USER INSTRUCTION, SAFETY AND TRAINING GUIDE

HAIX® NFPA Compliant Footwear Models

FIRE HUNTER® XTREME
FIRE HUNTER® PRO
FIRE HERO® XTREME
FIRE EAGLE® AIR
FIRE EAGLE® XTREME
FIRE EAGLE® AIR GRIP XTREME
FIRE EAGLE® AIR GRIP XTREME BLK
AIRPOWER® XR1 PRO
AIRPOWER® XR1 PRO GRIP XTREME
AIRPOWER® XR2
AIRPOWER® XR2 WINTER
AIRPOWER® XR2 PT
BLACK EAGLE® SAFETY 55 MID SZ
RESCUE XTREME
MISSOULA 2.1
FIRE EAGLE® AIR XPF
FIRE HUNTER® PRO XPF
AIRPOWER® XR1 PRO XPF

NFPA 1970: Standard on Protective Ensembles for Structural and Proximity Fire Fighting, Work Apparel, Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, and Personal Alert Safety Systems (PASS), 2025 edition (includes NFPA 1971 / NFPA 1975 / NFPA 1981 / NFPA 1982)

NFPA 1990: Standard for Protective Ensembles for Hazardous Materials and CBRN Operations, 2022 edition (includes NFPA 1991 / NFPA 1992 / NFPA 1994)

NFPA 1992: Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies, incorporated in the 2022 edition of NFPA 1990

NFPA 1950: Standard on Personal Protective Equipment for Technical Rescue Incidents, Emergency Medical Operations, and Wildland and Urban Interface Firefighting, 2025 edition (includes NFPA 1951 / NFPA 1977 / NFPA 1999)

NFPA 1850: Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural and Proximity Firefighting and Open-Circuit Self-Contained Breathing Apparatus (SCBA), 2026 edition (includes NFPA 1851 / NFPA 1852)

NFPA 1857: Standard on Selection, Care, and Maintenance of Protective Ensembles for Technical Rescue Incidents and Wildland Firefighting, 2026 Edition (includes NFPA 1855 / NFPA 1877)

NFPA 1891: Standard on Selection, Care, and Maintenance of Hazardous Materials, CBRN, and Emergency Medical Operations Clothings and Equipment, 2022 edition

ASTM F2413: Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear, 2024 edition.

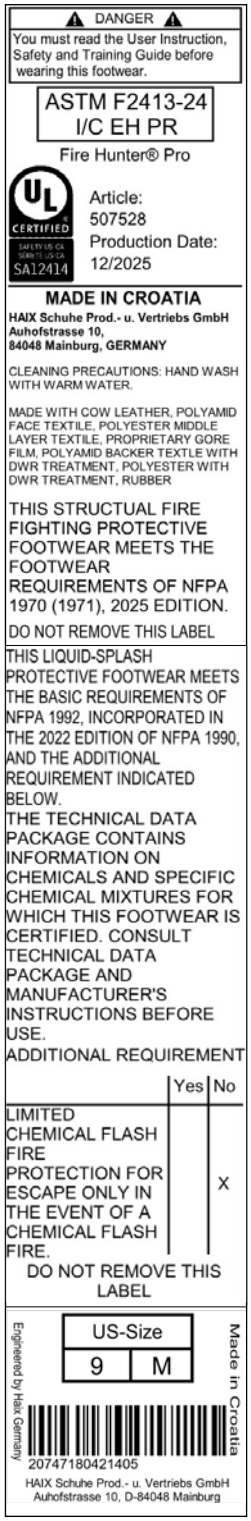
ASTM F2892: Standard Specification for Performance Requirements for Soft Toe Protective Footwear (Non-Safety / Non-Protective Toe), 2024 edition.

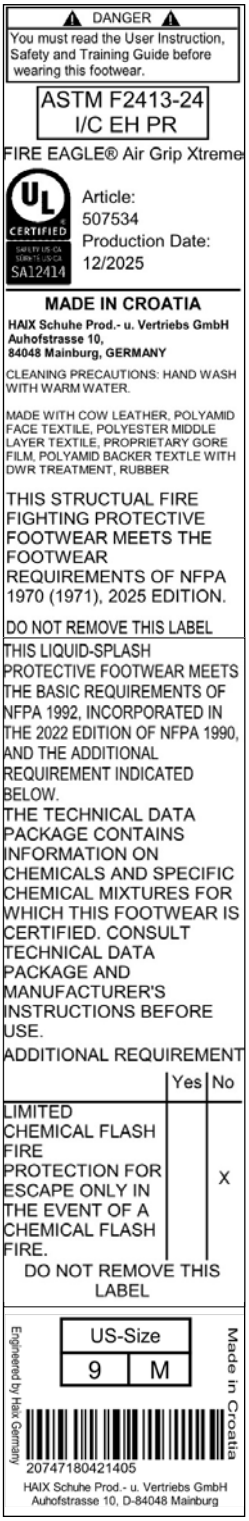
CSA-Z195: Standard for Protective Footwear, 2014 edition (R2025)

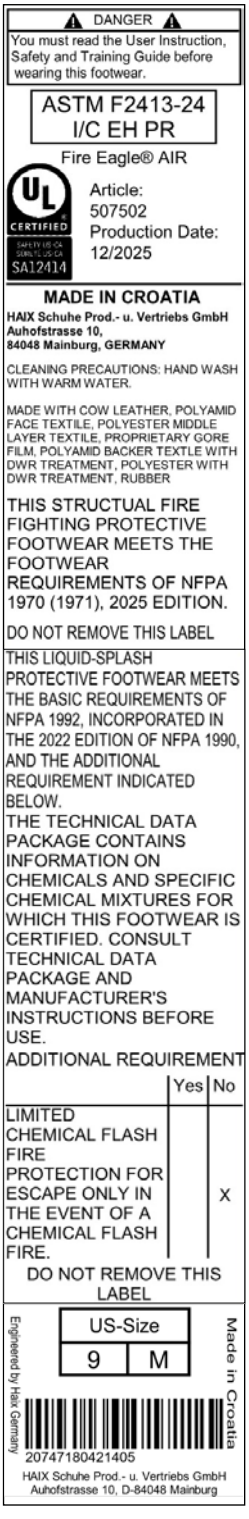
⚠ DANGER

- A copy of this User Guide must be retained, physically or digitally, and made accessible to fire department personnel for reference purposes
- **You MUST read this Guide and all Footwear Safety, Cleaning, and Information labels before wearing.**
- Burns are a function of time and temperature. First degree skin burns can occur when skin reaches a temperature of as low as 118 degrees F.
- Fire burns at temperatures up to 2000 degrees F or higher.
- This Footwear provides limited protection against heat and flame. While wearing this Footwear, you may be burned without heat sensation or warning in some circumstances, and without any sign of damage to the Footwear.

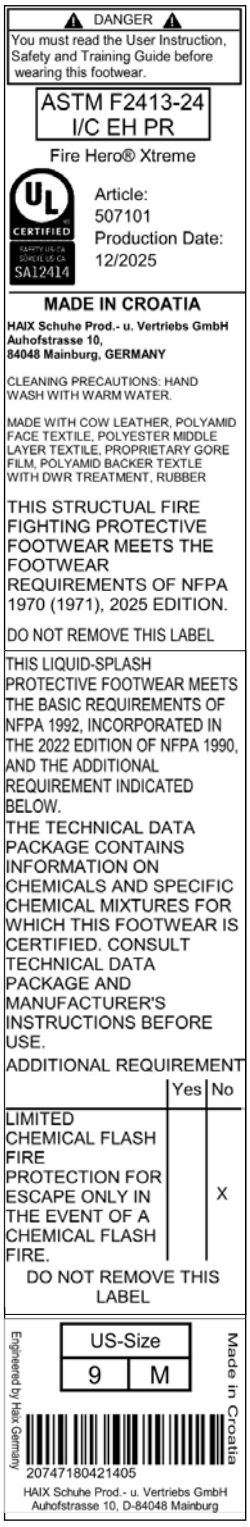
DANGER
You must read the User Instruction, Safety and Training Guide before wearing this footwear.
ASTM F2413-24
I/C PR
Fire Hunter® Xtreme
Article:
501605
Production Date:
12/2025
SA12414
MADE IN CROATIA
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10,
84048 Mainburg, GERMANY
CLEANING PRECAUTIONS: HAND WASH WITH WARM WATER.
MADE WITH COW LEATHER, POLYAMID FACE TEXTILE, POLYESTER MIDDLE LAYER TEXTILE, PROPRIETARY GORE FILM, POLYAMID BACKER TEXTLE WITH DWR TREATMENT, RUBBER
THIS STRUCTUAL FIRE FIGHTING PROTECTIVE FOOTWEAR MEETS THE FOOTWEAR REQUIREMENTS OF NFPA 1970 (1971), 2025 EDITION.
DO NOT REMOVE THIS LABEL
THIS LIQUID-SPLASH PROTECTIVE FOOTWEAR MEETS THE BASIC REQUIREMENTS OF NFPA 1992, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, AND THE ADDITIONAL REQUIREMENT INDICATED BELOW.
THE TECHNICAL DATA PACKAGE CONTAINS INFORMATION ON CHEMICALS AND SPECIFIC CHEMICAL MIXTURES FOR WHICH THIS FOOTWEAR IS CERTIFIED. CONSULT TECHNICAL DATA PACKAGE AND MANUFACTURER'S INSTRUCTIONS BEFORE USE.
ADDITIONAL REQUIREMENT
Yes
No
LIMITED CHEMICAL FLASH FIRE PROTECTION FOR ESCAPE ONLY IN THE EVENT OF A CHEMICAL FLASH FIRE.
X
DO NOT REMOVE THIS LABEL
Engineered by Haix Germany
US-Size
9
M
Made in Croatia
20747180421405
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10, D-84048 Mainburg

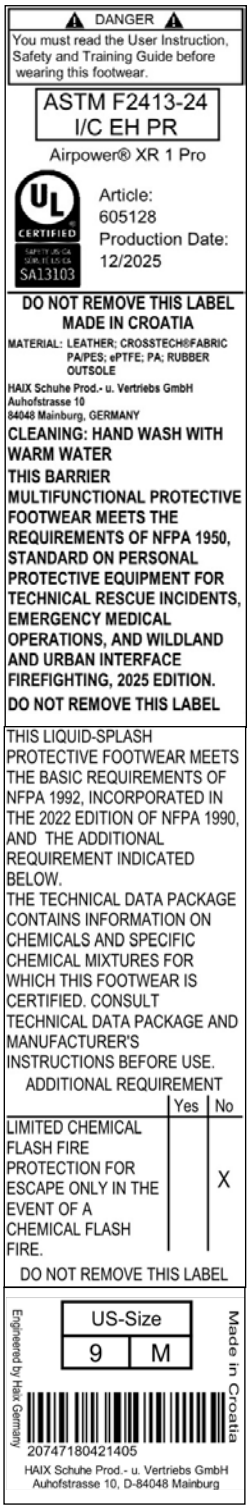

DANGER
You must read the User Instruction, Safety and Training Guide before wearing this footwear.
ASTM F2413-24
I/C EH PR
Fire Hunter® Pro
Article:
507528
Production Date:
12/2025
SA12414
MADE IN CROATIA
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10,
84048 Mainburg, GERMANY
CLEANING PRECAUTIONS: HAND WASH WITH WARM WATER.
MADE WITH COW LEATHER, POLYAMID FACE TEXTILE, POLYESTER MIDDLE LAYER TEXTILE, PROPRIETARY GORE FILM, POLYAMID BACKER TEXTLE WITH DWR TREATMENT, POLYESTER WITH DWR TREATMENT, RUBBER
THIS STRUCTUAL FIRE FIGHTING PROTECTIVE FOOTWEAR MEETS THE FOOTWEAR REQUIREMENTS OF NFPA 1970 (1971), 2025 EDITION.
DO NOT REMOVE THIS LABEL
THIS LIQUID-SPLASH PROTECTIVE FOOTWEAR MEETS THE BASIC REQUIREMENTS OF NFPA 1992, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, AND THE ADDITIONAL REQUIREMENT INDICATED BELOW.
THE TECHNICAL DATA PACKAGE CONTAINS INFORMATION ON CHEMICALS AND SPECIFIC CHEMICAL MIXTURES FOR WHICH THIS FOOTWEAR IS CERTIFIED. CONSULT TECHNICAL DATA PACKAGE AND MANUFACTURER'S INSTRUCTIONS BEFORE USE.
ADDITIONAL REQUIREMENT
Yes
No
LIMITED CHEMICAL FLASH FIRE PROTECTION FOR ESCAPE ONLY IN THE EVENT OF A CHEMICAL FLASH FIRE.
X
DO NOT REMOVE THIS LABEL
Engineered by Haix Germany
US-Size
9
M
Made in Croatia
20747180421405
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10, D-84048 Mainburg


DANGER
You must read the User Instruction, Safety and Training Guide before wearing this footwear.
ASTM F2413-24
I/C EH PR
FIRE EAGLE® Air Grip Xtreme
Article:
507534
Production Date:
12/2025
SA12414
MADE IN CROATIA
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10,
84048 Mainburg, GERMANY
CLEANING PRECAUTIONS: HAND WASH WITH WARM WATER.
MADE WITH COW LEATHER, POLYAMID FACE TEXTILE, POLYESTER MIDDLE LAYER TEXTILE, PROPRIETARY GORE FILM, POLYAMID BACKER TEXTLE WITH DWR TREATMENT, RUBBER
THIS STRUCTUAL FIRE FIGHTING PROTECTIVE FOOTWEAR MEETS THE FOOTWEAR REQUIREMENTS OF NFPA 1970 (1971), 2025 EDITION.
DO NOT REMOVE THIS LABEL
THIS LIQUID-SPLASH PROTECTIVE FOOTWEAR MEETS THE BASIC REQUIREMENTS OF NFPA 1992, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, AND THE ADDITIONAL REQUIREMENT INDICATED BELOW.
THE TECHNICAL DATA PACKAGE CONTAINS INFORMATION ON CHEMICALS AND SPECIFIC CHEMICAL MIXTURES FOR WHICH THIS FOOTWEAR IS CERTIFIED. CONSULT TECHNICAL DATA PACKAGE AND MANUFACTURER'S INSTRUCTIONS BEFORE USE.
ADDITIONAL REQUIREMENT
Yes
No
LIMITED CHEMICAL FLASH FIRE PROTECTION FOR ESCAPE ONLY IN THE EVENT OF A CHEMICAL FLASH FIRE.
X
DO NOT REMOVE THIS LABEL
Engineered by Haix Germany
US-Size
9
M
Made in Croatia
20747180421405
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10, D-84048 Mainburg


DANGER
You must read the User Instruction, Safety and Training Guide before wearing this footwear.
ASTM F2413-24
I/C EH PR
Fire Eagle® AIR
Article:
507502
Production Date:
12/2025
SA12414
MADE IN CROATIA
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10,
84048 Mainburg, GERMANY
CLEANING PRECAUTIONS: HAND WASH WITH WARM WATER.
MADE WITH COW LEATHER, POLYAMID FACE TEXTILE, POLYESTER MIDDLE LAYER TEXTILE, PROPRIETARY GORE FILM, POLYAMID BACKER TEXTLE WITH DWR TREATMENT, POLYESTER WITH DWR TREATMENT, RUBBER
THIS STRUCTUAL FIRE FIGHTING PROTECTIVE FOOTWEAR MEETS THE FOOTWEAR REQUIREMENTS OF NFPA 1970 (1971), 2025 EDITION.
DO NOT REMOVE THIS LABEL
THIS LIQUID-SPLASH PROTECTIVE FOOTWEAR MEETS THE BASIC REQUIREMENTS OF NFPA 1992, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, AND THE ADDITIONAL REQUIREMENT INDICATED BELOW.
THE TECHNICAL DATA PACKAGE CONTAINS INFORMATION ON CHEMICALS AND SPECIFIC CHEMICAL MIXTURES FOR WHICH THIS FOOTWEAR IS CERTIFIED. CONSULT TECHNICAL DATA PACKAGE AND MANUFACTURER'S INSTRUCTIONS BEFORE USE.
ADDITIONAL REQUIREMENT
Yes
No
LIMITED CHEMICAL FLASH FIRE PROTECTION FOR ESCAPE ONLY IN THE EVENT OF A CHEMICAL FLASH FIRE.
X
DO NOT REMOVE THIS LABEL
Engineered by Haix Germany
US-Size
9
M
Made in Croatia
20747180421405
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10, D-84048 Mainburg

DANGER
You must read the User Instruction, Safety and Training Guide before wearing this footwear.
ASTM F2413-24
I/C EH PR
Fire Eagle® Xtreme
Article:
507530
Production Date:
01/2026
SA12414
MADE IN CROATIA
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10, 84048 Mainburg,
GERMANY
CLEANING PRECAUTIONS:
HAND WASH WITH WARM WATER.
MADE WITH COW LEATHER, POLYESTER/POLYAMID TEXTILE BLEND FACE TEXTILE, PROPRIETARY GORE FILM, POLYAMID BACKER TEXTLE WITH DWR TREATMENT, RUBBER
THIS STRUCTUAL FIRE FIGHTING PROTECTIVE FOOTWEAR MEETS THE FOOTWEAR REQUIREMENTS OF NFPA 1970 (1971), 2025 EDITION.
THIS BARRIER MULTIFUNCTIONAL PROTECTIVE FOOTWEAR MEETS THE REQUIREMENTS OF NFPA 1950, STANDARD ON PERSONAL PROTECTIVE EQUIPMENT FOR TECHNICAL RESCUE INCIDENTS, EMERGENCY MEDICAL OPERATIONS, AND WILDLAND AND URBAN INTERFACE FIREFIGHTING, 2025 EDITION.
DO NOT REMOVE THIS LABEL
THIS LIQUID-SPLASH PROTECTIVE FOOTWEAR MEETS THE BASIC REQUIREMENTS OF NFPA 1992, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, AND THE ADDITIONAL REQUIREMENT INDICATED BELOW.
THE TECHNICAL DATA PACKAGE CONTAINS INFORMATION ON CHEMICALS AND SPECIFIC CHEMICAL MIXTURES FOR WHICH THIS FOOTWEAR IS CERTIFIED. CONSULT TECHNICAL DATA PACKAGE AND MANUFACTURER'S INSTRUCTIONS BEFORE USE.
ADDITIONAL REQUIREMENT
Yes
No
LIMITED CHEMICAL FLASH FIRE PROTECTION FOR ESCAPE ONLY IN THE EVENT OF A CHEMICAL FLASH FIRE.
X
DO NOT REMOVE THIS LABEL
Engineered by Haix Germany
US-Size
9
M
Made in Croatia
20747180421405
HAIX Schuhe Prod.- u. Vertriebs GmbH
Auhofstrasse 10, D-84048 Mainburg





Note: Labels for women boots are not shown above.

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Note: Labels for women boots are not shown above.

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NFPA 1990 (1994) - 2022 PE FOR HAZARDOUS MATERIALS AND CBRN OPERATIONS (OUTER BOOT, CLASS I)	NFPA 1970 (1971) - 2025 STRUCTURAL FIRE FIGHTING	NFPA 1950 (1977) - 2025 WILDLAND AND URBAN INTERFACE PROTECTIVE CLOSING	NFPA 1950 - 2025 MULTIFUNCTIONAL PROTECTIVE ENSEMBLE	NFPA 1990 (1992) - 2022 HAZARDOUS MATERIALS AND CBRN OPERATIONS	NFPA 1950 (1999) - 2025 EMERGENCY MEDICAL	ASTM F2413 - 2024 PROTECTIVE FOOTWEAR	CSA-Z195-2014 (R2025) PROTECTIVE FOOTWEAR	ASTM F2892 - 2024 SOFT TOE PROTECTIVE FOOTWEAR	
N/A	X	N/A	N/A	X	N/A	X	X	N/A	**FIRE HUNTER® XTREME**
N/A	X	N/A	N/A	X	N/A	X	X	N/A	**FIRE HUNTER® PRO**
X	N/A	N/A	N/A	N/A	X	X	X	N/A	**RESCUE XTREME**
N/A	X	-	X	X	-	X	X	N/A	**FIRE EAGLE® XTREME**
N/A	X	N/A	N/A	X	N/A	X	X	N/A	**FIRE HERO® XTREME**
N/A	X	N/A	N/A	X	N/A	X	X	N/A	**FIRE EAGLE® AIR**
N/A	X	N/A	N/A	X	N/A	X	X	N/A	**FIRE EAGLE® AIR GRIP XTREME**
N/A	N/A	-	X	X	-	X	X	N/A	**AIRPOWER® XR1 PRO**
N/A	N/A	-	X	X	-	X	X	N/A	**AIRPOWER® XR1 PRO GRIP XTREME**
N/A	N/A	N/A	N/A	N/A	X	X	X	N/A	**AIRPOWER® XR2**
N/A	N/A	N/A	N/A	N/A	X	X	X	N/A	**AIRPOWER® XR2 WINTER**
N/A	N/A	N/A	N/A	N/A	X	X	X	N/A	**AIRPOWER® XR2PT**
N/A	N/A	N/A	N/A	N/A	X	X	X	N/A	**BLACK EAGLE® SAFETY 55 MID SIDE ZIP**
N/A	N/A	X	N/A	N/A	N/A	N/A	N/A	X	**MISSOULA 2.1**

X = CERTIFIED

N/A = NOT APPLICABLE

● = COMPLIANT, NOT CERTIFIED

NFPA 1990 (1994) - 2022 PE FOR HAZARDOUS MATERIALS AND CBRN OPERATIONS (OUTER BOOT, CLASS I)	NFPA 1970 (1971) - 2025 STRUCTURAL FIRE FIGHTING	NFPA 1950 (1977) - 2025 WILDLAND AND URBAN INTERFACE PROTECTIVE CLOSING	NFPA 1950 - 2025 MULTIFUNCTIONAL PROTECTIVE ENSEMBLE	NFPA 1990 (1992) - 2022 HAZARDOUS MATERIALS AND CBRN OPERATIONS	NFPA 1950 (1999) - 2025 EMERGENCY MEDICAL	ASTM F2413 - 2024 PROTECTIVE FOOTWEAR	CSA-Z195-2014 (R2025) PROTECTIVE FOOTWEAR	ASTM F2892 - 2024 SOFT TOE PROTECTIVE FOOTWEAR	
N/A	X	N/A	N/A	X	N/A	X	X	N/A	**FIRE EAGLE AIR GRIP XTREME BLK**
N/A	X	N/A	N/A	N/A	N/A	X	X	N/A	**AIRPOWER XR1 PRO XPF**
N/A	X	N/A	N/A	N/A	N/A	X	X	N/A	**FIRE EAGLE AIR XPF**
N/A	X	N/A	N/A	N/A	N/A	X	X	N/A	**FIRE HUNTER PRO XPF**

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1 INTRODUCTION

Congratulations on purchasing your new HAIX® North America product!

Your HAIX® NFPA Compliant Footwear (referred to throughout this Guide as "Footwear" or “Boots”) is designed to provide limited protection in various dangerous operations. It and its components are manufactured and certified under the performance requirements of the corresponding NFPA Standards (page 4)

This User Information and Safety Guide gives important instructions regarding the use, inspection, care, maintenance, storage and retirement of your HAIX® NFPA Compliant Footwear. No one except you (the end user) should remove this Guide from your HAIX® NFPA Compliant Footwear. Immediately upon receipt of your Footwear you should remove, carefully read, and save this Guide in a three-ring binder for future reference.

This Guide is a training tool to help you understand your NFPA Compliant hazardous material emergency Footwear and how to use it in the safest possible manner during various dangerous operations. Please take time to read it.

This Guide will train you to:

- Put on your Footwear
- Wear your Footwear safely
- Inspect your Footwear
- Repair your Footwear
- Clean and Decontaminate your Footwear
- Store your Footwear
- Retire your Footwear

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 Footwear, 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 labels attached to your Footwear, 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

Afterflame Time – The length of time for which a material, component, or chemical protective suit continues to burn after the simulated chemical flash fire has ended.

Biological Agent– Biological materials that are capable of causing disease or long-time damage to the human body.

Compliance/Compliant – Meeting or exceeding all applicable requirements of this standard.

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

Ensemble Elements – The compliant products that provide protection to the upper and lower torso, arms, legs, head, hands, and feet.

Entry Fire Fighting – EXTRAORDINARILY specialized fire fighting operations that can include the activities of rescue, fire suppression, and property conservation at incidents involving fires producing very high 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. NFPA 1970 Compliant Footwear is NEVER to be used for entry fire fighting or any direct contact with flames or molten metals, and do not provide the required level of protection. Entry fire fighting is not structural fire fighting.

Exposure Incident – Specific contact of the following with blood or other potentially infectious materials: 1) eye; 2) mouth or other mucous membranes; 3) non intact skin; or 4) parenteral contact.

Follow-Up Program – The sampling, inspections, tests, or other measures conducted by the certification organization on a periodic basis to determine the conducted compliance of labeled or listed products that are being produced by the manufacturer to the requirements of this standard.

Footwear – The term Footwear used throughout this Guide refers ONLY to HAIX® NFPA Compliant Footwear. Footwear is an element of the protective ensemble designed to provide limited protection required by the NFPA Standards to the foot, ankle, and lower leg. Footwear is NOT Entry or Proximity Footwear.

Footwear Upper – That portion of the footwear above the sole, heel, or insole.

Hazardous Materials – A substance (solid, liquid, or gas) that when released is capable of creating harm to people, the environment, and property.

Hazardous Materials Emergencies – Incidents involving the release or potential release of hazardous materials.

Inner Liner –The liner portion of the NFPA Compliant Footwear consisting of the thermal liner layer and the moisture barrier layer sewn together.

Interface Area – An area of the body where the protective garment, helmet, gloves, and footwear, or SCBA facepiece meet. Interface area includes, but is not limited to, …the trouser/footwear area.

Liquid Splash-Protective Footwear – the element of the protective ensemble, or the item of protective clothing that provides liquid chemical protection and physical protection on the feet, ankles, and lower legs.

Maintenance – Procedures for inspection, repair, and removal from service of liquid splash-protective ensembles or clothing.

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 Compliant Footwear – (Also referred to in this Guide as NFPA Compliant Footwear). Means Footwear 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 valid NFPA Standards.

Protective Ensemble – Multiple elements of personal equipment designed in accordance with the NFPA Standards to provide a limited degree of protection for responders from adverse exposures to the inherent risks of structural fire fighting operations and certain other emergency operations. The elements of the protective ensemble are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

Proximity Fire Fighting – Specialized fire fighting 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 necessary for persons involved in such operations due to the scope of these operations and the close distance to the fire at which these operations are conducted, although direct entry into flame is NOT made. These operations usually are exterior operations but might be combined with interior operations. Proximity fire fighting is not structural fire fighting but might be combined with structural fire fighting operations. Proximity fire fighting also is not entry fire fighting.

Useful Life –The period of time that Footwear, which has been properly cared for, may provide reasonable limited protection. Useful life of Footwear is discussed in more detail in Section 14 of this Guide. Nothing in this definition shall alter, affect, or extend the warranties set forth in Section 16. EXCEPT AS SET FORTH IN SECTION 16 OF THIS GUIDE, HAIX® NORTH AMERICA MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR USE, OR USEFUL LIFE.

Wildland Urban Interface –The line area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.

3 SAFETY CHECKLIST

Do not use this HAIX® NFPA Compliant Footwear until you have checked "YES" to the following:

1. Have you completed professional training in fire fighting techniques or in hazardous materials emergency incident operations involving liquids, the proper use of NFPA Compliant Footwear?

   O Yes O No

2. Have you read and understood all the instructions and warnings throughout this Guide as well as all the label on the Footwear?

   O Yes O No

3. Will you regularly inspect your Footwear 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?

   O Yes O No

4. Have you studied the limitations of your Footwear as described throughout this Guide?

   O Yes O No

5. Have you checked to make sure that your Footwear fits you properly in accordance with Section 8 of this Guide?

   O Yes O No

6. Have you, your safety officer, or another appropriate person made plans to ensure that your Footwear is used, inspected, maintained, stored, and retired according to instructions in this Guide?

   O Yes O No

7. Have you read, do you understand, and do you assume the risks and responsibilities listed in the Personal Responsibility Code? See FIG. 1 and back cover of this Guide.

   O Yes O No

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

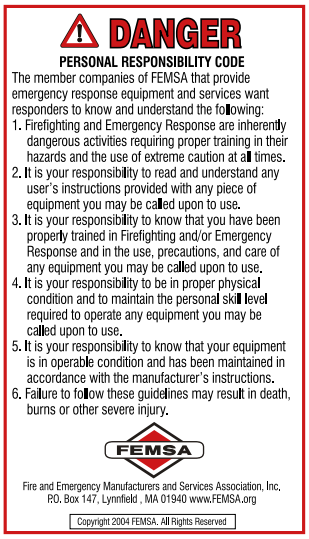


FIG. 1
Personal Responsibility Code
Also shown on back cover of this Guide.

4 PROPER USE OF YOUR HAIX® NFPA COMPLIANT FOOTWEAR – PROTECTING HEALTH CARE WORKERS FROM OCCUPATIONAL EXPOSURE TO BLOOD-BORNE PATHOGENS

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor places the responsibility for selection, approval, maintenance, inspection and training in the proper use and limitations of safety gear on your department, team, or employer. (Code of Federal Regulations Volume 29, Section 1910.132, General Requirements of Subpart I, Personal Protective Equipment). By doing this, OSHA is recognizing a simple truth: how you use your protective clothing is beyond the manufacturer's control. Your department or employer controls the circumstances under which the protective ensemble will be used and is in the better position to assess the hazards at the emergency scene and to direct the appropriate selection and use of safety equipment including protective ensembles. Consistent with the OSHA regulations, your protective ensemble is offered for your department (paid or volunteer), team, or employer to evaluate and decide for itself whether or not the protective ensemble will provide an acceptable level of protection for any particular emergency operation. It is recommended that your department or employer conduct its own testing, evaluation and training in conjunction with qualified safety experts before issuing protective ensemble elements for use by its members. Whether to use protective ensemble in a particular incident, whether to enter a particular situation, whether to remain in a particular situation, and similar decisions are a matter to be decided by your department or employer at the scene on a case by case basis. Since, obviously, the manufacturer of your protective ensernble element cannot know in advance all of the many conditions existing at each scene, the appropriate use of your protective ensemble and its suitability for that use must be decided by your department or employer at each and every scene. The manufacturer makes no guarantees or warranties, express or implied, that your protective ensemble is fit for a particular purpose. (See Warranty Information on inside back cover.) Your protective ensemble must be used only under the direct supervision of your department or employer in a manner consistent with NFPA 1581 (Standard on Fire Department Infection Control Program), NFPA 1500 (Standard on Fire Department Occupational Safety Health Program), 29 CFR 1910.132 referenced earlier, and 29 CFR 1910.1030 (Protecting Health Care Workers from Occupational Exposure to Blood-borne Pathogens.)

For Footwear certified to NFPA 1990, your department must also comply with the requirements of NFPA 1891 (Standard on Selection, Care, and Maintenance of Hazardous Materials, CBRN, and Emergency Medical Operations Clothing and Equipment).

For users in other countries or territories: Footwear users should also comply with national or other applicable personal protective equipment regulations in force in your country or territory.

This Footwear is designed to provide **LIMITED** protection under the requirements of the NFPA Standards to the foot, ankle and lower leg against hazards in STRUCTURAL FIRE FIGHTING OPERATIONS, WILDLAND OPERATIONS, AND NON-FIRE RELATED RESCUE OPERATIONS, EMERGENCY MEDICAL OPERATIONS, AND VICTIM EXTRICATION, INCLUDING:

- heat and flame,
- liquid splash of common fire ground chemicals (See Section 10 of this Guide for more information),
- penetration of blood and other body fluids,
- environmental, including moisture and cold weather,
- physical hazards, including puncture, crushing, cuts and abrasion,
- rain and hose steam water

Proper use of your HAIX NFPA compliant footwear should be consistent with the respective requirements of NFPA 1550, (NFPA 1500, 1521, and 1561), of NFPA 1970 (1971), of NFPA 1950 (1951, 1977, 1999), of NFPA 1990 (NFPA 1991, 1992, 1994), as NFPA 1850, NFPA 1857, NFPA 1891 well as applicable Federal, state and local regulations specific to the selection, use, care, and maintenance of firefighting personal protective

equipment, including 29 CFR 1910.132, "Personal Protective Equipment: General Requirements", and 29 CFR 1910.1030, "Protecting Health Care Workers from Occupational Exposure to Blood-Borne Pathogens"

Do not use for ANY proximity or entry fire fighting.

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

Do not use for protection against hazardous chemical agents.

Do not use for protection against hazardous radiological agents.

Do not use for protection against hazardous biological agents.

⚠ WARNING

If wearing a zippered style, you must fasten all closures during all times the Footwear is worn or there will be gaps in your protection, and wear will occur in the heel area, greatly decreasing the useful life of the Footwear and voiding the warranty.

⚠ DANGER

DO NOT use this Footwear for the following:

- Proximity or entry fire fighting operations (See Definitions)
- Activities requiring direct contact with flames or molten metal
- Protection against all hazardous material, biological, or radiological agents.

⚠ DANGER

Fire fighting 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 even while wearing their complete NFPA 1970 Structural Fire Fighter Protective Ensemble!

Emergency response personnel can encounter many common liquids during normal performance of their duties. The reference to limited protection from liquid splash from common fire grounds chemicals should not be interpreted to mean that the Footwear is suitable or is permitted to be used for protection to the wearer during any hazardous materials situation.

⚠ WARNING

Controlled lab tests in the NFPA Standard "cannot be deemed as establishing performance levels for all situations to which personnel can be exposed". You should always use extreme caution in all situations to avoid the risk of injuries.

⚠ WARNING

Protective properties in new NFPA Compliant Footwear 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 Footwear to ensure that the Footwear is not used past its Useful Life.

5 KNOW YOUR HAIX® NFPA COMPLIANT FOOTWEAR: CONSTRUCTION, FEATURES AND FUNCTION

In order to understand the limits of protection provided by your HAIX® NFPA Compliant Footwear, you should study its construction, features, and function.

5.1 OVERVIEW

HAIX® NFPA Footwear provides a limited barrier against penetration from sharp objects and liquids contacted on the fire grounds. Because it is made of special heat and flame resistant materials, hydrophobic leather, and rubber soles, it provides limited resistance to heat and flame for brief periods of time, without the boot combusting and burning.

5.2 LAYERED STRUCTURE

Your HAIX® NFPA Compliant Footwear is made with three primary layers: a leather outer layer, a moisture barrier, and an inner lining. The CAMBRELLE®inner lining and CROSSTECH® moisture barrier are secure inside the boot and are designed not to come out of the boot while doffing.

5.3 LEATHER OUTER LAYER

The outer layer consists of a hydrophobic, breathable leather that provides initial limited protection against, heat, flame, abrasions, and punctures.

5.4 INNER LAYER

The inner lining and moisture barrier are sewn together to make up the inner layer.

Moisture Barrier

The moisture barrier is 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 Footwear. The moisture barrier is bonded to a woven or nonwoven substrate to give it strength and durability. All breathable moisture barriers have the ability to prevent liquid moisture from passing through, while allowing the passage of moisture vapor. This allows some body heat to escape the inner layers and move outside the footwear. This promotes the evaporative cooling of the fire fighter's feet, ankles, and lower legs

Inner Lining

The inner lining attached to the moisture barrier is a breathable fabric that protects the moisture barrier and absorbs perspiration, allowing it to pass through the moisture barrier and be pumped out of the holes or mesh liner at the top of the footwear (as applicable) by the natural pumping action of movement and walking.

OTHER IMPORTANT SAFETY FEATURES:

Sole: The rubber lug sole with self-cleaning tread is resistant to oil, fuel, heat, and acid.

Toe Protection System: The Footwear has stainless steel or composite toes and a rubber toe cap to provide limited protection from puncture, crushing and abrasions.

Closure Systems: Zip/lacing systems are included on some models. When properly fastened, they reduce the amount of water that can enter the Footwear and prevent the Footwear from coming open during fire fighting or hazardous material operations.

Removable Insole: The anatomically formed absorbent insole can be removed to help promote drying. It is also washable and/or replaceable.

Puncture Resistant Bottom Plate: The Footwear has a flexible high-grade stainles steel or non-metallic puncture plate (Midsole) to resist puncture and penetration.

Leather Back Straps/Pull-on Loops: Provides a grasping mechanism to allow the user to more easily pull the Footwear on.

Label: Located on the inside of the lining, the label contains a statement indicating that the Footwear was manufactured and certified in compliance with the applicable NFPA Standards and contains information regarding the date of manufacture, the serial number, and the name of the manufacturer.

FIG. 1
Key elements of
HAIX® NFPA Compliant Footwear

PUT ON:

Put the shoe on. First time & individual adjusting the laces: Pull on the grip until the forefoot is held firmly in place. Then pull up the colored lace until the shoe fits around the calf area. The Lace-Lock will automatically hold the laces at the desired length. Adjust the length of the colored lace by knotting it so that it is the same length as the black lace. From now on, all you need to do is pull on the grip to adjust the boot perfectly to your foot. Once the laces are secured, place the grip in the side pocket.

TAKE OFF:

To loosen the lacing, pull the handle of the Lace-Lock. At the same time, pull instep protector forward to give the forefoot more freedom and also facilitate exit. Pull/push the tongue forward and upward in circular movements to give the upper foot and calf area more movement. Important: Keep the Lace-Lock open at the top.

FIRE EAGLE® XTREME

Recommended Maintenance for the HAIX® patented Lacing System

Please use a hard nylon brush to clean the Rapidfit System

Do not use a wire brush

Please note: Rapidfit Systems that have been forcibly damaged are not covered by our guarantee.

Thread the shoelace through the "start" eyelets from the rear. Continue to lace upwards, following the numbered arrows, to the top of the zipper system and tie a knot at the back of the uppermost eyelets.

AIRPOWER® XR1 PRO

AIRPOWER® XR2

AIRPOWER® XR2 PT

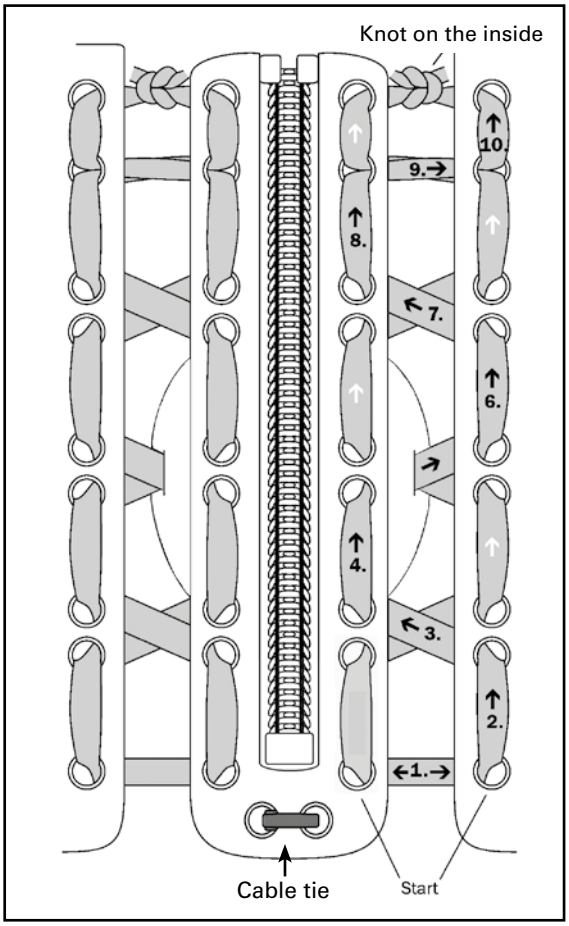


FIG. 2
Zipper Assembly

Recommended Maintenance for the HAIX® patented Lacing System

Please use a hard nylon brush to clean the zipper teeth

Do not use a wire brush

If the zipper grip gets stuck, it can be released easily using a few drops of silicone or sewing machine oil

Please note: Zippers that have been forcibly damaged are not covered by our guarantee.

6 INSPECTING YOUR HAIX® NFPA COMPLIANT FOOTWEAR

6.1 PREPARATION

Read the Information Label (See Section 5 of this Guide for location).

6.2 FREQUENCY

You should inspect your Footwear at the following times: 1.) Upon receipt of your new Footwear or replacement component; 2.) At least monthly thereafter during the useful life of the Footwear; 3.) After exposure to heat, flames, chemicals, or fire fighting agents (including AFFF foam and water); 4.) After exposure to body fluids (including blood); and 5.) After washing, repair or decontamination. You must inspect your Footwear, at a minimum, at the above frequency intervals to detect more obvious damage and deterioration. In addition, you might sense deficiencies in thermal protection by feeling heat more quickly or more easily than before, or get wet from rain or hose streams leaking through the moisture barrier materials or seams. Whenever you detect a potential problem through your own inspection, or suspect that the protective qualities might be degraded, your Footwear should be inspected by trained personnel at the Fire Department or EMS Station or at a HAIX® North America Authorized Clean and Repair Center.

6.3 INSPECTION PROCESS AND CRITERIA

1. Criteria

Inspection of NFPA Footwear should be done in compliance with NFPA 1851 Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, Section 6.2.2.5 and 6.3.5.5

2. Preparation

A. Universal precautions should be observed. At a minimum, individuals conducting inspections shall wear exam gloves certified to NFPA 1999. Also consider to wear aprons with sleeves and/or repirators.

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

3. Outer Layers

A. Leather Layer, Rubber Toe Cap, and Sole: Examine for dirt, thin spots, holes, tears, embrittlement, burns, abrasions, melted areas, and worn spots.

a. Discoloration could be 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 may need to be replaced.

c. If leather is punctured or cracked, the Footwear must be repaired by an HAIX® North America Authorized Clean and Repair Center, or retired and disposed of in accordance with Disposal Procedures in this Guide.

⚠ WARNING

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

d. Soles: If one or more lugs on the sole is worn away, the Footwear needs to be retreaded. All repairs must be done by HAIX® North America Authorized Clean and Repair Centers.

B. Closure on zipper-closure Footwear:

a. Check for functionality and corrosion.

b. Check that the zipper anchor and zipper loop are securely attached to the Footwear.

c. Check that laces are securely tied, and all extra lace is behind the attachment to avoid snagging

d. Check for signs of burns, melting, dirt, or other damage to the laces.

C. Retroreflective Trim:

a. Inspect Footwear for missing, burned, melted, or torn retroreflective trim.

b. Damaged trim should be replaced by a HAIX® North America Authorized Clean and Repair Center.

D. Pull-on Boot Straps: Examine all components to make sure they are securely attached to the Footwear.

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

4. Inner Layer:

A. Fabric: Examine for dirt, thin spots, holes, tears, embrittlement, burns, abrasions, and worn spots.

a. Inspect by running your hands across the inner liner and feel for thin areas or ridges that indicate breakdown. Special attention should be given to the heel area.

b. Discoloration could be a sign of overexposure to light or heat.

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

C. Label: Locate and inspect the label on the inside of the Footwear. Check for legibility, abrasions or tears.

D. Removable insole: check that it is thoroughly dry and not worn or compressed.

HAIX® North America recommends using a HAIX® North America Authorized Clean and Repair Center, or your organization's trained personnel, for footwear repair or inspection. For a list of centers, contact HAIX® North America at: Toll free 866-344-HAIX (4249).

6.4 RECORDKEEPING

HAIX® North America Authorized Clean and Repair Centers offer record keeping services in compliance with NFPA 1850, NFPA 1857, or NFPA 1891, as applicable. 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 record keeping method for this purpose.

7 DONNING & DOFFING: PUTTING ON AND REMOVING YOUR HAIX® NFPA COMPLIANT FOOTWEAR

PREPARATION

Before donning, check to make sure that the Footwear, including the inner layer and inner sole, is thoroughly dry, and that the inner sole is placed in the bottom of the Footwear. If there are laces, the laces must be tied securely. Before the first use of the zipper Footwear, adjust the fit by loosening the laces, pulling the Footwear onto foot, closing the zipper, then tightening the laces for a secure and comfortable fit. Tuck ends of laces between the lace system and tongue area.

DONNING (PUTTING ON YOUR FOOTWEAR)

For the pull-on style, use the pull-on straps and pull the Footwear securely onto your foot.

When using the zippered style, check to be sure the Footwear is unzipped, then pull the Footwear securely onto your foot and pull the zipper closed.

Check and adjust for comfortable, secure fit.

Before entering a hazard area, you must have a partner inspect the area where the Footwear interfaces with your trousers in order to assure proper overlap of all components of your NFPA Protective Ensemble, including Trousers and Footwear.

DOFFING (REMOVING YOUR FOOTWEAR)

A. First, never remove Protective Ensemble until you are certain that you are safely removed from the hazard area. Always wear full NFPA Compliant Protective Ensemble during all phases of emergency operations. If your organization has implemented a preliminary exposure reduction plan, you are to follow the procedures outlined in your preliminary exposure reduction plan.

B. When you are ready to remove your NFPA Compliant Protective Ensemble, you should first remove your gloves and helmet.

⚠ WARNING

If wearing a zippered style, you must fasten all closures during all times the Footwear is worn or there will be gaps in your protection, and wear will occur in the heel area, greatly decreasing the useful life of the Footwear and voiding the warranty.

C. Next, you should remove your SCBA cylinder and begin to remove your garments. Remove the coat first, then remove footwear by gently pulling off your Footwear. Pull the zipper completely downward and then remove the Footwear.

D. If your Footwear is contaminated with hazardous chemicals, you should remove them using protective gloves and carefully avoiding any contact with contaminated parts of the Footwear. Be sure to place the Footwear in a plastic bag to allow safe handling. Bring this to the immediate attention of your fire department or employer.

E. During and after doffing, always look for signs of chemicals, body fluids, or other contamination, and for signs of wear or damage. See Cleaning, Decontamination, and disinfecting Procedures, Section 11, and Inspection Procedures, Section 6 of this Guide.

8 CHECKING YOUR HAIX® NFPA COMPLIANT FOOTWEAR FOR COMPATIBILITY AND PROPER FIT

SIZE AND FIT

There are different styles of NFPA Compliant Footwear available from HAIX® North America. Make sure that you are wearing Footwear that fits securely and comfortably.

In order to determine the proper size, you must ensure that your foot size is measured either with the use of a Brannock device or by trying on sizing samples of the model you or your department are purchasing.

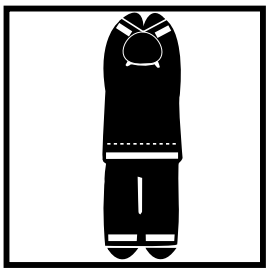


FIG. 3
NFPA Position A

Footwear should have adequate room for toes to lay flat in the boot, and there should not be too much movement in the heel area. Failure to ensure the proper fit of your NFPA Compliant Footwear could result in serious injury. Footwear that does not properly fit will have a shortened useful life. If the Footwear does not seem to fit properly, you should check the size in the label to make sure it is your size, and to make sure it is your Footwear.

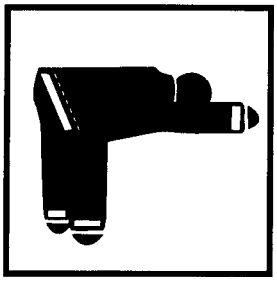


FIG. 4
NFPA Position B

Make sure that the lower edges of your NFPA Compliant Trousers overlap the tops of your Footwear by 4-6 inches when standing. In addition, check to see if all layers of the Trousers overlap Footwear in any body position during use, including when crawling on the ground. Check NFPA Positions A and B.

For the first use of the zipper Footwear, adjust the fit by loosening the laces, pulling on Footwear, closing zipper, then tightening the laces for a secure and comfortable fit. Tuck ends of laces between the lace system and tongue area.

⚠ DANGER

Never wear NFPA Compliant Footwear that fits improperly. If you have a question, or there is a problem with the fit of the Footwear, contact your safety officer for assistance. Wearing Footwear 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 HAIX® NFPA COMPLIANT FOOTWEAR MARKING CONSIDERATIONS

9.1 The Footwear Information Label indicates the date of manufacture and the serial number of your HAIX® NFPA Compliant Footwear.

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 inner lining, which is attached to the moisture barrier. Indelible inks could damage the film or coating.

NEVER MARK ON THE LABEL ON YOUR FOOTWEAR!

⚠ WARNING

Do not apply letters, emblems, trim and/or other types of identification that may penetrate the moisture barrier. Do not write on the inner lining. Damage to the moisture barrier could result in the penetration of water into your Footwear, reducing protection and resulting in scalding or burns.

10 USING YOUR HAIX® NFPA COMPLIANT FOOTWEAR SAFELY: HOW TO MINIMIZE THE RISK OF INJURY

The Footwear is designed in compliance with NFPA Standards to protect the user against specific hazards associated with operations and non-fire related rescue operations, emergency medical operations, and victim extrication. This section indicates the hazards associated with these activities, and specific warnings concerning the proper safe usage of your Footwear.

10.1 PREPARATION

Before beginning any emergency operation where there is fire or a threat of fire, your Footwear should be donned according to the procedures in Section 7 of this Guide, and checked by another person for proper overlap at the interface areas.

Always use your NFPA Compliant Footwear consistent with NFPA 1550, Standard on Fire Department Occupational Safety and Health Program and Title 29, Code of Federal Regulations, Part 1910.132.

⚠ DANGER

Always wear clean and thoroughly dry Footwear in any fire fighting operation. Soiled or contaminated Footwear may be combustible, causing serious burns to the wearer if exposed to high heat or flame.

FIRE CHARACTERISTICS

10.2 FIRES ARE INHERENTLY DANGEROUS, UNPREDICTABLE ENVIRONMENTS

Temperatures can range upwards of more than 2000° F in a matter of seconds. It is important to understand these conditions in order to maximize your protection and to understand the limited ability of your Footwear to protect you from all hazards that may be present in a fire.

10.3 BURN HAZARDS: TYPES OF HEAT TRANSFER

There are three types of heat transfer: conduction, convention, and radiation. Conduction is the direct transfer of heat through contact with a hot object. Convection is the transfer of heat through a medium; for example, air. Thermal radiation is the transfer of heat in the form of light energy, directly from flames or reflected from hot surfaces. Fire fighters experience all three types of heat in a fire, and must understand their effects on NFPA Compliant Footwear.

Conduction: The danger of being burned by conductive heat while wearing NFPA Compliant Footwear is frequently underestimated. You can be burned by conductive heat when you contact heated surfaces or objects. This very real hazard is significantly increased if your Footwear is wet, either from damage to the moisture barrier, or from outside water entering from the top opening. Water can provide a conductive bond between surfaces that might not otherwise touch, increasing the chances of heat conduction. Water is a very poor insulator; it conducts heat with dangerous and totally unpredictable efficiency!

⚠ DANGER

Moisture in protective footwear can reduce insulation and lead to scalding burns! Always make sure your footwear is dry before wearing it in any emergency situation. Dry your footwear and the inner sole between runs to reduce the risk of serious burn injuries. Inspect your footwear for holes, and always secure the closures to prevent the penetration of moisture from the fire environment. Follow Inspection, Maintenance, Storage, Repair, Retirement, and Disposal Instructions in this Guide to make sure that the Footwear is not worn out or in an unsafe condition.

Convection: Convected heat travels through the air, even if there is no immediate appearance of fire. Convected heat can elevate the temperature of your Footwear to a point at which conductive heat burns can easily occur, particularly if your Footwear is wet or damp.

Thermal Radiation: Thermal Radiation is the transfer of heat in the form of light energy into a material, directly from flames or reflected from hot objects. Factors that affect the speed of radiant heat transfer include the temperature difference between two surfaces, their distance from each other, and the reflectivity of each surface.

FIG. 5
Radiant heat from hot surfaces and flames can cause burns

⚠ DANGER

Contact with hot objects can severely reduce insulation and result in scalding and burning without heat sensation or warning in some circumstances. If you feel tingling, immediately move to a cooler location. Failure to react immediately could cause you to be burned.

⚠ DANGER

Convected or Radiant heat can penetrate quickly into your Footwear. Dangerous levels of heat may be present inside or outside a structure despite the lack of flames, and burns can occur at relatively low temperatures. If you feel thermal radiation burns developing, escape to a cool, safe place immediately and remove Footwear. You may be burned without any warning signals or sustaining any damage to your Footwear.

⚠ DANGER

- You may have very little or no warning time from feeling heat or pain before skin begins to burn at 118° F.
- You need to be constantly aware of the buildup of heat in the surrounding environment and in your Garments and be ready to escape to a cool area where you can remove hot Garments quickly to avoid burns.

10.4 BURNS

Burns are a function of time and temperature. The higher the temperature of the heat source and the longer the exposure time, the greater the severity of burns.

FIRST DEGREE BURNS begin when the temperature of skin reaches 118° F. SECOND DEGREE BURNS occur when the skin reaches approximately 131° F. THIRD DEGREE BURNS occur when skin temperature reaches approx. 152° F.

In terms of heat flux, unprotected skin will receive a second-degree burn after only a 30-second exposure at .45 watts per square centimeter. Studies have shown that flame temperatures of low intensity, like wastebasket fires, can reach almost 1300° F, with a heat flux in excess of over four watts per square centimeter and with air temperatures ranging up to 750° F. (For more information, see the study by J. Randall Lawson, listed in Reference Section). Thus, even small fires can generate several times the level of heat to cause severe burns to emergency responders who do not wear their protective clothing and footwear in a secure manner.

⚠ DANGER

Prolonged or repeated exposures to heat will increase Footwear temperatures and can cause burns even after the emergency responder is no longer exposed to high temperatures. Minimize exposure to heat by using water to cool the environment or by escaping quickly after a short period of time. Failure to follow these instructions will result in burns to your feet, ankles, or lower legs.

⚠ DANGER

The buildup of heat in NFPA Compliant Footwear can lead to burns without any sign of damage to the footwear. Never wait for signs of footwear damage to warn of imminent burns. Always be aware of your surrounding environment and be ready to escape if you begin to feel tingling or burning sensations.

⚠ DANGER

Fire fighters who are exposed to a flashover, backdraft, or other flame and high heat environments are at EXTREME risk for extensive burn injuries and death even while wearing their NFPA Compliant Structural Fire Fighting Footwear.

⚠ WARNING

Do not confuse the component testing requirements that are part of NFPA Standards with the conditions in which fire fighting personnel work. For example, the requirement that certain components must not melt, drip, or separate when exposed to convected heat temperatures of 500° F for 5 minutes is in no way intended to indicate that emergency responders face that condition in their work, or could be expected to withstand that condition EVEN WHILE WEARING NFPA Compliant FOOTWEAR CORRECTLY without suffering serious injury or death.

⚠ WARNING

Your NFPA Footwear is made of different types of materials that may absorb heat at different rates. Some parts may be much hotter than other parts. Avoid contact of skin with outer Footwear surfaces during and after fire fighting operations, until you are certain that the Footwear is a safe temperature.

10.5 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 degrees 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 stress, heat exhaustion, or heat stroke.

⚠ WARNING

Overexertion in hot conditions while wearing an NFPA Compliant Protective Ensemble, including Footwear, 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 or clammy. If you feel symptoms, get to a cool place, remove your complete protective ensemble, and drink fluids. Failure to seek attention could lead to severe 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 complete NFPA Protective Ensemble, including Footwear, 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.

10.6 HEART ATTACKS: A RESULT OF OVEREXERTION

During Structural fire fighting 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 that 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 responder'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.

10.7 LIQUID PENETRATION AND HAZARDOUS MATERIALS

LIMITED Protection against liquid penetration from common chemicals

The NFPA 1990 (1992) Compliant Footwear's moisture barrier is tested for resistance against penetration from liquid splash by only 10 common hazardous liquid chemicals after 1 hour exposures. These chemicals are Sodium hydroxide, Sodium hypochlorite, Dimethylformamide, Tetrachloroethylene, Fuel H, Isopropyl alcohol, Butyl acetate, Methyl isobutyl ketone, Nitrobenzene, Sulfuric acid.

NFPA 1990 (1994 Class 1) Compliant footwear shall be tested for toxic industrial chemical permeation resistance against the following chemicals which shall be tested as gases or vapors: Acrylonitrile, Ammonia, Chlorine Cl2, Diethylamine, Ethyl acetate. And the following toxic industrial chemicals shall be tested as liquids: Dimethyl Sulfate, Tetrachloroethylene, and Toulene.

The NFPA 1970 Compliant Footwear's moisture barrier is tested for resistance against penetration from liquid splash by only 6 common fire ground chemicals after 1 hour exposures. These chemicals are 1. AFFF Foam (3 % concentrate); 2. battery acid (37 % by weight sulfuric acid to water); 3. mineral oil-based hydraulic fluid (CAS No 126 73 8); 4. Surrogate gasoline – Fuel H as defined by ASTM D471 Standard test method for rubber property-effect of liquids consisting of 42.5 % toluene, 42.5 % iso-octane, and 15 % ethanol by volume respectively; 5. Swimming pool chlorinating chemical containing at least 65 percent-free chlorine (saturated solution) and 6. Automobile antifreeze fluid (ethylene glycol, 90 % by weight or higher concentration)

These liquids are tested because they are considered to be the most common chemicals encountered in structual fire fighting and hazardous materials emergency incident operations. Footwear provides limited protection against incidental contact with these materials encountered during routine operations.

The moisture barrier has not been evaluated for all chemicals that can be encountered during fire fighting/technical rescue operations and the effects of chemical exposure on the moisture barrier are to be evaluated per the inspection procedures in NFPA 1850/1857/1891.

NFPA 1990 (1994 Class 1) Compliant footwear shall be tested for toxic industrial chemical permeation resistance against the following chemicals which shall be tested as gases or vapors: Acrylonitrile, Ammonia, Chlorine Cl2, Diethylamine, Ethyl acetate. And the following toxic industrial chemicals shall be tested as liquids: Dimethyl Sulfate, Tetrachloroethylene, and Toulene.

⚠ WARNING

Over time, as the Footwear is worn and ages, the moisture barrier's protection against penetration of the 7 common fire ground chemicals and/or the 8 toxic liquid chemicals or gases listed in this section will be become more limited. See Section 14 of this Guide on Useful life.

No Protection Against Hazardous Materials Exposure

In addition, fire fighters face potential exposure to an almost unlimited number of other potentially hazardous chemicals in their operations.

⚠ WARNING

Your HAIX® NFPA Compliant Footwear is NOT designed to protect against exposures to hazardous materials operations. You MUST use appropriate protective equipment in situations involving liquid or vapor hazardous materials.

⚠ WARNING

If you experience accidental or incidental exposure to a hazardous material, you need to follow the precautions in Section 11 of this Guide regarding Cleaning and Decontamination in order to limit exposure to yourself and others.

10.8 ELECTROCUTION

⚠ DANGER

Your footwear does NOT provide complete protection against electrocution. Your footwear acts only as a second barrier to protect you from electric shock by insulating the feet, your footwear offers only limited protection and is never a substitute for primary safety equipment. When entering a rescue site, you should NEVER touch live wiring, especially if your Footwear is wet. Never allow equipment you are operating to contact live wiring. Any of these hazards could result in serious injuries or death.

10.9 BLOODBORNE PATHOGENS

Your Footwear is designed to protect your feet, ankles, and lower legs 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 Infectious 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 Footwear exposed to body fluids. Washing Footwear 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 Footwear will substantially reduce hazards arising from exposure of Footwear to potentially hazardous body fluids. See Section 11 of this Guide for more information.

10.10 ADDITIONAL FACTORS AFFECTING SAFETY

The following additional factors may affect the limited protection provided by the NFPA Compliant Footwear:

- Conditions at an incident beyond the scope of the limited purposes of this Footwear
- Unauthorized modifications, repairs or replacement of components of the Footwear not otherwise in compliance with HAIX® North America specifications
- The addition of accessories that are not third party certified to the NFPA Standard, or not approved by HAIX® North America as compatible with NFPA Compliant Footwear. If you have questions about whether accessories will degrade the performance of your Footwear below the NFPA Standard, contact HAIX® North America or a HAIX® North America Authorized Clean and Repair Center.

11 CLEANING, DECONTAMINATING, AND DISINFECTING YOUR HAIX® NFPA COMPLIANT FOOTWEAR

11.1 HAZARDS OF DIRTY FOOTWEAR: WHY CLEANING AND DECONTAMINATING ARE IMPORTANT

You can be exposed to many hazardous substances while involved in hazardous materials emergency operations. These substances can contaminate your Footwear, and cause harm to you after your body comes in contact with your Footwear. This section tells you how to wash and decontaminate your Footwear to reduce these hazards.

Routine Fire Ground Contaminants: Many fire combustion products — including hydrocarbons, polynuclear aromatic compounds, metals such as cadmium and chromium, acids and soot — are hazardous to the fire fighter. These substances can become embedded in your Footwear, penetrate the inner layer, and enter the body through ingestion, absorption, inhalation, and parenterally. In addition, particulates and other products of combustion can reduce the flame resistance of your Footwear and increase your Footwear's ability to conduct electricity. To reduce the risk of long-term harm from hazardous substances present in the products of fire combustion, or hazardous chemicals, you MUST wash your Footwear.

Hazardous Chemicals: If you experience accidental or incidental exposure to a hazardous chemical, you need to follow the precautions in this Section on Washing and Decontamination to limit exposure and risk of harm to yourself and others.

⚠ WARNING

To reduce the risk of harm from hazardous substances present at a building collapse, damaged vehicle, or hazardous chemicals, you MUST wash your Footwear.

Bloodborne Pathogens: You are also at risk of exposing your Footwear to body fluids that may contain bloodborne pathogens. Following proper washing procedures described later in this section will reduce the risk of infection from these hazards.

Hazardous Chemicals: If you experience accidental or incidental exposure to a hazardous chemical, you need to follow the precautions in this Section on Washing and Decontamination to limit exposure and risk of harm to yourself and others.

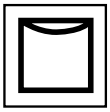
11.2 FREQUENCY

NFPA Compliant Footwear should be cleaned

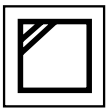
1) at least every six months or;

2) as soon as possible after contamination or exposure to smoke, blood or body fluids, hazardous substances or hazardous liquid chemicals.

water temperature


air dry

do not machine wash


in the shade

no chlorine bleach

never tumble dry

never dry-clean

⚠ WARNING

Always clean your HAIX® NFPA Compliant Footwear separately from other items. Never clean your Footwear at home, or at public laundry facilities to avoid the spread of chemical contamination or hazardous combustion products to other laundry.

⚠ WARNING

Never use chlorine bleach or chlorinated detergents to wash your Footwear. Even small amounts of chlorine will seriously reduce your Footwear's protective qualities and could lead to serious injury or death.

⚠ WARNING

Never use high velocity power washers or pressure hoses for washing Footwear. These tools can severely damage the raw materials and seams, compromising the protection of the Footwear.

11.3 CLEANING

Before cleaning, make sure you comply with all state, federal, and local guidelines for handling effluents from utility sinks. Appropriate protective gloves should be worn.

Hand Scrub NFPA Footwear in a utility sink with warm water and a wet shoe brush or another soft brush such as a small nailbrush or a soft-bristle toothbrush. The brush should be soaked with water to remove dirt and other soils. Do not use heavy abrasion and/or scrubbing.

If you also want to wet clean the inside of your shoes, then completely submerge the boots in water one at a time. Use fresh water for both the outer material and the lining to avoid possible contamination from the outside in.

Do not use saddle soaps or soaps that contain fats.

Do not use chlorine bleach. Do not use detergent. Use water temperatures less than 110° F.

The removable insole can also be washed as necessary. Machine wash the insoles in cold water on delicate cycle. Air dry the insoles before returning to the boots.

11.4 DRYING

Air dry NFPA Footwear, removing the insole. Drying racks for hanging NFPA Footwear provide maximum air exposure and reduce drying time.

Do not dry Footwear in direct/indirect sunlight or fluorescent light. Do not machine dry. Do not dry NFPA Footwear in front of open windows, hot ovens, or radiators. The Footwear's form will change, and the leather might become brittle. Allow the boots to dry slowly.

11.5 POLISHING

To prolong the wearlife and maintain the leather exterior of your NFPA Footwear, apply a professional grade silicone-based shoe polish. Those that contain petroleum-based products may be flammable; these products will significantly reduce the flame and/or heat resistance of your NFPA Footwear and therefore are not suitable.

⚠ WARNING

Never use petroleum-based shoe polish, because it will significantly reduce the flame and/or heat resistance of your HAIX® Footwear. Use of petroleum-based products may result in serious injuries.

⚠ WARNING

Do not dry your leather NFPA Compliant Footwear near heaters or radiators. Treat Footwear with the same care as other fine quality leather products. Force drying will cause the foot form to change and the leather to crack. It will also cause damage to the moisture barrier, possibly exposing you to significant amounts of water and hazardous contaminants, which may result in serious injuries.

⚠ WARNING

Do not dry Footwear in direct/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 Footwear.

11.6 CONTRACT CLEANING

HAIX® North America has made available a network of professional clean and repair centers that are factory approved to provide cleaning for HAIX® North America NFPA Compliant Footwear. HAIX® North America recommends that only a HAIX® North America Authorized Clean and Repair Center be used for contract cleaning. For contract cleaning please call HAIX® North America toll free at (866) 344-HAIX (4249).

11.7 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 - 2022 Edition.

⚠ CAUTION

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

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

⚠ WARNING

To reduce the risk of harm from hazardous substances present in the products of fire combustion, hazardous chemicals, and blood or body fluids, you MUST clean, and if necessary, decontaminate or disinfect your NFPA Compliant Footwear after each exposure to such hazardous substances.

A. 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 clean, dry, and store your Footwear according to the procedures in this User Guide.

B. Hazardous Chemicals:

1. Footwear at the scene should be handled to limit further exposure to hazardous chemicals, and exposure to others. Contaminated Footwear should be handled in according to federal, state and local regulations.

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 HAIX® North America Authorized Clean and Repair Center to determine the feasibility of decontamination.

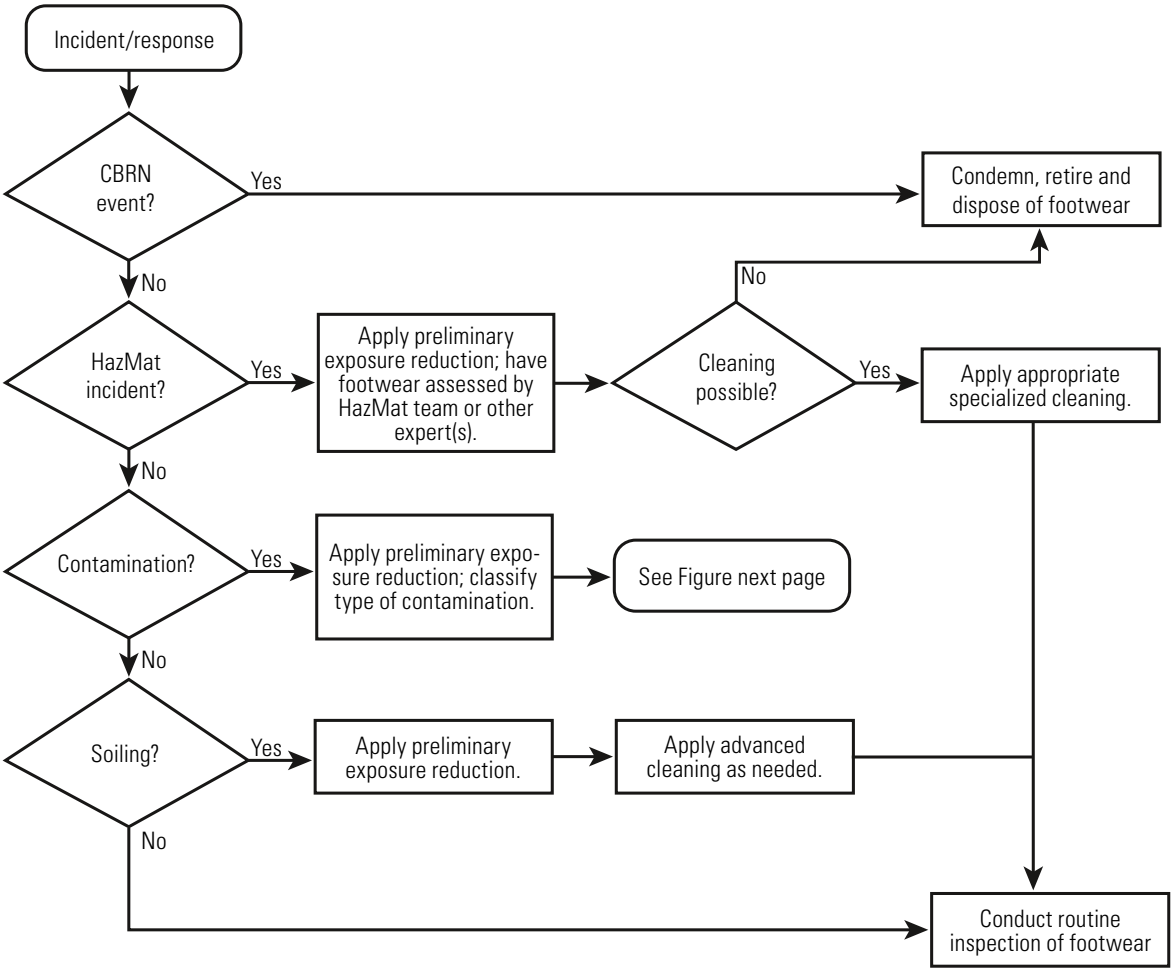
3. UNKNOWN MATERIALS: If the contaminant is not known, any NFPA Compliant Footwear should remain out of service until the materials are identified. Always demand MSDS information and be prepared to share your findings with the HAIX® North America Authorized Clean and Repair Center to decontaminate the Footwear.

4. If your Footwear cannot be decontaminated, it must be retired and disposed of in accordance with federal, state, and local regulations.

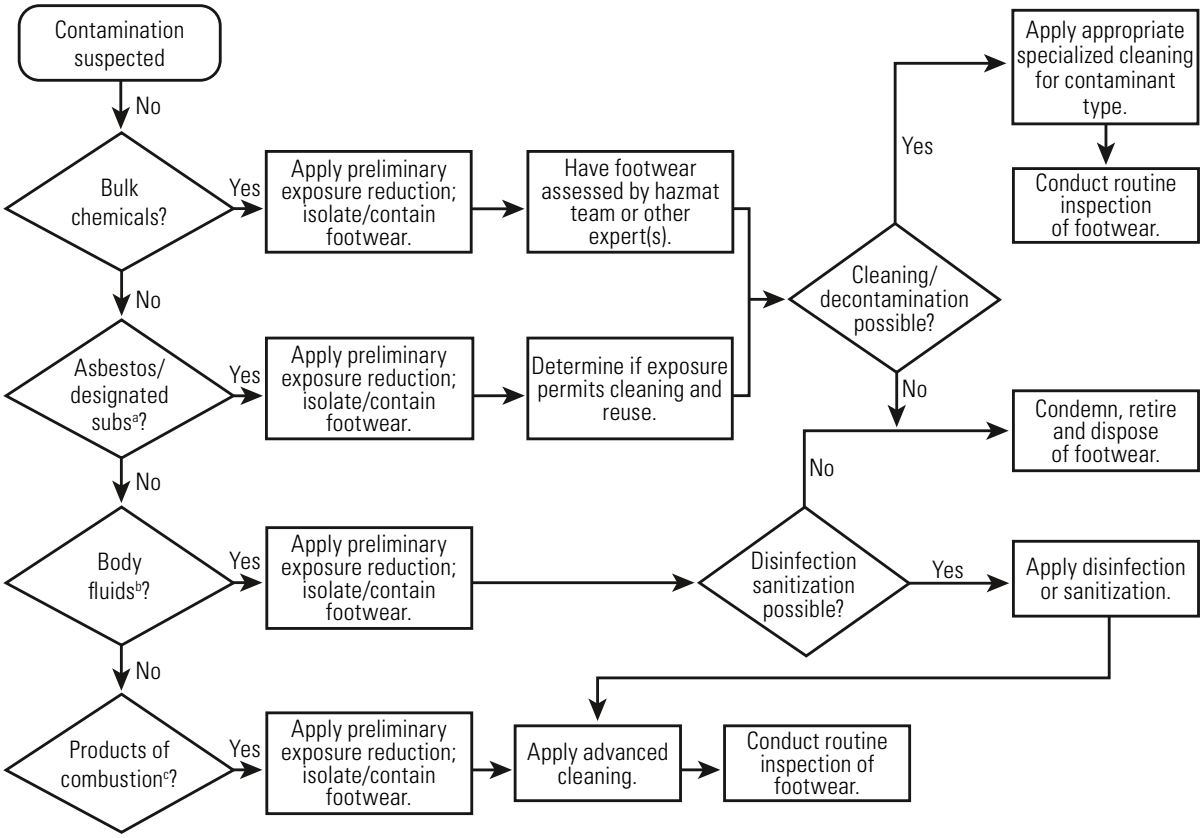
⚠ WARNING

Only a trained expert in decontamination should attempt to decontaminate NFPA Compliant Footwear. Contact a HAIX® North America Authorized Clean and Repair Center to seek assistance in determining whether decontamination is possible, and the name of the appropriate organization to perform decontamination.

Suggested Approach for Deciding Handling, Cleaning, and Disposition of NFPA Footwear



Suggested Approach for Addressing Specific Types of Contamination



11.8 LAUNDRY SAFETY

In the health care field, Laundry and House Keeping Personnel are considered to be among those at risk to not only hazardous materials, but also to bloodborne pathogens primarily by exposure to sharps. Your fire department should have a Bloodborne Pathogens Written Exposure Control Plan. Part of this plan is decontamination, disinfection, and cleaning of Footwear, and it should include cleaning procedures and housekeeping safety procedures. You should follow all appropriate federal, state, and local regulations. See NFPA 1850-2026, Chapter 6, NFPA 1857-2026, Chapter 6, and/or NFPA 1891-2022 Chapter 7, as applicable.

Universal Precautions should always be observed, when handling soiled or contaminated Footwear.

A. Blood and Body Fluids

1. **Disinfecting Products**. You must use disinfectants approved by and registered with the U.S. Environmental Protection Agency and shall also be registered as tuberculocidal. You must use disinfectants that are compatible with NFPA Compliant Footwear. If you have questions concerning the use of a particular disinfectant, contact a HAIX® North America Authorized Clean and Repair Center.
2. **Disinfecting Procedure for Blood and Body Fluids**.

   Small incidental areas: Use an appropriate disinfectant available for Footwear. Always follow the instructions of the disinfectant manufacturer regarding product usage.

   Large areas: If Footwear has large areas of coverage of blood or body fluids, place and transport Footwear in bags to prevent leakage. Contact a HAIX® North America Authorized Clean and Repair Center to arrange for disinfection.

B. Transporting of Footwear contaminated with blood or body fluids must be done in accordance with federal, state and local regulations.

12 REPAIR METHODS FOR HAIX® NFPA COMPLIANT FOOTWEAR

⚠ WARNING

Before any repairs are made to your NFPA Compliant Footwear, it must be cleaned, 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 Footwear.

All repairs to Footwear should be done at HAIX® North America Authorized Clean and Repair Centers, or by an expert trained by HAIX® North America. Unauthorized repairs made to Footwear invalidates all warranties and may expose wearer to hazardous or life threatening conditions. For a list of HAIX® North America Authorized Clean and Repair Centers, call HAIX® North America at: Toll free (866) 344-HAIX (4249).

13 STORING YOUR HAIX® NFPA COMPLIANT FOOTWEAR

Between incidents, and for longer-term storage, store your Footwear out of direct and indirect sunlight and fluorescent light and away from sharp objects.

Use fans to provide good ventilation to dry Footwear that may have absorbed water or sweat after a run and to assist in the removal of fire ground combustion products that may not have been removed by washing.

Moisture in your Footwear reduces your insulation, comfort, and overall protection during Structural fire fighting operations.

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

Always clean and dry your Footwear in accordance with Section 11 of this Guide and before placing in short or long term storage.

⚠ WARNING

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

⚠ WARNING

NEVER STORE YOUR FOOTWEAR 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 components such as the moisture barriers, NOMEX® laces and thread in your Footwear 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

Never store your Footwear in living quarters with personal belongings, or within the passenger compartment of a vehicle. It is recommended that footwear be stored in a designated area to avoid cross contamination with living and work spaces. Prolonged exposure to contaminants remaining in the Footwear may increase the risk of cancer or other diseases.

14 RETIRING YOUR HAIX® NFPA COMPLIANT FOOTWEAR

14.1 USEFUL LIFE

Generally, useful life is the period of time that Footwear, which has been properly used and cared for, may provide reasonable limited protection. Useful life is highly unlikely to be more than 5 years and, in fact, could be much shorter, based on the factors set forth below.

NFPA performance requirements are based on new, unworn Footwear. Thus, even if Footwear is not used, it should be retired as discussed in Section 14.2, pursuant to NFPA standards.

- NFPA performance requirements are based on new, unworn Footwear and Composites. Useful life varies depending on conditions of wear, maintenance, and storage.

The following factors affect the useful life of your Footwear:

A. Age and frequency of use - Footwear used at the busiest stations will not last as long as at less busy stations.

B. Number and type of previous repairs - Footwear repaired many times in the same places will generally wear out sooner than less frequently damaged or repaired Footwear.

C. Type of work the wearer performed - For example, toe areas of the Footwear that are used in crawling operations generally will wear out more quickly than other areas.

D. The length of exposure to extreme heat and the intensity of the heat - Exposure to extreme heat can cause the leather outer layer and the inner lining to become brittle. Repeated cycles of low level, long-term exposure to heat can also damage moisture barrier materials.

- As a result, useful life is highly unlikely to be more than 5 years and, in fact, could be much shorter based on conditions of wear, maintenance, storage, and other factors.

E. The length of exposure to hazardous chemicals – If there is exposure to hazardous chemicals, and decontamination is not fully effective, the Footwear may not be safe for further use.

F. The length of exposure to direct or indirect sunlight, or other light sources such as fluorescent light - Tests and fire department surveys show that exposure to direct/indirect sunlight or fluorescent light causes the moisture barrier, and any Footwear component made with aramid fibers such as thread and laces, to become brittle, weak or degraded.

G. Footwear more than 5 years old are highly likely to have exceeded their useful life and should be retired. In fact, as noted above, useful life could be much less than 5 years.

H. Damage caused by use of non-authorized replacement parts such as insoles, zipper inserts, laces.

I. Replacement of zippers worn improperly, incompletely zipped or damaged.

J. Damage or wear to inner or outer heel area by zipper-style Footwear worn without proper sealing of zippers.

K. Damage to inner liner by donning or doffing zipper Footwear without first properly unzipping.

L. Footwear not properly cleaned and polished.

If you have questions about whether to retire your Footwear, contact a HAIX® North America Authorized Clean and Repair Center.

Trained professionals with in-depth knowledge of Footwear and their limitations should handle the details of a retirement program. If you have any questions about the useful life and retirement of your HAIX® Footwear, get assistance before wearing your Footwear into any emergency situation!

Nothing in this section shall alter, affect, or extend the warranties set forth in Section 16. EXCEPT AS SET FORTH IN SECTION 16 OFTHIS GUIDE, HAIX® NORTH AMERICA MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR USE, OR USEFUL LIFE.

14.2 RETIREMENT

According to NFPA 1850 Standard on Selection, Care and Maintenance of Protective Ensembles for Structural and Proximity and Open-Circuit Self-Contained Breathing Apparatus (SCBA) - 2026, structural firefighting ensembles and ensemble elements shall be retired:

A. no more than 10 years from the date of manufacture.

B. If structural firefighting ensembles and ensemble elements (PPE) are worn or damaged to the extent that the organization deems it not possible or cost effective to repair the PPE shall have said PPE destroyed or disposed of in a manner that ensures the PPE will not be used in any firefighting or emergency activities, including training

C. If structural firefighting ensembles and ensemble elements (PPE) were not in compliance with the edition of the applicable NFPA standard that was current when the ensemble and ensemble elements were manufactured, then said PPE shall be retired.

D. If structural firefighting ensembles and ensemble elements (PPE) are contaminated t o the extent that the organization deems it not possible or cost effective to clean, then said PPE shall be retired.

E. If structural firefighting ensembles and ensemble elements (PPE) are contaminated by CBRN terrorism then said PPE shall be immediately retired after confirmed exposure and shall not be used.

F. If structural firefighting ensembles and ensemble elements (PPE) are no longer of use to the organization for emergency operations service but are not contaminated, defective, or damaged, shall be retired. Could be used for non-emergency training and marked accordingly.

According to NFPA 1857 Standard on Selection, Care, and Maintenance of Protective Ensembles for Technical Rescue Incidents and Wildland Firefighting – 2026, technical rescue protective ensembles and ensemble elements (boots) shall be retired:

Technical Rescue Protective Ensembles and Ensemble Elements (PPE)

A. no later than 15 years from the date of manufacture.

B. If technical rescue protective ensembles and ensemble elements (PPE) are worn or damaged to the extent that the organization deems it not possible or cost effective to repair the PPE shall have said PPE destroyed or disposed of in a manner that

ensures the PPE will not be used in any firefighting or emergency activities, including training

C. If technical rescue protective ensembles and ensemble elements (PPE) were not in compliance with the edition of the applicable NFPA standard that was current when the ensemble and ensemble elements were manufactured, then said PPE shall be retired.

D. If technical rescue protective ensembles and ensemble elements (PPE) are contaminated to the extent that the organization deems it not possible or cost effective to decontaminate then said PPE shall be retired.

E. If technical rescue protective ensembles and ensemble elements (PPE) are no longer of use to the organization for emergency operations service but are not contaminated, defective, or damaged shall be retired. Could be used for non-emergency training and marked accordingly.

Wildland and Urban Interface Protective Clothing and Equipment (PPE)

A. PPE that is worn or damaged to the extent that the organization deems it not possible or cost effective to repair the PPE shall be destroyed or disposed of in a manner that ensures the PPE will not be used in any firefighting or emergency activities, including training.

B. PPE that is contaminated to the extent that the organization deems it not possible or cost effective to decontaminate the PPE shall be destroyed or disposed of in a manner that ensures the PPE will not be used in any firefighting or emergency activities, including training.

C. PPE that is no longer of use to the organization for emergency operations service shall be destroyed or disposed of in a manner that ensures it will not be used in any firefighting or emergency activities, including training.

D. PPE not in compliance with the edition of the NFPA standard that was current when the PPE was manufactured shall be destroyed or disposed of in a manner that ensures it will not be used in any firefighting or emergency activities, including training.

According to NFPA 1891 Standard on Selection, Care, and Maintenance of Hazardous Materials, CBRN, and Emergency Medical Operations Clothing and Equipment – 2026, the Authority Having Jurisdiction (AHJ) shall develop guidelines, consistent with manufacturer recommendation, that will identify and explain the criteria used to determine when HAZMAT/CBRN/EMO PPE is to be retired.

Please keep in mind that the above criteria does not mean the useful life of Footwear will be close to ten (10) or fifteen (15) years. Please see the discussion in Section 14.1. Prior to the time for retirement as stated in the NFPA Standard, Footwear may have exceeded its useful life. As discussed in Section 14.1, we recommend that such Footwear be retired. Your Footwear should be assessed at each regular inspection described in Section 6 of this Guide to determine whether it has exceeded its useful life and should be retired, either pursuant to the NFPA Standard or because the Footwear's useful life has expired, as discussed in Section 14.1.

15 DISPOSING OF RETIRED HAIX® NFPA COMPLIANT FOOTWEAR

15.1 DISPOSAL

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

Retired Footwear that is contaminated with blood or body fluids or hazardous chemicals 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 Footwear for training purposes. Use of retired Footwear in hazardous situations could result in serious injury.

16 Harmful substances: PFAS and HAIX Footwear - Statement

Per- and polyfluorinated alkyl substance ("PFAS") are a group of chemicals used in various products for their water and grease-repellent properties (also known as "forever chemicals"). Due to their persistence in the environment and potential health concerns, various regulations and reporting requirements now require manufacturers and sellers of firefighting personal protective equipment containing PFAS to provide notice to purchasers of the PFAS contained in these products.

Certain designated models of HAIX structural firefighting footwear are available and are manufactured without intentionally added PFAS. This footwear is designed to comply with the PFAS and restricted-substance requirements established in NFPA 1970 (2025 Edition). NFPA 1970 includes limits and testing requirements for PFAS and other restricted chemicals in firefighter protective equipment, including footwear. Other designated models of NFPA 1950 compliant multiuse footwear are manufactured without intentionally added PFAS are available and designed to meet applicable performance and certification requirements for emergency services footwear. This footwear is denoted and easily identifiable with "XPF" in the product name. i.e. Fire Eagle Air XPF.

In accordance with the above requirements in paragraph 1, HAIX hereby provides notice of the existence of PFAS in some models of its firefighting/EMS personal protective boots and the reasons PFAS are added to the equipment.

According to W.L. Gore ("Gore"), supplier of the CROSSTECH inner liner used in HAIX's firefighting boots, their moisture barrier materials used for the CROSSTECH contain chemicals categorized as PHAS. Gore uses one type of PFAS in its technical footwear fabric: fluoropolymer PTFE. PTFE is extremely stable and not biodegradable. PTFE is in the raw material used to make the CROSSTECH membrane. A fluorinated polymer treatment is then applied to the inside of the composite layers of the CROSSTECH inner line in order

to provide water and oil repellency while keeping the breathability features needed for firefighter safety and health. PTFE's are generally considered non-toxic and safe for the end user.

Additionally, although not intentionally used by Gore, some low molecular weight PFAS may be found as trace residuals in the raw materials Gore uses to make their products. Although the majority of the low macular weight PFAS are eliminated during the manufacture of the CROSSTECH inner liner, some small trace amounts may remain in the finished product. These residuals do not affect the safety or performance of the CROSSTECH inner liner.

Currently, CROSSTECH is the only moisture barrier available to HAIX that provides the specific level of protection that HAIX demands and needs in our firefighter and EMS boots, including the need to ensure our boots meet specific technical requirements such as waterproofing and first responder safety. CROSSTECH is used to reduce the risk of exposure to toxic chemicals such as gasoline, chlorine, battery acid, and other chemicals which can be encountered on an emergency scene/The breathability of the CROSSTECH in conjunction with the breathability of HAIX leather also reduces the risk of steam burns and overheating.

With regard to the leather used in HAIX boots, HAIX sources its leather from two European leather producers: Heinen leather factory and PSUNJ leather factory. Heinen leather factory abstains from the use of per- and polyfluorinated chemicals (PFAS) in their production process. The PSUNJ leather factory also does not use PFAS in their leather production as well. Both companies caution that since these substances are present all over the world and are very persistent, a full PFA-free product cannot be guaranteed.

Further, all leathers and fabrics used by HAIX are certified to the OEKO-TEX standard 100 which tests materials for harmful substances and sets the benchmark for textile safety. All firefighting and National Fire Protection Association (NFPA) boots are also tested to the latest applicable standard to ensure first responder safety needs are met. At HAIX, we are conscious of the environmental impact of our products and actively strive to employ alternative PFAS-free materials. HAIX continues to actively work towards a transition to PFAS-free materials over the next few years.

17 LIMITED WARRANTY INFORMATION

Except for the limited warranties expressly stated this Section, the Footwear is sold AS IS and WITH ALL FAULTS and Seller makes NO REPRESENTATION OR WARRANTY in connection with this sale, either express or implied, AS TO MERCHANTABILITY AND/OR FITNESS FOR ANY PURPOSE.

HAIX® North America warrants that its Footwear meets or exceeds all applicable NFPA standards with respect to performance and design 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. The limited warranties in the preceding sentence and remedies in connection with such warranties are limited as set forth in this Section.

Conditions of use, including, but not limited to, the useful life of Footwear, are outside the control of HAIX® North America and HAIX® North America makes no warranty, either express or implied, with respect thereto.

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 procedures and in accordance with the product's warning, use, inspection, maintenance, care, storage, and retirement instructions.

HAIX® North America shall honor limited warranty claims on HAIX® North America NFPA boots for a period of one (1) year. The limited warranty time period begins on the date that the equipment was delivered to the original retail purchaser, or three months after the product is sent to a North American HAIX® North America Dealer.

EXCEPT AND TO THE EXTENT OTHERWISE EXPRESSLY PROVIDED FOR ABOVE, HAIX® NORTH AMERICA MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE. INSOFAR AS IT IS PERMITTED UNDER APPLICABLE LAW, ALL OTHER WARRANTIES ARE SPECIFICALLY EXCLUDED, INCLUDING WARRANTIES ARISING BY STATUTE, COURSE OF DEALING, OR USAGE OF TRADE.

17.1 EXCEPTIONS TO LIMITED WARRANTY

The following are excluded from the provisions of this limited warranty: (Note that this list is not all inclusive)

A. Damage caused by improper cleaning or maintenance (for example, use of bleach or petrochemicals to clean);
B. Any repairs not made by a HAIX® North America authorized repair center;
C. Damage caused by the use of non-authorized replacement parts or accessories such as insoles, zippers, inserts, laces or lace replacements;
D. Damage from routine exposure to common fire scene hazards;
E. Loss of trim reflectivity due to normal wear;
F. Detachment of reflective trim due to thread abrasion or heat exposure;
G. Replacement of zippers which have been damaged by improper use;
H. Damage or excessive wear due to zipper equipped footwear being worn with the zipper fully or partially unzipped;
I. Damage which results from putting on or taking off footwear before unzipping the zipper where applicable;
J. Any damage which results from the zipper being used without a zipper anchor;
K. Re-soling by other than a HAIX® North America authorized repair center.

18 SOURCES AND FOR FURTHER INFORMATION

- International Fire Service Training Association, (IFSTA). 1998. Essentials of Fire Fighting. 4th Edition, (1998 Edition)
- Lawson, James R. "Thermal Performance and Limitations of Bunker Gear." Fire Engineering, August, 1998, 37-56
- NFPA 1550, Standard for Emergency Responder Health and Safety, 2024 Edition
- NFPA 1580 Standard for Emergency Responder Occupational Health and Wellness, 2025 Edition
- NFPA 1850, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire fighting and Proximity Fire Fighting, 2025 Edition
- NFPA 1857, Standard on Selection, Care, and Maintenance of Protective Ensembles for Technical Rescue Incidents and Wildland Firefighting, 2026 Edition
- NFPA 1891, Standard on Selection, Care, and Maintenance of Hazardous Materials, CBRN, and Emergency Medical Operations Clothing and Equipment, 2022 Edition
- NFPA 1950, Standard on Personal Protective Equipment for Technical Rescue Incidents, Emergency Medical Operations, and Wildland and Urban Interface Firefighting (includes NFPA 1951 / NFPA 1977 / NFPA 1999)
- NFPA 1970, Standard on Protective Ensembles for Structural and Proximity Fire Fighting, Work Apparel, Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, and Personal Alert Safety Systems (PASS), 2025 edition (includes NFPA 1971 / NFPA 1975 / NFPA 1981 / NFPA 1982)
- NFPA 1990, Standard for Protective Ensembles for Hazardous Materials and CBRN Operations, 2022 Edition
- National Institute for Occupational Safety and Health,,1989, Guidelines for Prevention of Transmission of Human
- Immunodeficiency Virus and Hepatitis B Virus to Health-Care and Public-Safety Workers.
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- Occupational Safety and Health Administration, Occupational Safety and Health Standards, Subpart I: Personal Protective Equipment", 29 CFR 1910.132
- Southern Area Fire Equipment Research (SAFER), 1994, PPE Care and Use Guidelines.
- TRI/Environmental, 1994, Decontamination of Structural Fire Fighting Protective Clothing and Equipment, Draft Final Report.
- Veghte, James H, Ph.D. 1988, Fire Fighters' Protective Clothing: Design Criteria. 2nd Edition.
- West KH:, 1992, Infectious Disease Handbook for Emergency Care Personnel, 2nd Edition. Cincinnati: ACGIH, Cincinnati, Ohio.
- CSA Z195, Canadian Standards Association, Protective Footwear, 2014 Edition (R2025)
- ASTM F2413, Standard Specification for Performance Requirements for Protective (Safety)Toe Cap Footwear), 2024 Edition
- ASTM F2892, Standard Specification for Performance Requirements for Soft Toe Protective Footwear (Non-Safety / Non-Protective Toe), 2024 Edition

For Further Information, contact:

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19 INSPECTION, CLEANING, REPAIR, RETIREMENT AND DISPOSAL RECORD

Footwear ID_____ Model_____ Date of Footwear Manufacture_____

Inspection Date	Date Washed, Repaired or Retired, Inspection Finding	Advance Clean or Decontamination Date	Reason for Wash Advance, Clean, or Decontamination	Wash Advance, Clean, or Decontamination Site	Date of Repair	Description of Repair	Repair Site	Date of Retirement	Date and Method of Disposal

[1]Turn Around Time

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 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

Fire and Emergency Manufacturers and Services Association, Inc.
P.O. Box 147, Lynnfield , MA 01940 www.FEMSA.org

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Subject to change without prior notice. HAIX® 09 / 2026 / 00676

Al Azul Cartón

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22 PAP IT RACCOLTA CARTA

For UK: Imported in the UK by HAIX GEAR UK LTD.
170 Edmund Street Birmingham, England, B3 2HB

PPWR-FL-PA-004

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