



System Assessment and Validation for Emergency Responders (SAVER)

General Purpose Outer Work Gloves Market Survey Report

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System Assessment and Validation for Emergency Responders

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FOREWORD

The U.S. Department of Homeland Security (DHS) established the System Assessment and Validation for Emergency Responders (SAVER) Program to assist emergency responders making procurement decisions. Located within the Science and Technology Directorate (S&T) of DHS, the SAVER Program conducts objective assessments and validations on commercial equipment and systems, and provides those results along with other relevant equipment information to the emergency response community in an operationally useful form. SAVER provides information on equipment that falls within the categories listed in the DHS Authorized Equipment List (AEL). The SAVER Program mission includes:

- Conducting impartial, practitioner-relevant, operationally oriented assessments and validations of emergency responder equipment; and
- Providing information that enables decision-makers and responders to better select, procure, use, and maintain emergency responder equipment.

Information provided by the SAVER Program will be shared nationally with the responder community, providing a life- and cost-saving asset to DHS, as well as to Federal, state, and local responders.

The SAVER Program is supported by a network of Technical Agents who perform assessment and validation activities. Further, SAVER focuses primarily on two main questions for the emergency responder community: “What equipment is available?” and “How does it perform?”

As a SAVER Program Technical Agent, the U.S. Army Natick Soldier Research, Development and Engineering Center (NSRDEC) has been tasked to provide expertise and analysis on key subject areas, such as personal protective equipment, rapid deployment shelters, and shelf stable food. In support of this tasking, NSRDEC conducted a market survey of general purpose outer work gloves, which fall under the AEL reference number 01ZA-02-GLVW. The following report presents the survey’s findings.

Visit the SAVER Web site at www.dhs.gov/science-and-technology/SAVER for more information on the SAVER Program or to view additional reports on outer work gloves and other technologies.

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1. MARKET SURVEY OBJECTIVES

The purpose of this market survey report is to provide information on currently available general purpose outer work gloves (hereinafter referred to as work gloves) (Authorized Equipment List [AEL] reference number 01ZA-02-GLVW). The information provided herein is meant to be useful in determining the types of work gloves available for use by responders.

The emergency response community has a common need for work gloves; however, there is no one-glove-fits-all solution. Emergency responders have a need for basic protection from cut, stab, puncture, impact, pathogen, flame, water, heat, and cold. They also require dexterity, tactility, and durability. Responders consider work gloves an important piece of personal protective equipment and most find it necessary to carry more than one pair to meet their needs.

This market survey represents an effort to exercise due diligence in the collection of valuable support information for emergency responders. It is not intended to be a complete catalog of available work gloves.

2. RESEARCH METHODOLOGY

The market research methods used in this survey comply with the System Assessment and Validation for Emergency Responders (SAVER) Program guidelines for market surveys. In addition, these market research procedures comply with the Federal Acquisition Regulation (FAR); specifically, Section 10, Market Research.

Four methodologies were used in the work gloves market research: (1) Internet research, including product catalogs; (2) Request for Information (RFI); (3) a focus group; and (4) subject matter expertise.

2.1 Internet Research

The Internet was employed as a resource in this survey. Specific product information, including manufacturers, features, specifications, and equipment options, was identified by utilizing this resource.

2.2 Request For Information (RFI)

An RFI was posted on the Federal Business Opportunities (FedBizOpps) Web site (<http://www.fbo.gov>) in March 2011 inviting manufacturers to provide information on their currently available work gloves. The notice clarified several important aspects of the request: (1) it is not a request for proposals, (2) it is for information gathering and planning purposes only, (3) the government does not intend to award a contract based on the RFI or otherwise pay for the information solicited, and (4) there will not be an endorsement for any product or manufacturer. Manufacturers were asked to identify and describe their particular brand or product in regard to reliability, maintainability, durability, performance, and cost, as well as, provide their company address and contact information.

2.3 Focus Group

In September 2010, emergency response personnel participated in a focus group. Participants possessed backgrounds in fire, law enforcement, and emergency medical service, and represented a broad range of geographic regions and environments. The group's primary purpose was to help identify criteria that users might consider important and useful when procuring this type of equipment. For more information on the focus group deliberations, see the *General Purpose Outer Work Gloves Focus Group Report* located on the SAVER Web site at <https://www.dhs.gov/science-and-technology/SAVER>.

2.4 Subject Matter Expertise

Subject matter experts from the U.S. Army Natick Soldier Research, Development and Engineering Center, as well as other government agencies, provided technical expertise in the review of information and development of this report.

3. INTRODUCTION TO GENERAL PURPOSE OUTER WORK GLOVES

Work gloves are needed and used in everyday assignments for almost all emergency responder operations. Work gloves provide personal protection that includes both safety and comfort. The work gloves come in a variety of materials with salient characteristics that can affect the performance. There is no one-glove-fits-all solution for all responder needs.

State, local, and tribal jurisdictions use the U.S. Department of Homeland Security (DHS) AEL guidelines to comply with Federal grant requirements in their selection of equipment for procurement. DHS directs state and local responders to refer to specific program guidelines for the list of authorized equipment categories eligible for purchase through that particular grant program. Work gloves are under the AEL category for Personal Protective Equipment and are described as "outer work gloves for physical hazard protection (certified as compliant with ANSI/ISEA 105)."

3.1 Standards

The following standard is used by industry for work gloves.

American National Standards Institute (ANSI)/International Safety Equipment Association (ISEA) 105: Hand Protection Selection Criteria is designed to assist users and employers to select appropriate gloves for identifiable workplace hazards. An overview of ANSI/ISEA Standard 105 is provided in Table 3-1.

Table 3-1. ANSI/ISEA Standard 105

| | |
|-------------------------|--|
| Standards Agency | American National Standards Institute 1899 L Street, NW 11th Floor Washington, DC 20036 202-293-8020 |
| Summary | <p>ANSI/ISEA 105-2005: Hand Protection Selection Criteria (2005) is the benchmark standard for specific performance properties related to chemical and industrial applications. This standard provides performance ranges for many different properties such as: cut, puncture, and abrasion resistance, and heat and flame protection, based on standardized test methods. The levels of performance are specified for each property using a numeric rating scheme. The criteria are set as pass/fail, with zero (0) representing the minimal protection. Both ASTM International (ASTM) and European Committee for Standardization (EN 388) testing methods are used to determine test results.</p> |
| Standard Update | <p>ANSI/ISEA 105-2011: Hand Protection Selection Criteria (2011) The current designation of ANSI 105 is 2011 with the latest revision published in February 2011. The majority of the document remains the same, with the most notable change being the acceptance of different ASTM methods for evaluating cut-resistance performance.</p> |

Note: Because this report was prepared close to the time of the update in the ANSI/ISEA standard, most of the products represented as ANSI/ISEA certified used the 2005 version of the standard.

When referring to the numeric rating scheme for ANSI/ISEA 105, Level 5 gloves would offer greater cut protection than Level 1 gloves. However, it is important to keep in mind that there can be tradeoffs. Although Level 5 gloves may offer more cut protection, they may also have decreased dexterity because of the heavier weight material. It is up to the emergency responder agency to identify the level of protection necessary, and evaluate the risk and performance tradeoffs.

3.2 Equipment Applications

The relevant operational environments/mission areas where work gloves could help to improve emergency responder safety includes, but are not limited to:

- Performing extrication and rescue of trapped and/or injured people;
- Emergency medical procedures;
- Firing weapons;
- High temperature environments;
- Use with ropes;
- Situations where there are threats from sharp objects, needle punctures, or pathogens;
- Cold/wet weather conditions; and
- Motorcycle or marine patrol.

3.3 Glove Material Definitions

Gloves come in a variety of materials with salient characteristics that can affect the performance. To assist users in understanding the salient characteristics, definitions for some of the materials are provided.

Amara® is a synthetic suede material that closely resembles leather in its surface feel, appearance, durability, and air permeability.

Aramid fibers are a class of heat-resistant and high-strength synthetic fibers.

Armortex® is a bullet and blast resistant product available in a variety of protection levels.

Clarino™ is a synthetic leather-like material. It can be made to simulate suede or top grain leather and is washable.

Cordura® is an air treated nylon fabric that has a rough fuzzy texture. It is known for its abrasion resistance.

EVA (Ethylene Vinyl Acetate) is a material popularly known as expanded rubber or foam rubber.

Keprotect® is a brand name for a protective fabric that was originally developed for motorcycle racing. Some basic properties are: abrasion proof, tear resistant, and temperature resistant.

Kevlar® is a para-aramid fiber that is extremely strong, has low combustibility, and will not melt or drip. It provides levels of cut resistance depending on the weight and weave of the fabric. Kevlar fabric may be used for a lining of a glove to offer additional cut/stab resistance.

Kodra is an air treated nylon fabric that has a rough fuzzy texture. It is known for its abrasion resistance. (see Cordura)

Latex is a polymer used to make rubber. Latex is resistant to chemicals and can be used to provide stretch to fabrics. There are no synthetic ingredients in 100% natural latex.

Leather is a natural product with characteristics that make it comfortable to wear, and give it strength and flexibility. Quality leather offers great overall abrasion resistance and grip when placed on the palm.

Neoprene is a synthetic material resembling rubber.

Nitrile is a synthetic rubber resistant to oil, fuel, and other chemicals.

Nylon and Spandex (elastic) combination is a synthetic material that offers durability, strength, abrasion resistance, flexibility, and dexterity. It has low water absorption and is quick drying.

PVC (Polyvinyl Chloride) is a widely produced plastic.

Spandex is a synthetic stretch fiber or fabric made from polyurethane.

Spectra® fiber is made from ultra-high molecular weight polyethylene (i.e., durable plastic). It is a very strong, yet lightweight manmade fiber.

SuperFabric® consists of “plates” that may be printed onto many different base fabrics. The performance depends on the combinations of the number of layers, thickness, and surface coatings. These materials have added durability, abrasion resistance, slash resistance, stain resistance, and grip.

Thermoplastic is a synthetic plastic or resin.

TurtleSkin® is an aramid material that offers protection from both punctures and cuts. The material is very tightly woven to achieve its protective characteristics.

Visco-Elastic is a material that exhibits properties of both liquids (viscous solutions) and solids (elastic materials) that enable it to maintain its shape, stretch, and provide shock absorption.

4. CURRENTLY AVAILABLE WORK GLOVES

There are multiple work gloves available and it would be advantageous for responders to investigate various options when considering the appropriate work gloves for procurement. Suggested considerations include intended uses, performance capabilities, maintenance requirements, and manufacturer recommendations.

The work gloves in Tables 4-1 and 4-2, provide some level of protection from cut, stab, puncture, impact, pathogens, flame, water, heat, or cold. They also provide a level of dexterity, tactility, and durability. While the SAVER Program provides information on equipment that falls within the categories listed in the DHS AEL, not all the equipment listed in the market survey is certified to the standards identified as relevant to that AEL category.

The purpose of this market survey is to provide comprehensive information to emergency responder agencies, which in turn need to make decisions appropriate to their mission and procurement rules as to whether they choose a product that is certified to a standard, simply meets the standard, or is silent with respect to that standard. Any information made available to the SAVER Program regarding a product's certification status is identified in Table 4-2. The salient characteristics of the materials used in the gloves may help to determine the type of performance that can be expected.

Information listed in the table was provided by manufacturers and/or obtained from various Internet sources and has not been independently verified by the SAVER Program. Information should be verified with each respective manufacturer or applicable distributor when purchasing. Some manufacturers produce work gloves that may be sold under another manufacturer or distributor label.

4.1 Index of Work Gloves

The work gloves listed below are listed in alphabetical order by manufacturer, and then by price. The checked box indicates that the glove manufacturer claims some level of protection for the indicated hazard.

Table 4-1. Index of Work Gloves

| Manufacturer | Glove Name/Type | Abrasion | Cut | Flame | Impact | Puncture | Other* | Cost |
|---------------------------|-------------------------------------|----------|-----|-------|--------|----------|--------|---------|
| Ansell Hawkeye | HyFlex Utility | ✓ | ✓ | | | | | \$8.98 |
| Ansell Hawkeye | PowerFlex Utility | ✓ | ✓ | | | ✓ | | \$10.47 |
| Ansell Hawkeye | ActvArmr Light Duty Utility | ✓ | | | | | ✓ | \$24.53 |
| Camelbak Products, LLC | Hi-Tech Impact II CT | ✓ | | | ✓ | ✓ | ✓ | \$56.50 |
| Camelbak Products, LLC | Magnum Force Glove | ✓ | | | ✓ | ✓ | ✓ | \$75.00 |
| Ergodyne | Proflex Fire and Rescue Standard | ✓ | | | ✓ | ✓ | | \$33.95 |
| Ergodyne | Proflex Cut Resistant PVC Handlers | ✓ | ✓ | | ✓ | | | \$37.45 |
| Ergodyne | Proflex Fire and Rescue Rope | ✓ | ✓ | | ✓ | ✓ | | \$39.15 |
| Ergodyne | Proflex Cut Resistant Trades | ✓ | ✓ | | ✓ | | | \$39.95 |
| HWI Gear, Inc. | Kevlar Lined Cut Resistant | ✓ | ✓ | | | | | \$25.00 |
| HWI Gear, Inc. | Fire Resistant Tactical Glove | | ✓ | ✓ | ✓ | | | \$40.00 |
| HWI Gear, Inc. | FR Hard Knuckle Tactical Glove | | ✓ | ✓ | ✓ | | | \$52.00 |
| HexArmor | Leather Tactical Enforcement | ✓ | ✓ | | | ✓ | ✓ | \$34.34 |
| HexArmor | Chrome Series: Cut 5 Impact Slipfit | ✓ | ✓ | | ✓ | | ✓ | \$35.48 |
| HexArmor | GGT5 Mud Glove | ✓ | ✓ | | ✓ | ✓ | ✓ | \$45.98 |
| Ironclad Performance Wear | Ranchworx | | ✓ | | ✓ | | | \$22.99 |
| Ironclad Performance Wear | General Utility | | | | ✓ | | | \$24.99 |
| Ironclad Performance Wear | Heavy Utility Landscaper | | | | ✓ | | | \$26.99 |
| Ironclad Performance Wear | Tac-Ops | | | | ✓ | | ✓ | \$27.99 |
| Ironclad Performance Wear | Icon Heavy Lifter | | | | ✓ | | | \$31.99 |
| Mechanix Wear | FastFit | ✓ | ✓ | | | ✓ | | \$15.95 |
| Mechanix Wear | Original Covert | ✓ | ✓ | | | ✓ | | \$24.99 |
| Mechanix Wear | M-Pact Covert | ✓ | ✓ | | | ✓ | | \$36.95 |
| Mechanix Wear | M-Pact 2 Covert | ✓ | ✓ | | | ✓ | | \$40.95 |
| Valeo | Leather Multi-Task | ✓ | ✓ | | | | | \$14.25 |
| Warwick Mills, Inc. | TurtleSkin Bravo | | ✓ | | | ✓ | ✓ | \$74.00 |
| Warwick Mills, Inc. | TurtleSkin Alpha | | ✓ | | | ✓ | ✓ | \$82.00 |

*Other refers to needle, slash, vibration, oil or water resistant. Exact specifications are provided in Table 4-2.

4.2 Sample of Currently Available Work Gloves

The work gloves listed below are listed in alphabetical order by manufacturer, and then by price.

Table 4-2. Sample of Currently Available Work Gloves

| Model/ Manufacturer | Photo | Key Features | Cost |
|---|--|---|----------------|
| <p>HyFlex® Utility Glove 11-510</p> <p>Manufactured by Ansell Hawkeye</p> |  <p><i>Photo Courtesy of Ansell Hawkeye</i></p> | <p>Materials: Kevlar knit glove with high-grip foamed nitrile coated palm and fingers</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 4 (ANSI/ISEA) ✓ Cut resistant: Level 2 (ANSI/ISEA) <p>Donning and Doffing: Form fitted glove</p> | <p>\$8.98</p> |
| <p>PowerFlex® Utility Glove 80-600</p> <p>Manufactured by Ansell Hawkeye</p> |  <p><i>Photo Courtesy of Ansell Hawkeye</i></p> | <p>Materials: Kevlar liner, thick palm coating of natural rubber latex, crinkle finish latex coating</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 4 (ANSI/ISEA) ✓ Cut resistant: Level 2 (ANSI/ISEA) ✓ Puncture resistant <p>Donning and Doffing: Form fitted glove</p> | <p>\$10.47</p> |
| <p>ActvArmr Light Duty Utility Glove</p> <p>Manufactured by Ansell Hawkeye</p> |  <p><i>Photo Courtesy of Ansell Hawkeye</i></p> | <p>Materials: All leather</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Water resistant <p>Donning and Doffing: Slip on glove, adjustable wrist strap, pull tab</p> | <p>\$24.53</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|---|--|----------------|
| <p>Hi-Tech Impact II CT Glove</p> <p>Manufactured by Camelbak® Products, LLC</p> |  <p><i>Photo courtesy of Camelbak Products, LLC</i></p> | <p>Materials: Spandex back, Clarino synthetic leather palm, high-density knuckle padding</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 3 (ANSI/ISEA) ✓ Impact resistant ✓ Puncture resistant: Level 2 (ANSI/ISEA) ✓ Vibration resistant <p>Donning and Doffing: Snug fit, two-way stretch, hook and loop wrist closure</p> | <p>\$56.50</p> |
| <p>Magnum Force Glove</p> <p>Manufactured by Camelbak Products, LLC</p> |  <p><i>Photo courtesy of Camelbak Products, LLC</i></p> | <p>Materials: Spandex, stretch Kodra, Clarino synthetic leather palm, knuckles reinforced with Kevlar, EVA padding</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Palm Pad, Level 2 (EN 388) ✓ Impact resistant: Hard knuckle ✓ Puncture resistant: Level 1 (EN 388) ✓ Vibration Resistant <p>Donning and Doffing: Snug fit, two-way stretch, hook and Loop wrist closure, polyester cord</p> | <p>\$75.00</p> |
| <p>Proflex® 726 Fire and Rescue Standard Glove</p> <p>Manufactured by Ergodyne®</p> |  <p><i>Photo courtesy of Ergodyne</i></p> | <p>Materials: Spandex shell, synthetic leather on palm, fingers and thumb saddle, Kevlar stitching, PVC-reinforced fingertip, EVA knuckle and palm padding</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Impact resistant ✓ Puncture resistant: Palm, back of fingers <p>Donning and Doffing: Gauntlet cuff</p> | <p>\$33.95</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|--|---|----------------|
| <p>Proflex 820CR Cut Resistant PVC Handlers Glove</p> <p>Manufactured by Ergodyne</p> |  <p><i>Photo courtesy of Ergodyne</i></p> | <p>Materials: Textured PVC palm and fingertips, spandex back, neoprene knuckle pad, terry thumb brow wipe, lined with 100% Kevlar</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistance: Palm, Level 3 (ANSI/ISEA) ✓ Impact resistant <p>Donning and Doffing: Low-profile closure with woven elastic cuff, pull tab</p> | <p>\$37.45</p> |
| <p>Proflex® 740 Fire and Rescue Rope Glove</p> <p>Manufactured by Ergodyne</p> |  <p><i>Photo courtesy of Ergodyne</i></p> | <p>Materials: Double layer Amara palm and fingers, EVA knuckle pad, double-reinforced EVA-padded rope zone, Kevlar stitching</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 3 (EN 388) ✓ Cut resistant: Palm and back of fingers, Level 3 (EN 388) ✓ Impact resistant ✓ Puncture resistant: Palm, back of fingers, Level 3 (EN 388) <p>Donning and Doffing: Adjustable wrist cinch anchor, wrist grommet</p> | <p>\$39.15</p> |
| <p>Proflex 710CR Cut Resistant Trades Glove</p> <p>Manufactured by Ergodyne</p> |  <p><i>Photo courtesy of Ergodyne</i></p> | <p>Materials: Visco-elastic gel polymer palm pad, PVC on palm and fingers, spandex with neoprene knuckle pad, synthetic leather palm and fingers, terry thumb brow wipe, lined with 100% Kevlar</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistance: Palm, Level 3 (ANSI/ISEA) ✓ Impact resistant <p>Donning and Doffing: Hook and loop closure</p> | <p>\$39.95</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|--|---|----------------|
| <p>Kevlar Lined Cut Resistant Glove - KLD100</p> <p>Manufactured by HWI Gear, Inc.®</p> |  <p><i>Photo courtesy of HWI Gear, Inc.</i></p> | <p>Materials: All leather, Kevlar liner</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistant: Glove liner <p>Donning and Doffing: Adjustable wrist closure, snug secure fit</p> | <p>\$25.00</p> |
| <p>Fire Resistant Tactical Glove - CG200/400</p> <p>Manufactured by HWI Gear, Inc.</p> |  <p><i>Photo courtesy of HWI Gear, Inc.</i></p> | <p>Materials: Kevlar knit material, leather palm, hard knuckle protection</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Cut resistant ✓ Flame resistant ✓ Impact resistant: Knuckles <p>Donning and Doffing: Adjustable wrist closure, snug secure fit</p> | <p>\$40.00</p> |
| <p>FR Hard Knuckle Tactical Glove - HKTG200/400</p> <p>Manufactured by HWI Gear, Inc.</p> |  <p><i>Photo courtesy of HWI Gear, Inc.</i></p> | <p>Materials: Kevlar knit material, leather palm, hard knuckle protection</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Cut resistant: Back of hand ✓ Flame resistant: Back of hand ✓ Impact resistant <p>Donning and Doffing: Adjustable wrist closure, snug secure fit</p> | <p>\$52.00</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|--|--|----------------|
| <p>Leather Tactical Enforcement Glove - 4046</p> <p>Manufactured by HexArmor</p> |  <p><i>Photo courtesy of HexArmor</i></p> | <p>Materials: SuperFabric and synthetic leather with PVC dot pattern on palm, thermoplastic rubber guards on back of hand, cut resistant liner on back of hand</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistant: Level 5 (EN 388) ✓ Needle stick and puncture resistant <p>Donning and Doffing: Slip on</p> | <p>\$34.34</p> |
| <p>Chrome Series: Cut 5 Impact Slipfit Glove - 4028</p> <p>Manufactured by HexArmor</p> |  <p><i>Photo courtesy of HexArmor</i></p> | <p>Materials: SuperFabric and synthetic leather palm with PVC grip pattern, thermoplastic rubber guards on back of hand</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistant: Level 5 (ANSI/ISEA) ✓ Impact resistant: Back of hand ✓ Oil resistant <p>Donning and Doffing: Slip on</p> | <p>\$35.48</p> |
| <p>GGT5® Mud Glove - 4021x</p> <p>Manufactured by HexArmor®</p> |  <p><i>Photo courtesy of HexArmor</i></p> | <p>Materials: SuperFabric palm, thermoplastic rubber guards on back of hand</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistant: Level 5 (ANSI/ISEA) ✓ Impact resistant: Back of hand ✓ Puncture resistant ✓ Oil resistant <p>Donning and Doffing: Slip on</p> | <p>\$45.98</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|---|---|----------------|
| <p>Ranchworx® Glove</p> <p>Manufactured by Ironclad® Performance Wear</p> |  <p><i>Photo courtesy of Ironclad Performance Wear</i></p> | <p>Materials: Leather, Kevlar, flexible finger and knuckle impact protection</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Cut resistant ✓ Impact resistant <p>Donning and Doffing: Slip-fit cuff</p> | <p>\$22.99</p> |
| <p>General Utility™ Glove</p> <p>Manufactured by Ironclad Performance Wear</p> |  <p><i>Photo courtesy of Ironclad Performance Wear</i></p> | <p>Materials: Synthetic leather palm, rubberized knuckle impact protection, padded palm</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Impact resistant: Knuckles <p>Donning and Doffing: Form fitting</p> | <p>\$24.99</p> |
| <p>Heavy Utility™ Landscaper Glove</p> <p>Manufactured by Ironclad Performance Wear</p> |  <p><i>Photo courtesy of Ironclad Performance Wear</i></p> | <p>Materials: Synthetic leather, knuckle impact protection, padded palm</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Impact resistant <p>Donning and Doffing: Form fitting</p> | <p>\$26.99</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|--|---|----------------|
| <p>Tac-Ops™ Glove</p> <p>Manufactured by Ironclad Performance Wear</p> |  <p><i>Photo courtesy of Ironclad Performance Wear</i></p> | <p>Materials: Synthetic leather, knuckle impact protection, padded palm</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Impact resistant ✓ Oil/water resistant <p>Donning and Doffing: Form fitting</p> | <p>\$27.99</p> |
| <p>Icon™ Heavy Lifter™ Glove</p> <p>Manufactured by Ironclad Performance Wear</p> |  <p><i>Photo courtesy of Ironclad Performance Wear</i></p> | <p>Materials: Synthetic leather, knuckle impact protection, finger sidewall material, terry cloth sweat wipe</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Impact resistant <p>Donning and Doffing: Form fitting, wrap around wrist support</p> | <p>\$31.99</p> |
| <p>FastFit® Glove</p> <p>Manufactured by Mechanix Wear</p> |  <p><i>Photo courtesy of Mechanix Wear</i></p> | <p>Materials: Clarino synthetic leather palm, stretch panels between the fingers, two-way stretch spandex padded back</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 2 (EN 388) ✓ Cut resistant: Level 1 (EN 388) ✓ Puncture resistant: Level 1 (EN 388) <p>Donning and Doffing: Easy on-off design with full elastic closure</p> | <p>\$15.95</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|---|---|----------------|
| <p>Original® Covert Glove</p> <p>Manufactured by Mechanix Wear®</p> |  <p><i>Photo courtesy of Mechanix Wear</i></p> | <p>Materials: Clarino synthetic leather palm and fingertips, two-way stretch spandex top</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 2 (EN 388) ✓ Cut resistant: Level 1 (EN 388) ✓ Puncture resistant: Level 1 (EN 388) <p>Donning and Doffing: Form fitting, rubber hook and loop cuff closures</p> | <p>\$24.99</p> |
| <p>M-Pact® Covert Glove</p> <p>Manufactured by Mechanix Wear</p> |  <p><i>Photo courtesy of Mechanix Wear</i></p> | <p>Materials: Clarino synthetic leather palm and fingertips, molded rubber exoskeleton, knuckle guard, tapered finger stretch side panels</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 2 (EN 388) ✓ Cut resistant: Level 1 (EN 388) ✓ Puncture resistant: Level 1 (EN 388) <p>Donning and Doffing: Form fitting, thermal plastic rubber hook and loop cuff closure and two way stretch spandex top</p> | <p>\$36.95</p> |
| <p>M-Pact® 2 Covert Glove</p> <p>Manufactured by Mechanix Wear</p> |  <p><i>Photo courtesy of Mechanix Wear</i></p> | <p>Materials: Clarino synthetic leather palm and fingertips, molded neoprene cuff, molded rubber finger protection, EVA knuckle protection, tapered finger stretch side panels</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant: Level 2 (EN 388) ✓ Cut resistant: Level 1 (EN 388) ✓ Puncture resistant: Level 1 (EN 388) <p>Donning and Doffing: Form fitting, thermal plastic rubber hook and loop cuff closure and two way stretch spandex top</p> | <p>\$40.95</p> |

| Model/ Manufacturer | Photo | Key Features | Cost |
|--|---|--|----------------|
| <p>Leather Multi-Task Glove - V620/GMTL Glove</p> <p>Manufactured by Valeo®</p> |  <p><i>Photo courtesy of Valeo</i></p> | <p>Materials: Full leather, Kevlar lined, Kevlar stitching</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Abrasion resistant ✓ Cut resistant <p>Donning and Doffing: Elastic pull-on cuff</p> | <p>\$14.25</p> |
| <p>TurtleSkin Bravo Glove</p> <p>Manufactured by Warwick Mills®, Inc.</p> |  <p><i>Photo courtesy of Warwick Mills, Inc.</i></p> | <p>Materials: TurtleSkin aramid fabric layer on palm and fingertips, high stretch mesh knit backing</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Needle stick, cut and puncture resistant: palm and fingertips ✓ Slash resistant: Back of hand <p>Donning and Doffing: Hook and loop cuff closure, snug fit</p> | <p>\$74.00</p> |
| <p>TurtleSkin® Alpha Glove</p> <p>Manufactured by Warwick Mills, Inc.</p> |  <p><i>Photo courtesy of Warwick Mills, Inc.</i></p> | <p>Materials: TurtleSkin aramid fabric lining on palm and fingertips, high stretch knit backing</p> <p>Performance:</p> <ul style="list-style-type: none"> ✓ Needle stick, cut and puncture resistant: palm and fingertips ✓ Slash resistant: Back of hand <p>Donning and Doffing: Hook and loop cuff closure, snug fit</p> | <p>\$82.00</p> |

5. MANUFACTURER CONTACT INFORMATION

Contact information for the manufacturers included in this report is listed in Table 5-1. Manufacturers are ordered alphabetically.

Table 5-1. Manufacturer Contact Information

| Manufacturer | Address/ Phone | Website/E-mail |
|------------------------------|--|---|
| Ansell Hawkeye | 200 Schultz Drive Red Bank, NJ 07701 800-426-7535 | http://www.ansellhawkeye.com E-mail: ActivArmrSales@Ansell.com |
| Camelbak Products, LLC | 2000 S. McDowell Boulevard Suite 200 Petaluma, CA 94954 800-767-8725 | http://www.camelbak.com/Military-Tactical.aspx E-mail: sales@camelbak.com |
| Ergodyne | 1021 Bandana Boulevard East Suite 220 St. Paul, MN 55108 800-225-8238 | http://www.ergodyne.com E-mail inquiries can be submitted to above Web site |
| HWI Gear, Inc. | 201 Bryant Street 2C Ojai, CA 93023 855-646-3879 | http://www.hwigear.com E-mail: customerservice@hwigear.com |
| HexArmor | 2000 Oak Industrial Drive NE Grand Rapids, MI 49505 877-692-7667 | http://www.hexarmor.com E-mail: info@hexarmor.com |
| Ironclad Performance Wear | 2201 Park Place, Suite 101 El Segundo, CA 90245 888-314-3197 | http://www.ironclad.com E-mail: customerservice@ironclad.com |
| Mechanix Wear | 28525 Witherspoon Parkway Valencia, CA 91355 800-222-4296 | http://www.mechanix.com E-mail: info@mechanix.com |
| Valeo | 19275 W. Capitol Drive Suite L01 Brookfield, WI 53045 800-634-2704 | http://www.valeowork.com E-mail: valeoinfo@valeoinc.com |
| Warwick Mills, Inc. | 301 Turnpike Road P.O. Box 409 New Ipswich, NH 03071 888-477-4675 | http://www.turtleskin.com E-mail: inquiries@turtleskin.com |

6. CONCLUSION

The use of general purpose outer work gloves for personal protection has many benefits including safety and comfort. There are many types of general purpose outer work gloves available with a variety of materials and glove designs supporting many different work glove applications. Only a portion of those gloves are included in this report. The SAVER Program recommends that emergency response personnel investigate the many options, and procure work gloves that are best suited for their individual needs.