

TIPS VENDOR AGREEMENT

Between Myers Supply Inc. and
(Company Name)

THE INTERLOCAL PURCHASING SYSTEM (TIPS),

a Department of Texas Education Service Center Region 8 for

TIPS RFP 200405 Fire Truck, Ambulance and Other First Responder Vehicle Parts, Equipment and Services

General Information

The Vendor Agreement ("Agreement") made and entered into by and between The Interlocal Purchasing System (hereinafter "TIPS") a government cooperative purchasing program authorized by the Region 8 Education Service Center, having its principal place of business at 4845 US Hwy 271 North, Pittsburg, Texas 75686 and the TIPS Vendor. This Agreement consists of the provisions set forth below, including provisions of all attachments referenced herein. In the event of a conflict between the provisions set forth below and those contained in any attachment, the provisions set forth shall control unless otherwise agreed by the parties in writing and by signature and date on the attachment.

A Purchase Order ("PO"), Agreement or Contract is the TIPS Member's approval providing the authority to proceed with the negotiated delivery order under the Agreement. Special terms and conditions as agreed between the Vendor and TIPS Member should be added as addendums to the Purchase Order, Agreement or Contract. Items such as certificate of insurance, bonding requirements, small or disadvantaged business goals are some, but not all, of the possible addendums.

Terms and Conditions

Freight

All quotes to Members shall provide a line item for cost for freight or shipping regardless if there is a charge or not. If no charge for freight or shipping, indicate by stating "No Charge", "\$0", "included in price" or other similar indication. Otherwise, all shipping, freight or delivery charges shall be passed through to the TIPS Member at cost with no markup and said charges shall be agreed by the TIPS Member unless alternative shipping terms are agreed by TIPS as a result of the proposal award.

Warranty Conditions

All new supplies equipment and services shall include manufacturer's minimum standard warranty unless otherwise agreed to in writing. Vendor shall be legally permitted to sell all products offered for sale to TIPS Members if the offering is included in the Request for Proposal ("RFP") category. All goods proposed and sold shall be new unless clearly stated in writing.

Customer Support

The Vendor shall provide timely and accurate customer support for orders to TIPS Members as agreed by the Parties. Vendors shall respond to such requests within a commercially reasonable time after receipt of the request. If support and/or training is a line item sold or packaged with a sale, support shall be as agreed with the TIPS Member.

Agreements

Shipments

The Vendor shall ship, deliver or provide ordered products or services within a commercially reasonable time after the receipt of the order from the TIPS Member. If a delay in said delivery is anticipated, the Vendor shall notify TIPS Member as to why delivery is delayed and shall provide an estimated time for completion of the order. TIPS or the requesting entity may cancel the order if estimated delivery time is not acceptable or not as agreed by the parties.

Invoices

Each invoice or pay request shall include the TIPS Member's purchase order number or other identifying designation as provided in the order by the TIPS Member. If applicable, the shipment tracking number or pertinent information for verification of TIPS Member receipt shall be made available upon request.

Payments

The TIPS Member will make payments directly to the Vendor, the Vendor Assigned Dealer or as agreed by the Vendor and the TIPS Member after receiving invoice and in compliance with applicable payment statute(s), whichever is the greater time or as otherwise provided by an agreement of the parties.

Pricing

Price increases will be honored according to the terms of the solicitation. All pricing submitted to TIPS shall include the participation fee, as provided in the solicitation, to be remitted to TIPS by the Vendor. Vendor will not show adding the fee to the invoice presented to TIPS Member customer.

Participation Fees and Reporting of Sales to TIPS by Vendor

The Participation Fee that was published as part of the Solicitation and the fee published is the legally effective fee, along with any fee conditions stated in the Solicitation. Collection of the fees by TIPS is required under Texas Government Code §791.011 Et seq. Fees are due on all TIPS purchases reported by either Vendor or Member. Fees are due to TIPS upon payment by the Member to the Vendor, Reseller or Vendor Assigned Dealer. Vendor, Reseller or Vendor Assigned Dealer agrees to pay the participation fee to TIPS for all Agreement sales upon receipt of payment including partial payment, from the Member Entity or as otherwise agreed by TIPS in writing and signed by an authorized signatory of TIPS. Thus, when an awarded Vendor, Reseller or Vendor Assigned Dealer receives any amount of payment, even partial payment, for a TIPS sale, the legally effective fee for that amount is due to TIPS from the Vendor.

Reporting of Sales to TIPS by Vendor

Vendor is required to report all sales under the TIPS contract to TIPS. When a TIPS Member entity indicates verbally or in writing that it is seeking a TIPS purchase, Vendor must verify that the Member is seeking a TIPS purchase and then the Vendor include the TIPS Contract number on any communications and related sales documents exchanged with the TIPS Member entity. To report sales, the Vendor must login to the TIPS Vendor Portal online at https://www.tips-usa.com/vendors_form.cfm and click on the PO's and Payments tab. Pages 3-7 of the [Vendor Portal User Guide](#) will walk you through the process of reporting sales to TIPS. Please refer to the TIPS [Accounting FAQ's](#) for more information about reporting sales and if you have further questions, contact the Accounting Team at accounting@tips-usa.com. The Vendor or vendor assigned dealers are responsible for keeping record of all sales that go through the TIPS Agreement and submitting same to TIPS. Failure to render the participation fee to TIPS shall constitute a breach of this agreement with our parent governmental entity, Texas Education Service Center Region 8, as established by the Texas legislature and shall be grounds for termination of this agreement and any other agreement held with TIPS and possible legal action. Any overpayment of participation fees to TIPS by a Vendor will be refunded to the Vendor within ninety

(90) days of receipt of notification if TIPS receives written notification of the overpayment not later than the expiration of six (6) months from the date of overpayment and TIPS determines that the amount was not legally due to TIPS pursuant to this agreement and applicable law. It is the Vendor's responsibility to identify which sales are TIPS Agreement sales and pay the correct participation fee due for TIPS Agreement sales. Any notification of overpayment received by TIPS after the expiration of six (6) months from the date of overpayment will be non-refundable. Region 8 ESC and TIPS reserve the right to extend the six (6) month deadline to notify if approved by the Region 8 ESC Board of Directors. TIPS reserves all rights under the law to collect the fees due. Please contact TIPS at tips@tips-usa.com or call (866) 839-8477 if you have questions about paying fees.

Indemnity

The Vendor agrees to indemnify and hold harmless and defend TIPS, TIPS Member(s), officers and employees from and against all claims and suits by third parties for damages, injuries to persons (including death), property damages, losses, and expenses including court costs and reasonable attorney's fees, arising out of, or resulting from, Vendor's performance under this Agreement, including all such causes of action based upon common, constitutional, or statutory law, or based in whole or in part, upon allegations of negligent or intentional acts on the part of the Vendor, its officers, employees, agents, subcontractors, licensees, or invitees. Parties found liable shall pay their proportionate share of damages as agreed by the parties or as ordered by a court of competent jurisdiction over the case. **NO LIMITATION OF LIABILITY FOR DAMAGES FOR PERSONAL INJURY OR PROPERTY DAMAGE ARE PERMITTED OR AGREED BY TIPS/ESC REGION 8.** Per Texas Education Code §44.032(f), and pursuant to its requirements only, reasonable Attorney's fees are recoverable by the prevailing party in any dispute resulting in litigation.

State of Texas Franchise Tax

By signature hereon, the Vendor hereby certifies that he/she is not currently delinquent in the payment of any franchise taxes owed the State of Texas under Chapter 171, Tax Code.

Miscellaneous

The Vendor acknowledges and agrees that continued participation in TIPS is subject to TIPS sole discretion and that any Vendor may be removed from the participation in the Program at any time with or without cause. Nothing in the Agreement or in any other communication between TIPS and the Vendor may be construed as a guarantee that TIPS or TIPS Members will submit any orders at any time. TIPS reserves the right to request additional proposals for items or services already on Agreement at any time.

Purchase Order Pricing/Product Deviation

If a deviation of pricing/product on a Purchase Order or contract modification occurs between the Vendor and the TIPS Member, TIPS must be notified within five (5) business days of receipt of change order.

Termination for Convenience of TIPS Agreement Only

TIPS reserves the right to terminate this agreement for cause or no cause for convenience with a thirty (30) days prior written notice. Termination for convenience is conditionally required under Federal Regulations 2 CFR part 200 if the customer is using federal funds for the procurement. All purchase orders presented to the Vendor, but not fulfilled by the Vendor, by a TIPS Member prior to the actual termination of this agreement shall be honored at the option of the TIPS Member. The awarded Vendor may terminate the agreement with ninety (90) days prior written notice to TIPS 4845 US Hwy North, Pittsburg, Texas 75686. The vendor will be paid for goods and services delivered prior to the termination provided that the goods and services were delivered in accordance with the terms and conditions of the terminated agreement. This termination clause does not affect the sales agreements executed by the Vendor and the TIPS Member

customer pursuant to this agreement. TIPS Members may negotiate a termination for convenience clause that meets the needs of the transaction based on applicable factors, such as funding sources or other needs.

TIPS Member Purchasing Procedures

Usually, purchase orders or their equal are issued by participating TIPS Member to the awarded vendor and should indicate on the order that the purchase is per the applicable TIPS Agreement Number. Orders are typically emailed to TIPS at tipspo@tips-usa.com.

- Awarded Vendor delivers goods/services directly to the participating member.
- Awarded Vendor invoices the participating TIPS Member directly.
- Awarded Vendor receives payment directly from the participating member.
- Fees are due to TIPS upon payment by the Member to the Vendor. Vendor agrees to pay the participation fee to TIPS for all Agreement sales upon receipt of payment including partial payment, from the Member Entity or as otherwise agreed by TIPS in writing and signed by an authorized signatory of TIPS.

Licenses

Awarded Vendor shall maintain, in current status, all federal, state and local licenses, bonds and permits required for the operation of the business conducted by awarded Vendor. Awarded Vendor shall remain reasonably fully informed of and in compliance with all ordinances and regulations pertaining to the lawful provision of goods or services under the Agreement. TIPS and TIPS Members reserves the right to stop work and/or cancel an order or terminate this or any other sales Agreement of any awarded Vendor whose license(s) required for performance under this Agreement have expired, lapsed, are suspended or terminated subject to a 30-day cure period unless prohibited by applicable statute or regulation.

Novation

If awarded Vendor sells or transfers all assets, rights or the entire portion of the assets or rights required to perform this Agreement, a successor in interest must guarantee to perform all obligations under this Agreement. A simple change of name agreement will not change the Agreement obligations of awarded vendor. TIPS will consider Contract Assignments on a case by case basis. TIPS must be notified within five (5) business days of the transfer of assets or rights.

Site Requirements (*only when applicable to service or job*)

Cleanup: When performing work on site at a TIPS Member's property, awarded Vendor shall clean up and remove all debris and rubbish resulting from their work as required or directed by TIPS Member or as agreed by the parties. Upon completion of work, the premises shall be left in good repair and an orderly, neat, clean and unobstructed condition.

Preparation: Awarded Vendor shall not begin a project for which TIPS Member has not prepared the site, unless awarded Vendor does the preparation work at no cost, or until TIPS Member includes the cost of site preparation in a purchase order. Site preparation includes, but is not limited to: moving furniture, installing wiring for networks or power, and similar pre-installation requirements.

Registered sex offender restrictions: For work to be performed at schools, awarded Vendor agrees that no employee of a subcontractor who has been adjudicated to be a registered sex offender will perform work at any time when students are, or reasonably expected to be, present unless otherwise agreed by the TIPS Member. Awarded Vendor agrees that a violation of this condition shall be considered a material breach and may result in the cancellation of the purchase order at the TIPS Member's discretion. Awarded Vendor must identify any additional costs associated with compliance of this term. If no costs are specified, compliance with this term will be provided at no additional charge. **Safety measures:** Awarded Vendor shall take all reasonable precautions for the safety of employees on the worksite, and shall erect

and properly maintain all necessary safeguards for protection of workers and the public. Awarded Vendor shall post warning signs against all hazards created by the operation and work in progress. Proper precautions shall be taken pursuant to state law and standard practices to protect workers, general public and existing structures from injury or damage.

Safety Measures

Awarded Vendor shall take all reasonable precautions for the safety of employees on the worksite, and shall erect and properly maintain all necessary safeguards for protection of workers and the public. Awarded vendor shall post warning signs against all hazards created by the operation and work in progress. Proper precautions shall be taken pursuant to state law and standard practices to protect workers, general public and existing structures from injury or damage.

Smoking

Persons working under Agreement shall adhere to the TIPS Member's or local smoking statutes, codes or policies.

Marketing

Awarded Vendor agrees to allow TIPS to use their name and logo within TIPS website, marketing materials and advertisement subject to any reasonable restrictions provided to TIPS in the Proposal to the Solicitation. The Vendor may submit an acceptable use directive for Vendor's names and logos with which TIPS agrees to comply. Any use of TIPS name and logo or any form of publicity, inclusive of press release, regarding this Agreement by awarded vendor must have prior approval from TIPS which will not be unreasonably withheld. Request may be made by email to TIPS@TIPS-USA.COM.

Supplemental Agreements

The TIPS Member entity participating in the TIPS Agreement and awarded Vendor may enter into a separate Supplemental Agreement or contract to further define the level of service requirements over and above the minimum defined in this Agreement such as but not limited to, invoice requirements, ordering requirements, specialized delivery, etc. Any Supplemental Agreement or contract developed as a result of this Agreement is exclusively between the TIPS Member entity customer and the Vendor. TIPS, its agents, TIPS Members and employees not a party to the Supplemental Agreement with the TIPS Member customer, shall not be made party to any claim for breach of such agreement unless named and agreed by the Party in question in writing in the agreement. If a Vendor submitting a Proposal requires TIPS and/or TIPS Member to sign an additional agreement, those agreements shall comply with the award made by TIPS to the Vendor. Supplemental Vendor's Agreement documents may not become part of TIPS' Agreement with Vendor unless and until an authorized representative of TIPS reviews and approves it. TIPS review and approval may be at any time during the life of this Vendor Agreement. TIPS permits TIPS Members to negotiate additional terms and conditions with the Vendor for the provision of goods or services under the Vendor's TIPS Agreement so long as they do not materially conflict with this Agreement.

Survival Clause

All applicable sales, leases, Supplemental Agreements, contracts, software license agreements, warranties or service agreements that were entered into between Vendor and TIPS or the TIPS Member Customer under the terms and conditions of this Agreement shall survive the expiration or termination of this Agreement. All Orders, Purchase Orders issued or contracts executed by TIPS or a TIPS Member and accepted by the Vendor prior to the expiration or termination of this agreement, shall survive expiration or termination of the Agreement, subject to previously agreed terms and conditions agreed by the parties or as otherwise specified herein relating to termination of this agreement.

Legal obligations

It is the responding Vendor's responsibility to be aware of and comply with all local, state and federal laws governing the sale of products/services identified in the applicable Solicitation that resulted in this Vendor Agreement and any awarded Agreement thereof. Applicable laws and regulations must be followed even if not specifically identified herein.

Audit rights

Due to transparency statutes and public accountability requirements of TIPS and TIPS Members', the awarded Vendor shall, at their sole expense, maintain appropriate due diligence of all purchases made by TIPS Member that utilizes this Agreement. TIPS and Region 8 ESC each reserve the right to audit the accounting of TIPS related purchases for a period of three (3) years from the time such purchases are made. This audit right shall survive termination of this Agreement for a period of one (1) year from the effective date of termination. In order to ensure and confirm compliance with this agreement, TIPS shall have authority to conduct audits of Awarded Vendor's pricing or TIPS transaction documentation with TIPS Members with 30 days' notice unless the audit is ordered by a Court Order or by a Government Agency with authority to do so without notice. Notwithstanding the foregoing, in the event that TIPS is made aware of any pricing being offered to eligible entities that is materially inconsistent with the pricing under this agreement, TIPS shall have the ability to conduct the audit internally or may engage a third- party auditing firm to investigate any possible non- compliant conduct or may terminate the Agreement according to the terms of this Agreement. In the event of an audit, the requested materials shall be reasonably provided in the time, format and at the location acceptable to Region 8 ESC or TIPS. TIPS agrees not to perform a random audit the TIPS transaction documentation more than once per calendar year, but reserves the right to audit for just cause or as required by any governmental agency or court with regulatory authority over TIPS or the TIPS Member.

Force Majeure

If by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this Agreement then such party shall give notice and full particulars of Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch.

Choice of Law

The Agreement between the Vendor and TIPS/ESC Region 8 and any addenda or other additions resulting from this procurement process, however described, shall be governed by, construed and enforced in accordance with the laws of the State of Texas, regardless of any conflict of laws principles.

Venue, Jurisdiction and Service of Process

Any Proceeding arising out of or relating to this procurement process or any contract issued by TIPS resulting from or any contemplated transaction shall be brought in a court of competent jurisdiction in Camp County, Texas and each of the parties irrevocably submits to the exclusive jurisdiction of said court in any such proceeding, waives any objection it may now or hereafter have to venue or to convenience of forum, agrees that all claims in respect of the Proceeding shall be heard and determined only in any such court, and agrees not to bring any proceeding arising out of or relating to this procurement process or any contract resulting from or any contemplated transaction in any other court. The parties agree that either or both of them may

file a copy of this paragraph with any court as written evidence of the knowing, voluntary and freely bargained for agreement between the parties irrevocably to waive any objections to venue or to convenience of forum. Process in any Proceeding referred to in the first sentence of this Section may be served on any party anywhere in the world. Venue for any dispute resolution process, other than litigation, between TIPS and the Vendor shall be located in Camp or Titus County, Texas.

Project Delivery Order Procedures

The TIPS Member having approved and signed an interlocal agreement, or other TIPS Membership document, may make a request of the awarded Vendor under this Agreement when the TIPS Member desires goods or services awarded to the Vendor. Notification may occur via phone, the web, courier, email, fax, or in person. Upon notification of a pending request, the awarded Vendor shall acknowledge the TIPS Member's request as soon as possible, but must make contact with the TIPS Member within two working days.

Status of TIPS Members as Related to This Agreement

TIPS Members stand in the place of TIPS as related to this agreement and have the same access to the proposal information and all related documents. TIPS Members have all the same rights under the awarded Agreement as TIPS.

Vendor's Resellers as Related to This Agreement

Vendor's Named Resellers ("Resellers") under this Agreement shall comply with all terms and conditions of this agreement and all addenda or incorporated documents. All actions related to sales by Authorized Vendor's Resellers under this Agreement are the responsibility of the awarded Vendor. If Resellers fail to report sales to TIPS under your Agreement, the awarded Vendor is responsible for their contractual failures and shall be billed for the fees. The awarded Vendor may then recover the fees from their named reseller.

Support Requirements

If there is a dispute between the awarded Vendor and TIPS Member, TIPS or its representatives may, at TIPS sole discretion, assist in conflict resolution if requested by either party. TIPS, or its representatives, reserves the right to inspect any project and audit the awarded Vendor's TIPS project files, documentation and correspondence related to the requesting TIPS Member's order. If there are confidentiality requirements by either party, TIPS shall comply to the extent permitted by law.

Incorporation of Solicitation

The TIPS Solicitation which resulted in this Vendor Agreement, whether a Request for Proposals, the Request for Competitive Sealed Proposals or Request for Qualifications solicitation, or other, the Vendor's response to same and all associated documents and forms made part of the solicitation process, including any addenda, are hereby incorporated by reference into this Agreement as if copied verbatim.

SECTION HEADERS OR TITLES

THE SECTION HEADERS OR TITLES WITHIN THIS DOCUMENT ARE MERELY GUIDES FOR CONVENIENCE AND ARE NOT FOR CLASSIFICATION OR LIMITING OF THE RESPONSIBILITIES OF THE PARTIES TO THIS DOCUMENT.

STATUTORY REQUIREMENTS

Texas governmental entities are prohibited from doing business with companies that fail to certify to this condition as required by Texas Government Code Sec. 2270.

By executing this agreement, you certify that you are authorized to bind the undersigned Vendor and that your company (1) does not boycott Israel; and (2) will not boycott Israel during the term of the Agreement.

You certify that your company is not listed on and does not and will not do business with companies that are on the Texas Comptroller of Public Accounts list of Designated Foreign Terrorists Organizations per Texas Gov't Code 2270.0153 found at <https://comptroller.texas.gov/purchasing/docs/foreign-terrorist.pdf>

You certify that if the certified statements above become untrue at any time during the life of this Agreement that the Vendor will notify TIPS within three (3) business day of the change by a letter on Vendor's letterhead from and signed by an authorized representative of the Vendor stating the non-compliance decision and the TIPS Agreement number and description at:

Attention: General Counsel
ESC Region 8/The Interlocal Purchasing System (TIPS)
4845 Highway 271 North
Pittsburg, TX,75686
And by an email sent to bids@tips-usa.com

Insurance Requirements

The undersigned Vendor agrees to maintain the below minimum insurance requirements for TIPS Contract Holders:

General Liability	\$1,000,000 each Occurrence/ Aggregate
Automobile Liability	\$300,000 Includes owned, hired & non-owned
Workers' Compensation	Statutory limits for the jurisdiction in which the Vendor performs under this Agreement.
Umbrella Liability	\$1,000,000

When the Vendor or its subcontractors are liable for any damages or claims, the Vendor's policy, when the Vendor is responsible for the claim, must be primary over any other valid and collectible insurance carried by the Member. Any immunity available to TIPS or TIPS Members shall not be used as a defense by the contractor's insurance policy. The coverages and limits are to be considered minimum requirements and in no way limit the liability of the Vendor(s). Insurance shall be written by a carrier with an A-; VII or better rating in accordance with current A.M. Best Key Rating Guide. Only deductibles applicable to property damage are acceptable, unless proof of retention funds to cover said deductibles is provided. "Claims made" policies will not be accepted. Vendor's required minimum coverage shall not be suspended, voided, cancelled, non-renewed or reduced in coverage or in limits unless replaced by a policy that provides the minimum required coverage except after thirty (30) days prior written notice by certified mail, return receipt requested has been given to TIPS or the TIPS Member if a project or pending delivery of an order is ongoing. Upon request, certified copies of all insurance policies shall be furnished to the TIPS or the TIPS Member.

Special Terms and Conditions

- **Orders:** All Vendor orders received from TIPS Members must be emailed to TIPS at tipspo@tips-usa.com. Should a TIPS Member send an order directly to the Vendor, it is the Vendor's responsibility to forward a copy of the order to TIPS at the email above within 3 business days and confirm its receipt with TIPS.
- **Vendor Encouraging Members to bypass TIPS agreement:** Encouraging TIPS Members to purchase directly from the Vendor or through another agreement, when the Member has requested using the TIPS cooperative Agreement or price, and thereby bypassing the TIPS Agreement is a violation of the terms and conditions of this Agreement and will result in removal of the Vendor from the TIPS Program.
- **Order Confirmation:** All TIPS Member Agreement orders are approved daily by TIPS and sent to the Vendor. The Vendor should confirm receipt of orders to the TIPS Member (customer) within 3 business days.
- **Vendor custom website for TIPS:** If Vendor is hosting a custom TIPS website, updated pricing when effective. TIPS shall be notified when prices change in accordance with the award.
- **Back Ordered Products:** If product is not expected to ship within the time provided to the TIPS Member by the Vendor, the Member is to be notified within 3 business days and appropriate action taken based on customer request.

The TIPS Vendor Agreement Signature Page is inserted here.

TIPS Vendor Agreement Signature Form

RFP 200405 Fire Truck, Ambulance and Other First Responder Vehicle Parts, Equipment and Services

Company Name Myers Supply Inc.

Address 831 Third Street


City Hot Springs State AR Zip 71913

Phone 501.623.7742 Fax 501.623.7727

Email of Authorized Representative ryan@myerssupply.com

Name of Authorized Representative Ryan Myers

Title COO

Signature of Authorized Representative 

Date 5/12/20

TIPS Authorized Representative Name Meredith Barton

Title Chief Operating Officer

TIPS Authorized Representative Signature 

Approved by ESC Region 8 

Date 6/23/2020

NOTICE TO MEMBERS REGARDING ATTRIBUTE RESPONSES

TIPS VENDORS RESPOND TO ATTRIBUTE QUESTIONS AS PART OF TIPS COMPETITIVE SOLICITATION PROCESS. THE VENDOR'S RESPONSES TO ATTRIBUTE QUESTIONS ARE INCLUDED HEREIN AS "SUPPLIER RESPONSE." PLEASE BE ADVISED THAT DEVIATIONS, IF ANY, IN VENDOR'S RESPONSE TO ATTRIBUTE QUESTIONS MAY NOT REFLECT VENDOR'S FINAL ATTRIBUTE RESPONSE, WHICH IS SUBJECT TO NEGOTIATIONS PRIOR TO AWARD. PLEASE CONTACT THE TIPS OFFICE AT 866-839-8477 WITH QUESTIONS OR CONCERNS REGARDING VENDOR ATTRIBUTE RESPONSE DEVIATIONS. PLEASE KEEP IN MIND THAT TIPS DOES NOT PROVIDE LEGAL COUNSEL TO MEMBERS. TIPS RECOMMENDS THAT YOU CONSULT YOUR LEGAL COUNSEL WHEN EXECUTING CONTRACTS WITH OR MAKING PURCHASES FROM TIPS VENDORS.



200405 Addendum 2 Myers Supply Inc Supplier Response

Event Information

Number: 200405 Addendum 2
Title: Fire Truck, Ambulance and Other First Responder Vehicle Parts, Equipment and Services
Type: Request for Proposal
Issue Date: 4/2/2020
Deadline: 6/12/2020 03:00 PM (CT)
Notes: This solicitation is for Fire Truck, Ambulance and Other First Responder Vehicle **Parts, Equipment and Services ONLY**. If you wish to propose the sale of Fire Truck, Ambulance and Other First Responder **Vehicles**, please respond to TIPS Solicitation 200404 Fire Trucks, Ambulances and Other First Responder Vehicles.

Contact Information

Address: Region 8 Education Service Center
4845 US Highway 271 North
Pittsburg, TX 75686
Phone: +1 (866) 839-8477
Email: bids@tips-usa.com

Myers Supply Inc Information

Address: 831 THIRD ST
HOT SPRINGS, AR 71913
Phone: (501) 623-7742
Fax: (501) 623-7742
Toll Free: (501) 623-7742

By submitting your response, you certify that you are authorized to represent and bind your company.

Ryan Myers

Signature

Submitted at 5/15/2020 3:48:57 PM

ryan@myerssupply.com

Email

Requested Attachments

Vendor Agreement

200405 fire agreement.pdf

The vendor must download the Vendor Agreement from the attachment tab, fill in the requested information and upload the completed agreement.
DO NOT UPLOAD encrypted or password protected files.

Agreement Signature Form

200405 signature form.pdf

If you have not taken exception or deviation to the agreement language in the solicitation attributes, download the AGREEMENT SIGNATURE FORM from the "ATTACHMENTS" tab. This PDF document is a fillable form. Download the document to your computer, fill in the requested company information, print the file, SIGN the form, SCAN the completed and signed AGREEMENT SIGNATURE FORM, and upload here.

If you have taken exception to any of the agreement language and noted the exception in the deviations section of the attributes for the agreement, complete the AGREEMENT SIGNATURE FORM, but DO NOT SIGN until those deviations have been negotiated and resolved with TIPS management. Upload the unsigned form here, because this is a required document.

Pricing Spreadsheet #1

Fire 200405_Pricing_form_1.xlsx

The vendor must download the PRICING SPREADSHEET SHEET from the attachment tab, fill in the requested information and upload the completed spreadsheet.
DO NOT UPLOAD encrypted or password protected files.

Pricing Spreadsheet #2

Fire 200405_Pricing_form_2.xlsx

The vendor must download the PRICING SPREADSHEET SHEET from the attachment tab, fill in the requested information and upload the completed spreadsheet.
DO NOT UPLOAD encrypted or password protected files.

References

Reference_Form (1) 2020.xls

The vendor must download the References spreadsheet from the attachment tab, fill in the requested information and upload the completed spreadsheet. DO NOT UPLOAD encrypted or password protected files.

Proposed Goods and Services

Fire Equipment brochure.pdf

Please upload one or more documents or sheets describing your offerings, line cards, catalogs, links to offerings OR list links to your offerings that illustrate the catalog of proposed lines of goods and or services you carry and offer under this proposal. It does not have to be exhaustive but should, at a minimum tell us what you are offering. It could be as simple as a sheet with your link to your online catalog of goods and services.

Resellers/Dealers - COMPLETE AND UPLOAD ONLY IF YOU HAVE RESELLER OF YOUR GOODS OR SERVICES PROPOSED *No response*

If the PROPOSING vendor has resellers that will be selling for the vendor UNDER this contract, the vendor must download the Resellers/Dealers spreadsheet from the attachment tab, fill in the requested information and upload the completed spreadsheet.

DO NOT UPLOAD encrypted or password protected files.

D/M/WBE Certification OPTIONAL

No response

D/M/WBE Certification documentation may be scanned and uploaded if you desire to claim your status as one of the identified enterprises. (Disadvantaged Business Enterprise, Minority Business Enterprise and/or Woman Business Enterprise) If vendor has more than one certification scan into one document. (PDF Format ONLY)

DO NOT UPLOAD encrypted or password protected files.

Warranty

Warranty Fire Information 2020.pdf

Warranty information (if applicable) must be scanned and uploaded. (PDF Format ONLY)

DO NOT UPLOAD encrypted or password protected files.

Supplementary

Fire Equipment brochure.pdf

Supplementary information may be scanned and uploaded. (Company information, brochures, catalogs, etc.) (PDF Format ONLY)

DO NOT UPLOAD encrypted or password protected files.

All Other Certificates

healthy-firefighters-skelleftea-swedish-model_1_.pdf

All Other Certificates (if applicable) must be scanned and uploaded. If vendor has more than one other certification scan into one document. (PDF Format ONLY)

DO NOT UPLOAD encrypted or password protected files.

Logo and Other Company Marks

Myers 2019.jpg

If you desire, please upload your company logo to be added to your individual profile page on the TIPS website. If any particular specifications are required for use of your company logo, please upload that information under the Supplementary section or another non-required section under the "Response Attachment" tab. Preferred Logo Format: 300 x 225 px - .png, .eps, .jpeg preferred

Conflict of Interest Form CIQ- ONLY REQUIRED IF A CONFLICT EXISTS PER THE INSTRUCTIONS *Conflict of Interest.pdf*

ONLY REQUIRED IF A CONFLICT EXISTS PER THE INSTRUCTIONS

Conflict of Interest Form for Vendors that are required to submit the form. The Conflict of Interest Form is included in the Base documents or can be found at <https://www.tips-usa.com/assets/documents/docs/CIQ.pdf>.

Certificate of Corporate Offerer - COMPLETE ONLY IF OFFERER IS A CORPORATION *certification by corporate officer.pdf*

COMPLETE AND UPLOAD FORM IN ATTACHMENTS SECTION ONLY IF OFFERER IS A CORPORATION

Disclosure of Lobbying Activities Standard Form LLL

lobbying activities.pdf

ONLY IF you answered "I HAVE Lobbied per above" to attribute #66, please download and complete and upload the Standard Form-LLL, "disclosure Form to Report Lobbying," in the Response attachments section.

Confidentiality Form

confidential fire form.pdf

REQUIRED CONFIDENTIALITY FORM. Complete the form according to your company requirements, make any desired attachments and upload to the appropriate section under "Response Attachments" THIS FORM DETERMINES HOW ESC8/TIPS RESPONDS TO LEGAL PUBLIC INFORMATION REQUESTS.

Current W-9 Tax Form

W9 2020.pdf

You are required by TIPS to upload a current W-9 Internal Revenue Service (IRS) Tax Form for your entity. This form will be utilized by TIPS to properly identify your entity. Additionally, if not designated "Confidential" in your proposal response, this W-9 may be accessed by TIPS Members for the purpose of making TIPS purchases from you in the event that you are awarded. If you wish to designate your required W-9 confidential, please do so according to the terms of the Confidentiality Claim Form which is an attachment to this solicitation.

Bid Attributes

1 Yes - No

Disadvantaged/Minority/Women Business Enterprise - D/M/WBE (Required by some participating governmental entities) Vendor certifies that their firm is a D/M/WBE? Vendor must upload proof of certification to the "Response Attachments" D/M/WBE CERTIFICATES section.

2 Yes - No

Historically Underutilized Business - HUB (Required by some participating governmental entities) Vendor certifies that their firm is a HUB as defined by the State of Texas at <https://comptroller.texas.gov/purchasing/vendor/hub/> or in a HUBZone as defined by the US Small Business Administration at <https://www.sba.gov/offices/headquarters/ohp>

Proof of one or both may be submitted. Vendor must upload proof of certification to the "Response Attachments" HUB CERTIFICATES section.

3 Yes - No

The Vendor can provide services and/or products to all 50 US States?

4 States Served:

If answer is NO to question #3, please list which states can be served. (Example: AR, OK, TX)

5 Company and/or Product Description:

This information will appear on the TIPS website in the company profile section, if awarded a TIPS contract. (Limit 750 characters.)

Myers Supply has partnered with ProBlend and Solo Rescue to provide easy to use decontamination products for firefighters and first responders. The combination of ProBlend SCBA and the Solo Rescue Decon washer offers a quick, easy and safe method of cleaning protective gear in a sealed compartment. This significantly improves the work environment for rescue services personnel.

6 Primary Contact Name

Primary Contact Name

7 Primary Contact Title

Primary Contact Title

8 Primary Contact Email

Primary Contact Email

9 Primary Contact Phone

Enter 10 digit phone number. (No dashes or extensions)

Example: 8668398477

10	Primary Contact Fax Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
	<input type="text" value="501.371.9080"/>

11	Primary Contact Mobile Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
	<input type="text" value="No response"/>

12	Secondary Contact Name Secondary Contact Name
	<input type="text" value="Don Ellis"/>

13	Secondary Contact Title Secondary Contact Title
	<input type="text" value="GM"/>

14	Secondary Contact Email Secondary Contact Email
	<input type="text" value="don@myerssupply.com"/>

15	Secondary Contact Phone Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
	<input type="text" value="501.372.6677"/>

16	Secondary Contact Fax Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
	<input type="text" value="501.371.9080"/>

17	Secondary Contact Mobile Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
	<input type="text" value="No response"/>

18	Admin Fee Contact Name Admin Fee Contact Name. This person is responsible for paying the admin fee to TIPS.
	<input type="text" value="Ryan Myers"/>

19	Admin Fee Contact Email Admin Fee Contact Email
	<input type="text" value="ryan@myerssupply.com"/>

20	Admin Fee Contact Phone Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
<input type="text" value="501.372.6677"/>	

21	Purchase Order Contact Name Purchase Order Contact Name. This person is responsible for receiving Purchase Orders from TIPS.
<input type="text" value="Ryan Myers"/>	

22	Purchase Order Contact Email Purchase Order Contact Email
<input type="text" value="ryan@myerssupply.com"/>	

23	Purchase Order Contact Phone Enter 10 digit phone number. (No dashes or extensions) Example: 8668398477
<input type="text" value="501.372.6677"/>	

24	Company Website Company Website (Format - www.company.com)
<input type="text" value="http://deconfire.com/index.html"/>	

25	Federal ID Number: Federal ID Number also known as the Employer Identification Number (EIN). (Format - 12-3456789)
<input type="text" value="71-0500163"/>	

26	Primary Address Primary Address
<input type="text" value="831 Third Strret"/>	

27	Primary Address City Primary Address City
<input type="text" value="Hot Springs"/>	

28	Primary Address State Primary Address State (2 Digit Abbreviation)
<input type="text" value="AR"/>	

29	Primary Address Zip Primary Address Zip
<input type="text" value="71913"/>	

30 Search Words:

Please list search words to be posted in the TIPS database about your company that TIPS website users might search. Words may be product names, manufacturers, or other words associated with the category of award. YOU MAY NOT LIST NON-CATEGORY ITEMS. (Limit 500 words) (Format: product, paper, construction, manufacturer name, etc.)

SCBA, DECON WASHER, SOLO RESCUE, DECON, SCBA WASHER, LAUNDRY, SANITIZERS, TRUCK DECON, DECON PRODUCTS

31 Do you want TIPS Members to be able to spend Federal grant funds with you if awarded? Is it your intent to be able to sell to our members regardless of the fund source, whether it be local, state or federal?

Most of our members receive Federal Government grants and they make up a significant portion of their budgets. The Members need to know if your company is willing to sell to them when they spend federal budget funds on their purchase. There are attributes that follow that include provisions from the federal regulations in 2 CFR part 200. Your answers will determine if your award will be designated as Federal or Education Department General Administrative Regulations (EDGAR) compliant.

Do you want TIPS Members to be able to spend Federal grant funds with you if awarded and is it your intent to be able to sell to TIPS Members regardless of the fund source, whether it be local, state or federal?

Yes

32 Yes - No

Certification of Residency (Required by the State of Texas) The vendor's ultimate parent company or majority owner:

(A) has its principal place of business in Texas;

OR

(B) employs at least 500 persons in Texas?

This question is required as a data gathering function for information to our members making purchases with awarded vendors. It does not affect scoring with TIPS.

No

33 Company Residence (City)

Vendor's principal place of business is in the city of?

Hot Springs

34 Company Residence (State)

Vendor's principal place of business is in the state of?

Arkansas

35 Discount Offered - CAUTION READ CAREFULLY BECAUSE VENDORS FREQUENTLY MAKE MISTAKES ON THIS ATTRIBUTE QUESTION

Remember this is a MINIMUM discount percentage. So, be sure that the discount percentage inserted here can be applied to ANY OFFERING OF GOODS OR SERVICES THROUGHOUT THE LIFE OF THE CONTRACT

CAUTION: BE CERTAIN YOU CAN HONOR THIS MINIMUM DISCOUNT PERCENTAGE ON ANY OFFERED SERVICE OR GOOD NOW OR DURING THE LIFE OF THE CONTRACT.

What is the MINIMUM percentage discount off of any item or service you offer to TIPS Members that is in your regular catalog (as defined in the solicitation specifications document), website, store or shelf pricing or when adding new goods or services to your offerings during the life of the contract? The resulting price of any goods or services Catalog list prices after this discount is applied is a ceiling on your pricing and not a floor because, in order to be more competitive in the individual circumstance, you may offer a larger discount depending on the items or services purchased and the quantity at time of sale.

Must answer with a number between 0% and 100%.

36 TIPS Administration Fee

By submitting a proposal, I agree that all pricing submitted to TIPS shall include the Administration Fee, as designated in the solicitation or as otherwise agreed in writing which shall be remitted to TIPS by the Vendor, or the vendor's named resellers, and as agreed to in the Vendor Agreement. I agree that the fee shall not and will not be added by the Vendor as a separate line item on a TIPS member invoice, quote, proposal or any other written communications with the TIPS member.

37 Yes - No

Vendor agrees to remit to TIPS the required administration fee or, if resellers are named, Vendor agrees to guarantee the fee remittance by or for the reseller named by the vendor?

TIPS/ESC Region 8 is required by Texas Government Code § 791 to be compensated for its work and thus, failure to agree shall render your response void and it will not be considered.

38 Yes - No

Do you offer additional discounts to TIPS members for large order quantities or large scope of work?

39 Years experience in category of goods or services

Company years experience in this category of goods or services? This is an evaluation criterion worth a maximum of 10 points. See RFP for more information.

4

0

Resellers:

Does the vendor have resellers that it will name under this contract? Resellers are defined as other companies that sell your products under an agreement with you, the awarded vendor of TIPS.

EXAMPLE: BIGmart is a reseller of ACME brand televisions. If ACME were a TIPS awarded vendor, then ACME would list BIGmart as a reseller.

(If applicable, vendor should download the Reseller/Dealers spreadsheet from the Attachments section, fill out the form and submit the document in the "Response Attachments" RESELLERS section.

4

1

Pricing discount percentage are guaranteed for?

Does the vendor agrees to honor the proposed pricing discount percentage off regular catalog (as defined in the RFP document), website, store or shelf pricing for the term of the award?

4

2

Right of Refusal

Does the proposing vendor wish to reserve the right not to perform under the awarded agreement with a TIPS member at vendor's discretion?

4

3

NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid or proposal, the Bidder certifies that:

- 1) This bid or proposal has been independently arrived at without collusion with any other Bidder or with any Competitor;
- 2) This bid or proposal has not been knowingly disclosed and will not be knowingly disclosed, prior to the opening of bids, or proposals for this project, to any other Bidder, Competitor or potential competitor;
- 3) No attempt has been or will be made to induce any other person, partnership or corporation to submit or not to submit a bid or proposal;
- 4) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties being applicable to the Bidder as well as to the person signing in its behalf.

Not a negotiable term. Failure to agree will render your proposal non-responsive and it will not be considered.

4 4 CONFLICT OF INTEREST QUESTIONNAIRE - FORM CIQ - Do you have any CONFLICT OF INTEREST TO REPORT OR DISCLOSE under this statutory requirement?

Do you have any CONFLICT OF INTEREST TO REPORT OR DISCLOSE under this statutory requirement? YES or NO

If you have a conflict of interest as described in this form or the Local Government Code Chapter 176, cited therein- you are required to complete and file with TIPS.

You may find the Blank CIQ form on our website at:

Copy and Paste the following link into a new browser or tab:

<https://www.tips-usa.com/assets/documents/docs/CIQ.pdf>

There is an optional upload for this form provided if you have a conflict and must file the form.

4 5 Filing of Form CIQ

If yes (above), have you filed a form CIQ by uploading the form to this RFP as directed above?

4 6 Regulatory Standing

I certify to TIPS for the proposal attached that my company is in good standing with all governmental agencies Federal or state that regulate any part of our business operations. If not, please explain in the next attribute question.

4 7 Regulatory Standing

Regulatory Standing explanation of no answer on previous question.

4 8 Antitrust Certification Statements (Tex. Government Code § 2155.005)

By submission of this bid or proposal, the Bidder certifies that:

I affirm under penalty of perjury of the laws of the State of Texas that:

(1) I am duly authorized to execute this contract on my own behalf or on behalf of the company, corporation, firm, partnership or individual (Company) listed below;

(2) In connection with this bid, neither I nor any representative of the Company has violated any provision of the Texas Free Enterprise and Antitrust Act, Tex. Bus. & Comm. Code Chapter 15;

(3) In connection with this bid, neither I nor any representative of the Company has violated any federal antitrust law;

(4) Neither I nor any representative of the Company has directly or indirectly communicated any of the contents of this bid to a competitor of the Company or any other company, corporation, firm, partnership or individual engaged in the same line of business as the Company.

Suspension or Debarment Instructions

Instructions for Certification:

1. By answering yes to the next Attribute question below, the vendor and prospective lower tier participant is providing the certification set out herein in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and / or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms “covered transaction,” “debarred,” “suspended,” “ineligible,” “lower tier covered transaction,” “participants,” “person,” “primary covered transaction,” “principal,” “proposal” and “voluntarily excluded,” as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled “Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction” without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and / or debarment.

5
0

Suspension or Debarment Certification

By answering yes, you certify that no federal suspension or debarment is in place, which would preclude receiving a federally funded contract as described above.

Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

By answering yes, you certify that no federal suspension or debarment is in place, which would preclude receiving a federally funded contract as described above.

5
1

Non-Discrimination Statement and Certification

In accordance with Federal civil rights law, all U.S. Departments, including the U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

(Title VI of the Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975; Title 7 CFR Parts 15, 15a, and 15b; the Americans with Disabilities Act; and FNS Instruction 113-1, Civil Rights Compliance and Enforcement – Nutrition Programs and Activities)

All U.S. Departments, including the USDA are equal opportunity provider, employer, and lender.

Not a negotiable term. Failure to agree by answering YES will render your proposal non-responsive and it will not be considered. I certify that in the performance of a contract with TIPS or its members, that our company will conform to the foregoing anti-discrimination statement and comply with the cited and all other applicable laws and regulations.

5 **2 CFR PART 200 Contract Provisions Explanation**

2 Required Federal contract provisions of Federal Regulations for Contracts for contracts with ESC Region 8 and TIPS Members:

The following provisions are required to be in place and agreed if the procurement is funded in any part with federal funds.

The ESC Region 8 and TIPS Members are the subgrantee or Subrecipient by definition. Most of the provisions are located in 2 CFR PART 200 - Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards at 2 CFR PART 200. Others are included within 2 CFR part 200 et al.

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

5 **2 CFR PART 200 Contracts**

3 Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

Notice: Pursuant to the above, when federal funds are expended by ESC Region 8 and TIPS Members, ESC Region 8 and TIPS Members reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Does vendor agree?

5 **2 CFR PART 200 Termination**

4 Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of \$10,000)

Pursuant to the above, when federal funds are expended by ESC Region 8 and TIPS Members, ESC Region 8 and TIPS Members reserves the right to terminate any agreement in excess of \$10,000 resulting from this procurement process for cause after giving the vendor an appropriate opportunity and up to 30 days, to cure the causal breach of terms and conditions. ESC Region 8 and TIPS Members reserves the right to terminate any agreement in excess of \$10,000 resulting from this procurement process for convenience with 30 days notice in writing to the awarded vendor. The vendor would be compensated for work performed and goods procured as of the termination date if for convenience of the ESC Region 8 and TIPS Members. Any award under this procurement process is not exclusive and the ESC Region 8 and TIPS reserves the right to purchase goods and services from other vendors when it is in the best interest of the ESC Region 8 and TIPS.

Does vendor agree?

5
5

2 CFR PART 200 Clean Air Act

Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Pursuant to the Clean Air Act, et al above, when federal funds are expended by ESC Region 8 and TIPS Members, ESC Region 8 and TIPS Members requires that the proposer certify that during the term of an award by the ESC Region 8 and TIPS Members resulting from this procurement process the vendor agrees to comply with all of the above regulations, including all of the terms listed and referenced therein.

Does vendor agree?

5
6

2 CFR PART 200 Byrd Anti-Lobbying Amendment

Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

Pursuant to the above, when federal funds are expended by ESC Region 8 and TIPS Members, ESC Region 8 and TIPS Members requires the proposer certify that during the term and during the life of any contract with ESC Region 8 and TIPS Members resulting from this procurement process the vendor certifies to the terms included or referenced herein.

Does vendor agree?

5
7

2 CFR PART 200 Federal Rule

Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of \$100,000)

Pursuant to the above, when federal funds are expended by ESC Region 8 and TIPS Members, ESC Region 8 and TIPS Members requires the proposer certify that in performance of the contracts, subcontracts, and subgrants of amounts in excess of \$100,000, the vendor will be in compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15).

Does vendor certify that it is in compliance with the Clean Air Act?

58 2 CFR PART 200 Procurement of Recovered Materials

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

Does vendor certify that it is in compliance with the Solid Waste Disposal Act as described above?

59 Certification Regarding Lobbying

Applicable to Grants, Subgrants, Cooperative Agreements, and Contracts Exceeding \$100,000 in Federal Funds

Submission of this certification is a prerequisite for making or entering into this transaction and is imposed by section 1352, Title 31, U.S. Code. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all covered subawards exceeding \$100,000 in Federal funds at all appropriate tiers and that all subrecipients shall certify and disclose accordingly.

60 If you answered "I HAVE lobbied" to the above Attribute Question

If you answered "I HAVE lobbied" to the above Attribute question, you must download the Lobbying Report "Standard From LLL, disclosure Form to Report Lobbying" which includes instruction on completing the form, complete and submit it in the Response Attachments section as a report of the lobbying activities you performed or paid others to perform.

**6
1** **Subcontracting with Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms.**

Do you ever anticipate the possibility of subcontracting any of your work under this award if you are successful?

IF NO, DO NOT ANSWER THE NEXT ATTRIBUTE QUESTION. . IF YES, and ONLY IF YES, you must answer the next question YES if you want a TIPS Member to be authorized to spend Federal Grant Funds for Procurement.

**6
2** **ONLY IF YES TO THE PREVIOUS QUESTION OR if you ever do subcontract any part of your performance under the TIPS Agreement, do you agree to comply with the following federal requirements?**

ONLY IF YES TO THE PREVIOUS QUESTION OR if you ever do subcontract any part of your performance under the TIPS Agreement,

do you agree to comply with the following federal requirements?

Federal Regulation 2 CFR §200.321 Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms. (a)The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

(b) Affirmative steps must include:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

(4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;

(5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce ; and

(6) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs(1) through (5) of this section.

6 **Indemnification**

3

The ESC Region 8 and TIPS is a Texas Political Subdivision and a local governmental entity; therefore, is prohibited from indemnifying third parties pursuant to the Texas Constitution (Article 3, Section 52) except as specifically provided by law or as ordered by a court of competent jurisdiction. A provision in a contract to indemnify or hold a party harmless is a promise to pay for any expenses the indemnified party incurs, if a specified event occurs, such as breaching the terms of the contract or negligently performing duties under the contract. Article III, Section 49 of the Texas Constitution states that "no debt shall be created by or on behalf of the State ... " The Attorney General has counseled that a contractually imposed obligation of indemnity creates a "debt" in the constitutional sense. Tex. Att'y Gen. Op. No. MW-475 (1982). Contract clauses which require the System or institutions to indemnify must be deleted or qualified with "to the extent permitted by the Constitution and Laws of the State of Texas." Liquidated damages, attorney's fees, waiver of vendor's liability, and waiver of statutes of limitations clauses should also be deleted or qualified with "to the extent permitted by the Constitution and laws of State of Texas."

Not a negotiable term. Failure to agree will render your proposal non-responsive and it will not be considered. Do you agree to these terms?

6 **Remedies**

4

The parties shall be entitled to exercise any right or remedy available to it either at law or in equity, subject to the choice of law, venue and service of process clauses limitations agreed herein. Nothing in this agreement shall commit the TIPS to an arbitration resolution of any disagreement under any circumstances. Any Claim arising out of or related to the Contract, except for those specifically waived under the terms of the Contract, may, after denial of the Board of Directors, be subject to mediation at the request of either party. Any issues not resolved hereunder MAY be referred to non-binding mediation to be conducted by a mutually agreed upon mediator as a prerequisite to the filing of any lawsuit over such issue(s). The parties shall share the mediator's fee and any associated filing fee equally. Mediation shall be held in Camp or Titus County, Texas. Agreements reached in mediation shall be reduced to writing, and will be subject to the approval by the District's Board of Directors, signed by the Parties if approved by the Board of Directors, and, if signed, shall thereafter be enforceable as provided by the laws of the State of Texas.

Do you agree to these terms?

6 **Remedies Explanation of No Answer**

5

6
6 **Choice of Law**

The agreement between the Vendor and TIPS/ESC Region 8 and any addenda or other additions resulting from this procurement process, however described, shall be governed by, construed and enforced in accordance with the laws of the State of Texas, regardless of any conflict of laws principles.
THIS DOES NOT APPLY to a vendor's agreement entered into with a TIPS Member, as the Member may be located outside Texas.

Do you agree to these terms?

6
7 **Venue, Jurisdiction and Service of Process**

Any Proceeding arising out of or relating to this procurement process or any contract issued by TIPS resulting from or any contemplated transaction shall be brought in a court of competent jurisdiction in Camp County, Texas and each of the parties irrevocably submits to the exclusive jurisdiction of said court in any such proceeding, waives any objection it may now or hereafter have to venue or to convenience of forum, agrees that all claims in respect of the Proceeding shall be heard and determined only in any such court, and agrees not to bring any proceeding arising out of or relating to this procurement process or any contract resulting from or any contemplated transaction in any other court. The parties agree that either or both of them may file a copy of this paragraph with any court as written evidence of the knowing, voluntary and freely bargained for agreement between the parties irrevocably to waive any objections to venue or to convenience of forum. Process in any Proceeding referred to in the first sentence of this Section may be served on any party anywhere in the world. Any dispute resolution process other than litigation shall have venue in Camp County or Titus County Texas.

Do you agree to these terms?

6
8 **Infringement(s)**

The successful vendor will be expected to indemnify and hold harmless the TIPS and its employees, officers, agents, representatives, contractors, assignees and designees from any and all third party claims and judgments involving infringement of patent, copyright, trade secrets, trade or service marks, and any other intellectual or intangible property rights attributed to or claims based on the Vendor's proposal or Vendor's performance of contracts awarded and approved.

Do you agree to these terms?

6
9 **Infringement(s) Explanation of No Answer**

7
0 **Contract Governance**

Any contract made or entered into by the TIPS is subject to and is to be governed by Section 271.151 et seq, Tex Loc Gov't Code. Otherwise, TIPS does not waive its governmental immunities from suit or liability except to the extent expressly waived by other applicable laws in clear and unambiguous language.

7
1

Payment Terms and Funding Out Clause

Payment Terms:

TIPS or TIPS Members shall not be liable for interest or late payment fees on past-due balances at a rate higher than permitted by the laws or regulations of the jurisdiction of the TIPS Member.

Funding Out Clause:

Vendor agrees to abide by the laws and regulations, including Texas Local Government Code § 271.903, or any statutory or regulatory limitations of the jurisdiction of any TIPS Member which governs contracts entered into by the Vendor and TIPS or a TIPS Member that requires all contracts approved by TIPS or a TIPS Member are subject to the budgeting and appropriation of currently available funds by the entity or its governing body.

See statute(s) for specifics or consult your legal counsel.

Not a negotiable term. Failure to agree will render your proposal non-responsive and it will not be considered.

Do you agree to these terms?

7
2

Insurance and Fingerprint Requirements Information

Insurance

If applicable and your staff will be on TIPS member premises for delivery, training or installation etc. and/or with an automobile, you must carry automobile insurance as required by law. You may be asked to provide proof of insurance.

Fingerprint

It is possible that a vendor may be subject to Chapter 22 of the Texas Education Code. The Texas Education Code, Chapter 22, Section 22.0834. Statutory language may be found at: <http://www.statutes.legis.state.tx.us/>

If the vendor has staff that meet both of these criterion:

- (1) will have continuing duties related to the contracted services; and
- (2) has or will have direct contact with students

Then you have "covered" employees for purposes of completing the attached form.

TIPS recommends all vendors consult their legal counsel for guidance in compliance with this law. If you have questions on how to comply, see below. If you have questions on compliance with this code section, contact the Texas Department of Public Safety Non-Criminal Justice Unit, Access and Dissemination Bureau, FAST-FACT at NCJU@txdps.state.tx.us and you should send an email identifying you as a contractor to a Texas Independent School District or ESC Region 8 and TIPS. Texas DPS phone number is (512) 424-2474.

See form in the next attribute to complete entitled:
Texas Education Code Chapter 22 Contractor Certification for Contractor Employees

Texas Education Code Chapter 22 Contractor Certification for Contractor Employees

Introduction: Texas Education Code Chapter 22 requires entities that contract with school districts to provide services to obtain criminal history record information regarding covered employees. Contractors must certify to the district that they have complied. Covered employees with disqualifying criminal histories are prohibited from serving at a school district.

Definitions: Covered employees: Employees of a contractor or subcontractor who have or will have continuing duties related to the service to be performed at the District and have or will have direct contact with students. The District will be the final arbiter of what constitutes direct contact with students. Disqualifying criminal history: Any conviction or other criminal history information designated by the District, or one of the following offenses, if at the time of the offense, the victim was under 18 or enrolled in a public school:

(a) a felony offense under Title 5, Texas Penal Code; (b) an offense for which a defendant is required to register as a sex offender under Chapter 62, Texas Code of Criminal Procedure; or (c) an equivalent offense under federal law or the laws of another state.

I certify that:

NONE (Section A) of the employees of Contractor and any subcontractors are covered employees, as defined above. If this box is checked, I further certify that Contractor has taken precautions or imposed conditions to ensure that the employees of Contractor and any subcontractor will not become covered employees. Contractor will maintain these precautions or conditions throughout the time the contracted services are provided.

OR

SOME (Section B) or all of the employees of Contractor and any subcontractor are covered employees. If this box is checked, I further certify that:

(1) Contractor has obtained all required criminal history record information regarding its covered employees. None of the covered employees has a disqualifying criminal history.

(2) If Contractor receives information that a covered employee subsequently has a reported criminal history, Contractor will immediately remove the covered employee from contract duties and notify the District in writing within 3 business days.

(3) Upon request, Contractor will provide the District with the name and any other requested information of covered employees so that the District may obtain criminal history record information on the covered employees.

(4) If the District objects to the assignment of a covered employee on the basis of the covered employee's criminal history record information, Contractor agrees to discontinue using that covered employee to provide services at the District.

Noncompliance or misrepresentation regarding this certification may be grounds for contract termination.

None

7 **Texas Business and Commerce Code § 272 Requirements as of 9-1-2017**

4 SB 807 prohibits construction contracts to have provisions requiring the contract to be subject to the laws of another state, to be required to litigate the contract in another state, or to require arbitration in another state. A contract with such provisions is voidable. Under this new statute, a “construction contract” includes contracts, subcontracts, or agreements with (among others) architects, engineers, contractors, construction managers, equipment lessors, or materials suppliers. “Construction contracts” are for the design, construction, alteration, renovation, remodeling, or repair of any building or improvement to real property, or for furnishing materials or equipment for the project. The term also includes moving, demolition, or excavation. BY RESPONDING TO THIS SOLICITATION, AND WHEN APPLICABLE, THE PROPOSER AGREES TO COMPLY WITH THE TEXAS BUSINESS AND COMMERCE CODE § 272 WHEN EXECUTING CONTRACTS WITH TIPS MEMBERS THAT ARE TEXAS GOVERNMENT ENTITIES.

7 **Texas Government Code 2270 Verification Form**

5 Texas Government Code 2270 Verification Form

Texas 2017 House Bill 89 has been signed into law by the governor and as of September 1, 2017 will be codified as Texas Government Code § 2270 and 808 et seq.

The relevant section addressed by this form reads as follows:
Texas Government Code Sec. 2270.002. PROVISION REQUIRED IN CONTRACT. A governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract engaged by:

ESC Region 8/The Interlocal Purchasing System (TIPS)
4845 Highway 271 North
Pittsburg, TX, 75686

I verify by this writing that the above-named company affirms that it (1) does not boycott Israel; and (2) will not boycott Israel during the term of this contract, or any contract with the above-named Texas governmental entity in the future. I further affirm that if our company’s position on this issue is reversed and this affirmation is no longer valid, that the above-named Texas governmental entity will be notified in writing within one (1) business day and we understand that our company’s failure to affirm and comply with the requirements of Texas Government Code 2270 et seq. shall be grounds for immediate contract termination without penalty to the above-named Texas governmental entity.

AND

Our company is not listed on and we do not do business with companies that are on the the Texas Comptroller of Public Accounts list of Designated Foreign Terrorists Organizations per Texas Gov't Code 2270.0153 found at <https://comptroller.texas.gov/purchasing/docs/foreign-terrorist.pdf>

I swear and affirm that the above is true and correct.

7
6

Logos and other company marks

Please upload your company logo to be added to your individual profile page on the TIPS website. If any particular specifications are required for use of your company logo, please upload that information under the "Logo and Other Company Marks" section under the "Response Attachment" tab. Preferred Logo Format: 300 x 225 px - .png, .eps, .jpeg preferred

Potential uses of company logo:

- * Your Vendor Profile Page of TIPS website
- * Potentially on TIPS website scroll bar for Top Performing Vendors
- * TIPS Quarterly eNewsletter sent to TIPS Members
- * Co-branding Flyers and or email blasts to our TIPS Members (Permission and approval will be obtained before publishing)

7
7

Solicitation Deviation/Compliance

Does the vendor agree with the General Conditions Standard Terms and Conditions or Item Specifications listed in this proposal invitation?

Yes

7
8

Solicitation Exceptions/Deviations Explanation

If the bidder intends to deviate from the General Conditions Standard Terms and Conditions or Item Specifications listed in this proposal invitation, all such deviations must be listed on this attribute, with complete and detailed conditions and information included or attached. TIPS will consider any deviations in its proposal award decisions, and TIPS reserves the right to accept or reject any bid based upon any deviations indicated below or in any attachments or inclusions. In the absence of any deviation entry on this attribute, the proposer assures TIPS of their full compliance with the Standard Terms and Conditions, Item Specifications, and all other information contained in this Solicitation.

No response

7
9

Agreement Deviation/Compliance

Does the vendor agree with the language in the Vendor Agreement?

Yes

8
0

Agreement Exceptions/Deviations Explanation

If the proposing Vendor desires to deviate from the Vendor Agreement language, all such deviations must be listed on this attribute, with complete and detailed conditions and information included. TIPS will consider any deviations in its proposal award decisions, and TIPS reserves the right to accept or reject any proposal based upon any deviations indicated below. In the absence of any deviation entry on this attribute, the proposer assures TIPS of their full compliance with the Vendor Agreement.

No response

**8
1** **Felony Conviction Notice**

Texas Education Code, Section 44.034, Notification of Criminal History, Subsection (a), states “a person or business entity that enters into a contract with a school district must give advance notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony.” Subsection (b) states “a school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction. The district must compensate the person or business entity for services performed before the termination of the contract.” (c) This section does not apply to a publicly held corporation. The person completing this proposal certifies that they are authorized to provide the answer to this question.

Select A., B. or C.

A. My firm is a publicly held corporation; therefore, this reporting requirement is not applicable.

OR B. My firm is not owned nor operated by anyone who has been convicted of a felony, OR

C. My firm is owned or operated by the following individual(s) who has/have been convicted of a felony. (if you answer C below, you are required to provide information in the next attribute.

B. Firm not owned nor operated by felon; per above

**8
2** **If you answered C. My Firm is owned or operated by a felon to the previous question, you are REQUIRED TO ANSWER THE FOLLOWING QUESTIONS.**

If you answered C. My Firm is owned or operated by a felon to the previous question, you must provide the following information.

1. Name of Felon(s)
2. The named person's role in the firm, and
3. Details of Conviction(s).

No response

**8
3** **Long Term Cost Evaluation Criterion # 4.**

READ CAREFULLY and see in the RFP document under "Proposal Scoring and Evaluation". Points will be assigned to this criterion based on your answer to this Attribute. Points are awarded if you agree not increase your catalog prices (as defined herein) more than X% annually over the previous year for years two and three and potentially year four, unless an exigent circumstance exists in the marketplace and the excess price increase which exceeds X% annually is supported by documentation provided by you and your suppliers and shared with TIPS, if requested. If you agree NOT to increase prices more than 5%, except when justified by supporting documentation, you are awarded 10 points; if 6% to 14%, except when justified by supporting documentation, you receive 1 to 9 points incrementally. Price increases 14% or greater, except when justified by supporting documentation, receive 0 points.

increases will be <10% annually per question

**8
4** **Required Confidentiality Claim Form**

Required Confidentiality Claim Form

This completed form is required by TIPS. By submitting a response to this solicitation you agree to download from the “Attachments” section, complete according to the instructions on the form, then uploading the completed form, with any confidential attachments, if applicable, to the “Response Attachments” section titled “Confidentiality Form” in order to provide to TIPS the completed form titled, “CONFIDENTIALITY CLAIM FORM”. By completing this process, you provide us with the information we require to comply with the open record laws of the State of Texas as they may apply to your proposal submission. If you do not provide the form with your proposal, an award will not be made if your proposal is qualified for an award, until TIPS has an accurate, completed form from you.

Read the form carefully before completing and if you have any questions, email Rick Powell at TIPS at rick.powell@tips-usa.com

85 Choice of Law clauses with TIPS Members

If the vendor is awarded a contract with TIPS under this solicitation, the vendor agrees to make any Choice of Law clauses in any contract or agreement entered into between the awarded vendor and with a TIPS member entity to read as follows: "Choice of law shall be the laws of the state where the customer resides" or words to that effect.

86 Venue of dispute resolution with a TIPS Member

In the event of litigation or use of any dispute resolution model when resolving disputes with a TIPS member entity as a result of a transaction between the vendor and TIPS or the TIPS member entity, the Venue for any litigation or other agreed upon model shall be in the state and county where the customer resides unless otherwise agreed by the parties at the time the dispute resolution model is decided by the parties.

87 Automatic renewal of contracts or agreements with TIPS or a TIPS member entity

This clause **DOES NOT** prohibit multiyear contracts or agreements with TIPS member entities. Because TIPS and TIPS members are governmental entities subject to laws that control appropriations of funds during their fiscal years for contracts and agreements to provide goods and services, does the Vendor agree to limit any automatic renewal clauses of a contract or agreement executed as a result of this TIPS solicitation award to not longer than "month to month" and at the TIPS contracted rate.

88 Indemnity Limitation with TIPS Members

Texas and other states restrict by law or state Constitution the ability of a governmental entity to indemnify others. TIPS requires that any contract entered into between a vendor and TIPS or a TIPS Member as a result of an award under this Solicitation limit the requirement that the Customer indemnify the Vendor by either eliminating any such indemnity requirement clauses in any agreements, contracts or other binding documents **OR** by prefacing all indemnity clauses required of TIPS or the TIPS Member entity with the following: "To the extent permitted by the laws or the Constitution of the state where the customer resides, ".

Agreement is a required condition to award of a contract resulting from this Solicitation.

89 Arbitration Clauses

Except for certain circumstances, TIPS forbids a mandatory arbitration clause in any contract or agreement entered into between the awarded vendor with TIPS or a TIPS member entity. Does the vendor agree to exclude any arbitration requirement in any contracts or agreement entered into between TIPS or a TIPS member entity through an awarded contract with TIPS?

90 Required Vendor Sales Reporting

By responding to this Solicitation, you agree to report to TIPS all sales made under any awarded Agreement with TIPS. Vendor is required to report all sales under the TIPS contract to TIPS. If the TIPS Member entity requesting a price from the awarded Vendor requests the TIPS contract, Vendor must include the TIPS Contract number on any communications with the TIPS Member entity. If awarded, you will be provided access to the Vendor Portal. To report sales, login to the TIPS Vendor Portal and click on the PO's and Payments tab. Pages 3-7 of the [Vendor Portal User Guide](#) will walk you through the process of reporting sales to TIPS. Please refer to the TIPS [Accounting FAQ's](#) for more information about reporting sales and if you have further questions, contact the Accounting Team at accounting@tips-usa.com. The Vendor or vendor assigned dealers are responsible for keeping record of all sales that go through the TIPS Agreement and submitting same to TIPS.

9
1

Upload of Current W-9 Required

Please note that you are required by TIPS to upload a current W-9 Internal Revenue Service (IRS) Tax Form for your entity. This form will be utilized by TIPS to properly identify your entity. Additionally, if not designated "Confidential" in your proposal response, this W-9 may be accessed by TIPS Members for the purpose of making TIPS purchases from you in the event that you are awarded. If you wish to designate your required W-9 confidential, please do so according to the terms of the Confidentiality Claim Form which is an attachment to this solicitation.

CERTIFICATION BY CORPORATE OFFERER

COMPLETE ONLY IF OFFERER IS A CORPORATION,

THE FOLLOWING CERTIFICATE SHOULD BE EXECUTED AND INCLUDED AS PART OF PROPOSAL FORM/PROPOSAL FORM.

OFFERER: Myers Supply Inc.
(Name of Corporation)

Judy Myers certify that I am the Secretary of the Corporation
I, (Name of Corporate Secretary)

named as OFFERER herein above; that

Ryan Myers
(Name of person who completed proposal document)

who signed the foregoing proposal on behalf of the corporation offerer is the authorized person that is acting as

COO
(Title/Position of person signing proposal/offer document within the corporation)

of the said Corporation; that said proposal/offer was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

CORPORATE SEAL if available

Judy Myers
SIGNATURE

5/12/20
DATE

Required Confidential Information Status Form

CONFIDENTIAL INFORMATION SUBMITTED IN RESPONSE TO COMPETITIVE PROCUREMENT REQUESTS OF EDUCATION SERVICE CENTER REGION 8 AND TIPS (ESC8) IS GOVERNED BY TEXAS GOVERNMENT CODE, CHAPTER 552

If you consider any portion of your proposal to be confidential information and not subject to public disclosure pursuant to Chapter 552 Texas Gov't Code or other law(s), you **must attach a copy of all claimed confidential materials within your proposal and put this COMPLETED form as a cover sheet to said materials then scan, name "CONFIDENTIAL" and upload with your proposal submission.** (You must include all the confidential information in the submitted proposal. The copy uploaded is to indicate which material in your proposal, if any, you deem confidential in the event the receives a Public Information Request.) ESC8 and TIPS will follow procedures of controlling statute(s) regarding any claim of confidentiality and shall not be liable for any release of information required by law. Upon your claim and your defense to the Office of Texas Attorney General is required to make the final determination whether the information submitted by you and held by ESC8 and TIPS is confidential and exempt from public disclosure.

Myers Supply Inc.

Name of company

Ryan Myers COO

Printed Name and Title of authorized company officer declaring below the confidential status of material

831 Third Street Hot Springs AR 71913 501.623.7742

Address City State ZIP Phone

ALL VENDORS MUST COMPLETE THE ABOVE SECTION.

I DO CLAIM parts of my proposal to be confidential and DO NOT desire to expressly waive a claim of confidentiality of all information contained within our response to the solicitation. The attached contains material from our proposal that I classify and deem confidential under Texas Gov't Code Sec. 552 or other law(s) and I invoke my statutory rights to confidential treatment of the enclosed materials.

ATTACHED ARE COPIES OF _____ PAGES OF CLAIMED CONFIDENTIAL MATERIAL FROM OUR PROPOSAL THAT WE DEEM TO BE NOT PUBLIC INFORMATION AND WILL DEFEND THAT CLAIM TO THE TEXAS ATTORNEY GENERAL IF REQUESTED WHEN A PUBLIC INFORMATION REQUEST IS MADE FOR OUR PROPOSAL.

Signature _____ Date 5/12/20

OR -----

I DO NOT CLAIM any of my proposal to be confidential, complete the section below.

Express Waiver: I desire to expressly waive any claim of confidentiality as to any and all information contained within our response to the competitive procurement process (e.g. RFP, CSP, Bid, RFQ, etc.) by completing the following and submitting this sheet with our response to Education Service Center Region 8 and TIPS.

Signature  _____ Date 5/12/20



Our Return and Refund Policy

Myers Supply Inc. will credit unused merchandise previously purchased from our company, if currently stocked, received in good condition for resale and within 45 days from purchase date. If applicable, any restocking or shipping charges incurred will be the responsibility of the Customer, and may be deducted from the credit total. Myers Supply Inc reserves the right to determine if credit or what amount of credit will be issued for any given situation.

Returns

- No returns accepted without prior authorization
- Merchandise must be clean, in resalable condition and in original box
- No returns accepted after 45 days from date of purchase
- Returns must be shipped "Freight Prepaid"

Warranty Information

Myers Supply Inc. is a authorized Distributor for many different Manufactures and warranty policies will vary for each Manufacture.

If any of Manufacturer's Products are proven to the Manufacturer's satisfaction to have been defective Myers Supply Inc. will handle warranty claims for all Manufactures distributed by Myers Supply Inc.



We Supply Facility Solutions



Facility Health & Productivity Benchmarking



Myers U

Onsite & Online Certification Training

ELEVATE
SUPPLY CHAIN SOLUTIONS



COMMERCIAL



HEALTHCARE



INDUSTRIAL



HOSPITALITY

Work Loading & Supply Chain Optimization



StockRoomPro

Stock Room & Inventory Control Solutions

Discover The Difference

- Experienced Staff
- Fast Delivery
- Innovative Products
- Competitive Prices
- Budget Management
- Inventory Control
- Show Rooms
- Training Center
- 64 Years Of Experience
- Wide Variety Of Lines
- Safety Programs
- O.S.H.A. Training
- High Fill Rates
- Product Training
- Facility Management
- Sole Source Supplier
- Large Sales Force
- Green Clean Training
- Large Inventory
- Cleaning Schedules

**Janitorial, Office, Safety, Foodservice,
Breakroom & Facility Maintenance Supplies**

www.MyersSupply.com

Take the stress out of purchasing!



Finally Procurement Made Easy!

The full bidding process can be time consuming, expensive and frustrating to administer.

Using an purchasing cooperative PCA, TIPS & many others enables you to meet your responsibility to conduct a competitive bid while avoiding the cost and hassle!

Purchasing is a necessary activity for any business or organization. We provide a proven process to eliminate purchasing related stress for procurement managers.

State & Federal Contracts



Arkansas State Contract SP-19-0059 Custodial Equipment, Services And Supplies



GSA Contract GS-07F-132AA Cleaning Equipment & Supplies, Chemicals and Services



TIPS USA Contract 3062515 Office and School Supplies

TIPS USA Contract 170104 Janitorial and Sanitation Supplies and Services

TIPS USA Contract 2082715 Custodial Equipment and Supplies

TIPS USA Contract 170401 Food Service Equipment, Chemicals Supplies & Service



PCA Contract 3-204-18 Custodial Services, Supplies, and Cleaning Equipment

National Group Purchasing Organizations (GPO) Affiliations

Controlling Cost & Advancing Patient Care

Now more than ever, healthcare facilities should be focused on one common goal providing the highest level of care attainable for its patients. Often, scarce resources and precious time are consumed by the task of controlling escalating costs and ultimately detract from the overall mission of the facility. As an approved distribution partner of housekeeping supplies with the major GPOs, AFFLINK / Myers Supply is the partner you need to face this challenge head-on.

As supply chain experts, let us shoulder the worry of controlling supply costs while you focus on what's really important, improving the health and well being of those that depend on your expertise.



We Offer Free Building Surveys



How Healthy Is Your Building

Myers Facility Supply FREE Healthy Building Survey includes two major audit areas:

1. Evaluation of Your Current Program vs Healthy Cleaning Standards

Learn how your cleaning program stacks up against a formal Healthy Cleaning Standard. This FREE informative evaluation will look at every aspect of your current program to set a baseline.

2. Survey of your Equipment, Products, and Procedures

Myers Facility Supply Healthy Building Evaluation Tests:



ATP
Determines cleaning efficacy



UV LED
Detects bed bugs, mold, stains, body fluids



Microscopic Inspection
Microscopic inspection includes digital photos of mold, bacteria, dust mites.



Microgloss Meter
Measure gloss on marble, wood, VCT, stone



IAQ
Suggestions on improving Indoor Air Quality; prevent Sick Building Syndrome



Carbon Dioxide
Provides indication of air circulation efficacy



Humidity
Determines indoor humidity deficits; prevent static electricity, drywall cracks



Laser Particulates
Determines amount of respirable-sized particles in air



Air Temperature
Measures consistency, individualized temperature control



Slip and Fall Measurement
Measures compliance to ANSI/NSFI standards for proper traction.

Healthy Building Survey: Products, Equipment, Procedures



Products
Suggests healthier product options based on several industry standards



Health Hazards
Alerts you to products with high levels of toxicity



Equipment
Rates current practices for vacuuming, use of green cleaning equipment



Paper Products
Suggests options for better environmental, cost choices in paper products



Plastic Products
Suggests better environmental plastic product options; 100% recycled products



Healthy Cleaning University



Myers Facility Supply is a Certified Expert Training Facility, able to prepare our customers for certification under the ISSA industry standard, CIMS (Cleaning Industry Management Standard).

Additionally, we can train our customers under the CIMS-GB certification. CIMS-GB demonstrates an organization's capability to assist customers in achieving LEED-EBOM points.



The Cleaning Management Institute training program is divided into two levels, Basic and Advanced. We offer both levels to fully prepare you and your team to properly use the right products for the right job. We are also available to train your team in your facility at a time that is convenient to you and your staff.

See chart below for details of our training classes:

Class	Curriculum Topics
The Chemistry of Cleaning	<ul style="list-style-type: none"> ○ Cleaning agents, soil removal processes and dilution ratios. ○ Killing germs and using disinfectant chemicals.
Basic Cleaning of Hard Floor Surfaces	<ul style="list-style-type: none"> ○ Floor covering types ○ Equipment, materials & supplies ○ Basic cleaning procedures for hard floors
Basic Cleaning of Carpeted Floor Surfaces	<ul style="list-style-type: none"> ○ Incoming soil control ○ Spot & stain removal ○ Basic cleaning procedures for carpeted floors
Basic Cleaning of Above-Floor Surfaces	<ul style="list-style-type: none"> ○ Basic procedures for cleaning & polishing a variety of surfaces
Basic Cleaning of Restrooms	<ul style="list-style-type: none"> ○ Basic restroom & shower room cleaning ○ Disinfection procedures
Green Cleaning	<ul style="list-style-type: none"> ○ Basic procedures for cleaning green ○ Equipment, materials & supplies



StockRoom PRO Inventory Management Solutions for Facilities

Take control of your inventory today with Myers Supply's **StockRoomPro** inventory management solutions. With **StockRoomPro** you can better manage your inventory, improve productivity, and reduce operation costs. All of the **StockRoomPro** inventory solutions can also be customized to fit your specific facilities needs.

Item	Min Qty	Qty On Hand	Qty To Order
Liberty High Density Roll IN-5243300N Abat Source Reduction Cardless - 24 in. roll	15	0	15
IN-5388217N Made in the USA Abat Source Reduction Cardless - 24 in. roll	15	0	15
Paper Tissues 2-Ply Bath Tissue AFF-1943805 LEED v4 D-M Products Affix Premium 2-Ply Bath Tissue 300000	10	0	10
Paper Tissues Facial Tissue AFF-1912002 LEED v4 D-M Products Affix Premium 2-Ply Facial Tissue 300000	10	0	10

CMI (Customer Managed Inventory)

CMI is an easy-to-use mobile or online ordering program which enables you to save time and money while effectively replenishing your inventory and stocking levels.

Simply scan or enter your products stock level and the needed item quantity is automatically added to your order to meet your preset Min/Max requirements.

Custom budgets and approval controls can also be set up within StockRoomPro.



MMI (Myers Managed Inventory)

MMI is a means of optimizing Supply Chain performance in which we are responsible for maintaining all your preset Min/Max inventory levels.

Inventory levels are jointly established based on your provided sales history. Myers analyzes your inventory on a regular basis to assure availability and replenishes it on a schedule that keeps your stock levels at optimum efficiency, improving service and cutting transaction costs.



Consignment Inventory

With Consignment Inventory we supply a preset inventory level to your locations and Myers retains ownership of the inventory.

Payment is not made until the item is actually used. Increase your cash flow, reduce upfront costs and carry more products with your consignment program.

Inventory Vending Solutions

Myers VendPro Machines are fully customizable and have been engineered for harsh industrial environments to deliver reliable, high-volume dispenses.

Myers VendPro includes state-of-the-art electronics, enhanced admin control, and better user functionality, including an integrated touchscreen.



Myers offers a full line of Customizable VendPro Machines: Supply Agents, Bays, Lockers, Drawers and Scales.



Commercial



Healthcare



Hospitality



Industrial



customized approach to supply chain optimization



AFFLINK clients realize the true value of integrated supply through the industry's most comprehensive bundle of single-source solutions.

Starting with a review process that allows us to understand your entire purchasing process, **we are able to uncover savings focused on vendor reduction, product standardizations, and simplified, congruent ordering processes.**

Taking time to understand our clients from the top down, **we do more than just deliver products. With more than 450 servicing locations driving \$7 billion in annual sales, AFFLINK is far and away the largest, most diverse group of Distributors found anywhere in the industry.**

So whether it's Facility Maintenance, Industrial Packaging, Food Service, Safety & Wellness, Office Products or Industrial Supply – whatever your business needs, we have the experts available to uncover opportunities in every corner of your business.

Seamlessly giving clients the best of both worlds, AFFLINK provides the speed and efficiencies of online ordering, single-source invoicing and one point of contact. But through the combined power and knowledge of our industry-leading Distributors we are also able to offer the intimacy, flexibility and responsibility of local distribution on a national scale.

No matter where your business takes you, AFFLINK has the logistical footprint to cover your needs and the market leadership and business processes to connect your interests.

e|ev⁸™ your expectations

ELEVATE Supply Chain Optimization

Myers Supply has been a leader in supply chain optimization for more than 60 years. And when you boil it down, we do one thing better than anyone else in the industry – provide innovative process and procurement solutions to help drive efficiencies in today’s leading businesses.

Powered by ELEVATE, our proprietary approach to the marketplace, Myers Supply can uncover never-before-seen opportunities and quantify their value to enhance our clients’ overall image, promote a healthy workplace, decrease total costs, increase productivity and satisfy any sustainable objectives they may have.

No matter what industry you compete in, from building management to healthcare and manufacturing to food Service, ELEVATE works to harness your business information into usable data allowing you to make sound, strategic decisions.

ELEVATE
SUPPLY CHAIN SOLUTIONS



COMMERCIAL



HEALTHCARE



INDUSTRIAL



HOSPITALITY

Product, Process and SUPPLY CHAIN Optimization



The ELEVATE process takes an analytical look at your business intelligence, current processes, needs and objectives and provides efficient product, process and supply chain solutions coupled with a quantitative forecast of the potential impact to your business.

Myers Supply uses a cutting-edge diagnostic tool as part of the ELEVATE process to walk you through a step-by-step analysis of your operations:

Client Discovery: Utilizing a consultative approach, ELEVATE uncovers the true needs of your business based on five Universal Business Needs: decreasing total cost, improving health and hygiene, enhancing corporate image, increasing productivity and facilitating sustainability.

Site Needs Analysis: By observing and documenting the products you are currently using throughout your facility, ELEVATE recommends innovative product solutions based on your business needs and objectives.

Supply Chain Analysis: A thorough analysis of your procurement processes, from purchasing and ordering to warehousing and processing, helps identify potential efficiencies and areas of waste in your supply chain.

Workloading Analysis: On average, labor represents 70% of all business’ annual facility maintenance budget. This analysis takes a snapshot of your current labor deployment and processes and identifies opportunities to be more efficient.

Solutions Selection: Choose from a recommended set of solutions based on your needs and the quantitative impact it has on your business.

PROBLEND™



ProBlend is a brand of cleaning solutions that goes BEYOND CLEAN! For organizations and sanitation professionals that choose to use the very best, they ensure their customers and guest enjoy the many benefits of a cleaner, healthier environment.

Problend has laundry chemical products that give brighter colors, whiter whites, softer towels and sheets, and cleaner uniforms. Whatever your laundry chemical product need is, Problend has a chemical cleaning solution for your commercial laundry or industrial laundry needs.

ProBlend will help with high performance laundry chemical solutions and efficient laundry cleaning systems – all designed to impress employees and guests while brightening your bottom line.

Bright. Soft. Impressive.



PROBLEND™



Problend's line of complete warewash solutions include:

1. Dish-machine detergent, rinse and sanitizer
2. Three-compartment sink products
3. Hi & Low temp dish machines
4. Drain treatment systems

We have products to clean and sanitize any type of ware used for preparing, serving and storage of food. Products are cost effective and provide sparkling clean results for customers, increasing customer satisfaction as well as customer retention.

ProBlend's line of complete warewash solutions removes the worry and hassle from kitchen and facility cleaning and sanitation, offering employees a healthier and safer work environment and guests a remarkably enjoyable dining experience.

Convenience. Confidence. Health.



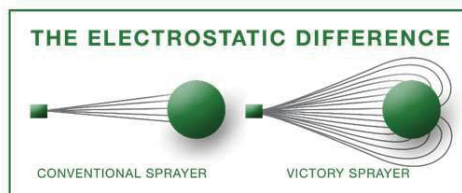


VICTORY
INNOVATIONS CO

FIRST
CORDLESS SYSTEM
OF
ELECTROSTATIC SPRAYERS



Ideal for Disinfecting, Sanitizing, Odor Removal, Decontamination, Pesticides and More!



SAVES TIME



SAVES MONEY



PROVIDES BETTER
COVERAGE

Bio-Protect 90 Day Antimicrobial Coating

The Micro-biostatic Antimicrobial Coating forms a protective surface protectant by forming a nano bed of spikes that disrupts the microorganism's membrane resulting in the loss of energy in the microbe and its demise. This mode of action is entirely unique to other antimicrobials. The molecule is made up of several sections.

One end of the molecule forms a strong bond wherever it is applied. The surface can be either porous and non-porous. The other end of the molecule forms a microscopic bed of nails that stand straight up from the surface. This nano bed of nails disrupts the microbe's membrane resulting in its demise. All of this takes place without the use of heavy metals or poisons.

Because Microbiostatic Antimicrobial Coating's methodology mechanically disrupts the membrane of the microbe, no microbial resistance "superbugs" are ever created from the treatment.



Relax—we've got your **breakroom covered.**



A better breakroom serves up **real benefits** for your business:

- ✓ Higher **morale**
- ✓ Improved **workplace satisfaction**
- ✓ Increased **productivity**
- ✓ Enhanced **workplace wellness**
- ✓ Stronger **teams**

18-CB-BN-BRK2



THE CUP

Rich, delicious coffee, flavorful teas and all the add-ins to stir up the **perfect cup.**



18-CB-BN-BRK1

Everything you need to get good things brewing in your breakroom.



Relax—we've got your **breakroom covered.**



THE PANTRY

Delicious ways to fuel up and recharge all day long, from smart starts to energy-boosting bars to sweet rewards.



All your favorites delivered **right to your door.**

THE COOLER

We pour on the **refreshment** with sparkling and spring water, big brand sodas, sports drinks, juices and more.



Something to quench **every kind of thirst.**



Relax—we've got your **breakroom covered.**



THE SUPPLY CLOSET

Simplify life with convenient disposables and quick cleanup supplies.



All you need to stock up—all from the **same source.**

THE ROOM

Great ways to gather. Essential appliances.
Neat ways to organize.

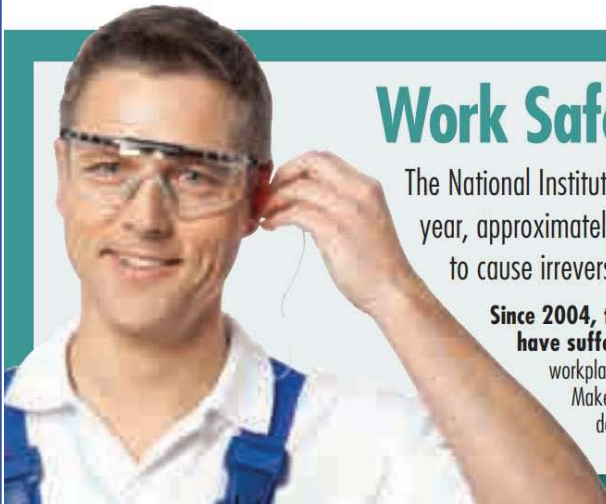


Everything it takes to create
the perfect place to relax, recharge and reconnect.

Commit to Safety!

SAFETY IN THE WORKPLACE IS OUR #1 PRIORITY!

We're committed to helping you create a culture of safety in your facility. Shop our pages for a wide selection of products that put safety first.



Work Safe and Protect Your Hearing

The National Institute for Occupational Safety and Health (NIOSH) reports that each year, approximately 30 million workers are exposed to noise levels high enough to cause irreversible hearing loss.

Since 2004, the Bureau of Labor Statistics has reported that nearly 125,000 workers have suffered significant, permanent hearing loss. The best way to reduce noise in the workplace is to choose the right hearing protection device for you and your work environment. Make sure to look for the Noise Reduction Rate (NRR), a measurement that classifies the devices' ability to reduce noise levels, given in decibels (dB) — the higher the number, the greater the potential for noise reduction.



Keep Your Eyes Safe and Protected!

Personal protective eyewear, such as goggles and safety glasses, must be used in a workplace where an eye hazard exists.

Having the right protective eyewear is critical in preventing eye-related injuries. According to the National Institute for Occupational Safety and Health (NIOSH), each day approximately 2,000 U.S. workers sustain an eye injury on the job that requires medical treatment. A third of these are treated in hospital ERs, with more than 100 resulting in a day or more of lost work. The majority of injuries occur because of small particles or objects striking or abrading the eye.

When selecting eye protection, consider your specific work situation and the nature of hazards at your workplace. Choose safety glasses or goggles that offer appropriate coverage and the right fit, and allow for sufficient peripheral vision.

Commit to Safety!



Breathe Safely on the Job!

An estimated five million workers are required to wear respirators in 1.3 million workplaces throughout the United States.

Respirators protect against inhaling dangerous substances, such as chemicals and infectious particles, which can cause illness, lung impairment, disease or even death.

The National Institute of Occupational Safety and Health (NIOSH) collaborates with industry and government partners to develop respirator standards in accordance with government regulations. Look for NIOSH approval labels on respirators to ensure your safety and protection.



Be Prepared for a Fire Emergency!

Having a fire prevention program in place is crucial for employee safety and facility compliance.

On an average day, over 200 fires occur in U.S. workplaces, according to the Occupational Safety and Health Administration (OSHA), and more than 5,000 people are injured annually in explosions and fires on the job. The best way to ensure the safety of your workforce is through fire prevention and preparation.

- OSHA requires employers to provide proper exits, firefighting equipment, emergency plans and employee training to prevent fire deaths and injuries in the workplace.
- Having an extinguisher within reach can be the difference between minor damage and catastrophe, or in extreme cases, life and death.
- Make sure to frequently inspect and maintain the condition of extinguishers, smoke alarms and any other fire safety equipment.

Be prepared with critical supplies

Whether for fire emergencies or everyday needs, first aid products keep your business compliant and your employees safe.



Myers Supply's complete product systems allow unparalleled single source purchasing for the finest facility products.



Jan/San Products



Office Supplies



Safety Products



Foodservice Supplies



Facility Maintenance



Warewash & Laundry

Myers Supply offers over 156,000 facility supply products available online and in our print catalogs!

www.MyersSupply.com

- Floor Care
- Office Products
- Office Furniture
- Restroom Care
- Degreasers
- Cleaners
- Disinfectants
- Hand Care
- Food Service
- Aerosols
- Laundry Systems
- Carpet Machines
- Floor Machines
- Auto Scrubbers
- Maintenance Supplies
- Tools
- Brushes
- Safety Supplies
- Air Freshener
- Paper Products
- Facial Tissue
- Janitor Carts
- Trash Liners
- Window Equipment
- Floor Pads
- Mops & Brooms
- Dilution Control
- Mop Buckets
- Trash Cans
- Gloves
- Mats
- Paper Dispensers
- Insecticides
- Warewash Systems
- Air Filters
- Plates & Glassware



Serving Arkansas Since 1955

900 Arch St. Little Rock, AR 72202 (501-372-6677)
831 Third St. Hot Springs, AR 71913 (501-623-7742)



PROBLEND™



equipment
& tools

Professional Cleaning Solutions

ProBlendSolutions.com



SCBA Decon Washer



Everything is clean and free from contamination in just a few minutes.

Contaminated Gear a Constant Health Risk. SCBA (Self Contained Breathing Apparatus) and protective gear is a life insurance for firemen and women. On an emergency call, soot particles and combustion gases are absorbed by the protective gear, contaminating it. Therefore, it's important to decontaminate it immediately upon return to the station.

Cleaning by Hand	VS	SCBA Decon Washer
30 minutes per set		8 minute cycle for SCBAs
Unprotected exposure to toxic residues on SCBA		Ergonomic process minimizes contact with contaminated materials
Prolonged exposure to toxins put firemen & women at a greater risk of cancer		Minimizes exposure with sealed, self-contained cleaning process

Solo Rescue® cleans SCBA smokediver gear (steel, composite, rubber, fabric, plastic etc.) from residues of combustion gases, soot particles and toxins in just a few minutes and contributes to a significantly improved working environment for rescue service personnel.

Developed In Close Contact With The Swedish Rescue Service to meet the needs for cleaning contaminated equipment in the best way possible. Solo Rescue has a specially adapted interior and accessories to ease the cleaning of SCBA, gloves, boots and helmets.

Compact, Easy And Efficient. Fits in less than 11 ft² with a lower door that folds out, acting as a loading table when opened. Two efficient wash programs: Choose between a 2 minute cycle for gloves and helmets or a 5 minute cycle for SCBAs.

Accessories



INCLUDED
Standard basket + Single/ Double Cylinder Holder. The basket and SCBA holder for single and double cylinders, including masks can clean up to 15 SCBAs per hour.



OPTIONAL
Holder for Jumbo Cylinders. Washes 2 cylinders at a time.



Holder for Gloves, Helmets and Boots. Basket fits 2 holders at a time for full capacity. At full capacity it can clean 160 gloves per hour, 60 pairs of boots per hour, or 100 helmets per hour.



Dishmachines - Chemical Sanitizing Door Type



WAREFORCE® I-X

External Sump. Single rack, convertible for straight-through or corner application, 90-second cycle, 37 racks per hour, 1.5 gallons per rack, self-draining stainless steel wash pump assembly, air gap, electromechanical timer, top mounted controls, delimer switch, low product indicator light, built-in chemical pumps and priming switches, auto start/stop, built-in stainless steel scrap accumulator.



WAREFORCE® I-E

Internal Sump. Single rack, convertible for straight-through or corner application, 90-second cycle, 39 racks per hour, 1.02 gallons per rack, self-draining stainless steel wash pump assembly, air gap, electromechanical timer, top mounted controls, delimer switch, low product indicator light, built-in chemical pumps and priming switches, auto start/stop, built-in stainless steel scrap accumulator.



WAREFORCE® I-E-LTH

WAREFORCE® I-E with booster heater.

WAREFORCE® I HH

Internal Sump. 27" tall chamber, single rack, convertible for straight-through or corner application, 90-second cycle, 39 racks per hour, 1.61 gallons per rack, self-draining stainless steel wash pump assembly, air gap, electromechanical timer, top mounted controls, delimer switch, low product indicator light, built-in chemical pumps and priming switches, auto start/stop, built-in stainless steel scrap accumulator, internal sump.



WAREFORCE® II

Dual rack straight, 74 racks per hour, 1.17 gallons per rack, self-draining stainless steel wash pump assembly, air gap, electromechanical timer, three selectable wash cycles, top mounted controls, delimer switch, low product indicator light, built-in chemical pumps and priming switches, auto start/stop, built-in stainless steel scrap accumulator.



WAREFORCE® IIC

Same specifications as the WAREFORCE® II, except for corner installations. Please specify right front (R) or left front (L) door opening.

Dishmachines - High Temperature Sanitizing Door Type



WAREFORCE® HT-180

Single rack, field convertible for straight-through or corner application, electric tank heat, built-in booster heater with Sani-Sure™ final rinse system, 58 racks per hour, 0.89 gallons per rack, self-draining stainless steel wash pump assembly, universal timer, four selectable wash cycles, top mounted controls, delimer switch, auto start/stop, exhaust vent fan control, front stainless steel dress panel.



WAREFORCE® HT-180 with Ventless & Energy Recovery

No vent hood required. Accommodates a wide range of water inlet temperatures and operates with only a cold water connection. Same specifications as WAREFORCE HT-180 with the exception of capacity. Cleans 39 racks per hour. Door interlock and pressure regulator included.



WAREFORCE® HT-180 HH

27" tall chamber, single rack, field convertible for straight-through or corner application, electric tank heat, built-in booster heater with Sani-Sure™ final rinse system, 58 racks per hour, 1.36 gallons per rack, self-draining stainless steel wash pump assembly, dual counter-rotating lower wash arms, universal timer, four selectable wash cycles, top mounted controls, delimer switch, auto start/stop, exhaust vent fan control, front stainless steel dress panel.



WAREFORCE® HT-180HH with Ventless & Energy Recovery

No vent hood required. Accommodates a wide range of water inlet temperatures and operates with only a cold water connection. Same specs as WAREFORCE HT-180HH with the exception of capacity. Cleans 37 racks per hour. Door interlock and pressure regulator included.



PROBLEND™

 **Solo Rescue®**
SCBA DECON WASHER

SCBA

Protective Gear Decontamination Detergent
Detergente Protector de Descontaminación de Engranajes

QUICK, EASY, SAFE.

Easy Decontamination of Complete SCBA

Item Code Case
PB0010966AC 2.5 GAL

- Use with SCBA DECON WASHER machine
- Removes soot and dangerous carcinogens from SCBA (Self Contained Breathing Apparatus)
- Intended for use by firefighters and first responders
- Mild and low-foaming detergent



Endorsed By: **Solo Rescue®**
832.321.3260 | www.solorescue.com

ProBlendCommercial.com
Manufactured By: Seatex, LLC. 445 TX Hwy 36 Rosenberg, TX 77471

REV:020119

MADE IN

THE USA

DECON FOR HEROES™

EASY DECONTAMINATION
OF COMPLETE SCBA.

Developed in cooperation with



“Everything is clean and free from contamination in just a few minutes.”

CONTAMINATED GEAR IS A CONSTANT HEALTH RISK.

The SCBA (Self Contained Breathing Apparatus) and protective gear are a lifeline for firefighters in their daily work of saving the lives of others.

When fighting a fire, soot particles and combustion gases are absorbed by the protective gear. This contamination then poses a health risk to the firefighter. Therefore it is important to decontaminate the protective gear immediately upon return to the station.

CLEANING BY HAND IS TIME CONSUMING, HARD WORK AND POSES A HEALTH RISK.

Cleaning contaminated gear by hand takes time (about 30 minutes/set) and is hardly what you want to be doing after a demanding operation in the field. Cleaning by hand also means that the crew is yet again exposed to the residues from combustion gases, soot particles and toxins. Only this time, unprotected.

Studies have shown that prolonged exposure to these toxins put firefighters at greater risk of developing cancer than other professional groups. Establishing procedures to handle contaminated gear in a controlled and safe way is one way of minimizing this risk.



SOLO RESCUE® – CLEAN GEAR IN A FEW MINUTES.

The Solo Rescue cleans SCBAs and protective gear of residue from combustion gases, soot particles and other toxins in just a few minutes. It can clean steel, composite, rubber, fabric, plastic, etc. all in a mechanical, self contained process.

IMPROVED WORKING ENVIRONMENT AND MINIMISED CONTACT TIME.

The Solo Rescue offers a quick, easy and safe method of cleaning protective gear in a sealed compartment. This ergonomic process minimizes manual contact with contaminated materials.

The Solo Rescue does the hard work for you. This significantly improves the work environment for rescue services personnel.

DEVELOPED IN CLOSE COOPERATION WITH THE SWEDISH RESCUE SERVICE.

The Solo Rescue was developed in close cooperation with the Swedish Rescue Services. The goal of this partnership was to develop a healthier way to decontaminate protective gear. The Solo Rescue has a durable stainless steel interior with heavy duty stainless steel accessories for cleaning SCBAs, gloves, helmets, and boots.

COMPACT, EASY AND EFFICIENT.

Fits in less than 11 ft².

Solo Rescue is a compact machine with a lower door that folds out, acting as a loading table when opened. The machine occupies less than 11 ft² of space.

Self-contained cleaning process.

The entire cleaning process is carried out inside in the machine, ensuring minimum contact time for the staff.

Two efficient wash programs.

Gear is cleaned in just a few minutes. Choose between a 3 min cycle for gloves and helmets or a 8 min cycle for SCBAs.

Watch our Solo Rescue videos on YouTube and follow us on LinkedIn for latest information.



"Firefighter proof" and easy to use - developed to fit the Fire Rescue Services.

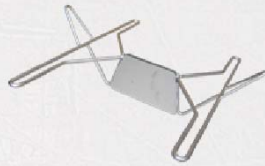
INCLUDED.

All you need to clean single and double cylinder SCBA's is included with standard delivery of Solo Rescue®.

The heavy duty basket is used at all times and is paired with accessories to wash different gear. The SCBA holders are placed over the center bracket of the basket. The gear holder for gloves helmets and boots is placed in the bottom of the basket.



Gear holder for masks, helmets, gloves and boots. One holder is included.



Holder for SCBA single/double cylinders. One holder is included.



Holder for SCBA jumbo cylinders. One holder is included.



SCBA - capacity/hour.

The heavy duty basket, one SCBA holder for single and double cylinders, one SCBA holder for jumbo cylinders and one gear holder are included with the Solo Rescue®. The machine cleans up to 14 SCBA's/hour.



Heavy duty basket with holder for SCBA single/double cylinders.



Heavy duty basket with holder for SCBA single/double cylinders and one gear holder for masks, helmets, gloves and/or boots.



Heavy duty basket with two gear holders for masks, helmets, gloves and/or boots (one is included).



Heavy duty basket with one gear holder for masks, helmets, gloves and/or boots.

OPTIONAL.

OPTIONAL GEAR HOLDER FOR 60 HELMETS, 120 PAIRS OF GLOVES OR 40 PAIRS OF BOOTS* (capacity/hour).

Use the gear holder accessory to load and wash helmets, gloves and boots. It fits in the bottom of the heavy duty basket. Full capacity requires two gear holders (one is included as standard equipment).



HELMETS* - capacity/hour.

1 gear holder: up to 30 helmets.
2 gear holders: up to 60 helmets.
(max. 5 helmets/basket)



GLOVES* - capacity/hour.

1 gear holder: up to 60 pairs of gloves.
2 gear holders: up to 120 pairs of gloves.



BOOTS* - capacity/hour.

1 gear holder: up to 20 pairs of boots.
2 gear holders: up to 40 pairs of boots.



* Always follow the manufacturers washing guidelines. In case of uncertainty, contact your supplier for advice.



Swedish Civil
Contingencies
Agency

Healthy firefighters

– the Skellefteå Model improves the work environment





Stefan Magnusson has worked as a firefighter since the early 80s and is the principal health & safety representative for the Skellefteå Fire & Rescue service. In 2006 Stefan co-founded the Healthy Firefighters project and he is the creator of the Skellefteå Model. Since 2007 Stefan has delivered hundreds of lectures on the Healthy Firefighters project and the Skellefteå Model, in Sweden and around Europe. Stefan is also active in the Firefighters Cancer Foundation.



David Hultman is a fire protection engineer, who studied at Luleå University. Since his post-graduate studies about the fire & rescue service for fire engineers David has worked within the fire & rescue service, and today is a unit manager in Eskilstuna. David is also a certified fire investigator and has a position on the Board of the Swedish Fire Protection Association and on the Swedish Engineers Board.

Healthy firefighters

– the Skellefteå Model improves
the work environment

Healthy Firefighters – the Skellefteå Model improves the work environment

This publication is also available in Swedish

Friska brandmän – Skellefteåmodellen förbättrar arbetsmiljön

Order. No: MSB743 - november 2014 ISBN: 978-91-7383-480-3

Swedish Civil Contingencies Agency (MSB)

Reference group:

Sören Lundström, Swedish Civil Contingencies Agency.

Peter Berg, Swedish Association of Firefighters.

Ove Halvors, Swedish Municipal Workers' Union.

Ned Carter, Swedish Association of Local Authorities and Regions.

Stefan Svensson, Faculty of Engineering (LTH), Lund University.

Anders Wahlberg, certified psychologist.

Photo: Johan Eklund, all photos except for page 19, David Hultman and page 25, Claes-Håkan Carlsson.

Layout: Advant Produktionsbyrå

Translation: Språkservice Sverige

Order. no. MSB849 - June 2015

ISBN: 978-91-7383-570-1

Contents

Foreword	7
Summary	8

Chapter 1

A book about improving the working environment of firefighters	11
The "Healthy Firefighters" project and the Skellefteå Model.....	13
Focus on being exposed to unknown substances.....	13

Chapter 2

Combustion gases	17
Content of combustion gases.....	17
Spread of combustion gases.....	19
The body's uptake of harmful substances	20
<i>Uptake via inhalation</i>	20
<i>Uptake via skin absorption</i>	23
<i>Uptake via swallowing</i>	25
The hazardous effects of combustion gases.....	26
<i>Combination effects</i>	27
<i>How harmful substances affect the body</i>	27
<i>Difficult to make early and reliable diagnoses</i>	30

Chapter 3

Risk factors in firefighters' work	33
Many fire stations can increase the safety of their operations.....	33
All pollutants from fire treated the same.....	35
Different points of contamination.....	35
Involuntary risk-taking.....	36
Many firefighters have long careers	37
Common points of discussion	38
Personal Protective Equipment and contamination.....	41
<i>Turnout gear</i>	41
<i>Helmet and Gloves</i>	44
<i>Boots</i>	45
<i>Other textiles</i>	45

Breathing apparatus and contamination	46
Vehicles and contamination	48
Other material and contamination	49
Contamination during callouts and training	50
Psychological aspects: Ignoring risks	50
<i>The individual's own view of risks</i>	51
<i>A hero's role, but no supermen</i>	51
<i>Voluntary and involuntary risks</i>	53
<i>Habitual blindness</i>	54
<i>The difficulty with assessing risks</i>	55

Chapter 4

The Skellefteå Model – Better health for firefighters.....	57
The Skellefteå Model is a collaboration	57
Unknown particles to be considered harmful	58
Clear and simple routines that work	59

Chapter 5

Introducing and using the Skellefteå Model	61
Training, knowledge and insight	61
Good routines and flows	64
<i>Transporting clean equipment to the scene of the accident</i>	64
<i>Routines at the fireground</i>	64
<i>Changing routines and storage of contaminated protective clothing</i>	65
<i>Storing contaminated breathing apparatus in an airtight case</i>	67
<i>Storing dirty hoses in an airtight case</i>	67
<i>Storing other equipment in an airtight case</i>	69
<i>Return transportation must be conducted in a clean environment</i>	70
<i>All contaminated material has only one way into the fire station</i>	71
<i>Protect skin and airways when washing turnout gear</i>	71
<i>Thorough decontamination of respiratory protection equipment by machine</i>	72
<i>Soak fire hoses when storing prior to washing</i>	73
<i>All other material must also be cleaned</i>	74
<i>Bodily decontamination</i>	74

Conditions and equipment	74
<i>Washing machine with sufficient capacity</i>	74
<i>Washer with sufficient capacity for thorough decontamination of compressed air breathing apparatus and other equipment</i>	75
<i>Storing and transporting equipment in an airtight case</i>	76
<i>Adapted ventilation is important</i>	76
<i>Simple donning and removal of equipment</i>	76
<i>Different filter masks</i>	77
Experiences	77
<i>Assessing who has been contaminated</i>	77
<i>Handling other contaminated material</i>	78
<i>Establishing work methods throughout the organisation</i>	78
<i>Simplifying</i>	79
<i>Making a habit of good handling practices</i>	80
<i>It's simple – just do it</i>	80
Conclusion: The Skellefteå Model improves the working environment of firefighters using very small means	81
Recommended further research and investigation	82
The fertility of firefighters	82
Products adapted to the working environment of a firefighter	84
What does turnout gear protect against?	85
Indicating instruments	85
Glossary	86
Sources	89
Appendix	92

Foreword

*“It’s dangerous being alive – you can die!”
(David Eberhard, Chief Psychiatric Doctor, 2005)*

For a long time, we have had the joy and the privilege to work together in the emergency services with professions that we are very proud of. The firefighting profession is a vital and indispensable part of civil protection in most countries. The profession is carried by people with the will and goal of saving and securing the lives, health and property of others. But as is discussed in this book, research clearly shows that firefighters unfortunately run a greater risk of being affected by a number of diseases which in the worst cases are fatal.

It is difficult to find a firefighter who does not have colleagues that have affected by suspected occupational illnesses. The unfortunate situation is deemed difficult to change and there are many reasons for this. It is well known that the firefighters’ work environment can be extreme at times and that this can be a considerable strain on the individual. The firefighters’ vulnerability is also a result of such trivial factors such as professional culture, lack of basic routines and illnesses that develop deceptively slowly. For us, this situation is impossible to accept.

This book has come about for the purpose of describing how to break the pattern and with a desire to have a positive impact on the firefighters’ work environment. The book is based on research, in-depth knowledge of the duties and everyday life of a firefighter and on personal experience. It has been compiled into a publication about how to prevent and counteract hidden sources of illness in firefighters’ everyday lives. The book can be seen as guidelines for how to achieve great changes in the fight for firefighters’ health and well-being with small means.

Special thanks to all of the friends, colleagues and others who were committed to driving the process forward. Thanks also to our families who patiently accepted our absence to allow us the freedom to write.

Stefan Magnusson and David Hultman

Summary

Research shows that firefighters run a higher risk of suffering from serious illnesses than the rest of the population (LeMasters et al. 2006). This despite the fact that firefighters as a group often have a healthy lifestyle and thereby good health.

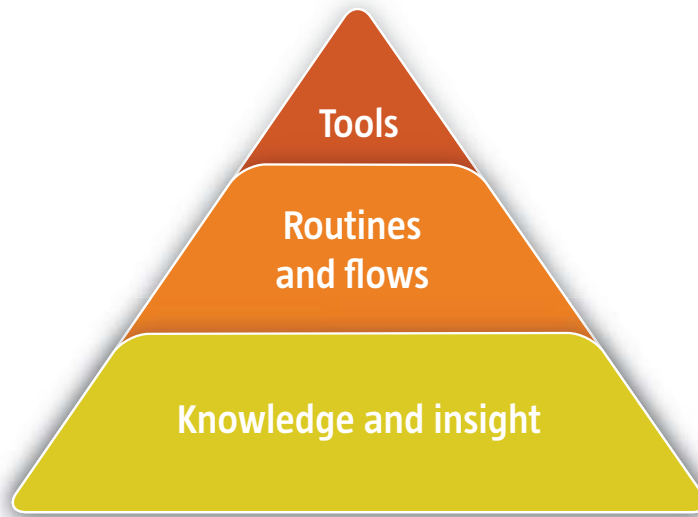
One condition that separates firefighters from many other groups is that firefighters are often exposed to situations in which foreign and unknown chemical pollutants are present. The contamination of firefighters is both evident and hidden. It should however be a given that the firefighters themselves are able to act on the extent of their exposure.

Firefighters should be able to start their shift in full, clean protective clothing and be able to protect their airways and skin in all situations. There should also be the facility of the cleaning of protective clothing and other equipment by machine every time they have been contaminated. Routines that separate contaminated from clean when transporting and when handling at the fire station are also essential.

Three important factors which in combination reduce the quantity of harmful substances that firefighters are exposed to and then keep the quantities at a minimal level are:

- all personnel in the organisation receive the knowledge and insight they require in order to reduce the incidence of contamination.
- simple, clear routines and flows are used to minimise the number of instances in which firefighters are subjected to foreign substances.
- the organisation provides the necessary material and opportunities for personnel to carry out the operational routines.

These factors lead to an improvement of firefighters' health over time. The Skellefteå Model is a tried and tested way of creating a good and sustainable work environment in accordance with these points and with very basic means.



The Skellefteå model consists of three factors which, combined, improve firefighters' work environment.



CHAPTER 1

A book about improving the working environment of firefighters

It has long been established that there is a connection between the firefighting profession and the risk of suffering from serious illness. In 2007, WHO (the World Health Organisation) established the connection between the firefighting profession and various forms of cancer (testicular cancer, prostate cancer and cancer of the lymphatic system). The result was reached by a work group consisting of 24 researchers from ten different countries (Straif et al. 2007). Many questions remain unanswered and ambiguity surrounds the issue of how firefighters are affected by their work environment over time. The context is complex, as so many different factors work in combination to affect firefighters' health.

According to research, the health risks entailed by firefighters' work situation not only lead to cancer, but other health problems such as fertility disorders, cardiovascular diseases, asthma and allergies (LeMasters et al. 2006). If we summarise firefighters' conditions, we can distinguish a number of health factors that are known and well documented.

- The firefighting profession involves both evident and hidden exposure to hazardous substances in various forms.
- Firefighters often work in shifts with irregular hours and thereby irregular stress patterns.

- Firefighters expose themselves to extremely hard physical strain and thermal stresses for short periods.
- Being a firefighter is associated with an identity rather than a profession, which leads to long employment. This in turn lays the foundation for occupational illness.

No-one can know exactly which substances or combination of substances individual firefighters are exposed to, nor the extent to which this happens. For unknown substances, there are no hygienic threshold values. It is not possible to establish what dose or how long an individual must be exposed to unknown combustible gas particles in order for it to be harmful. It is therefore difficult to introduce health checks that provide an early warning of imminent illness. Some of the diagnostic methods available today for these types of illness are still not perfected and not entirely reliable. One example is the PSA test for prostate cancer (Cooper et al. 2004). Attempts to diagnose illness at an early stage may therefore lead to unnecessary medical treatment and anxiety in the individual. The types of cancer concerned here are difficult to anticipate and detect in their preliminary stages. At the same time, the connection between a heightened risk of illness and the firefighting profession has been proven. (LeMasters et al. 2006). A reasonable conclusion from this must therefore be that it is important to minimise the occasions on which firefighters come into contact with unknown matter and substances.

Theoretically, it should be possible to completely protect firefighters from exposure to harmful substances. In practice, however, firefighters attending the scene of an accident/fire are sometimes forced to enter an extremely unhealthy work environment if they are to be able to carry out their work. Such situations not only arise in the event of large, spectacular fires but also smaller and more everyday incidents. These everyday incidents are so frequent that they likely constitute the major portion of the total exposure to harmful substances. Even if the employer were to use all available means to improve the firefighters' situation, the work environment could not be completely sterile and free from harmful situations and particles. With common sense and simple tools, however, clear improvements can be achieved for firefighters.

Thus far, there has been a lack of a compilation of effective measures for reducing the quantity of foreign substances in firefighters' work environment. This book contains examples and solid advice on how firefighters and organisations can achieve an improved work environment with very simple means and thereby also better health for the firefighters.

The “Healthy Firefighters” project and the Skellefteå Model

Sweden is no exception when it comes to problems facing firefighters across the world. Firefighters’ work environment is a global problem and several types of cancer are classed as an occupational illness for firefighters in Canada, Australia and parts of the USA (Forrest, A.2012). Strong measures are required in order to quickly and adequately effect changes to the current situation. Back in 2006, Swedish employee and employer organisations came together over the issue in a collaborative project which took the name “Friska brandmän” (Healthy Firefighters).

At a fire station of average size in the northern part of the country, a model was created within the scope of the project with which to address the health risks. This work method came to be known as the Skellefteå Model, after the location of the emergency services where the method was developed. The Skellefteå Model received the prestigious “Good practice award” from the European Agency for Safety and Health at Work in 2011 and thus became internationally acclaimed and recognised. Together with the European Trade Union Institute (ETUI), the European Federation of Public Service Unions (EPSU) has had the Skellefteå Model in its action programme since 2012. The programme names the model the Skellefteå Model. The Skellefteå Model is also referred to as The Swedish Way in international contexts.

Focus on being exposed to unknown substances

This book looks at the link between the firefighting profession and the risk of suffering from serious illness as a result of being repeatedly subjected to unknown harmful substances. It also discusses proposed measures for handling this.

There are many other examples of occupational illnesses that can affect firefighters. Several studies have investigated how night shifts and disruptions to the circadian rhythm affect the human body. It has been proven that there is a connection between disruptions to the circadian rhythm and metabolic disorders and changes in hormone level. Circadian rhythm disorders also increase the risk of cardiovascular diseases (David and Mirick 2006). Many firefighters regularly work in shifts, with frequent night shifts. The consequence is that normal sleep and circadian rhythm are at risk of disruption, in addition to the added stress of emergency call-outs. Such matters are discussed sparingly in this book, however.

The Skellefteå model has become internationally acclaimed and is also known as The Swedish Way.



Furthermore, repetitive strain injuries, musculoskeletal disorders, exposure to liquid foam, fire-extinguishing powder, inert gases and other chemical extinguishing agents are not discussed here. The same applies to burns, blood infections, fertility disorders and injuries caused by trauma such as falls, explosions, being crushed, landslides and training-related injuries.

The term “firefighters” is used here as a collective term for what in certain cases may also include other members of the emergency services.

At the end of the book is a glossary of terms and expressions used in the text.



CHAPTER 2

Combustion gases

Content of combustion gases

The exact substances and combustion products created in a fire depend on the type and quantity of fuel, the size and nature of the surface, access to oxygen, the temperature and other conditions (Karlsson & Quintiere, 2000). All the variables make it difficult to know what type and quantity of waste products are formed during a fire. The point of departure, however, is that harmful substances are always produced at the scene of a fire.

As there are so many artificial materials in our surroundings, most fires create combustion products derived from synthetic material. In a pyrolysis test of seven common plastics, over 400 different substances have been identified. It is likely that additional substances which could not be identified were also created (Bengtsson & Antonsson, 1993). In a normal house fire, for example, there is of course a much greater number of substances.

Common substances found in combustion gases, and which have been established as carcinogenic, include: benzene, dioxin, formaldehyde, polyaromatic hydrocarbons (PAH) and vinyl chloride. Some of these substances are easily absorbed through the skin. Certain substances, such as common components of flame retardants, can numb and dampen cough reflexes. This means even more substances are taken up. Some substances are produced in the largest quantities when the combustion is incomplete; when the fire is very “sooty” and does not have enough oxygen. Other substances continue to be produced once the flame is out but the



In a fire, many harmful substances are created, and certain substances are more easily taken up via airways and the skin than others.

fuel is still glowing. This is often the case with the final extinction of a fire (Bengtsson and Antonsson, 1993).

New mixtures and compounds of materials are constantly being developed. In our lives we come across more and more new materials with to some extent unknown properties which can constitute a hazard to health in the long and short term. One example is nanoparticles, where the extremely small size means that a substance can have entirely different properties when in nanomaterial to those they possess in their normal form. Nanoparticles, which have a small diameter compared to other particles, are able to penetrate the protective barriers of living organisms. The nanoparticles are easily taken up via the skin and airways, transported into the body via the blood, and spread throughout and accumulated in various organs. Whilst research has shown that certain nanomaterials are very toxic, it is necessary to conduct further studies which more extensively document the impact of these particles on health over a longer period. (Ostiguy et al. 2006). Despite continuous research in the area, it is almost impossible to document the long-term effects of substances on people at the same pace as new nanosubstances appear on the market. More documentation on the substances' properties when they are combusted is also required.

In fire exercises with well-known fuels such as wood, chipboard,

gas, ethanol, diesel and lighter fluid, products such as PAH (polyaromatic hydrocarbons), VOC (volatile organic compounds), oxides, isocyanates, dioxins and particles which have a negative impact on the body are formed in different sizes. At the fireground, firefighters are exposed to more unknown substances from the fire than during training as there are many types of fuel present at the same time. Instructors and firefighters that train a lot can, however, be exposed to harmful substances more often during training. (Svensson and Månsson 2009).

Spread of combustion gases

Combustion gases and combustion gas particles are able to spread and contaminate the surrounding environment. An indication of this is how even a small, limited fire in a household causes extensive damage to adjacent areas and surfaces. According to Insurance Sweden (2010), payments to policyholders that have incurred fire damage in Sweden cost around SEK 5 billion every year. This only covers property damage. In addition to this, there are costs for healthcare, rehabilitation, absence from work, etc. Even small apartment fires cost hundreds of thousands of Swedish Kronor in decontamination and restoration costs. It is thus very costly to clean up rooms after a fire so as to be rid of pollutants and odours. In more complex and extensive fires, in industrial areas for example,

Combustion gases spread and contaminate the surrounding environment, it is dangerous to enter such environments and costly to clean up.



there is an even greater spread of harmful substances and toxic particles. In such situations, it is not uncommon for emergency services to inform and warn the public of instances of toxic smoke. The warning may concern people in areas situated relatively far from the scene of the fire. Despite this, unprotected firefighters often find themselves in a considerably worse environment directly adjacent to the scene of the fire.



REFLECT

Do you as a firefighter know if the house you are extinguishing contains asbestos or how many glass particles from a cut up car window are in the air at incident site?

The body's uptake of harmful substances

In this context, there are three primary ways in which airborne harmful substances can make their way into our bodies (Rodricks 1992):

- via inhalation
- via skin absorption
- via the mouth (orally).

Uptake via inhalation

All people must breathe to survive. Normal breathing frequency at rest is 12-20 breaths per minute (approx. 7-14 litres of air). Under extreme stress, firefighters with normal lung capacity can metabolise up to 100 litres of air per minute (Malmsten & Rosander 2006). If the air inhaled contains foreign substances, the body's metabolism of these substances will increase if the individual is subjected to hard work.

It is not uncommon for firefighters to believe they are protecting their airways via simple solutions which in reality do not provide proper protection. Examples of this are breathing through the nose instead of the mouth in the hope that nose hairs and mucous membranes filter and protect them against harmful substances in the smoke. Another example is the "skip breathing method" based on the theory that a lower frequency of breaths in a poor air



environment reduces the intake of harmful substances. It is also common to breathe into the elbow crease or the collar as a means of protection. Unfortunately, none of these methods is especially effective. These methods can be thought to be irrational, but are a real problem and have logical explanations. This behaviour occurs in situations which are not planned or pre-meditated. Such situations occur for example when the wind suddenly changes, the fire quickly changes character, or when the firefighters need to change position and circumnavigate the scene of the fire. There is often no immediate access to protection for the airways or any possibility of breaking off the task at hand and moving to a better environment.

A common type of emergency callout and task is “smoke smell investigation”. In order to locate a suspected source of fire, it is common for firefighters to use their sense of smell as a tool. For logical reasons, protective equipment for the airways is used in such situations, and at these times firefighters often find themselves in spaces where people normally do not enter. These may be attics, storage, crawlspaces, fan chambers and ventilation spaces. In such spaces, the presence of mould, spores, dust and other harmful airborne particles cannot be ruled out. Firefighters normally give no importance to the situation, but in other contexts these environments would be considered hazardous for people to enter.

Harmful substances in connection with fires are taken up by the body via inhalation, absorption through the skin and orally.

Situations which at first glance are not perceived as hazardous can easily be overlooked or mistaken as harmless. Respiratory protection is almost always used when the environment is so unsuitable and unpleasant that the firefighters can establish with their natural senses that the environment is toxic or hazardous. But in situations when the normal defence mechanisms such as smell, taste, tear ducts and coughing reflex do not react in a natural way, it is normal for the firefighters not to use breathing apparatus. Some of the harmful substances that form during fires can be seen and smelt but others are completely invisible or odourless. An environment without an irritating odour or visible soot is thus not necessarily harmless, despite there being no perceived threat. The reason for wearing respiratory protection is not that combustion gases are always toxic; rather, because it is impossible for firefighters to determine whether or not the air they will inhale is harmful (Bengtsson & Antonsson, 1993).

It is important to protect both the skin and airways in all situations potentially involving harmful substances.



REFLECT

Are there any present or past contexts and situations that you can relate to in which you have unwillingly been forced to inhale bad air as a result of being unable to protect your airways.





When firefighters touch their own skin with contaminated hands, the surface of the skin comes into contact with combustion gas particles.

Uptake via skin absorption

There are many situations in which firefighters' skin comes into contact with harmful substances. This happens every time the firefighters touch their own skin with contaminated hands or with gloves that have been in contact with fire debris, for example when scratching or urinating. Another example is when the firefighters are situated in a smoky environment and an area of skin is exposed. Here, particles from combustion gases come into contact with the surface of the skin.

How much of a substance is absorbed by the body via the skin is determined by the quantity and type of substance, the size of the molecules and the skin condition. The substance penetrates warm and sweaty skin quicker than dry or cool skin (Thors et al. 2013). Firefighters often have warm and sweaty skin when they are in environments in which there are foreign substances. Moreover, it is not only in physically demanding tasks such as smoke diving, hose routing, venting or other demanding operations that firefighters' skin is warm and moist. The construction and functional requirements of the turnout gear mean that even simpler tasks constitute a higher temperature.

Many medicines are designed to be absorbed by the skin, e.g., analgesic creams, heart disease medication and nicotine patches. As these medicines contain molecules that pass through the skin barrier, they can be absorbed into the blood stream and thereby take effect. In the same way, undesirable and harmful molecules can make their way into the firefighter's body when they come into contact with the skin.

Today, knowledge about how firefighters' protective clothing prevents the surrounding environment from reaching the skin during e.g., indoor firefighting.



REFLECT

Think about how your skin has been subjected to visible soot and how long after a fire you can still smell smoke on your body. Is it a matter of minutes, hours or even days? Can you possibly know what substances remain on your skin?



Uptake via swallowing

Not all harmful chemical agents and substances from the scene of a fire can be perceived or detected with our natural senses. This makes the situation even more treacherous and is one of the reasons why firefighters tend to swallow unknown substances (oral uptake). This can happen in different situations:

- Gases and particles that have entered via the upper respiratory tract are carried via mucous and saliva into the digestive system and are thereby absorbed into the body.
- After or during long operations, sustenance is required.
- Food is often consumed at or directly adjacent to the fireground, with no opportunity for the firefighters to change clothing, wash themselves or even put the food in a clean place.
- Firefighters that use snuff and carry out work that contaminates their hands are at risk of placing foreign substances in their mouth via their fingers, with the snuff as a carrier.

Eating close to the scene of a fire entails a risk of harmful substances entering the body via the mouth.

The hazardous effects of combustion gases

Several research studies have shown that firefighters run a heightened risk of certain forms of cancer (LeMasters et al. 2006). To ensure the quality and reliability of studies of illnesses that take a long time to manifest, it is necessary to perform measurements over a long period. In parallel with these studies, firefighters' personal protective equipment and work methods have been developed and improved, which has had a positive impact on their work environment.

In recent decades, the presence of new materials and chemical substances in our surroundings has increased drastically. For many new substances, there is insufficient or no documentation about how they affect health in the long term (Ostiguy et al. 2006). Professional culture and local work methods are additional factors which affect how firefighters are subjected to combustion gases and their harmful effects.

The correct equipment and a good working method are important for protecting firefighters against harmful substances.

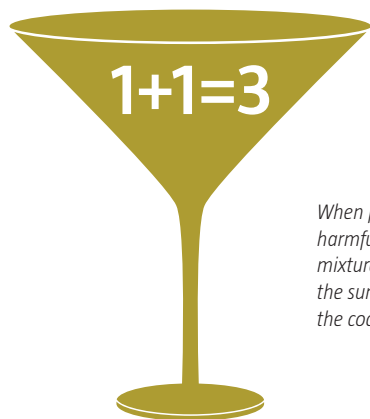


Combination effects

When a person is exposed to a number of different substances at the same time, one of the following occurs:

- The substances have no effect whatsoever on one another.
- The substances are aggregated (additive).
- The substances counteract one another's effects (antagonism).
- The substances enhance one another's effects (synergy).

Normally, the more hazardous the substances people are subjected to, the more harmful the effect (Mayer 1977). When firefighters are subjected to combustion gases and particles, they are exposed to several harmful substances at once. The effects of this are difficult to assess, but there is a risk of synergistic effects. Substances which at a determined quantity affect (or do not affect) the body can have an entirely different impact if the body is subjected to another substance before, after or at the same time (Lidman 2008). There is a risk that the mixture of different substances absorbed by the firefighter's body will become even more harmful than the sum of the various components; there can be a synergistic or "cocktail" effect.



When people are subjected to several harmful substances at once, the mixture can be more hazardous than the sum of its parts. This is known as the cocktail effect.

How harmful substances affect the body

Apart from the effects that harmful substances have on health previously mentioned, these substances can also impact on everything from the heart to the immune system, the muscles, the nerves, the internal organs and the body's system for hormone regulation, including the reproductive organs (Lidman, 2008). Children of firefighters run a three to six times higher risk of



Some substances that fire-fighters can be exposed to are suspected to be, or have been established as, toxic to reproduction

suffering from congenital heart defects compared with children of parents in other professional groups (Olshan et al. 1989). It has also been established that during their normal duties in connection with callouts, firefighters are subjected to substances that are suspected to be, or have been established as, toxic to reproduction (McDiarmid et al. 1991).

Some substances that are formed in fires (e.g., acetaldehyde and formaldehyde) react with one another or with e.g., water (saliva or mucous in the airways). These substances can either remain in the upper respiratory tract or be transported down to the stomach and lungs and have harmful effects. Some substances (such as isocyanates from glue, plastic and paint) can evoke asthma, allergies and other hypersensitivity, even for those exposed to low quantities if this occurs repeatedly. Free radicals are formed in fires involving normal construction materials. Free radicals are very reactive; i.e., they easily react with other substances, and they have a harmful effect on DNA, among other things.

At the scene of a fire, firefighters are at risk of being subjected to mixtures of harmful substances from particles, gases and waste products that come from fire and pyrolysis. These can include heavy metals (lead, cadmium, uranium), various chemical agents

(benzene, polyaromatic hydrocarbons, toluene, formaldehyde) and minerals (asbestos, silicon dioxide, silicates).

Even the fire station, where the firefighters spend a great deal of time, contains complex mixtures of substances in particle form. (LeMasters et al. 2006).

Serious illness can be the result of having been exposed to many different harmful substances. It has also been proven that combinations of different chemicals which are not particularly harmful individually can give rise to entirely new and very hazardous effects (Mayer 1977). Firefighters are at risk of exposure to quantities of foreign chemicals at the scene of a fire and when handling material that has been in contact with pollutants from the fire. As a rule, both the type and concentration of substances that are formed or released in the event of a fire and pyrolysis are unknown to the firefighters.

People have varying degrees of sensitivity for exposure to different chemicals and mixtures of chemicals. This means that the risk of different individuals developing illnesses due to exposure to foreign substances varies.

It is known that harmful substances are formed in fires. Different substances can become even more hazardous in combination,

Some substances formed in fires only lead to harmful effects when they react with water from saliva or mucous in the airways.





People have varying degrees of sensitivity and the risk of developing illnesses varies.

and firefighters at risk of exposure to these mixtures do not know what substances they are exposed to or how this affects them as individuals. It is known that firefighters as a professional group are affected by certain illnesses, but it is not known which firefighters are affected. It has been established through previously mentioned meta studies (LeMasters et al. 2006) that firefighters run a higher risk of certain types of cancer. What is less researched is what other illnesses can arise as a result of firefighters being subjected to foreign substances. More studies are required to investigate the connection between the firefighting profession and serious chronic or sub-chronic diseases other than cancer.

Difficult to make early and reliable diagnoses

The only reasonable way to determine how people are affected by combinations of unknown substances suspected to be included in complex mixtures in different concentrations is via tests or taking samples. The problem with some of the illnesses that affect firefighters is that they can remain latent for a long time before any symptoms arise or are even measurable (Barry 2001).

Measuring and controlling illnesses is therefore difficult. Aside the fact that detailed health examinations can be resource-intensive

and lengthy, it is difficult to decide what should be measured and how. As the substances and consequences can be unknown, this can also mean there is a false sense of security in measuring certain substances as the most relevant tests could be those not carried out. Health examinations are necessary, but before we begin measuring health markers, the measurements must be so reliable that they do not cause more concern in the person being examined.

Even if it is possible to measure and prove the presence of certain substances in firefighters' bodies, it is at present difficult to predict the consequences of the combination of substances that a particular individual has been exposed to and how this affects him or her in the long term.

When discussing firefighters' heightened risk of serious illness as a result of their work, this must always take into account the fact that everyone can contract cancer and other diseases. Cancer is found among all professional groups, and it is very difficult in each individual case to ensure that an illness which takes a long time to manifest is work-related. At the same time, the connection between the professional role of a firefighter and a heightened risk of cancer has been evidenced, so it is therefore important to ensure that firefighters are not exposed to harmful substances more than absolutely necessary.

It is difficult to predict the consequences of harmful substances in the body, even if it is possible to check whether the substances exist in the body.





CHAPTER 3

Risk factors in firefighters' work

Most people probably believe that a firefighters' working day takes place at the chaotic scene of a fire or accident. In reality, this working day is filled with completely different duties. Some of firefighters' work involves direct operative work, i.e., fighting fires and attending the scene of an accident. The rest of the work consists of various operations such as exercises, training, maintenance, recovery of used materials, physical training, prevention work and preparations for operative work. The fact that the work has such a shifting nature and involves such varied operations means that it is complex and difficult to predict. This also means that firefighters are subjected to a number of unnoticed, constantly recurring operations and situations, which in the long term can have a serious impact on health if such operations are not carefully executed.

Many fire stations can increase the safety of their operations

Foreign substances are handled in an unstructured manner at many fire stations. This is due to factors such as carelessness, culture, logistical conditions, lack of knowledge and behavioural psychology.

It is normal for contaminated turnout gear to be hung back in its place without first being cleaned. There are examples where turnout gear has been highly contaminated when hung up, leading to the spread of such large quantities of gaseous substances via the building's ventilation that people in entirely different parts of the



The working day consists of various operations such as exercises, training, preventive work and preparations for operative work.



All contaminated equipment must be handled so that people are not exposed to harmful substances.

building felt acute discomfort and had irritation symptoms. The majority of fire stations have been in operation for many years and ventilation systems are not constructed to prevent or limit the spread of undesirable substances between different parts of the building.

All pollutants from fire treated the same

All fires release harmful and toxic substances that affect people's health. Some common examples of substances from fires are benzene, chloroform, styrene, formaldehyde, brominated flame retardants, asbestos, isocyanates and carbon fibres.

Firefighters can never predict which harmful substances are formed or in which pollutants and concentrations these can occur in the event of a fire. It is difficult to protect against something unknown, which means that there is a tendency not to respect the danger. Moreover, damaging effects on health often do not manifest until much later (latency period). The fact that a long time can pass (10–40 years) before illness breaks out is perhaps the single biggest reason that firefighters tend to handle all pollutants from fire the same (“smoke as smoke and soot as soot”).

Different points of contamination

Obvious situations in which firefighters risk exposure to unknown substances include fires and accidents involving the release of harmful substances. Other less obvious situations include exercises, training, final extinction of a fire, decontamination, and

salvage work and fire investigations. The risk of contamination is also present when restoring equipment such as turnout gear, respiratory protection, hoses, vehicles and other turnout material. Simply staying in and working at a fire station with inadequate or non-existent procedures for handling contaminated material can have a negative impact on health in the long term.



REFLECT

Why do we sometimes act as though combustion gases and soot particles released from a burning car during an exercise are less harmful than in a real callout?

Involuntary risk-taking

It is common for firefighters to enter the site of an accident without protection for both airways and skin. This is especially true for firefighters who have duties other than direct smoke diving, e.g., commander, pump operator or engineer. Research (Hertzberg et al. 2003) shows that harmful substances from a normal fire spread quickly and are found in high concentrations, even far from the area of the fire. This spread can be difficult or almost impossible to detect with our natural senses.



Even firefighters who do not subject themselves to direct smoke can be exposed to harmful substances.

Combustion gases from a normal fire also contain substances that have a numbing and desensitising effect on the airways' natural protective reflexes, by e.g., inhibiting the cough reflex. This means that firefighters risk involuntary exposure to even more harmful substances and particles due to the fact that their biological defence mechanisms are weakened and put out of action. Even firefighters who enter a fireground but do not pass through dense areas of smoke are exposed to substances and particles. As they are less exposed than colleagues in the immediate proximity of the source of the fire, the work environment is not perceived to be harmful, despite it being in reality a hazard to health. This experience is treacherous as the firefighters instinctively relate their situation to a visually healthier environment at the same accident scene. Firefighters often have a high acceptance for poor work environments, as it is always possible to relate to nearby situations with even worse working conditions. Furthermore, the situation of a person in the proximity of the site of the damage is normally considered temporary and quickly changeable.



IMPORTANT

The reason for wearing respiratory protection is not that the smoke is always hazardous; rather, because the firefighters are unable to know whether or not the smoke is harmful.

Many firefighters have long careers

The firefighting profession is not to be considered a transitional profession. Historically, firefighters begin work at a young age and then remain in the profession their entire working lives, until retirement. There is a low staff turnover in the firefighting services, something which indicates a high level of satisfaction. This means that there is plenty of opportunity and time for firefighters to be exposed to large quantities of harmful and unknown substances overall. Individual occasions on which firefighters take in harmful substances do not need to be particularly noteworthy, but the risk of suffering from a serious illness increases with the number of occasions. It is a matter of recurring situations and time spent in hazardous environments for an entire career. The saying “many small streams make one big river” is entirely appropriate here.



Firefighters often have a long career and run the risk of being subjected to large quantities of harmful and unknown substances overall.

There are a large number of occasions over a long career in which firefighters are exposed to unknown and harmful substances. Assuming that a firefighter in some way comes into contact with foreign substances in some form around once per week on average via callouts, exercises, training or handling contaminated equipment. This would mean over 50 occasions each year, which over an entire career would be around 2,000 occasions. Just one occasion per week for firefighters to be exposed to harmful substances should be considered a conservative estimate. The actual number of occasions is normally many times more.

Common points of discussion

Reflect on the following hypothetical situation. A fire station is alerted to a fire in a waste disposal room. A normal team for this kind of callout is one commander and four firefighters (AFS crew requirements for smoke-diving, AFS 2007:7) In order to effectively tackle the fire, the fire engine is placed as close to the waste disposal room as possible. The commander gains an overview of the situation at the fireground and prepares orders. Three firefighters prepare for firefighting indoors¹.

¹ Provisions and general advice on smoke diving and chemical diving can be found in the Swedish Work Environment Authority's directives, AFS 2007:7.

The driver (who is also a pump operator) is responsible for ensuring the firefighters' supply of safe water. Where possible, try to relate to first-hand experience and real events

1. Can someone determine with any certainty what the combustion gases from such a fire contain?
2. Is it possible to know with any certainty what effect repeated exposure to such combustion gases has on health?
3. In what way is vehicle placement important in this context?
4. Is the municipal Chief of Emergency Operations' capacity to assess the situation at the fireground and give orders affected by what protective equipment he/she is wearing?
5. Is full gear a given in simpler firefighting operations?
6. Do firefighters ever remove their respiratory protection equipment in too early a stage of the operation?
7. What protective equipment is worn by firefighters not fighting the fire internally at the scene?

When large quantities of mixed materials burn, it is impossible to assess the contents of the combustion gases.



After the operation, the firefighters return to the fire station to restore the vehicle and replenish supplies and equipment. Upon return, contaminated material arrives at the station from the site of an incident. The function and serviceability of the equipment is checked. The vehicle is resupplied and prepared for the next emergency operation.

8. Is it likely that tools and materials that have been at the fireground are contaminated?
9. How is the equipment used at the fireground transported back to the station?
10. Are the personnel's personal protective equipment and the vehicle always supplemented with clean and decontaminated equipment?

Waste is a simple, everyday example of a mixture of several unknown materials in different quantities. When this kind of mixture of materials burns, such large quantities of various chemical pollutants are released that it is impossible for the firefighters to assess the properties of the combustion gases and how toxic and harmful they are.

The air inside the vehicle cabin is the same as that of the surrounding environment, though heavily filtered via the vehicle's fresh air inlet. Standardised cabin filters in vehicles provide no

All equipment that is contaminated is potentially harmful before it is decontaminated.



protection against foreign, harmful substances and particles from a fire. An unfavourable placement of the vehicle leads to contamination inside the cabin and on the vehicle's other surfaces. Opening doors and shutters increases the level of contamination.

When the firefighters are to gain an overview of the scene of an incident and the commander is preparing orders, they are focused on their task. This situation entails that certain natural protective reflexes are not noticed. Few firefighters reflect on the fact that they have tears in their eyes and are coughing at the scene of a fire, for example, despite these being reflexes which in other situations act as warning signals.

Ensuring firefighters are wearing full gear even for simple firefighting operations would have a major impact on the way in which the skin is exposed to harmful substances in the surrounding environment. When firefighters remove their respiratory protection equipment too early (e.g., in the final extinction of a fire), the firefighters are exposed to harmful substances from their surroundings in situations where the toxicity is also high due to incomplete combustion.

The driver/pump operator/engineer is often in the proximity of the vehicle in order to extend the hose, secure the water supply and provide tools at the fireground. The placement of the vehicle is therefore of the highest importance for the driver's working environment.

All material that has been exposed to particles and dense combustion gases is to be considered contaminated. This may include firefighters' personal protective equipment: helmet, turnout gear, gloves, boots and respiratory protection. But it also includes other equipment such as hoses, hand tools, ventilation fans, thermal imaging cameras and radios.

All contaminated material gives off harmful substances via skin contact, at least initially. The material also emits harmful substances via particle dispersion (soot, etc.) at the location where they are stored and handled.

Material and equipment which is contaminated is potentially harmful before being decontaminated.

Personal Protective Equipment and contamination

Turnout gear

Modern turnout gear is designed to withstand stress from both the surrounding environment and the user's physique. There is also a strong symbolic value in clothes that have connotations of trust,



The performance of turnout gear is continuously developed and improved. The images show the development of turnout gear from the 70s and onwards.

group affiliation and personal identity. The functional requirements are thus also numerous. For example, the turnout gear must:

- protect the user from sharp objects
- withstand extremely high (and low) temperatures and the effects of steam
- repel moisture and water
- serve as high-visibility clothing so that firefighters are seen
- denote the professional role each individual firefighter has
- be well adapted ergonomically, as well as flexible and comfortable
- facilitate fall protection equipment (harness or belt)
- have space for communication devices, hand tools, etc.

There are many ergonomic challenges for firefighters at the scene of a fire or accident. The work involves a number of situations in which the firefighters must be able to move freely, such as when carrying equipment, climbing ladders, working on the roof or crawling.

Firefighters must be able to feel safe and trust in the function of their turnout gear as protective clothing in all imaginable con-

Throughout its life, turnout gear has been subjected to many stresses and instances of contamination; some difficult to remove with a normal wash.





Firefighters work in their turnout gear in many different environments.

ditions and situations, regardless of the surrounding environment with heat, cold, moisture, external force, etc. Functioning turnout gear is therefore expensive to produce and acquire.

The replacement cycle for turnout gear is relatively long, which means that the clothing is subjected to repeated and regular contamination during its service life. Soot and particles from dense combustion gas and aerosols have a tendency to become stored in textiles. Furthermore, some particles are difficult to remove in a normal wash. These include carbon fibres and asbestos, which are heavy, sharp and fibrous by nature and are able to cling to the fabric.



The helmet is another part of the equipment that becomes contaminated and it should be decontaminated as often as other equipment.

Helmet and Gloves

Helmets, gloves and boots are also surface layers which are contaminated to the same extent as turnout gear. The difference between these and turnout gear is that helmets, gloves and boots are, in general, decontaminated even more seldom.

Due to its function and design, the helmet can become contaminated inside and out. Furthermore, it is worn on the head, where it has close contact with both fine skin and airways. The helmet can thereby expose the user to harmful substances in a number of ways.

Firefighters' protective gloves are probably the protective clothing most subjected to contamination. The glove is the item which traditionally is the most difficult to wash and dry simply and effectively whilst retaining function. Firefighters' gloves are often made in leather or leather-like material, meaning they are sensitive to machine-washing. They also have a tendency to lose their shape if they are cleaned and dried carelessly. It is entirely inappropriate to touch a used protective glove with bare hands if it is not decontaminated as it may be contaminated by substances that can be absorbed via contact with the skin.

Boots

Firefighters' boots often have a sole with a deep tread so as to provide good traction on different surfaces. This means that dirt and waste from the fireground is gathered under the boots and is easily transported back to the fire station unnoticed. A boot which is not decontaminated therefore functions as an effective spreader of uncontrolled and undefined chemical compositions.

Other textiles

Firefighters use uniforms and training clothes during almost every working shift. If these clothes come into contact with a contaminated environment, they also become contaminated, e.g., via storage, washing or drying together with turnout gear which is not correctly decontaminated. Handling clothes in this way therefore entails a risk of subjecting firefighters to foreign substances via contact with the skin. In the same way, towels and bed linen can transfer foreign substances to the skin if handled incorrectly.

Careless handling of contaminated equipment can lead to the transfer of harmful substances to textiles such as towels and training clothes.



Even when the worst of the fires has been put out, the compressed air breathing apparatus must be kept on.



Breathing apparatus and contamination

Respiratory protection with overpressure is personal protective equipment for firefighters and life assurance in the truest sense. When firefighters use the breathing apparatus, they often find themselves in environments which can be directly harmful to health and deadly. This means that the stress on the outer layer of the breathing apparatus is often extreme.

The construction of the breathing apparatus has a number of design considerations other than its main function. It is both heavy and bulky, and there is plenty of surface area for airborne soot and particles to attach to.

When the need of breathing apparatus is no longer deemed urgent, its weight quickly becomes a burden. To move more effectively, firefighters are therefore tempted to remove the apparatus at too early a stage. Unfortunately, it is not always the case that the apparatus is replaced at this point with another form of respiratory protection. As final extinction and similar tasks take a long time, firefighters are exposed to a large total dose of foreign substances. The need for protection for the airways remains even after the worst of the fire is extinguished.

The properties of the breathing apparatus also affect how it is washed and restored. Qualitative manual decontamination of breathing apparatus is time-consuming, tough and laborious. The perception that the equipment will soon be used again and thus dirtied once more can mean that it is tempting not to clean it. Foreign substances remain on breathing apparatus that is inadequately or carelessly cleaned.



A normal fire often results in large quantities of contaminated equipment.

There are many occasions on which firefighters come into direct physical contact with breathing apparatus. Examples of this are:

- functional (when switching watch)
- alarm
- exercise
- training
- post-fire care
- all other use of the fire engine
- transport to and from callouts
- service and maintenance.



The fire engine becomes contaminated like other equipment and can have harmful substances inside and out.

Vehicles and contamination

Vehicles used at the fireground are at risk of contamination both externally and internally. They are also contaminated when used material and personnel with dirty clothing are handled carelessly when they are to be transported back to the fire station. Firefighters often come into contact with the vehicle's exterior, e.g., during:

- alarm
- exercise
- training
- service and maintenance
- maintenance and replenishment of the vehicle's equipment
- functional check when switching fire watch
- transport to and from study visits, physical activity, lunch visits, etc.

Other material and contamination

Firefighters often come into contact with e.g., hand tools, thermal imaging cameras, power tools, piercing nozzles, branch pipes, crowbars, Halligan tools, lines and spades. Sporadic contact with poorly contaminated hand tools and machines are also occasions on which firefighters are exposed to harmful substances.

Shared radios and mobile phones are used by different people. It is impossible for the individual user to know in which situations they have been used previously. Radios and telephones are generally sensitive and therefore difficult to decontaminate, which means that they are seldom decontaminated. The apparatus is used in contact with and close to the skin and airways, thereby exposing the firefighters to unknown substances.

Great lengths of fire hose are often used in fires. The hose has a coarse, durable surface which functions as an undesirable gatherer of substances from the surrounding environment. When a fire hose full of water is dragged across the ground at the scene of a fire, it collects soot, ash and other waste from the fire. After use, the hose is rolled up, transported back, decontaminated, pressure tested and, where necessary, repaired in order to be used again in service. Firefighters' work to restore fire hoses is another occasion on which they involuntarily come into contact with foreign substances.



The coarse surface of the fire hose means that soot, ash and other waste from a fire are easily gathered.

Contamination during callouts and training

All incomplete combustion leads to the emission of toxic and harmful substances in various forms and quantities. There is no doubt that any fires encountered during a callout release harmful substances. But a car which is set on fire during an exercise, for example, is not always met with the same respect and protective action as a burning car in a real accident. Harmful substances are of course the same regardless of whether they are released in a real accident or a training situation.

REFLECTION



What is your experience of the use of personal protective equipment in the post handling of dirty material from exercises, compared with the same handling after a real callout situation, e.g., when processing hoses, turnout gear and respiratory protection equipment?

Psychological aspects: Ignoring risks

It is obvious that the environments that firefighters periodically find themselves in are directly harmful and that this affects the individual's health in the long term (see the chapter on Combustion gases). This is public knowledge, but most fire stations have taken few or no measures to address the situation.



How an individual perceives and interprets risks affects how he or she goes on to handle the risk.

The individual's own view of risks

There must be at least as many reasons to apply to become a firefighter as there are firefighters. An important part of the professional role of a firefighter is to provide assistance and to resolve various situations for those who are vulnerable and in distress. The willingness to help others sometimes means that firefighters' own protection is neglected. In a group consisting of many people with such duties, this behaviour can be reinforced.

For the psychological aspects of risks, it is important to understand that it is not only the real risks that are significant. It is important how individuals perceive and interpret risks, as this has a major impact on how individuals handle these risks (Glassner, 1999). The factors that cause concern among people differ from one community to the next, and have varied historically. From time immemorial, hazards and risks have been associated with traditions and cultural beliefs (Odén, 1998). How individuals evaluate risks is affected by their perception of how the risks occur and what capacity they have to protect themselves. People therefore react strongly to certain risks and ignore others, even if the reaction does not reflect the actual severity of the threat (Enander, 2005).

People generally have the ability to disregard risks as most people believe that others are more vulnerable or run a higher risk of injury than themselves (Pidgeon et al. 2003). Risk perception differs significantly between women and men as groups. Women tend to perceive risks more clearly than men (Savage 1993). Men have greater difficulty than women in immediately seeing the positive side of safety and safety measures (Gustafson 1998). Men also feel in general that they have sufficient information and knowledge of risk and safety issues. They are also less concerned than women, especially when it comes to assessing risks to the individual (Enander 2002). A study in 1993 also showed that safety awareness is generally better among women than men (Crowe, 1995). As the firefighting profession has a heavy over-representation of men, it is likely that firefighters find themselves in a work environment where the risk to individual health is underestimated more than in professional groups where there is a more even gender distribution.

A hero's role, but no supermen

Firefighters are often perceived as heroes to some extent; constantly prepared to save and protect. This hero's role can contribute to

a feeling of invulnerability and a willingness to deny the actual risks. There can to some extent be a point in firefighters not having an exaggerated sense of their own fragility, so as to function socially in their group and professional role. At the same time, it is important to understand that no human being is invulnerable or immune to serious illnesses. Firefighters are not supermen.

An individual with their own experiences of undesirable events generally assesses the likelihood of similar events occurring in the future higher than others. Such individuals are more careful. But the more time that passes after such an event, the more this carefulness subsides. (Reason 1997). The person's own experience of an undesirable event is also interpreted individually. Two people with experience of the same ordeal can have entirely different perceptions of the risks and have entirely different standpoints afterwards (Weinstein, 1989). If a firefighter suffers a serious illness which is expected to be work-related, the colleagues' risk awareness will likely increase immediately, but only in the short term. Due to difficulties in breaking old patterns, the firefighters are at risk of gradually resuming the habits and routines that were in place prior to their colleague's illness.

Firefighters that put aside their own health to save others can in the worst cases become ill and cause losses for themselves and their families.





Voluntary and involuntary risks

There is a difference in how the individual reacts to voluntary and involuntary risks. People accept to a greater extent risks that are perceived as voluntary (Starr 1969). Some acute risks trigger emotions in the individual and automatically release natural warning signals. Other risks that take a slower course or are associated with well thought-out decisions based on an assessment of likelihood, etc., do not result in the same intense emotional response (Slovic 2002). It is thus important to understand how people evaluate, perceive and reflect on risk (Slovic 1987). Many of the risks in firefighters' work environment are evident, e.g., in an indoor firefighting situation, working at height or working on a road at the scene of a traffic accident. But the risk of suffering from ill health in the long time is not nearly as tangible, even though it may be just as serious. In addition, firefighters see advanced firefighting and the handling of equipment in connection with a fire as a natural part of the job and associate this with a sense of volunteerism.

Protective measures are often taken in face of immediate risks in firefighters' work, unlike in the case of risks whose consequences are delayed.



Like smoking, the risks in firefighters' everyday lives affect health in the long term and tend not to be treated with the same respect as an evident risk of injury.

Habitual blindness

When people routinely and repeatedly find themselves in contexts and environments, such as at their workplace, they tend to develop habitual blindness. Habitual blindness means that a person subject to repeated experience of the same situation or phenomenon becomes numb to it and stops reacting to or even noticing the circumstances in question (Miller 2001). Tobacco smoking is a common example of this phenomenon. It can be said that almost all smokers at least partly know the risks to health associated with tobacco. Smokers do not change their behaviour despite knowledge, insight and clear marking in capital letters on the product packaging itself, declaring that "SMOKING KILLS". Conscious choices and dependency factors aside, habitual behaviour is interesting.

Simply put, it can be argued that firefighters function in a similar way to smokers in the sense that acts which can affect health in the long term are so common, and so evident and frequent in their context, that the individual is not concerned in carrying them out. So that firefighters can carry out their everyday tasks, contact with materials or environments that contain unknown substances is difficult to avoid. Though it is known that the situation at hand

can entail the risk of contact with unknown substances, it will likely go ahead even if adequate protective equipment is not available.

The difficulty with assessing risks

Situations which entail delayed effects are not perceived as serious or dangerous as situations with immediate effects. The same applies to invisible, new or unknown risks (Fischhoff et al. 1978). The risk is thus perceived as lower if the effects of being exposed to the risk are delayed, unknown or hidden. Unfortunately, these criteria correspond well with several of the risks that can cause firefighters to develop serious illnesses. This means that the risks can be perceived as less serious, despite the fact that in the worst cases the consequences can be fatal. The reality is that the majority of the factors that affect risk perception are to the firefighters' disadvantage:

- Risk-taking is voluntary in the sense that the tasks are largely self-elected.
- The risks are common.
- Similar operations are part of the work of all firefighters across the world and are repeated on a daily basis.
- The consequences are delayed due to the fact that it takes a long time for the illnesses to develop.
- The consequences vary as the mixture of particles and chemicals cannot be assessed or checked.
- The work sometimes entails extreme time constraints and a heavy workload, and this likely affects the inclination to not follow self-protection and decontamination routines.

These factors mean that attentiveness to, awareness of and insight into firefighters' situation - as well as functioning routines - are important in reducing the risks.

Tools

**Routines
and flows**

Knowledge and insight

CHAPTER 4

The Skellefteå Model

– Better health for firefighters

“Self-maintaining works best”. This is the starting point of the Skellefteå Model (The Swedish Way). The Skellefteå Model is a points system which exemplifies and describes how firefighters can avoid hidden dangers in their working day with the use of simple routines and logical flows. The goal of the model is for the firefighters to avoid serious illness as a result of long-term and repeated contact with foreign substances. The model is based on the thesis “from one alarm to the next”, which also summarises the cyclic activities of firefighters called into duty.

Firefighters’ perception of their own situation does not always correspond with the actual circumstances. The reason for this can be found in historical professional culture, attitudes and the fact that the threats or dangers in this case have relatively unclear and obscure contours. The basic knowledge that leads to insight is therefore the foundation of the model.

The Skellefteå Model is a collaboration

The Skellefteå Model consists of a number of operations which each have a special function. The model is based on a team approach: “one for all, and all for one”. The work with the model requires individual responsibility in a way that and individual that deviates from the new routines will expose themselves and their colleagues to what everyone is working together to avoid. A person who shows respect for themselves quickly wins that of others. When the

An individual that deviates from work routines exposes themselves and their colleagues to what they are fighting to avoid.



Skellefteå Model is applied, the positive changes in the general environment are so immediately noticeable that even small deviations stand out via smell and visible dirt and are therefore easier to address; this may include forgotten or neglected materials.

Unknown particles to be considered harmful

One of firefighters' regular duties is to restore vehicles, materials and protective clothing that have been in contact with foreign substances in connection with fires, accidents and exercises. It is very common for such material to be restored and handled by a firefighter that does not know what the material has been subjected to or in which situations it has been used.

As firefighters have irregular working hours, varied workloads and a large number of shifting operations, jobs can sometimes be interrupted and then completed by a different person. It is also quite common for a firefighter to take over a colleague's task in the event of e.g., interruptions in the form of an alarm, shift changes or abnormally long and large-scale operations that require relief or extra personnel. This means that the firefighters lose a sense of context and thereby also lose control over what the materials and equipment have been subjected to and in contact with. The result can be that all particles and pollutants are handled routinely.

As the firefighters are unable to check which substances they risk coming into contact with, the conclusion is to use the precautionary principle. All unknown particles and remains from dense combustion gas shall be considered harmful as there is no evidence to the contrary.

Clear and simple routines that work

In order to distinguish contaminated clothes, materials and vehicles from what is clean, clear and simple flows and routines are required. These flows and routines should however neither delay nor complicate the everyday work. Experience clearly shows that everything which is time and energy-consuming or includes a greater number of operations tends to be avoided (Halbesleben et al. 2008).

Without a frame of reference, it is difficult to compare a thoroughly decontaminated work environment with one which is imperceptibly contaminated. The absence of serious illnesses is not necessarily down to the work environment being controlled. If the firefighters of the future are not as often affected by serious illnesses, it is still never possible to prove that individuals have become healthy as a result of improved routines and flow.

The vast majority of firefighters do not suffer from a serious occupational illness. For those affected, it often takes a very long time before the illness develops; in some cases as long as 40 years (Mustacchi 1996). The fact that it takes a long time for firefighters' occupational illnesses to manifest is one of the biggest reasons for the situation not having changed appreciably. When it takes a long time for illness to manifest, firefighters are often able to retire before they fall ill. The illness is thus not always associated with professional life. This means that knowledge and insight must be quickly disseminated so that the situation changes for the better. However, it is not enough simply to change behaviours and routines. There must be a certain level of equipment to ensure the right conditions for a sound and health-conscious work environment.



Equipment and material must be handled as if it were contaminated if it is unsure as to what it has been in contact with.



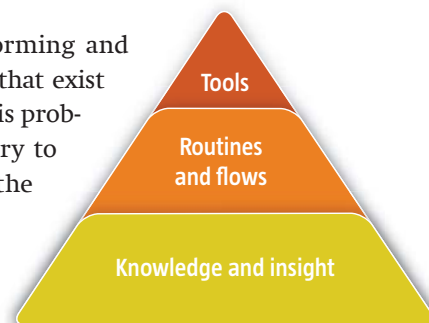
Introducing and using the Skellefteå Model

The Skellefteå Model is a tried and tested approach to creating a good and sustainable work environment with simple means. The model ties together a number of points into one. It deals with normal operations found in all fire departments and emergency services in varying degrees and frequency. Naturally, local opportunities and conditions must be taken into account for the station in question. Emergency services that fully introduce the Skellefteå Model in all its parts will quickly see surprising and tangible results in the work environment. Clear improvements are soon so noticeable that those affected tend to be surprised. It is only afterwards that people notice what the situation was like before.

Training, knowledge and insight

A suitable start for this process of change is informing and educating about the hidden risks of contamination that exist in firefighters' work and what can be done about this problem. To create motivation for change, it is necessary to provide information about the risks that exist and the harmful effects of poor or non-existent routines.

When firefighters gain knowledge of and insight into their own situation, it is obvious to them



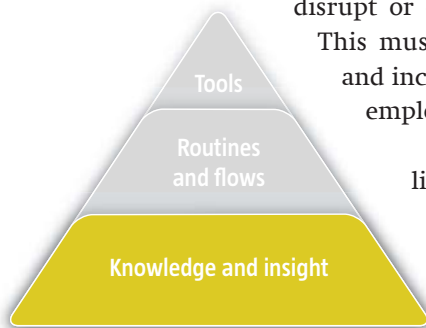


Simple solutions produce tangible improvements; it comes down to reviewing common operations in daily working life.

what changes and improvements are necessary, which thus makes them easier to implement. It has proven to be crucial to the results that as many individuals as possible have knowledge about how firefighters are exposed to harmful substances. All personnel in all personnel categories on all levels of the organisation must receive this knowledge. In order to facilitate changes to ingrained routines and behaviours, everyone must help one another. The importance of smart, obvious and simple solutions that do not disrupt or complicate operations cannot be overemphasised.

This must apply to all personnel affected in the workplace and include the entire organisation, full-time and part-time employees alike.

Sound health is a fundamental condition for a good life and is therefore a precious gift. It is also an area which affects everyone. When the everyday behaviour and routines of a given group are set to change, regardless of which areas are concerned, there are individuals who deny or belittle new

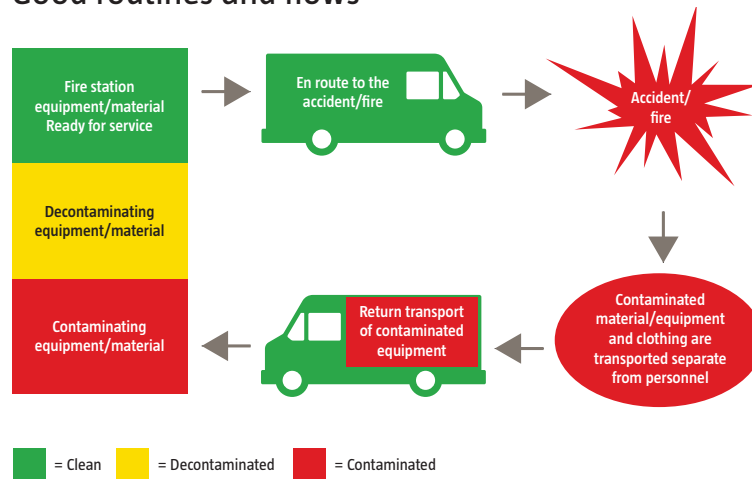


findings, changes or reforms. This may be due to ignorance, fear or how they are as a person. It is not entirely uncommon for these individuals to be influential and command a lot of space (Mårtensson 2002). Fortunately, it has proven to be the case that even these individuals become interested and are influenced by clear decisions concerning the vulnerability of their own health. This is one of the reasons why it is so important that a well-composed and clear message about working with health issues is firmly established and communicated to everyone in the concerned organisation. As the process takes into account everyone's health, even those opposed to changes tend to stop hindering the development. It is then easier for those driving the process to garner attention for the necessary adaptations and improvements.

Knowledge and insight are important to understanding what changes and improvements are needed.



Good routines and flows



The Skellefteå Model is based on simple routines and flows which, combined, create a good work environment.

Transporting clean equipment to the scene of the accident

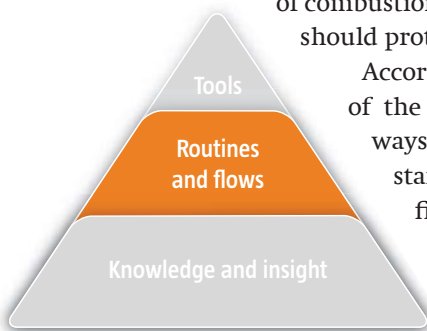
When the alarm sounds and the firefighters head to the scene of the incident, the starting point is that all equipment is clean and free of harmful substances. This includes the firefighters' personal protective equipment and the vehicle cabin in which they are transported. Upon arrival at the scene of an accident, the vehicle should be positioned so that the fire engine and associated equipment are not contaminated unnecessarily.

Routines at the fireground

It is common knowledge that when firefighters are at a callout or in an exercise situation in which foreign chemicals are present (known as a chemical alert), there are well-established safety routines and a high level of protection. Routines for the decontamination of individuals and material are also self-evident. But in the most common situations, where the poor environment is a result of combustion products, it is for many not as self-evident that they should protect themselves.

According to the Skellefteå Model, the routines at the site of the accident are therefore based around avoiding the ways in which firefighters can be exposed to harmful substances: via breathing, skin contact or oral intake. Firefighters should not unnecessarily expose their skin in a poor environment, take in poisons via the airways or unintentionally consume harmful substances.

When the context no longer requires the use of



the breathing apparatus, each firefighter should have a filter mask on hand with which to protect the airways. The filter mask must be immediately available, stored in a pocket in the turnout gear. This helps avoid “I’m just going to ...” situations, whereby the firefighter does not use any form of protection for their airways during temporary tasks or conditions in a poor environment. When a firefighter is to pass through a contaminated zone or provide a colleague with equipment, or when the wind suddenly changes, for example. All experience shows that even the smallest detour required to fetch protection for the airways is too long if the reason for doing so is a task which is considered temporary or quick.

It is tempting for firefighters to remove their protection during prolonged tasks and thereby expose the skin, especially in hot environments. Firefighters must strive to retain the protection of their full body covering and protect the skin as far as possible. If firefighters eat at the site of a fire, they must do so in a suitable environment so that what enters the mouth has not come into contact with unknown substances. Naturally, the facility to wash hands should also be available. It is also worth considering that some of the airborne particles that reach the mouth and throat, when firefighters do not use protection for the airways, will reach the stomach and be absorbed into the body this way, just as when we eat.

Changing routines and storage of contaminated protective clothing

When the intervention is complete and the firefighters’ equipment has become contaminated, they must remove their protective clothing and pack this into an airtight case. After hard work, firefighters are often sweaty and moist on the surface of their skin. To remove a protective layer of clothing at this point can lead to a rapid decrease in temperature with severe discomfort as a consequence. It is therefore important to have a dry, suitable change of clothing close at hand. One appropriate solution is to have a change of clothing for all passengers available in the fire engine. In this way, no-one is at risk of being without a change of clothes. An alternative is for each individual to have a personal change of clothes that they take with them on every callout or other situations.

Switching to clean, dry clothes after completing an intervention in a callout or an exercise is a task in itself. The circumstances cannot be predetermined and the change must take place even if it is the middle of the night, if there are poor weather conditions, or in other inconvenient situations. Firefighters are often exhausted



Switching to clear, dry clothes after completing an intervention should be done regardless of the weather and time of day.

after a callout and their focus is on recovery. In this situation, it is stressful to have to prepare the turnout gear for washing. If the equipment on the turnout gear is first removed at the station, this facilitates the change of clothing at the site of the incident. When the task of changing clothes is simplified, it is more likely to be carried out.

Storing contaminated breathing apparatus in an airtight case

The design of the breathing apparatus, with different composite materials and many components, means that it easily becomes dirty. The breathing apparatus' primary area of use is in the most hazardous of environments. Naturally, the breathing apparatus is therefore greatly exposed to the harmful substances and particles released in fires. The soot and particles stick to its surface and are thus carried on to the post-fire handling process. When contaminated breathing apparatus is to be transported to the station to be decontaminated and restored, it should therefore be stored in an airtight case. The case facilitates handling of the apparatus and is used to prevent the spread of harmful substances to firefighters and the surroundings.

Storing dirty hoses in an airtight case

As fire hoses have a coarse surface which easily attracts dirt, substances in the surroundings such as soot, ash and other contaminants from the fireground readily cling to them. A hose full of water is heavy, and at the fireground it is often wet or moist. When



Rolling a clean hose involves no health risks. If the hose is dirty, gloves should be used.



A hose full of water is heavy, and when it is dragged across the dirty ground, large quantities of particles cling to the coarse surface.

the hose is to be moved, the firefighters pull or drag it along the ground. The weight means that friction with the ground increases, and thus the surrounding jumbled waste from the fire easily clings to the hose's coarse exterior. If in addition the waste from the fire is wet and sticky (which it often is), large quantities of various particles stick to the hose.

When the hose is to be gathered up at the fireground after an operation, the firefighters should use gloves so as not to come into

contact with foreign substances. If the environment is dry and the hose kicks up dust, for example, it is appropriate to use a filter mask when handling. Ideally, the hose should be placed in an airtight storage device in the same way as turnout gear and respiratory protection in order to reduce the amount of particles spread during transportation and handling.



IMPORTANT

Do you as a firefighter use gloves when rolling up the hose?

Storing other equipment in an airtight case

All other materials which are used in firefighting operations and which thus become contaminated are potential spreaders of foreign substances. These include power cutters, chainsaws, thermal imaging cameras, power tools, steel rods and steel pipes. If other material is encased and stored securely during transport and handling prior to decontamination, additional sources of risk to the firefighters' health are removed.

After an operation, the hose should be placed in an airtight storage device so that particles are not spread.





The bags containing the contaminated equipment can be kept easily accessible so that if necessary in the event of a subsequent callout, the firefighters can suit up whilst retaining acceptable turnout times.

Return transportation must be conducted in a clean environment

When the above routines are followed, the environment during return transport will automatically be clean and healthy for the firefighters. The contaminated protective clothing (turnout gear, helmet, gloves, boots and, where applicable, base layers) have been packed into a storage device and are perhaps stored in controlled conditions in the cabin beside the firefighters. Other equipment is also well packed in another place in the fire engine.

It is of course desirable for the firefighters to return to the fire station at this point in order to decontaminate and restore the

equipment in an orderly manner. Normally, there are no further alarms on the return journey to the fire station, but unfortunately it is occasionally necessary for the firefighters to carry out one more mission. If an event of an acute nature occurs and the contaminated team are the most appropriate resource at the time, the firefighters can suit up once more, preferably without having to leave the vehicle, and carry out the new assignment. With the above routine, the turnout time (the time from the alarm to arrival at the scene) will be the same as if the firefighters had never removed their contaminated clothing. The advantage of this habit is that it is possible to retain the discipline of removing contaminated turnout gear even those times when the firefighters feel they have been subject to very little contamination or are in a good state to conduct further operations. It does not need to be particularly hazardous to health to work in dirty turnout gear on isolated occasions; it is the combination of frequency and time that has an impact.

All contaminated material has only one way into the fire station

It is important to have well thought-out flows so that firefighters can control the spread of harmful substances prior to decontamination and restoration. It is therefore good for the used equipment to be brought into the fire station via a predetermined route where possible. If this is not possible, e.g., due to the state of the premises, it is even more important for the contaminated equipment to be contained so as not to needlessly spread harmful substances throughout the fire station.

Protect skin and airways when washing turnout gear

Preparing turnout gear for washing is an additional task which can entail the risk of contact with foreign substances. Before the turnout gear is placed in a washing machine, all zips and Velcro must be fastened, pockets emptied and filters, note-taking materials, radios, telephones and hand tools removed, along with any fall protection equipment. It is therefore important to protect the skin and airways when carrying out this task. This is preferably achieved with full gear (long arms), gloves and some form of particle filter for the airways. Turnout gear must be washed and dried separate from other items of clothing.

It is important that the turnout gear can be washed quickly and easily. As a rule of thumb, the washing, impregnating and drying process following an everyday alarm should not need to take more than three to four hours in total. If the washing process



A smart solution for the thorough decontamination and cleaning of compressed air breathing apparatus is to machine wash.

When preparing turnout gear for washing, the airways and skin should be protected.

The process of washing, impregnating and drying should be effective and not take more than three to four hours.

is kept effective, double sets of turnout gear for each individual are not required in most cases. One solution if a subsequent alarm is received whilst gear is being washed is that each firefighter designates a colleague in another team with similar body measurements and temporarily borrows his or her turnout gear. Another solution may be to have a number of sets of turnout gear in different sizes on standby which can be used as a replacement whilst others are being washed. The reason for not investing in double sets of turnout gear for each firefighter is that the performance of turnout gear is constantly being developed and improved. Solutions with double sets of turnout gear risk doubling the service life, which can eventually result in outdated protective equipment. There are also economic reasons for keeping the capacity to a size which is reasonable in relation to the station's everyday events.

Thorough decontamination of respiratory protection equipment by machine

One smart solution for thorough decontamination and cleaning of compressed air breathing apparatus after each use is to machine wash. Thorough decontamination in a purpose-built machine pro-



In the absence of a washer, manual washing is an alternative for decontaminating the breathing apparatus.

duces quicker and better results and is one of the cornerstones of the Skellefteå Model. Just as with all other handling of contaminated material, the washing process is carried out for full gear and simpler forms of protection for the airways.

Manual cleaning is an alternative in the absence of a machine.

Soak fire hoses when storing prior to washing

Traditional washing and hydrostatic testing of fire hoses involves many different stages and actions which can expose firefighters to harmful substances. A dirty fire hose handled dry will release large quantities of the waste from the fire which remains on the outer layer in the form of dust and soot, particles which then become partially airborne. If in such a situation the firefighters do not have respiratory protection when handling the fire hose, they will inhale some of the dust. If in addition the hose is handled without gloves and full gear, the skin will come into contact with the foreign substances found on the fire hose's outer layer. It is therefore appropriate to always handle a fire hose used in unfamiliar environments with full gear, gloves and respiratory protection.

In order to drastically reduce the quantity of airborne particles spread from the fire hose, it is appropriate to keep the hose in water until it is washed. Soaked hoses release considerably less airborne contaminants and are also much easier to wash and clean effectively.

All other material must also be cleaned

All other equipment used at the fireground must also as far as possible be decontaminated before being used again, for example hand tools, thermal imaging cameras, power tools, piercing nozzles, branch pipes, crowbars, Halligan tools, lines, spades, radios and telephones. Even the simplest drying process for materials, using detergent and a cloth, are a winning concept in the long term. Suitable protective equipment should also be used when handling such material.

Bodily decontamination

Alongside decontaminating equipment and material, it is important that firefighters have the possibility to wash themselves. A thorough shower with soap and shampoo is appropriate for removing particles and waste from the fire from the body's exterior. This should be done as soon as possible after entering a contaminated environment.

The change of clothing used during transportation to the station must be washed before being used again.

Conditions and equipment

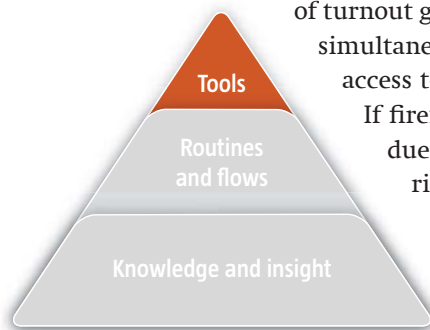
Alongside knowledge, insight, flows and routines, certain purpose-built equipment is required to achieve a good and healthy environment.

Washing machine with sufficient capacity

It is important to create opportunities for handling, washing and drying turnout gear separate from other clothing. Washing machines for turnout gear must be of the right quality and have sufficient capacity in order to avoid inadequate cleaning or queueing of loads.

A common "everyday alarm" (such as a fire in an apartment, waste disposal room, car or storage) normally results in two to five contaminated sets of turnout gear. It should be possible for all sets of turnout gear contaminated in this everyday task to be washed simultaneously and without delay so that each firefighter has access to their personal turnout gear as quickly as possible.

If firefighters risk not having access to their turnout gear due to queued loads in the washing process, there is a risk that the turnout gear will not be left for washing unless absolutely necessary (see the chapter Personal protective equipment and contamination, concerning turnout gear, function and identity).



Washer with sufficient capacity for thorough decontamination of compressed air breathing apparatus and other equipment

A machine used for thorough decontamination of compressed air breathing devices should have high capacity, as many respiratory protection devices are required even in everyday fires. Naturally, training exercises and events of a larger scale than the everyday also use up many respiratory protection devices. To facilitate thorough decontamination of compressed air breathing apparatus quickly and easily, it is therefore good if the machine has a certain capacity above the everyday. Wash programmes must of course be quick and effectively clean the equipment without affecting its function or shortening its service life.

The machine should be located so as to facilitate the flow when the equipment is restored following callouts and exercises. It should thus be placed close to the part of the station where the used equipment enters the building, if possible. If this is not possible, it is even more important for contaminated equipment to be well packed when handled and moved inside. This is to avoid the needless spread of harmful substances in the workplace.

The washer should have a high capacity as it is common for a large number of respiratory protection devices to be used in everyday fires.





As much as possible of the material used in an intervention should be kept in a sealed container pending decontamination.

Storing and transporting equipment in an airtight case

Dirt does not need to be removed if it is not brought into a vehicle or room in the first place. To facilitate simple control over all contamination, as much of the material as possible must be contained or stored by other means and transported in a sealed container pending decontamination.

Adapted ventilation is important

The ventilation must be approved in the areas of the fire station where contaminated material is handled and stored. Air that passes through these rooms must not be able to spread to adjacent spaces.

Simple donning and removal of equipment

Every fire station has a different layout, and thereby also different conditions for donning and removing equipment. The challenge is to design as simple a flow as possible with consideration for the local conditions. The goal is to avoid touching or moving contaminated material unnecessarily. A simple flow is important in order to have control over what material is dirty and what is clean.

Different filter masks

Respiratory protection in the form of filter masks is found in many different forms. The filter mask kept in the turnout gear is used for sudden and unforeseen events. The filter should be as compact and convenient that it does not disturb or get in the way when not in use. A larger and more cumbersome filter mask suitable for use over longer periods can be kept in the vehicle. Note that a filter mask must never be used in place of a compressed air breathing device.

Experiences



IMPORTANT

Not everything that smells is harmful and what doesn't smell is not necessarily harmless.

In an organisation that is to introduce routines similar to those of the Skellefteå Model, it can be problematic to immediately find the right level for which measures are to be taken.

Assessing who has been contaminated

Excessive fear of being exposed to harmful substances can be counterproductive and result in the inability to act. The perception of



It can be difficult for the individual to assess how contaminated their equipment is; let a team leader assess the need for decontamination.

contamination is subjective and is of course determined by what the individual firefighter has been exposed to. Nor is it necessarily the case that all individuals that have attended the scene of a fire have contaminated their equipment to the same extent. It can therefore be difficult for the individual firefighters to determine for themselves whether or not their equipment is contaminated. This is partly because it is often impossible to know what the individual has been exposed to and partly because not all harmful substances can be smelled or seen, and because different people experience the same situation in different ways. One solution to avoid arbitrariness and the inability to act is for a team leader or similar to take responsibility for assessing the need for decontamination. An individual that does not follow the routines will put their colleagues in danger (compare with passive smoking).

Handling other contaminated material

Not only turnout gear, breathing apparatus and hoses are contaminated by fire waste. Routines must be in place so as to facilitate simple handling and transportation of what can be summarised as “other material” back to the station. Other material includes power cutters, chainsaws, thermal imaging cameras, power tools, piercing nozzles, branch pipes, crowbars, Halligan tools, safety lines and spades. One good fix is to have storage solutions (bags, cases, etc.) ready so that diverse material can be stored away before being transported home. In this way, the spread of fire waste is reduced and the vehicle does not need to be cleaned to the same extent. For large-scale events involving a large turnaround of equipment, a separate means of transporting equipment back to the station is preferable; e.g., a truck or trailer.

Establishing work methods throughout the organisation

It is not unusual for a change in the working environment to take some time if the directive for change does not come with well-founded explanations. When it comes to new elements that change habitual behaviour, the person that is to carry out the new element must be told why. Otherwise, there is a risk of interrupting the decontamination process, which would eliminate the use of the new work method. The emergency services constitute a utilitarian organisation, and it is preferable if the benefits of a certain change can be shown in advance. In other words, it is a question of credibility, and of establishing support for the method throughout the organisation, so that the change is promoted by the firefighters themselves.

Simplifying

New routines that lead to a higher frequency of cleaning and decontaminating materials will take up more time and resources when done incorrectly. It is therefore important to keep the new elements simple, so that they are not deprioritised. For an organisation that has implemented the Skellefteå Model in a thought-out, well-prepared manner, and with the right resources, everyday operations will not be noticeably more complicated than before.



It's all about getting started – and solving any possible problems as they arise on the road towards new and improved working methods.

Making a habit of good handling practices

The firefighters may feel that they rarely work on fires of a magnitude that would expose them to large amounts of foreign substances. However, it is easy to forget that they are most likely exposed to a larger amount of contaminants from the total number of small fires they are involved in putting out, than from the lesser number of large fires.

Firefighters may be exposed to hazardous substances during their own callouts and training exercises, but also when they come in contact with the contaminated equipment of their colleagues, if this has not been properly handled. It may be tempting to skip the decontamination routines under poor conditions. If there are no established procedures in place, a situation may arise where those affected come to accept a hazardous environment under the premise “it was just this one time”. (Read more in the chapter Psychological aspects: ignoring risks).

It's simple – just do it

There must be a thousand excuses to query, delay or complicate the introduction of the Skellefteå Model in an organisation. One of the apprehensions is usually that it takes a lot of work to get started. Fortunately, the actual solution is very simple, and in many cases, the concerns have proven to be unfounded. A risk during the introduction is that focus is placed on the problems rather than the solutions. But it's all about getting started. After that, the fine-tuning and the local adaptations will follow naturally. Each day that passes without the model being introduced is a day wasted.

Conclusion: The Skellefteå Model improves the working environment of firefighters using very small means

The firefighter working environment is a global and widely recognised issue. Despite the known risks, there are few documented concrete action programmes. The Skellefteå Model (the Swedish Way) is an example of how it is possible to significantly improve the firefighter working environment with very small means, without complicating the work process. It is highly unlikely that firefighters will ever work in an environment completely free from hazardous substances; nor would it be practically possible. But on the other hand, no firefighter should have to risk unnecessary ill-health or suffering in their attempts to save human lives, property and the environment due to a neglected working environment.

There are few or no benefits from being afraid of soot or particles on isolated occasions. Aside from the incidents that are obviously harmful to human health, there is a long chain of repeated and often unnoticed occasions when the firefighters are exposed to hazardous substances. This chain is harmful and therefore needs to be disrupted. And doing so is perfectly possible without complicating the work of the firefighters. But it is difficult for a single individual to break a harmful pattern, since the firefighters' situation is so highly affected by the behaviour of their colleagues. Team work is required, and the knowledge and awareness must therefore be disseminated and accepted throughout the workplace if it is to have the intended effect. The current general situation is not satisfactory, and it must be taken seriously. At the same time, a healthy balance of common sense and deeper understanding is also necessary in this context.

Recommended further research and investigation

The fertility of firefighters

There are many aspects of firefighter health. One area that touches upon it, but which lacks extensive and reliable empirical data, is problems relating to the fertility of firefighters. It is known that firefighters are exposed to conditions that may impede reproduction, but it has not been proven whether this difference is significant in comparison to other parts of the population.

Fertility problems appear directly or in close connection to the firefighters being exposed to hazardous substances; fertility issues, unlike cancer, thus have a short latency period, or none at all. The effects of a reproductive disorder are thus clear and immediately discernible (Wischmann 2005). Certain professional activities have proven to be more common in men who seek medical help for infertility. These include activities where they have been exposed to solvents, metals, heat or cold and psychological stress. These factors are assumed to have a great impact on male reproductive abilities (Mendiola 2008). Even if there is limited knowledge regarding the effects of physical, chemical and emotional factors on male



Fertility may be affected when the body is exposed to hazardous substances, and the effect is not necessarily delayed as it is in other illnesses.



fertility, some connections have been found. Despite the proven connection between infertility and certain professions, it is difficult to distinguish specific causes and exposure to certain substances. The theory is that this is because there are often several concurrent factors which cause infertility (Sheiner 2003).

There is currently only very limited research available on pregnant firefighters, and how the work of a firefighter affects pregnancy. Smoke diving is currently prohibited for pregnant firefighters, in accordance with *AFS 2007:7 BA (Breathing Apparatus) and Full Suit Rescue*. What remains more or less unknown is whether the general working environment of the firefighters (aside from smoke diving and the actual firefighting) has any effect on fertility, and what that effect would be. However, we do know that many firefighters are exposed to several of the external factors that have been proven to affect reproductive ability. The question of whether firefighters are over-represented in cases of miscarriages and involuntary childlessness (for both women and men) is highly interesting. The same goes for the question of whether the firefighter work environment could even be detrimental to foetal development. This question is relevant not least because the correlation between children whose fathers are firefighters and congenital heart failure has already been proven (Olshan et al. 1989).

More knowledge is required on the effect of the working environment on firefighter fertility and foetal development.

As new work procedures are introduced, the demand for products to help improve the working environment increases.



Products adapted to the working environment of a firefighter

As the Skellefteå Model is becoming the norm, the demand for products to improve the firefighter working environment has begun to increase. Since the model is based on protecting firefighters from unnecessary contact with foreign substances, there are of course opportunities to develop products to help them in this respect. The innovative approach of the Skellefteå Model shows

that knowledge on the subject is still limited, and the product range is relatively undeveloped. Firefighters being a relatively small professional group, they have had to make do with material and standard equipment intended for other purposes than fire-fighting. This means that the development of specific products with adapted protective properties has long been neglected.

There are great possibilities for developing protective products directly aimed at firefighters: products that have the inherent capability of preventing or hindering the absorption of hazardous substances. The same is true for equipment that can be repeatedly but effectively decontaminated while maintaining function. There is currently no good selection of such products for those who feel that the aforementioned requirements are reasonable. New and creative innovations and solutions to improve firefighter health will hopefully be developed as knowledge and awareness of the problems grow.

What does turnout gear protect against?

The only thing that is more dangerous than being unprotected is taking risks thinking that you are protected. It is unclear how resilient the firefighters' turnout gear is to foreign substances in the gases, particles and aerosols in their working environment. The Swedish method of extinguishing fires through indoor fire-fighting may very well impact on the amount of foreign substances that the firefighters are exposed to. Turnout gear is designed primarily to shut out the heat of the combustion gases, but we now know that these gases also contain a high amount of toxic and hazardous substances. The firefighter turnout gear is in other words not primarily designed to prevent combustion gas particles from coming into contact with the body.

Indicating instruments

There are a number of products to detect the presence and levels of various hazardous gases in the environment. These products are effective when the user already knows what gases and substances they want to protect themselves from or discover. When a firefighter uses this type of product, one problem is that combustion gases contain so many different substances. It is therefore difficult to determine which of those substances the indicating instrument should be set to detect. Using warning equipment that does not indicate all hazardous substances entails a risk that the firefighter is given a false sense of security.

Glossary

Accumulation	Storage of substances absorbed from the surroundings.
Active operations	The parts of the firefighters' work that takes place in direct connection to an emergency operation.
AFS 2007:7	The Swedish Work Environment Authority's directives, publication Rök- och kemdykning (Breathing Apparatus and Full Suit Rescue).
Breathing Apparatus	Compressed air or various filter masks to protect the airways.
Cancer	Collective name for illnesses involving uncontrolled cell growth that destroys cell tissue.
Chemsuit	Protective clothing intended for measures with particular chemical risks.
Cocktail effects	Interaction of various chemicals, which can be detrimental to health. See Synergies.
Combustion gases	Energy-rich residues from incomplete combustion, in gas and particle form, which are expelled from fire.
Contaminated	Something that has been polluted or exposed to a foreign substance.
Contamination frequency	The number of times a person or object must be cleaned after contamination.
Engineer	Firefighter responsible for the provision of tools during an operation, for example after a traffic accident.
Exposure	When someone is exposed to something hazardous, such as skin being exposed to dangerous chemicals.
Fertility disorder	Disruption in the ability to have children (fertility).
Free radicals	Atom or molecule that is highly reactive, i.e., which easily reacts with other substances.
Full gear	The firefighter's personal protective clothing, when worn correctly, which minimises the thermal effects on their body.
Genetic material	Information coded in DNA.
Good practice award	European award to highlight the best examples of solutions to prevent work environment risks.
Hidden health risks	Risks to health that we do not notice.
Immune defence	The body's defence against pathogens.
Impregnation	Treatment of materials to give them particular properties, such as water-resistant fabrics.

Incident commander	The commanding officer (legal person) of a rescue operation in accordance with the Swedish Civil Protection Act (2003:778).
Incomplete combustion	Combustion without sufficient oxygen input, which means that residual products from the fuel remain or spread. This is always applicable to some extent in accidental fires.
Initial fire	The early part in the course of a fire, when the fire is only set in the initial source and does not yet have uncontrolled access to fuel.
Latency period	The time between initial exposure and symptoms, during which the illness remains undiscovered.
Mixed waste	Regular waste along with other types of waste.
PAH	Polyaromatic hydrocarbons.
Particle	A small portion of matter, such as soot, and small parts of residual substances from combustion.
Precautionary principle	Considering all that is potentially hazardous as risks until proven otherwise.
Pregnancy	Gestation period.
Proliferation	Reproduction (see Pregnancy and Fertility disorder).
PSA test	A medical test to check levels of prostate specific antigens, in order to discover an increased risk of prostate cancer.
Pump operator	The firefighter handling the engine during an accident, and who is responsible for the provision of water for the extinguishing operation.
Pyrolysis	Thermochemical decomposition of organic material at elevated temperatures in the absence of oxygen. The heated material expels volatiles in gas form.
Ready time	The time it takes from the firefighters receiving a call until they are on their way.
Replacement period	The period after which a product, such as turnout gear, is recommended to be discarded.
Routine alarm	A regularly occurring alarm that does not entail any significant deviations in terms of type or scope.
Skellefteå Model	A procedure for firefighters to follow in order to avoid exposure to foreign substances.
Smoke diving	Entering dense smoke (usually to save lives or to extinguish a fire).

Synergy	When the interaction of two or more substances produce a combined effect greater than the sum of their separate effects, i.e., 1+1 is not 2 but 3 or even 4.
Thermal stress	Strain caused by the temperature.
The Swedish Way	See Skellefteå Model.
Turnout gear	The firefighter's regular operative protective clothing.
Toxicity	The degree to which something is toxic.
VOC	Volatile organic compounds. Compounds that cause damage to organs and the nervous system.
Water supply	The firefighters' access to pressurised water at an (indoor) extinguishing operation.

Sources

Barry, M.J. (2001). *Prostate-specific-antigen testing for early diagnosis of prostate cancer*. New England Journal of Medicine. 334(18).

Bengtsson, L., Antonsson, A-B. (1993). *Brandmannens arbetsmiljö – Kemiska hälsorisker och förslag till åtgärder*. SRV.

Cooper, C.P., Merritt, T.L., Ross, L.E., John, L.V., Jorgensen, C.M. (2004). *To screen or not to screen, when clinical guidelines disagree: primary care physicians' use of the PSA test*. Preventive Medicine vol 38.

Crowe, J.W. (1995). *Safety values and safe practices among college students*. Journal of Safety Research.

Davis, S., Mirick, D.K. (2006). *Circadian Disruption, Shift Work and the Risk of Cancer: A Summary of the Evidence and Studies in Seattle*. Cancer Causes & Control. Kluwer Academic Publishers.

Enander, A. (2005). *Människors förhållningssätt till risker, olyckor och kriser*. Räddningsverket U30-650/05.

Enander, A., Johansson, A. (2002). *Säkerhet och risker i vardagen – en studie av uppfattningar, värderingar och beteenden hos allmänheten i Sverige*. Räddningsverket FoU P21-406/02.

Fischhoff, B., Slovic, P., Lichtenstein, S., Read, S., Combs, B. (1978). *How safe is safe enough? – A psychometric study of attitudes towards technological risks and benefits*. Policy Sciences.

Forrest, A. (2012) *International association of fire fighters*, presentation Stockholm 19 september 2012.

Gustafson, P.E. (1998). *Gender Differences in Risk Perception: Theoretical and Methodological perspectives*. Society for Risk Analysis.

Halbesleben, J.R.B., Wakefield, D.S., Wakefield, B.J. (2008). *Work-arounds in health care settings: Literature review and research agenda*. Health Care Management Review: 2008 – Vol 33.

Hertzberg, T., Blomqvist, P., Dalene, M., Skarping, G. (2003). *Particles and isocyanates from fires*. Brandforsk project 324-021. SP report 2003:05.

Karlsson, B., Quintiere, J.G. (2000). *Enclosure fire dynamics*. CRC Press inc.

LeMasters, G., Genaidy, A., Succop, P. (2006). *Cancer Risk Among Fire-fighters: A Review and Meta-analysis of 32 Studies* Journal of occupational and environmental medicine. JOM200238.

- Lidman, U. (2008). *Toxikologi: Läran om gifter*. Studentlitteratur AB.
- Malmsten, C., Rosander, M. (2006). *Rök- och kemdykning*. Svenska Brandförsvärsföreningen (SBF).
- Mayer, F. L. (1977). *Aquatic Toxicology and Hazard Evaluation: Proceedings of the First Annual Symposium on Aquatic Toxicology: a Symposium*. ASTM International.
- McDiarmid, M. A., Lees, P. S. J., Agnew, J., Midzenski, M., Duffy, R. (1991). *Reproductive hazards of fire fighting II*. Chemical hazards. American journal of industrial medicine.
- Mendiola, J. (2008). *Exposure to environmental toxins in males seeking infertility treatment: a case-controlled study*. Reproductive Biomedicine Online. Vol 16.
- Miller, S.M., Fang, C.Y., Diedenbach, M.A., Bales, C.B. (2001). *Tailoring psychosocial interventions to the individual's health information-processing style: The influence of monitoring versus blunting in cancer risk and disease*. American psychological association.
- Mustacchi, P. (1996). *Lung cancer latency and asbestos liability*. Journal of Legal Medicine.
- Mårtensson, O. (2002). *Räddningsstyrkans inre liv: En studie av räddningskårens företagskultur*. Räddningsverket.
- Olshan, A. F., Teschke, K., Baird, P. A. (1989). *Birth defects among offspring of firefighters*. The Johns Hopkins University School of Hygiene and Public Health.
- Ostiguy, C., Lapointe, G., Trottier, M., Ménard, L., Cloutier, Y., Boutin, M., Antoun, M., Normand, C. (2006). *Les effets à la santé reliés aux nanoparticules*. IRSST.
- Pidgeon, N., Kasperson, R.E., Slovic, P. (2003). *The social amplification of risk*. Cambridge university press.
- Rodricks, J. V. (1992). *Calculated Risks: Understanding the Toxicity and Human Health Risks of chemicals in our environment*. Cambridge university press.
- Reason, J. (1997). *Managing the risks of organizational accidents*. Ashgate Publishing Ltd, Aldershot.
- Scandella, F. (2012). *Firefighters: Feeling the heat*. European trade union institute, EPSU/ETUI-publ.

- Sheiner, E.K. (2003). *Effect of occupational exposures on male fertility: literature review*. *Industrial health* 41.
- Sheppard, D. (1986). *Acute effects of routine firefighting on lung function*. *American journal of industrial medicine*.
- Slovic, P. (1987). *Perception of risk*. *Science*.
- Slovic, P. (2002). *Perception of Risk Posed by Extreme Events. Risk Management strategies in an Uncertain World*. Palisades, New York.
- Starr, C. (1969). *Social benefit versus technological risk – What is our society willing to pay for safety?* *Science*.
- Straif, K., Baan, R., Grosse, Y., Secretan, B., Ghissassi, F.E., Bouvard, V., Altoero, A., Benbrahim-Tallaa, L., Coglianò, V. (2007). *Carcinogenicity of shift-work, painting, and fire-fighting*. *The lancet oncology*. vol. 8 nr 12.
- Svensson, S., Månsson, B. (2009). *Undersökning av andningsmiljön för instruktörer vid Räddningsverkets skolor*. Myndigheten för samhällsskydd och beredskap.
- Thors, L., Koch, B., Bergström, U., Forsgren, N., Ågren, L., Ekström, E., Bucht, A. (2013). *Motmedel mot nervgaser. Omvärldsbevakning och experimentell forskning*. FOI Memo 4759.
- Weinstein, N.D. 1989). *Effects of personal experience on selfprotective behavior*. *Psychological Bulletin*.
- Wischmann, T. (2005). *Psychosocial aspects of fertility disorders*. *Der Urologe*. Vol 44.

Appendix

Examples of risk identification at the fire station

- What routines are in place for handling turnout gear which has been decontaminated/dirtied during a callout/exercise/training?
- Is contaminated/dirty turnout gear transported separate from the personnel?
- Is turnout gear washed and dried systematically, and with the correct equipment?
- Is there a possibility to wash and dry turnout gear separate from textiles that sit close to the body (uniform, underwear, training clothes, linen, towels, etc.)?
- What routines are in place for handling dirty/contaminated breathing apparatus?
- Is contaminated breathing apparatus transported separate from the personnel?
- Is the breathing apparatus washed thoroughly by machine/manually prior to delicate wash/testing/restoring?
- What routines are in place for handling other material and equipment contaminated/dirtied during a callout/exercise/training?



A firefighter on an emergency response will often be in an environment where hazardous substances are present; and will be handling equipment and material contaminated by contaminants from the combustion gases. Repeated exposure to harmful substances may pose a greater risk of contracting a serious illness.

To avoid exposure a firefighter should have the option in all situations protect their skin and their respiratory tracts.

In Skellefteå, the fire & rescue service has now for many years developed procedures and working methods for a better work environment both at incident sites and at the fire station. The Skellefteå Model is now a proven way to work. A central part of the model is the procedures for the handling and cleaning of protective clothing and equipment.

This book provides examples and practical tips on how a fire & rescue service with simple means can reduce the amount of contaminants that personnel are exposed to, and thereby achieve a better work environment and improved health for firefighters and other fire & rescue service personnel.

Swedish Civil Contingencies Agency (MSB)

SE-651 81 Karlstad Phone +46 (0)771-240 240 www.msb.se/en

Order No. MSB849 - June 2015 ISBN 978-91-7383-570-1

Request for Taxpayer Identification Number and Certification

**Give Form to the
requester. Do not
send to the IRS.**

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type. See Specific Instructions on page 3.	<p>1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. Myers Supply Inc.</p> <p>2 Business name/disregarded entity name, if different from above</p>	
	<p>3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input checked="" type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____ Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) ▶ _____ </p>	<p>4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p><small>(Applies to accounts maintained outside the U.S.)</small></p>
	<p>5 Address (number, street, and apt. or suite no.) See instructions. 831 Third Street</p> <p>6 City, state, and ZIP code Hot Springs, AR 71913</p> <p>7 List account number(s) here (optional)</p>	<p>Requester's name and address (optional)</p>

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td></td> <td></td> </tr> </table>					-	-				
-	-									
or										
Employer identification number										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; text-align: center;">7</td> <td style="width: 25%; border: 1px solid black; text-align: center;">1</td> <td style="width: 25%; border: 1px solid black; text-align: center;">-</td> <td style="width: 25%; border: 1px solid black; text-align: center;">0</td> <td style="width: 25%; border: 1px solid black; text-align: center;">5</td> <td style="width: 25%; border: 1px solid black; text-align: center;">0</td> <td style="width: 25%; border: 1px solid black; text-align: center;">0</td> <td style="width: 25%; border: 1px solid black; text-align: center;">1</td> <td style="width: 25%; border: 1px solid black; text-align: center;">6</td> <td style="width: 25%; border: 1px solid black; text-align: center;">3</td> </tr> </table>	7	1	-	0	5	0	0	1	6	3
7	1	-	0	5	0	0	1	6	3	

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	<p>Signature of U.S. person ▶ </p>	<p>Date ▶ <u>5/12/20</u></p>
------------------	------------------------------------	------------------------------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
 - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
 - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
 - Form 1099-S (proceeds from real estate transactions)
 - Form 1099-K (merchant card and third party network transactions)
 - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
 - Form 1099-C (canceled debt)
 - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.