USER INSTRUCTION, SAFETY AND TRAINING GUIDE

NFPA 1999 Compliant Garment for Emergency Medical Operations

7200 POE AVE.
DAYTON, OHIO 45414
www.LIONprotects.com
August 2018

⚠ DANGER

This Guide should be removed only by the end user! In the event this Guide becomes detached from the Garment, turn this Guide in to the authorities responsible for the care and maintenance of the Garment.

You MUST read this Guide and all Garment Safety, Cleaning and Information labels before wearing.

This Garment provides limited protection against abrasion, puncture and bodily fluids.

This Garment does NOT include an inner thermal liner and MUST NOT BE WORN FOR ANY FIREFIGHTING OPERATIONS.

⚠ DANGER

You must read and understand these warnings and instructions. DO NOT WEAR THIS GARMENT FOR ANY FIRE FIGHTING ACTIVITY. 6588
Failure to follow these warnings and instructions will result in serious injury or death.

- Wear this garment ONLY FOR EMERGENCY PATIENT CARE DURING EMERGENCY MEDICAL OPERATIONS
- Before wearing this garment, you must read and understand the User Instruction, Safety and Training Guide provided with this garment. The guide explains: 1. critical safety information and protective clothing limitations. 2. proper sizing/adjustment. 3. procedures for putting on and removing protective clothing. 4. how to wash, decontaminate, inspect and store this garment. 5. use consistent with NFPA 1500. 6. limitations on useful life and retirement procedures.
- You should wear this garment only if you have been **properly trained in emergency medical operations** and have knowledge of the proper selection, fit, use, care and limitations of protective clothing and equipment.

Download the User Instruction, Safety and Training Guide at
www.LIONppe.com
Or contact LION @ 800-421-2926

- **This garment provides limited protection against flame and no protection against heat or compression.** Minimize exposure to heat. You may be burned without warning or without receiving damage to garment. Avoid contact with hot objects. Skin burns occur when skin reaches a temperature of 118 F. Fires burn at temperatures up to 2000 F.
- Moisture and/or compression in your garment may reduce protection. Exertion in hot conditions **may result in heat exhaustion or poor judgment.** If you feel dizziness, dehydration, loss of focus, or shortness of breath, get to a safe area, remove this garment, and seek medical attention.
- **Do not use this garment if it is damaged or dirty, garments will not provide the intended protection.** ALWAYS follow manufacturer's cleaning instructions.
- **This garment has limited useful life.** You must inspect regularly and retire when appropriate according to the User Instruction, Safety and Training Guide.

DO NOT REMOVE OR WRITE ON THIS LABEL!
Rev 2.0 8/18

LION® MedPro™

QUESTIONS, WRITE OR CALL IMMEDIATELY:
LION
7200 POE AVE., SUITE 400
DAYTON, OH 45414
1-800-421-2926

CLEANING AND STORAGE INSTRUCTIONS

- User must clean, inspect, maintain, store and alter only in accordance with the USER INSTRUCTION, SAFETY AND TRAINING GUIDE. Download at **www.LIONppe.com**
- Never use chlorine bleach. Chlorine bleach will significantly compromise the protection afforded by textile and film materials utilized in the contruction of the garment.
- Fasten zippers and hooks and loop and turn inside out or place in a laundry bag.
- Machine wash, warm water, using only liquid detergent and if needed, liquid non-chlorine bleach. Double rinse in cool water. Never use fabric softeners.
- Never dry clean.
- Dry by hanging in open area, out of direct or indirect sunlight and fluorescent light.
- Store out of direct or indirect sunlight and fluorescent light.

THIS GARMENT MEETS THE MULTIPLE-USE EMERGENCY MEDICAL GARMENT REQUIREMENTS OF THE NFPA 1999, STANDARD ON PROTECTIVE CLOTHING AND ENSEMBLES FOR EMERGENCY MEDICAL OPERATIONS, 2018 EDITION.
DO NOT REMOVE THIS LABEL
PROTECTIVE MULTIPLE-USE GARMENT FOR EMERGENCY MEDICAL OPERATIONS IN ACCORDANCE WITH NFPA 1999-2018. 3KF9

CLASSIFIED UL MH29126

This garment meets the personal protective equipment criteria of the US Dept. of Labor OSHA Bloodborne Pathogens Standard, Title 29 CFR, Part 1910.1030.

6589
Rev. 2.0 8/18

2. Cleaning Labels

3. Garment Information Label

⚠ WARNING

THIS MOISTURE BARRIER COMPONENT
MUST BE ATTACHED TO THE OUTER SHELL

This moisture barrier component provides NO protection against heat or flame and limited protection against chemical or biological hazards. Never wear this moisture barrier component without the SAME SIZE AND MODEL OUTERSHELL, as identified on labels located on each detachable component.

To reduce the risk of injury or death, you must assemble and wear together ALL of the following items: 1. protective coat and pant with outer shell and attached moisture barrier 2. gloves 3. boots 4. helmet and 5. eye protection. ALWAYS make sure that all ensemble layers have the proper overlap and that all items fit with adequate looseness. Tight fit restricts mobility.

MADE IN THE U.S.A.
DO NOT REMOVE OR WRITE ON THIS LABEL!

6591

4. Garment Liner Attachment Safety Label

Copies of labels used in EMS Garments

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1. INTRODUCTION

Congratulations on purchasing your new LION product! Your NFPA 1999 Emergency Medical Operations Garment (referred to throughout this Guide as the “NFPA 1999 Certified Garment”, “EMS Garment” or “Garment”) is designed to provide limited protection against the specific hazards associated with the assessment, stabilization and treatment of persons prior to arrival at medical care facilities during emergency medical situations (EMS operations). It and its components are manufactured and certified under the performance requirements of NFPA 1999.

This User Instruction, Safety and Training Guide gives important instructions regarding the use, inspection, care, maintenance, storage and retirement of your NFPA 1999 Certified Garment. Immediately upon receipt of your Garment, you should remove, carefully read and save this Guide for future reference.

This Guide is a training tool to help you understand your NFPA 1999 Certified Garment and how to use it in the safest possible manner during EMS operations. Please take the time to read it.

For your personal safety, be alert for important safety messages in this Guide:

⚠ DANGER

DANGER Indicates immediate hazards that will result in serious personal injury or death if not avoided, or if instructions, including recommended precautions, are not followed. The signal word **"DANGER"** is highlighted in red, both in this Guide and on labels affixed to your Garment, to indicate the extreme hazard of the situation.

⚠ WARNING

WARNING Indicates potentially hazardous situations that could result in serious personal injury or death if not avoided, or if instructions, including recommended precautions, are not followed. The signal word **"WARNING"** is highlighted in orange on applicable labels and in black in this Guide.

⚠ CAUTION

CAUTION Indicates potentially hazardous situations or unsafe practices that could result in minor or moderate personal injury or product or property damage if instructions, including recommended precautions, are not followed. The signal word **"CAUTION"** is highlighted in gray in this Guide.

2. DEFINITIONS

ASTM – Acronym for American Society of Testing and Materials.

Authority Having Jurisdiction – An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

Barrier Layer – The layer of material designated as providing body fluid-borne pathogen resistance.

Biological Agent – Biological materials that could be capable of causing disease or long-term damage to the human body.

Bloodborne Pathogen – Pathogenic microorganisms that are present in human blood and can cause disease in humans. These include, but are not limited to: Hepatitis B, Hepatitis C, HIV and Syphilis.

Body Fluids – Fluids produced by the body including, but not limited to, blood, semen, mucous, feces, urine, vaginal secretions, breast milk, amniotic fluid, cerebrospinal fluid, synovial fluid and pericardial fluid.

Body Fluids-Borne Pathogen – An infectious bacterium or virus carried in human, animal, or clinical body fluids, organs or tissue.

Body Substance Isolation – A concept practiced by emergency response personnel whereby blood and ALL other body fluids are considered a risk for transmission of bloodborne diseases.

Component(s) – Any material, part or subassembly used in the construction of the Garment.

Composite – The layer or combination of layers of the protective ensemble, or any elements of the protective ensemble, providing the required limited protection.

Emergency Medical Garment – Any item of emergency medical protective clothing designed and configured as a single garment or assembly of multiple garments to provide barrier protection to the wearer's upper and lower torso, excluding the hands, face and feet.

Emergency Medical Operations – Emergency patient care and transportation prior to arrival at a hospital or other health care facility.

Emergency Medical Protective Clothing – Multiple items of protective clothing, including garments, examination gloves, work gloves, cleaning gloves, footwear and footwear covers and face protection and barrier protection against blood and body fluid-borne pathogens contact with the wearer's body during delivery of emergency patient care and other emergency medical functions.

Entry Firefighting – EXTRAORDINARILY specialized firefighting operations that can include the activities of rescue, fire suppression and property conservation at incidents involving fires producing extreme levels of conductive, convective and radiant heat; such as aircraft fires, bulk flammable gas fires and bulk flammable liquid fires. Highly specialized thermal protection from exposure to extreme levels of conductive, convective and radiant heat is necessary for persons involved in such EXTRAORDINARILY specialized operations and because direct entry into the flames is made. EMS Garments are NEVER to be used for entry firefighting or any direct contact with flames or molten metals, and do not provide the required level of protection.

Exposure Incident – Specific contact of the following with blood or Other Potentially Infectious Materials (O.P.I.M.): 1) eye; 2) mouth or other mucous membranes; 3) non intact skin; or 4) parenteral contact.

Flame Resistance – The property of a material whereby the application of a flaming or non-flaming source of ignition and the subsequent removal of the ignition source results in the termination of combustion. Flame resistance can be an inherent property of the material or it can be imparted by specific treatment.

Flame Retardant – A chemical compound that can be incorporated into materials or a textile fiber during manufacture or treatment to reduce its flammability.

Fluorescence – The process by which radiant flux of certain wavelengths is absorbed and reradiated, nonthermally in other, usually longer, wavelengths.

Garment – The term Garment used throughout this Guide refers ONLY to EMS Garments for Emergency Medical Operations, which include coats, trousers or coveralls. EMS Garments are NOT Structural, Entry or Proximity firefighting protective clothing.

Guide – Means this User Instruction, Safety and Training Guide.

Inner Liner – The liner portion of a multi-layer NFPA 1999 Certified Garment consisting of the barrier layer. The Inner Liner must ALWAYS be attached to the Outer Shell whenever the Garment is in service for Rescue/Recovery and EMS incidents.

ISP – Acronym for Independent Service Provider. An independent third party utilized by an organization to perform any one or any combination of advanced inspection, advanced cleaning or repair services.

Moisture Barrier – The portion of the Garment composite designed to prevent the transfer of liquids. This may be in the form of a separate *Inner Liner* layer which must always be attached to the outersell when the garment is in severice.

NFPA – Acronym for National Fire Protection Association. A private sector, volunteer-based standard-making organization that develops guidelines related to fire protection and prevention.

NFPA 1999 Certified Garment – (Also referred to in this Guide as Garment). Means a Garment certified by a private, third party certification organization (for example, Underwriters' Laboratories) to meet at the time of manufacture the design and performance requirements of the NFPA 1999 Standards.

OPIM – Acronym for Other Potentially Infectious Materials. Includes semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid and peritoneal fluid.

OSHA – Acronym for Occupational Safety and Health Administration. A government-based standard-making body that develops public health and safety standards for the workplace.

Outer Shell – the outermost layer of the composite with the exception of trim, hardware and reinforcing material. Also referred to as "shell".

Parenteral – Piercing through the skin barrier, such as a needlestick injury, human bite or a cut or scrape.

Protective Element – The parts or items that comprise the protective ensemble. The protective ensemble elements are: coats, trousers, coveralls, helmets, gloves, footwear and interface components.

Proximity Firefighting – Specialized firefighting operations that can include the activities of rescue, fire suppression and property conservation at incidents involving fire producing very high levels of conductive, convective and radiant heat, such as aircraft fires, bulk flammable gas fires and bulk flammable liquid fires. Specialized thermal protection from exposure to high levels of radiant heat, as well as thermal protection from conductive and convective heat, is necessary for persons involved in such operations. EMS Garments are NEVER to be used in proximity firefighting and do not provide the required level of protection.

Reinforcement – The addition of extra material for enhanced protection in areas prone to compression or abrasive wear, such as knees, elbows and shoulders.

Rescue Operations – Those activities directed at locating endangered persons, removing endangered persons from danger, treating the injured at an emergency incident and providing transport to an appropriate health care facility.

Responder/Emergency Responder – Emergency personnel involved in Emergency Medical Operations.

Retroreflection/Retroflective – The reflection of light in which the reflected rays are preferentially returned in the direction close to the opposite of the direction of the incident rays, with this property being maintained over wide variations of the direction of the incident rays.

Retroreflective Markings – A material that reflects and returns a relatively high proportion of light in a direction close to the direction from which it came.

SAFER – Acronym for Southern Area Fire Equipment Research. An established body of fire equipment users with expertise in the research and evaluation of firefighting personal protective equipment.

SCBA – Acronym for Self-Contained Breathing Apparatus.

SDS – Acronym for Safety Data Sheets.

Sewn Seam – A series of stitches joining two or more separate pieces of material(s) of planar structure, such as textile fabrics.

Stabilization – Those activities directed at mitigating the dangerous elements of an emergency incident.

Structural Firefighting – The activities of rescue, fire suppression and property conservation in buildings, enclosed structures, vehicles, marine vessels or like properties that are involved in a fire or emergency situation. EMS Garments are NEVER to be used in structural firefighting and do not provide the required level of protection.

Technical Rescue Incidents – Complex rescue incidents requiring specially trained personnel and special equipment to complete the mission.

Technical Rescue Operations – Those activities directed at locating endangered persons, removing endangered persons from danger, treating the injured at an emergency incident and providing transport to an appropriate health care facility.

Trim – Retroreflective and fluorescent materials attached to the outermost surface of the protective ensemble for visibility enhancement. Retroreflective materials enhance nighttime visibility, and fluorescent materials enhance daytime visibility. "Trim" is also known as "visibility markings".

Useful Life – The period of time that EMS Garments, which have been properly cared for, can be expected to provide reasonable limited protection. Useful life of Garments is **normally 5-7 years**, depending on the materials making up the Garment and the conditions of wear, maintenance and storage. **Useful life is highly unlikely to be more than 10 years.** Garments more than 10 years old and made to earlier versions of NFPA Standards are highly likely to have exceeded their useful life and must be retired! See Section 14 of this Guide.

UV (Light or Radiation) – Acronym for Ultraviolet Light. A type of radiated electromagnetic energy commonly found in the sun's rays.

Universal Precautions – Under universal precautions, blood and certain body fluids of all patients are considered potentially infectious for human immunodeficiency virus (HIV), hepatitis B virus (HBV) and other bloodborne pathogens.

Winter Liner (Optional) – A detachable inner layer of the EMS Garment that provides limited cold-weather protection. The winter liner is constructed of a meltable fiber such as nylon and does not provide any thermal protection in high heat situations.

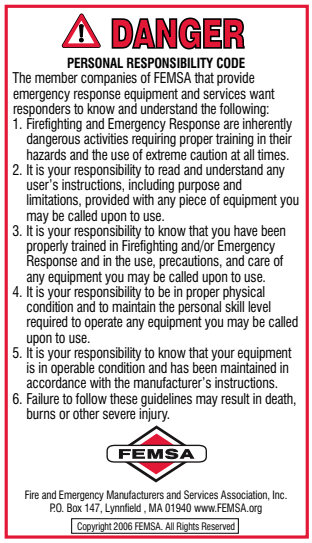


FIG. 1
Personal Responsibility Code Also shown on back cover of this Guide.

3. SAFETY CHECKLIST

Do not use this Garment until you have checked "YES" to the following:

1. Have you completed a formal training course in Emergency Medical Operation techniques, the proper use of EMS equipment and NFPA 1999 Certified Garments?
   ❑ Yes ❑ No

2. Have you read and understood all the instructions and warnings throughout this Guide as well as all the safety, cleaning and information labels on the Garment?
   ❑ Yes ❑ No

3. Will you regularly inspect your Garment inside and out for any tears, holes, thin spots, worn areas, color change, dirt, contaminants, leaks, embrittlement or any other conditions discussed in Section 6 of this Guide?
   ❑ Yes ❑ No

4. Have you studied the limitations of your Garment as described throughout this Guide?
   ❑ Yes ❑ No

5. Have you checked to make sure that your Garment fits you properly in accordance with Section 8 of this Guide?
   ❑ Yes ❑ No

6. Have you, your safety officer or another appropriate person made plans to ensure that your Garment is used, inspected, maintained, stored and retired according to instructions in this Guide?
   ❑ Yes ❑ No

7. Do you understand that this Garment offers no protection for firefighting activities?
   ❑ Yes ❑ No

8. Have you read, do you understand and do you agree to assume the risks and responsibilities listed in the Personal Responsibility Code? See **FIG. 1** and back cover of this Guide.
   ❑ Yes ❑ No

If you answered **NO** to any of the questions, **DO NOT WEAR THIS GARMENT** until you have read the appropriate sections of this Guide and have been properly trained by qualified instructors.

4. PROPER USE OF YOUR EMS GARMENT

This Garment is designed to provide LIMITED protection, under the requirements of NFPA 1999, to the legs, torso and arms against hazards TO EMERGENCY RESPONDERS INVOLVED IN TREATMENT AND OTHER MITIGATION OPERATIONS AT OR INVOLVING EMERGENCY MEDICAL OPERATIONS, INCLUDING:

- penetration of blood and other body fluids
- environmental, including moisture and cold weather when thermal liner is installed.

⚠ DANGER

DO NOT use this Garment for the following:

- **Structural, Proximity and Entry Firefighting (see Definitions)**
- **Activities requiring direct contact with flames or molten metal**
- **Protection against all hazardous materials and all biological or radiological agents.**
- **Technical Rescue Operations.**

Do not use for ANY firefighting.

Do not use for direct contact with flames or molten metal.

⚠ DANGER

EMS personnel who are exposed to a flashover, backdraft or other flame and high heat environments are at **EXTREME** risk for extensive burn injuries and death while wearing their NFPA 1999 Certified Garment!

Do not use for protection against hazardous radiological agents.

Risk Assessment

The authority having jurisdiction (see Definitions) should perform a risk assessment to identify the hazards present and to determine the suitability of the Garment. For each of the activities described as Emergency Medical incidents, the authority having jurisdiction should determine if protection provided by this Garment is commensurate with the level of protection needed as deemed by the hazards present.

Do not use for protection against hazardous biological agents.

For example, in an incident the decision for using EMS protective garments versus structural firefighting or technical rescue protective ensembles can be dependent on the level of fire or biological exposure risk at the incident.

Do not use for protection against hazardous chemical agents.

⚠ WARNING

Protective properties in a new Garment will diminish as the product is worn and ages. To reduce the risk of injuries, you MUST follow the recommendations in this Guide for inspection and retirement of your Garment to ensure that the Garment is not used past its Useful Life.

⚠ WARNING

Controlled lab tests in the NFPA 1999 Standards “should not be deemed as defining or establishing performance levels for protection from all environments”. You should always use extreme caution in any EMS incident to avoid the risk of injuries. See NFPA 1999.

⚠ WARNING

Wearing of this garment along roadsides or other areas with vehicular traffic requires additional high visibility safety apparel, compliant with at least the Class 2 requirements of ANSI/ISEA 107.

⚠ WARNING

NFPA 1999 Certified Garments should NEVER be used by responders in auto extrication incidents where there is ANY risk of fire.

5. GARMENT CONSTRUCTION, FEATURES AND FUNCTION

In order to understand the limits of protection provided by your EMS Garment, you should study its construction, features and function.

5.1 OVERVIEW

Your EMS Garment helps reduce health and safety risks to the EMS responder. The garment includes a moisture barrier for limited protection against liquid penetration of bloodborne pathogens, or of water from the outdoor environment associated with an Emergency Medical Operations incident.

5.2 STRUCTURE

Two-layer structure: Your Garment is made with two primary layers: an outer shell and a barrier layer. The barrier layer is removable for cleaning, inspection, and decontamination. EMS Garments should NEVER be worn without the barrier layer in place.

5.3 OUTER SHELL

The outer shell is made of material with limited resistance to the effects of flame and abrasion. It also provides limited protection to the moisture barrier. The outer shell fabric available from different textile manufactures have varying useful life characteristics and color fastness properties.

5.4 BARRIER LAYER

The barrier layer is either a film or a coating on a substrate which reduces the amount of water from the environment that might penetrate to the inside of the Garment. The barrier layer is bonded to a substrate to give it strength and durability. All breathable barrier layers have the ability to prevent liquid moisture from passing through, while allowing the passage of moisture vapor. Breathability allows some body heat to escape the inner layers and move outside the Garment. This promotes evaporative cooling of the responder's body.

The barrier layer should always be removed for washing, inspection or decontamination and properly reinstalled before using your Garment for EMS incidents.

5.5 OTHER IMPORTANT SAFETY FEATURES (FIG. 2)

Collar 1**:** Your coat has a collar which must be raised up and closed with the Hook and Loop Closure in order to provide limited protection to the neck area from hazards.

Sleeve Cuffs 2**:** Have a closure system that can be adjusted to provide a snug and secure fit around the wrists while wearing protective gloves.

Closure Systems 3**:** On the front of the coat and trousers, when properly fastened, keeps the coat and pants from coming open during EMS operations.

Retroreflective and Fluorescent Trim 4**:** Improves your visibility in low-light conditions, however it does not meet the requirements in ANSI/ISEA 107, *High-Visibility Safety Apparel and Headgear* unless the labels in your garment identify it as meeting the ANSI requirements.

⚠ *WARNING*

You must wear your NFPA 1999 Certified Garment at all times during any emergency operation near roads or highways. The retroreflective and fluorescent trim increases the chance of being seen by motorists and decreases the probability of injury.

Pockets: Located on coat and pants, provide storage for tools.

Reinforcements 5**:** Provide reinforcement at the knees and elbows against cuts and abrasion.

Labels: There are 3 important safety, cleaning and information labels, all located on the inside of the coat and pants. The Garment Safety Label provides critical safety information and directs you to read and understand this Guide. The Cleaning Label explains washing, drying and storage instructions. The Barrier Layer Attachment Safety Label warns the user about the need to always wear the Garment with the outer shell and barrier layer attached.

In addition, the Garment Information Label lists the Garment model, the date of manufacture and has a barcode to help track the Garment's washing and repair history.

Samples of the labels are located on page 2 of this Guide.

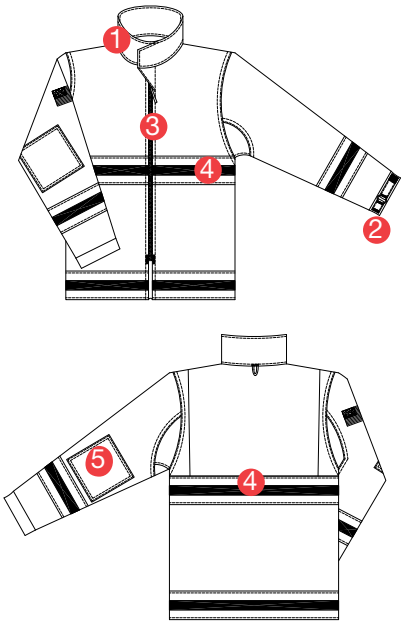


FIG. 2

Key Elements of NFPA 1999 Certified Garments.

6. INSPECTION

Your Garment should be cleaned, inspected and repaired in a frequency and manner consistent with your fire department's protocol and NFPA 1999.

6.1 PREPARATION

Read all labels first. There are three Safety, Cleaning and Information Labels (See Section 5.5 of this Guide for location). If any of the labels are missing, return the Garment to the manufacturer immediately.

6.2 FREQUENCY

Routine Inspection:

Inspect your Garment including its outer shell, liner and other components at the following times:

- Upon receipt of your new Garment or replacement component;
- After each use or at least monthly (whichever is greater) during the useful life of the Garment;
- After exposure to body fluids (including blood); and
- After washing, repair or decontamination.

⚠ WARNING

Most performance properties of the Garment and its components cannot be tested by the user in the field.

You must inspect your Garment as a minimum, at the above frequency intervals to detect more obvious damage and deterioration. Whenever you detect a potential problem through your own inspection, or suspect that the protective qualities might be degraded, your Garment should be inspected by a trained expert within your organization, a LION TotalCare® Center or verified ISP.

6.3 INSPECTION PROCESS AND CRITERIA

1. Preparation for Inspection

A. Ensure that Garments are clean. If any have been contaminated by hazardous materials or biological agents, make sure they have been decontaminated. This is important for your safety, and for assurance that potential problems are not masked by incidental residue.

B. Place Garment on a clean surface in a brightly lighted area.

C. Separate outer shell from inner liner.

Pay close attention to high abrasion areas such as the shoulders, back/waist area, knees, crotch, and seat. Where you see potential damage to the outer shell, examine the corresponding area on the moisture barrier.

2. Inspection of the Barrier Layer and Outer Shell Attachment System

A. Locate the hook and loop and/or snap attachments.

B. Disconnect and examine snaps for corrosion and make sure their attachments to the garment are secure.

C. Ensure that all snaps function well.

D. Engage and disengage hook and loop attachments to make sure they function well. Examine for worn or abraded pieces that require replacement. Check stitching for loose thread that would require repair.

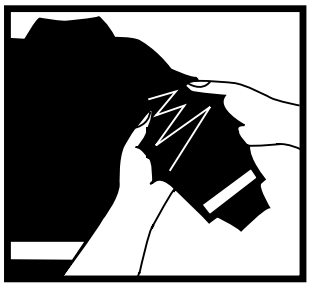


FIG. 3

Test fabric strength with thumbs

3. Inspection of the Outer Shell (Routine and Advanced Procedure)

A. Fabric: Examine for dirt, discoloration, thin spots, holes, tears, embrittlement, cracking, burns, abrasions and worn spots.
   a. Discoloration is a sign of overexposure to light or heat.
   b. Embrittlement, cracking or burns are a sign that other layers may be worn out or damaged and must be thoroughly inspected.
   c. Grasp any part of the fabric that may be damaged or flawed in both hands and try to push your thumbs through the fabric. **(FIG. 3)**. If the fabric punctures, you must repair the outer shell (if economically practical), replace it or retire the entire Garment and dispose of it in accordance with Sections 15 and 16 of this Guide.

B. Closure Systems: Examine for functionality and damage.
   a. Hook and Loop – Engage and disengage hook and loop attachments to make sure they function well. Examine for worn or abraded pieces that require replacement. Check stitching for loose thread that would require repair.
   b. Zippers – Examine all zippers for functionality and corrosion that would require replacement. Check stitching for loose threads that would require repair.
   c. Hardware – Examine all hardware (i.e., hooks and dees or snaps) for corrosion or other damage that would require replacement. Check that their attachment to the Garment is secure.

⚠ WARNING

If during EMS operations, you perceive that water is passing through your barrier layer from the outside, remove the Garment from service and have the Garment inspected by a LION TotalCare® Center or a verified ISP. Passage of outside water through the liner means that the barrier layer is damaged or deteriorated and must be replaced.

C. Retroreflective and Fluorescent Trim: Inspect Garment for missing, loose or torn trim that has lost its retroreflective or fluorescent properties.
   a. Damaged trim must be replaced.
   b. Loose trim that maintains its reflectivity and fluorescence must be resewn to the Garment.
   c. The retroreflective properties may be evaluated by performing a flashlight test: hold a bright flashlight at eye level, either next to the temple or on the bridge of the nose, and aim the light beam at the Garment trim. Stand about 40 feet (12 meters) away. Compare reflected light from the Garment trim to a sample of new trim. If the reflected light is noticeably less than that reflected by the sample, contact LION TotalCare® or a verified ISP to repair or replace.

D. Reinforcements, Pockets, Hanger Loops, Letters, etc: Examine all reinforcements and components to make sure they are securely sewn to the Garment. Check hook and loop or snap fasteners on pocket flaps for functionality and damage.

E. Accessories: Check all accessory items to ensure that they meet manufacturer's specifications and approval.

F. Stitching and Seams: Examine all seams for loose threads, breaks, skipped stitches or weaknesses.

G. Labels: Verify that all Safety, Cleaning and Information labels are on the Garment and are legible. See page 2 and Section 5.5 of this Guide.

4. **Inspection of the Inner Liner**

   A. Fabrics: Visually and manually examine the barrier layer of your inner liner for these and other signs of possible damage, such as:
      - Abrasion
      - Fraying
      - Broken stitches
      - Holes, cuts or tears
      - Ridges
      - Cracking
      - Rough spots
      - Dirt
      - Thin spots
      - Discoloration
      - Worn spots
      - Embrittlement

      Some damage may not be visible to the user. If you see or feel any signs of damage or detect anything unusual, the entire inner liner should be inspected only by an expert trained by LION, a LION TotalCare® Center, or verified ISP.

   B. Stitching and Seams: Examine all seams for loose threads, breaks, skipped stitches or weakness.

   C. Labels: Verify that all Safety, Cleaning and Information labels are on the Garment and are legible. See pg. 2 and section 5.5 of this Guide.

6.4 RECORDKEEPING

LION TotalCare® Centers offer recordkeeping services. For manual records, record all inspections and your results on the Inspection, Cleaning, Repair, Retirement and Disposal Record located in the back of this Guide. Maintain this form unless your organization has provided you with a comparable recordkeeping method for this purpose.

7. DONNING AND DOFFING

PREPARATION: Before donning, check to make sure that the inner liner and the outer shell are secured together at the torso, neck and wrist areas on the coat, and at the torso and ankle areas on the trousers.

⚠ *WARNING*

For EMS operations, NEVER wear the outer shell without installing the correct barrier layer; NEVER wear the barrier layer without attaching the correct outer shell to it. The outer shell and barrier layer alone do not provide the limited liquid barrier protection against the hazards associated with EMS incidents.

7.1 PANTS

With the fly closure unfastened, hold open the pants. After pulling the pants to the waist, fasten the fly closure securely. See **(FIG. 4A)**. Cinch take-up straps, (if present) so the pants are snug at your waist. Pull the suspenders (if present) over your shoulders,or fasten the belt (if present) and adjust them so that the crotch of the pants is comfortably secure against your crotch. Pants that hang down too low in the crotch will dangerously restrict your mobility and will wear out prematurely in the crotch seams or in the fabrics of the inner liner. When properly fitted, and correctly donned, the cuffs of your pants should be no less than 2" and not more than 5" off the floor. Step into your protective EMS footwear.

FIG. 4A

7.2 COAT

Pull the coat onto your body. (See **FIG. 4B)**. Tighten coat cuffs by using the take-up straps. (See **FIG. 4C)**. Zip up the front closure all the way to the neck and secure the stormflap (if present).

FIG. 4B

7.3 FINAL INSPECTION BEFORE ENTERING HAZARD AREA

Last and most important, to ensure proper donning before entering a hazard area, **you must have a partner inspect your interface areas for proper overlap and that all closures are secured properly.**

7.4 DOFFING (REMOVING) YOUR GARMENT

A. First, never remove your EMS Garments until you are certain that you are safely removed from the hazard area. Always wear your full ensemble during all phases of EMS operations.

B. After a strenuous emergency operation is completed, and you are in a safe area, it is important to ventilate your body as quickly as possible in order to cool down. You should open the front of the coat to allow cool air to penetrate.

C. When you are ready to remove your Garments, you should first remove your gloves.

D. Next, begin to remove your Garments. Remove the coat first. Loosen the take-up straps at the waist and on the coat and pants cuffs. Next, disengage the fly closure on pants and remove them.

E. If your Garments are contaminated with bloodborne pathogens or hazardous chemicals, you should remove them, carefully avoiding any contact with contaminated parts. Hose the Garments down at the scene. Be sure to place the Garments in plastic bags to allow safe handling by laundry personnel. A Garment exposed to body fluids can be washed and disinfected to reduce the risk of exposure to bloodborne pathogens. See Washing, Decontamination and Disinfection procedures in Section 11 of this Guide.

F. During and after doffing, always look for signs of body fluids or other contamination and for signs of wear or damage. See Washing, Decontamination and Disinfection procedures, Section 11 and Inspection procedures, Section 6 of this Guide.

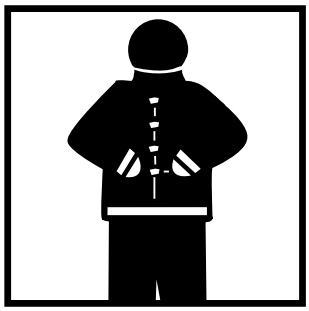


FIG. 4C

⚠ WARNING

Wearing a coat with inadequate overlap could result in serious injury. If you have questions about whether your Garments have the adequate overlap, contact your nearest LION dealer.

8. COMPATIBILITY AND PROPER FIT

8.1 OVERLAP

You must make sure that there is adequate overlap between the coat and the trousers, including the outer shell and the barrier layer, before using the Garments. You will need the assistance of a partner to check these key areas.

Your Height Affects Overlap

Special care should be given to long-bodied EMS personnel of any size to ensure that adequate overlap is provided. EMS personnel who are taller than 5'8" MUST wear a coat that is 32 inches or GREATER from the back of the neck at the collar down the back to the bottom of the coat hem. Special care should be given to long-bodied EMS personnel of any size to ensure that adequate overlap is provided.

FIG. 5A
NFPA Position A

To check overlap, the following tests should be performed while wearing your complete protective ensemble:

A. NFPA 1500 Standard Position A **(FIG. 5A)**. While standing, reach over head as high as possible with your hands together. The inner liner of the coat must overlap the top of the trousers by no less than 2 inches (5 cm).

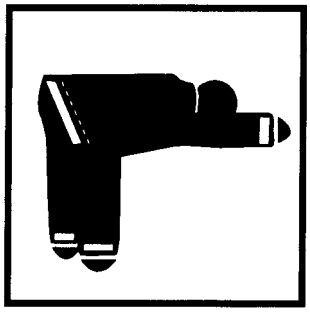


FIG. 5B
NFPA Position B

B. NFPA 1500 Standard Position B **(FIG. 5B)**. While standing with your hands together and reaching overhead as far as possible, bend forward to a 90° angle, to the left or right and backward. The inner liner of the coat must overlap the top of the trousers by no less than 2 inches (5 cm).

C. The lower edges of your trousers must overlap the tops of your boots by 4-6 inches (10-15 cm). Gloves and wristlets must overlap each other by 3 inches (7.5 cm) and leave no gaps where wrists might be exposed.

8.2 CHECKING PROPER FIT

All EMS Garments must have adequate looseness in the torso, arms and legs. If the Garment bunches at the shoulders or binds in the shoulders, arms, thighs or crotch area, it is probably too small. EMS Garments also should not be too loose, as this could hinder mobility or dexterity and place stress at the wrong places in the EMS Garments. Upon receiving new or replacement EMS Garments, make sure that there are at least a few inches of loose material around the arms and shoulder area. Then test the mobility by climbing stairs and crawling or duck walking.

8.3 CHECKING THE SIZE

Coat. The chest size shown for a coat should NEVER be smaller than the circumference of your own chest, measured under your arms. Coats are designed with an eight inch (8") overage for better fit over clothing. For example, a coat that fits someone with a 44" chest will be labeled as size 44 and measure approximately 52". The end of the sleeve should reach beyond your wrist when arms are at rest.

Trousers. The waist size shown for a pair of trousers should NEVER be smaller than the circumference of your own waist, measured at your navel. The actual waist dimension of the trousers should be approximately two inches (2") larger than the waist size ordered and labeled on the trousers. Make sure the lower edges of your trousers overlap the tops of your footwear by four to six inches (4"-6").

If the garment does not seem to fit properly, you should check the size in the label to make sure it is your size as measured, and to make sure it is your Garment.

⚠ DANGER

Never wear a Garment that fits improperly. If you have a question, or there is a problem with the fit of the Garment, contact your safety officer for assistance. Wearing a Garment that does not fit properly could reduce protection and result in severe burns, cuts or abrasions, or dangerously restrict your ability to avoid injuries in an emergency situation.

9 MARKING CONSIDERATIONS

For marking an individual's name, or other identifying mark, an indelible laundry marker may be used. LION recommends marking the Garment in the following manner:

9.1 First, check the Garment Information Label (it has a barcode on it) to determine whether adequate identifying information was already printed by the manufacturer. If not, the underside of the coat's storm flap, under the coat facings at the coat front or underside of the facings at the base of the trouser fly is also recommended as well-protected places for individual markings.

9.2 Do not apply letters, emblems, trim and/or other types of identification that may penetrate the moisture barrier. Do not write on the moisture barrier or the substrate textile of the moisture barrier layer. Indelible inks could damage the film or coating.

NEVER MARK ON THE SAFETY, CLEANING OR INFORMATION LABELS ON YOUR GARMENT!

10. USING GARMENTS SAFELY: HOW TO MINIMIZE THE RISK OF INJURY

Always use this garment properly and in a manner consistent with the following:

- The Authority Having Jurisdiction's standard operating procedures;
- NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*;
- NFPA 1581, *Standard on Fire Department Infection Control Program*;
- Title 29, Code of Federal Regulations (CFR), Part 1910.132 "General Requirements of Sub part I, Personal Protective Equipment"; and
- Title 29, CFR 1910.1030, "Protecting Health Care Workers from Occupational Exposure to Blood-Borne Pathogens"

The EMS Garment is designed to protect the user against specific hazards associated with the assessment, stabilization and treatment of persons prior to arrival at medical care facilities during emergency medical situations. This section indicates the hazards associated with these activities, and specific warnings concerning the proper safe usage of your EMS Garment.

10.1 PREPARATION

Before beginning any EMS emergency operation, your Garments should be donned according to the procedures in Section 7 of this Guide, and checked by another person for proper interface.

⚠ *DANGER*

Always wear clean and thoroughly dry Garments. Soiled or contaminated Garments may reduce the effectiveness of the protective garments and may cause illness.

10.2 BLOODBORNE PATHOGENS

With the barrier layer in place, your Garment is designed to protect your body from the hazards of exposure to bloodborne pathogens present in body fluids. Exposure incidents are specific contact of the following with blood or OPIM (Other Potentially Infection Materials): eye; mouth or other mucous membranes; non-intact skin; or parenteral contact. Make sure face, mouth, eyes, nose and non-intact skin are covered. Avoid contact with sharps. Use Body Substance Isolation Procedures when handling Garments exposed to body fluids. Washing Garments according to the Procedures in Section 11 of this Guide will generally eliminate hazards of exposure to body fluids arising from incidental contact. For heavier levels of exposure, disinfecting Garments will substantially reduce hazards arising from exposure of Garments to potentially hazardous body fluids. See Section 11 of this Guide for more information.

10.3 HEAT STRESS: A SIGNIFICANT CAUSE OF RESPONDER INJURIES

Physical work in a warm or hot environment causes a rise in the temperature inside the body. To protect the body against heat, the heart begins to beat faster so that more blood can be moved to the skin surface. Blood vessels near the skin dilate so that they can carry more blood. In this way, blood in the interior of the body can be brought out near the body's surface and cooled. Most importantly, the body produces sweat that evaporates off the skin to provide cooling. Those natural responses do not work very well for any or all of the following conditions: the ambient air temperature is at least 75° F (23.9° C) or higher, the garment's insulation blocks the transfer of heat away from the body, the garment blocks the evaporation of sweat, or the exertion of the muscles produces more heat than the system can remove. When the body temperature gets elevated too high, the results can be heat strain, heat exhaustion or heat stroke.

⚠ WARNING

Overexertion in hot conditions while wearing Garments can lead to heat exhaustion or heat stroke. Symptoms of **heat exhaustion** are a general feeling of weakness, dizziness, rapid pulse, low blood pressure while standing or sitting and/or a headache. The skin may feel moist and clammy. If you feel symptoms, get to a cool place, remove your Garments and drink fluids. Failure to seek attention could lead to coma or death.

⚠ WARNING

Symptoms of **heat stroke** are hot, dry skin with no sweating, very high body temperatures, weakness, dizziness, rapid breathing, nausea, unconsciousness and sometimes mental confusion. If you feel any of the above symptoms at any time, get to a cool area immediately, remove your Garments, drink fluids and seek medical attention. Failure to seek attention could lead to coma or death. Immediate cooling is essential for survival in heat stroke cases.

10.4 HEART ATTACKS: A RESULT OF OVEREXERTION

During EMS operations, the heart beats faster because of the need to move more blood to the working muscles. This blood carries more oxygen to the muscles so they can handle the increased workload.

Another factor in increasing the rate of the heart is the presence of adrenaline, the “fight or flight” hormone, in the user’s body during an emergency. The adrenaline present in your system causes the heart to pump even faster than during normal activity.

All of these factors could place too much stress on the heart, leading to a heart attack. The heart simply cannot handle the load placed on it.

⚠ WARNING

You must be physically fit to safely perform strenuous work under stressful conditions. Regular cardiovascular exercise, abstaining from cigarette smoking, proper training, a healthy diet and avoidance of obesity, can help to reduce the risk of heart attack.

10.5 ELECTROCUTION

⚠ WARNING

Your Garment is NOT designed to protect you against electrocution. When entering a rescue site, you should NEVER touch live wiring, especially if your Garments are wet. Never allow equipment you are operating to contact live wiring.

10.6 ADDITIONAL FACTORS AFFECTING SAFETY

The following additional factors may affect the limited protection provided by the Garment:

- Conditions at the incident beyond the scope of the limited purposes of this Garment;
- Unauthorized modifications, repairs or replacement of components of the Garment not otherwise in compliance with LION's specifications; and
- The addition of accessories that are not approved by LION as compatible with the Garments. If you have questions about whether accessories will degrade the performance of your Garment, contact LION or a LION TotalCare® Center.

11. WASHING, DECONTAMINATION AND DISINFECTION

11.1 HAZARDS OF DIRTY GARMENTS: WHY WASHING AND DECONTAMINATING IS IMPORTANT

⚠ DANGER

Always clean and thoroughly dry Garments used in any EMS operation.

You can be exposed to many hazardous substances on the job. These substances can contaminate your Garments, and cause harm to you after your body contacts your Garments. This section tells you how to wash and decontaminate your Garments to reduce these hazards.

Routine EMS Contaminants: EMS incidents may involve rescue after a structure collapse. Many construction materials, including asbestos, are also hazardous. These substances can become embedded in the fibers of your Garments, penetrate inner layers and enter the body through absorption, inhalation, parenterally, and ingestion. In addition, particulates and other products of combustion can reduce the flame resistance of your Garments and increase your Garments' ability to conduct electricity. To reduce the risk of long-term harm from hazardous substances, you MUST wash your Garments.

⚠ WARNING

To reduce the risk of harm from bloodborne pathogens, you MUST wash your garments.

Hazardous Chemicals: If you experience accidental or incidental exposure to a hazardous chemical, follow all precautions in this section to limit exposure and risk of harm to yourself and others.

You should hose down contaminated Garments at the scene to limit further exposure to hazardous chemicals, to reduce exposure to others and to prevent chemicals from settling into your Garments.

⚠ WARNING

Decontamination of protective clothing and equipment is a complicated process for which there is no guarantee that protective elements are free from contamination. While the purpose of decontamination is to remove all contaminant(s) from the element, decontamination procedures or cleaning processes are not always 100% effective in removing all contamination.

Bloodborne Pathogens: Your Garments may be exposed to body fluids that may contain bloodborne pathogens. The washing procedures described later in this section will reduce your risk of infection from these hazards.

11.2 FREQUENCY

Clean Garments at least annually or as soon as as possible after exposure to products of combustion, as well as contamination or exposure to smoke, blood or body fluids, or hazardous substances.

⚠ WARNING

Always wash your Garments separately from other items. Never wash your Garments at home or at public laundry facilities to avoid the spread of chemical contamination or hazardous combustion products to other laundry.

⚠ WARNING

Never use high velocity power washers or pressure hoses for washing Garments. These tools can severely damage the raw materials and seams.

11.3 CLEANING PRODUCTS

Routine Washing:

A. Commercially available detergents. Use commercially available detergents with a pH greater than 6.0 and less than 10.5. Many household detergents fall within this range.

B. Specialty Cleaners. StationCare 1851 from LION TotalCare® is designed for EMS Garments. Always read MSDS sheets before use.

C. Spot cleaning and pre-treating. Use commercially available cleaning products with a pH greater than 6.0 and less than 10.5. Many household cleaning products fall within this range. Always check MSDS and product's instructions before use.

StationCare 1851 is available online at www.lionprotects.com/totalcare.

⚠ WARNING

Never use chlorine bleach or chlorinated products to clean your Garments. Even small amounts of chlorine will seriously reduce your Garment's protective qualities. Non-chlorinated bleaches are acceptable.

Contact LION or a LION TotalCare® Center for additional information about the compatibility of cleaning products with protective clothing.

11.4 SPOT CLEANING

A. Use a cleaning product that is safe for use on protective clothing fabrics to clean light spots and stains on Garments.

B. Apply the cleaner one or two times on soiled areas according to the cleaning product's instructions on dilution and application. See Section 11.3 for guidelines on cleaning products.

C. For outer shells only, use a soft bristle brush (toothbrush or fingernail-type brush dipped in water) to gently scrub the soiled area for 1 or 2 minutes. For inner liner materials, gently rub the fabrics together.

D. Thoroughly and carefully rinse Garment with cool water.

⚠ *WARNING*

Do not use petroleum-based solvents to spot clean. These products may reduce the limited protective qualities of the Garment.

11.5 PRETREATING

A. Apply pretreating product onto the soiled areas according to the pretreating product's instructions on dilution and application.

B. Thoroughly and carefully rinse the Garment with cool water.

C. Place Garment into washing machine and follow the wash procedures in this section.

no chlorine bleach

11.6 HEAVILY SOILED AREAS

A. Air dry Garment before applying cleaning product.

B. Saturate the heavily soiled and surrounding area according to the cleaning product's instructions on dilution and application. Follow the cleaning product instructions for duration of soaking.

C. For outer shells only, use a soft bristle brush (toothbrush or fingernail-type brush dipped in water) to gently scrub the soiled area for 1 or 2 minutes. For inner liner materials, gently rub the fabrics together.

D. Thoroughly and carefully rinse Garment with cool water.

E. Repeat steps B-D if necessary.

F. Place Garment into the washing machine as instructed in the wash procedures in this section.

11.7 MACHINE WASHING

Preparation

Before washing, make sure you comply with all federal, state and local guidelines for handling effluents from utility sinks. Remove ancillary items such as suspenders, removable belts or any other detachable items. ALWAYS wash shells, liners and suspenders separately to avoid redepositing soil from one component to the other. For ANSI compliant garments, max laundry cycles = 25 times.

A. Detach outer shells from the inner liners.

B. Remove suspenders if applicable. If Suspenders are attached to pants with suspender buttons, hold the button when removing the suspender clips to help extend the wearlife of the suspender button.

C. Hand wash suspenders with a mild detergent and soft bristle brush, rinse thoroughly and hang the suspenders to air dry AWAY FROM DIRECT OR INDIRECT SUNLIGHT, FLUORESCENT LIGHT OR SHARP OBJECTS. See Section 11.3 for guidelines on cleaning products.

D. Pretreat heavily soiled Garments following steps in the Spot cleaning and Pretreating procedures, in Sections 11.4-11.6 of this Guide.

E. Where provided, fasten all hooks and dees or other metal parts and turn the Garment inside out or place in a large laundry bag that can be tied shut to avoid damage to the Garment or to the wash tub.

F. Fasten all hook and loop closures to each other to reduce the likelihood of damage to delicate parts of your Garments.

G. Wash shells and liners separately to avoid possible damage to the liner caused by hardware and to avoid cross contamination.

Machine Settings

Use a front loading extractor or front loading washing machine with a tumbling action for washing. Do not use a top-loading machine, because it will not wash your Garments as thoroughly and the agitator may damage the Garment and reduce its durability and protective value.

Use the following machine settings:

A. Wash temperature should not exceed 105° F (40° C).

B. Normal Cycle.

C. Use low extractor speeds less than 100 g's.

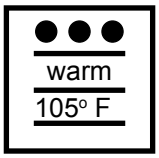
D. Double Rinse Double rinsing removes residual dirt and insures detergent removal. If your machine will not automatically double rinse, a complete second rinse cycle should be run without adding detergent.

Wash Procedures

A. Load machine with Garments to be washed. Follow machine manufacturer's instructions for proper load size. Overloading the machine can lead to incomplete cleaning and other poor cleaning results.

B. Add cleaning product per manufacturer's instructions. Never use Chlorine bleach; non-chlorine bleach may be used. Ensure accurate measuring tools are used for correct amount of cleaning product. See Section 11.3 for guidelines on cleaning products.

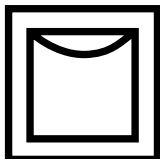
C. Set washing machine on normal cycle and start the wash cycle.

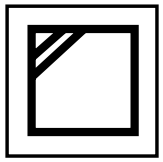


water temperature

machine wash cycle


no chlorine bleach

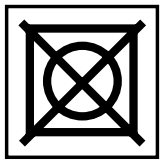

line dry/ hang to dry


in the shade

11.8 DRYING

A. Remove Garments from washing machine, and if they are not already inside out from washing, turn them inside out to expose the inner surfaces. Dry by hanging in a shaded area that receives good cross ventilation or use a fan to circulate the air.

B. Do not use automatic dryers because the mechanical action and excessive heat may damage or shrink your Garments.


never tumble dry

⚠ WARNING

Do not hang Garments to dry in direct or indirect sunlight, or in fluorescent light. Light will severely reduce the strength of the seams, and will discolor and greatly reduce the strength and protective qualities of the components of the Garments.

never dry-clean

⚠ WARNING

Never Dry-Clean your Garment. Many Garment components will not function if dry-cleaned.

⚠ WARNING

Only a trained expert in decontamination should attempt to decontaminate Garments. Contact a LION TotalCare® Center or verified ISP to seek assistance in determining whether decontamination is possible, and the name of the appropriate organization to perform decontamination.

11.9 DO NOT DRY CLEAN

Never dry-clean your Garment. Dry-cleaning will damage the Garment and reduce its protective qualities.

11.10 CONTRACT CLEANING

LION recommends that only a LION TotalCare® Center or a verified ISP be used for contract cleaning.

11.11 HAND WASHING IN A UTILITY SINK

LION does **NOT RECOMMEND** this method for washing your Garments. However, if no other options are available, hand washing is preferable to no washing.

Preparation: Before washing, make sure you comply with all federal, state and local guidelines for handling effluents from utility sinks. Wear rubber gloves to protect against exposure to contaminants. Detach inner liner from outer shell as indicated in the machine washing instructions.

Cleaning Products: Use same cleaning products as used for machine washing.

Procedures: Make sure water temperature does not exceed 105° F (40° C). Using a hand brush, gently scrub surfaces of inner liner and outer shell. Overscrubbing may damage your Garment's materials or reduce its useful life.

Drying: See Section 11.8 for drying procedure.

11.12 DO NOT BRUSH WASH ON FLOOR OF STATION

LION does **NOT RECOMMEND** brush washing your Garment on the floor of the station because this method is not effective and may damage it.

11.13 DECONTAMINATION AND DISINFECTION

Applicable Standard. You must read and have facilities and procedures in compliance with NFPA 1581 Standard for Fire Department Infection Control Program.

⚠ WARNING

To reduce risk of harm from hazardous substances present in contaminants and body fluids, you MUST wash, decontaminate and/or disinfect your Garments after each exposure to such hazardous substances.

Preparation: Remove contaminated and infected Garments from wearer and from service before beginning. Garments should remain out of service until decontaminated and disinfected. Wear protective gloves and appropriate protective clothing and equipment while decontaminating and disinfecting.

A. Blood and Body Fluids

1. **Disinfecting Products**. You must use disinfectants that are compatible the Garments.

2. **Disinfecting Procedure for Blood and Body Fluids**

   Small incidental areas: Use spot cleaning procedures described in Section 11.4, and use an appropriate disinfectant available for Garments. Always follow the instructions of the manufacturer regarding product usage. Wash Garments thoroughly after spot cleaning in accordance with procedures in this section.

   Large areas: If Garments have large areas of coverage of blood or body fluids, place and transport Garments in bags to prevent leakage. Contact a LION TotalCare® Center or a verified ISP to arrange for disinfection.

B. Hazardous Chemicals

1. Hose down contaminated Garments at the scene to limit further exposure to hazardous chemicals, to limit exposure to others and to limit chemicals from settling into your Garments.

2. KNOWN MATERIALS: Contact the source of the materials, your local HAZMAT Team or the Health Department to determine whether the contaminants are hazardous materials. If the contaminant is known, contact a LION TotalCare® Center or verified ISP to determine the feasibility of decontamination.

3. UNKNOWN MATERIALS: If the contaminant is not known, Garments should remain out of service until the materials are identified. Always demand MSDS information and be prepared to share your findings with the LION TotalCare® Center or a verified ISP to decontaminate the Garments. **If your Garment cannot be decontaminated, it must be retired and disposed of in accordance with federal, state and local regulations.**

If you have questions concerning the use of a particular disinfectant, contact LION, a LION TotalCare® Center or verified ISP.

C. Hazardous Substances Present in the Products of Fire Combustion (Soot, Smoke and Debris).

To reduce the risks associated with exposure to the hazardous substances found in the products of fire combustion, you MUST wash, dry and store your garments according to the procedures in this section.

⚠ CAUTION

Personnel involved in the handling, sorting, bagging, transporting and laundering of contaminated Garments must wear utility gloves and appropriate protective clothing to prevent occupational exposure during these activities.

11.14 LAUNDRY SAFETY

Laundry and Housekeeping Personnel are considered to be among those at risk to not only hazardous materials, but also to bloodborne pathogens primarily by exposure to sharp objects. Your Organization should have a Bloodborne Pathogens Written Exposure Control Plan. Part of this plan is decontamination, disinfection and washing of Garments, and it should include LAUNDRY ROOM SAFETY PROCEDURES and HOUSEKEEPING SAFETY PROCEDURES. You should follow all appropriate federal, state, and local regulations.

FIG. 6A

FIG. 6B

12. REASSEMBLY

Your Garment was completely assembled at the factory with an outer shell and liner. However, you may wish to separate your shell and liner for inspection, washing, decontamination or repairs. This section tells you how to put your Garment back together.

12.1 COATS

A. Start with coat shell and liner separated.

B. Orient the coat exterior side down so that the inner surface of the shell is facing you. Attach the liner at the coat shell collar using the hook and loop along the facings. **(FIG. 6A)**

C. Insert liner sleeves into shell, carefully avoiding any twisting or bunching. **(FIG. 6B)**

D. Fasten the wrists of the liner to the wrists of the shell using the snaps on the shell and liner.

E. Fasten the left and right fronts of the liner hook and loop to their counterparts in the coat's left and right front facings.

F. Try on coat to check for comfort and proper fit.

12.2 PANTS

A. Start with the pants shell and liner separated.

B. Insert liner legs into shell, carefully avoiding any twisting or bunching of the legs or torso.

C. Fasten the waist of the liner to the waist of the shell using the snaps. Fasten the fly of the liner to the shell using the hook and loop.

D. Fasten the cuffs of the liner to the cuffs of the shell with the guide snaps.

E. Try on pants to check for comfort and proper fit.

13. REPAIR METHODS FOR GARMENTS

To inquire on whether a damaged Garment, including its outer shell, liner or other component, may be repairable, contact a LION TotalCare® Center or verified ISP. REPAIRS SHOULD ONLY BE MADE BY LION TOTALCARE® OR BY A VERIFIED ISP.

⚠ *WARNING*

Before any repairs are made to your EMS Garment, it must be washed, decontaminated and disinfected in accordance with this Guide. It is a violation of OSHA guidelines to expect workers to alter or repair soiled and possibly contaminated or infected Garments.

All repairs to Garments should be done by LION TotalCare® Centers or a verified ISP. Repairs made by unlisted companies may invalidate all warranties and may expose the wearer to hazardous or life threatening conditions. For a list of LION TotalCare® Centers, visit www.lionprotects.com/totalcare-locations. Call LION at (800) 421-2926 for an updated list of verified ISPs.

14. STORAGE

Between incidents, and for longer-term storage, hang your Garments in a dry location out of light and away from sharp objects that may cause tears or snags in the fabric.

Use fans to provide good ventilation to dry Garments that may have absorbed water or sweat after an incident and to assist in the removal of contaminants that may not have been removed by washing.

Failure to dry your Garment will result in the growth of mildew and bacteria which could lead to skin irritation, rashes or may affect the protective qualities of the fabrics and barrier layer materials.

Always wash and dry your Garments in accordance with Section 11 of this Guide and before hanging in long-term storage. Garments should be stored at temperatures between 25° F and 180° F.

FIG. 7
Never store your Garments in direct sunlight, indirect sunlight or in unfiltered fluorescent light.

⚠ *WARNING*

Avoid storing your Garments in temperature extremes. Repeated cycles of heating and cooling can reduce the protective qualities and useful life of the Garment. See Section 14 of this Guide for limitations on useful life.

⚠ *WARNING*

NEVER STORE YOUR GARMENT IN DIRECT SUNLIGHT, INDIRECT SUNLIGHT or IN FLUORESCENT LIGHT (FIG. 6). Exposure to light (particularly light in the sun's rays and fluorescent light) will severely weaken and damage the components in your Garment after only A FEW DAYS Damage caused by exposure to light cannot be repaired, nor will the manufacturer cover such damage in its warranty. (See Warranty Information, Section 16 of this Guide.)

⚠ *CAUTION*

Do not store Garments in air tight containers unless the Garments are new and have not been issued.

⚠ *CAUTION*

Never store your Garments in living quarters with personal belongings, or within the passenger compartment of a vehicle. Prolonged exposure to contaminants remaining in the Garments may increase your risk of cancer or other diseases.

15. RETIREMENT

HOW LONG IS USEFUL LIFE?

- The period of time NFPA 1999 Certified Garment performance requirements are based on new, unworn Garments and Composites. Useful life varies depending on garment materials selected, conditions of wear, maintenance and storage, but is normally 5-7 years.
- Garments more than ten (10) years old are highly likely to have exceeded their useful life and must be retired!

15.1 USEFUL LIFE AND RETIREMENT

NFPA 1999 Certified Garment performance requirements are based on new, unworn Garments and Composites. Useful life is the period of time that NFPA 1999 Certified Garments, which have been properly cared for, can be expected to provide reasonable limited protection. Useful life is normally 5-7 years, depending on the materials and the conditions of wear, maintenance and storage. Useful life is highly unlikely to be more than 10 years. Garments more than 10 years old and made to earlier versions of NFPA Standards are highly likely to have exceeded their useful life and must be retired!

A general rule recommended by SAFER is that Garments should be retired when the costs of repair would exceed 50% of the replacement cost.

The useful life of a Garment will vary according to the following factors:

- Weight and type of weave of fabric
- Age and frequency of use
- Type of work the wearer performed
- The length of exposure to direct or indirect sunlight or other light sources such as fluorescent light

Your Garments should be assessed by trained professionals at each regular Advanced Inspection to determine whether they have exceeded their useful life and must be retired. Your Garments must be removed from service when they can no longer be safely used and when the cost of repair would exceed 50% of the cost of replacement.

Trained professionals with in-depth knowledge of Garments and their limitations should handle the details of a retirement program. If you have any questions about the useful life and retirement of your Garment, get assistance before wearing your Garment into any EMS operation! Contact a trained expert within your department, LION, a LION TotalCare® Center or a verified ISP.

⚠ CAUTION

Most performance properties of the Garment and its components cannot be tested by the user in the field.

15.2 OUTER SHELL COLOR OR SHADE CHANGES

Garment textiles may experience color or shade changes during their useful life as a result of washing and/or exposure to EMS operations. Shade changes normally do not affect the fabric's protective properties. Nonetheless, inspect your Garments according to section 6 of this guide.

16. DISPOSAL

16.1 DISPOSAL

Retired uncontaminated Garments must be destroyed to prevent their unauthorized or mistaken use. Cut the uncontaminated, retired Garments into several pieces and dispose of properly. One suggested method of disposal is a landfill.

Retired Garments that are contaminated with blood or body fluids or hazardous substances should be placed in a plastic bag and properly disposed of. You should follow federal, state and local regulations governing disposal of contaminated materials.

⚠ *WARNING*

Never use retired Garments for training purposes. Use of retired Garments in hazardous situations could result in serious injury or death.

17. LIMITED WARRANTY INFORMATION

HOW LONG IS USEFUL LIFE?

- The period of time that NFPA 1999 Certified Garments, which have been properly cared for, can be expected to provide reasonable limited protection. Useful life of Garments can be as little as 3 to 5 years with heavy wear and tear and improper maintenance and/or storage.
- Useful life can be as long as 7 to 10 years if Garments have been subject to relatively lower levels of wear and tear and have been consistently maintained in a regular cleaning and maintenance program and stored properly!

LION warrants that its firefighter and emergency responder products meet all applicable NFPA standards in effect at the time of their manufacture and further warrants that such products are free from any defect in workmanship or any patent material defect.

Conditions of use are outside the control of LION. It is the responsibility of the user to inspect and maintain the products to assure they remain fit for their intended purpose. In order to maximize the useful life of these products and maintain the warranty, the products are to be used only by appropriately trained personnel following proper emergency response techniques and in accordance with the product's warning, use, inspection, maintenance, care, storage and retirement instructions. Failure to do so will void the warranty.

EXCEPT AS SET FORTH ABOVE, LION MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE.

Under the above warranties, LION will repair or replace, at its option, any product which does not meet the above warranties. Such repair or replacement will be the purchaser's sole remedy and LION will not be responsible for any incidental, consequential or other damages based upon or arising in any way from any breach of the warranties contained herein or the purchaser's use of such product.

These warranty obligations apply only to any product, part or component which LION agrees to be defective as covered by this warranty and is returned.

The word "product" includes the product itself and any parts or labor furnished by LION with the sales, delivery or servicing of the product.

USEFUL LIFE: Performance requirements are based on new, unworn Garments and Composites. Useful life is the period of time that Garments, which have been properly cared for, can be expected to provide reasonable limited protection. The useful life will vary according to type and frequency of use, the weight and type of materials used in the product. Useful life is normally 5-7 years, depending on the conditions of wear, maintenance and storage. Useful life is highly unlikely to be more than 10 years. Garments more than 10 years old and made to earlier versions of NFPA Standards are highly likely to have exceeded their useful life and must be retired! A Garment should be retired when the costs of repair would exceed 50% of the replacement cost

DEFECTS IN WORKMANSHIP AND MATERIALS: Defects in Workmanship and Materials means poorly manufactured items, including seams, stitching or components (for example, loose or broken seams; zippers or snaps that fall off or do not function properly); and fabrics or barriers which have such flaws as holes, uneven spots, weak areas, pilling or other flaws caused by irregularities in their manufacture.

EXCEPTIONS TO LIMITED WARRANTY

This limited warranty does not cover the following items after receipt of products by end user:

A. Claims made after 60 days from the date of shipment for damage to materials;
B. Damage or color change from exposure of materials to direct or indirect sunlight or fluorescent light;
C. Shade variations among textiles used or shade changes to fabrics caused by wear and tear and washing;
D. Color loss due to abrasion (creases, folds, pleats, edges, collar points, etc.);
E. Damage caused by improper washing, decontamination, disinfection or maintenance (for example, use of chlorine or petrochemicals to clean);
F. Damage caused by repair work not performed to factory specification;
G. Damage from routine exposure to common hazards which may cause rips, tears, burn damage or abrasion;
H. Loss of retroreflectivity of reflective trim due to normal wear or heat exposure;
I. Detachment of reflective trim due to thread abrasion or heat exposure;
J. Replacement of zippers or closures worn partially sealed, or damaged by heavy wear and tear;
K. Loss of buttons, snaps or cuff hem seams.

18. INSPECTION, CLEANING, REPAIR, RETIREMENT AND DISPOSAL RECORD

Garment ID_____ **Model**_____ **Date of Garment Manufacture**_____

In the spaces below, note the activities performed on your Garment during its wear life.
Types of activities can include: Routine or Advanced Inspection; Routine or Advanced Cleaning; Decontamination; Repair; Alteration; Removal from Service; Retirement; Disposal, etc.

Date of Activity	Type of Activity	Reason for Activity	Description of Repair, Inspection Findings, etc.	Location on Garment	Inspection/ Cleaning/Repair Site	Activity Performed By	Date Returned to Service

Date of Retirement_____ Date and Method of Disposal_____

NOTES:

NOTES:

DANGER

PERSONAL RESPONSIBILITY CODE

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called upon to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and/or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.

FEMSA

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LION
ready for action