

# NFPA 1851 Instructional Guide

## for Ricochet Structural and Proximity Gear



This guide is to help organizations comply with the requirements of NFPA 1851 Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting. This guide is specific to Ricochet garments and does not apply to garments, helmets, footwear or interface components manufactured by other companies.

### NFPA 1851 GUIDELINES

NFPA 1851 provides guidelines for the program, selection, inspection, cleaning and decontamination, repair, storage, retirement and disposition of ensemble elements as well as verification requirements for organizations or Independent Service Providers. Ricochet highly recommends that you obtain a copy of NFPA 1851. Copies may be purchased directly from the National Fire Protection Association at [www.nfpa.org](http://www.nfpa.org).

Important information regarding your structural or proximity fire fighting gear is also contained in the FEMSA Official User Information Guide provided with your new Ricochet garment. Additional copies of the Structural and Proximity FEMSA Official User Information Guide may be requested by e-mailing us at [info@ricochet-gear.com](mailto:info@ricochet-gear.com).

### RECORD KEEPING

Your organization should compile and maintain records on its structural or proximity fire fighting garments. The standard specifies at least the following records shall be maintained for each garment:

- Person to whom the garment is issued
- Date and condition when issued
- Manufacturer and model name or design
- Manufacturer's identification number, lot number or serial number
- Month and year of manufacture
- Date(s) and findings of advanced inspection(s)
- Date(s) and findings of advanced cleaning or decontamination
- Reason for and who performed advanced cleaning or decontamination
- Date(s) of repair(s), who performed repair(s) and brief description of repair(s)
- Date of retirement
- Date and method of disposal

## **CLEANING-GENERAL**

Maintaining the cleanliness of your garments is extremely important. Soiled or contaminated garments may contain hazardous oils, chemicals or contaminants that may be flammable, toxic or carcinogenic and may reduce your garment's useful life and protective qualities.

Following each use, the wearer must evaluate the garments to determine whether routine or advanced cleaning needs to be performed. Protective gloves and eye/face splash protection should be worn when cleaning your garments.

Routine cleaning may be performed by the user and is appropriate for spot cleaning of the garment.

Advanced cleaning may only be performed by a verified Independent Service Provider (ISP) or organization personnel who have received training. Advanced cleaning is appropriate when the garment is soiled or the entire garment needs to be cleaned, when routine cleaning does not render the garment sufficiently clean for service or if the garment has not been subjected to advanced cleaning in the previous 12 months.

Garments should never be brought into the home, washed in home or public laundries or washed with other clothing.

To prevent cross contamination, outer shells, liners and drag rescue devices (DRDs) should be cleaned and dried separately.

We recommend that you contact a verified ISP if your garments require decontamination or specialized cleaning.

*Use only mild liquid detergents with a pH range between 6.0 and 10.5*  
*Do not use compounds containing chlorine or ammonia, oxidizing or abrasive agents or solvents*  
*Do not dry clean your garments*  
*Do not machine wash or dry Proximity (aluminized) outer shells*  
*Do not use a brush or any abrasive cleaning devices on Proximity outer shells*  
*Garments that are not thoroughly cleaned and dried should not be worn*

We recommend that each organization assess the suitability of all cleaning products based on the requirements outlined in NFPA 1851 and any requirements of their organization.

Routine and advanced cleanings should be recorded.

## **ROUTINE CLEANING**

### **Routine Cleaning of Structural Outer Shells, Structural and Proximity Liners and DRDs**

*To be performed as required by the user for spot cleaning only when no contamination is present*

- Empty all pockets
- Remove the liner and DRD and clean separately to avoid cross contamination
- Brush off any debris and gently rinse off any remaining debris with water
- Where necessary, use a soft bristle brush to lightly scrub and rinse
- Use a utility sink designated for cleaning PPE equipment and follow these procedures
  - Wear protective gloves and eye/face splash protection
  - Use mild liquid detergents with a pH range between 6.0 and 10.5

- Pre-treat heavily soiled or spotted areas by applying mild liquid detergent directly onto the soiled area(s) and gently rubbing the fabric together. For deeper stains on the outer shell, lightly scrub the soiled areas with a soft bristle brush
- Lightly scrub other soiled areas using warm water not to exceeding 105° F (40° C) and mild liquid detergent
- Rinse outer shell, liner, DRD, brush and utility sink thoroughly
- Inspect for cleanliness and rewash if necessary. Submit for advanced cleaning if routine cleaning does not render the garment sufficiently clean for service
- Drying
  - Air drying
    - Air drying is the preferred method of drying, as it minimizes the possibility of shrinkage and maximizes the garment service life
    - Dry by hanging in a shaded area with good cross ventilation, or use a fan to circulate the air. Do not dry by hanging in direct sunlight, as ultraviolet light will cause exposed materials to degrade
  - Machine drying
    - Remove the liner and DRD
    - Fasten all closures on the outer shell, including pocket closures, hook and loop tape, snaps, zippers and hooks & dees. All hook tape must be covered to prevent pulling or snagging during drying
    - Turn the outer shell and liner inside out, place the DRD in a mesh bag and dry each item separately only with like items to prevent damage
    - Do not exceed the recommended load capacity
    - Use a 'no heat' or 'air dry' setting
    - If neither of the options is available, select a setting which will result in the basket temperature not exceeding 105° F (40° C), discontinue drying prior to removal of all moisture to prevent shrinkage and follow the air drying instructions listed above
- Reinstall the liner and DRD
- Do not store in direct sunlight or in a wet, damp or contaminated condition

### **Routine Cleaning of Proximity Outer Shells**

*To be performed as required by the user for spot cleaning only when no contamination is present*

The proximity outer shell contains a highly reflective surface which must be kept clean to perform at peak efficiency

- Do not dry clean, machine wash or dry or clean with a brush or any other abrasive cleaning devices
- Empty all pockets
- Remove the liner and the DRD and clean separately to avoid cross contamination
- Wipe off any debris with a soft cloth
- Gently rinse off any remaining debris with water
- Use a utility sink designated for cleaning PPE equipment and follow these procedures
  - Wear protective glove and eye/face splash protection
  - Use only mild liquid detergents with a pH range of 6.0-10.5
  - Clean by gently rubbing the surface with a soft cloth or sponge and mild liquid detergent
  - Rinse outer shell, cloth or sponge and utility sink thoroughly
  - Inspect for cleanliness and re-clean if necessary

- Dry by hanging in a shaded area with good cross ventilation, or use a fan to circulate the air. Do not dry by hanging in direct sunlight, as ultraviolet light will cause exposed materials to degrade
- Reinstall the liner and DRD
- Do not store in direct sunlight or in a wet, damp or contaminated condition

**Alternate ‘buddy’ method for cleaning proximity outer shells:** While you and a buddy are wearing the ensemble, sponge each other down with mild liquid detergent and rinse each other off with clean water from a garden hose. Refer to drying and storage instructions above

## ADVANCED CLEANING

### Advanced Cleaning of Structural Outer Shells, Structural and Proximity Liners and DRDs

*To be performed only when no contamination is present by a verified ISP, a verified organization or organization personnel who have received training*

- Machine Washing
  - Use only a mild liquid detergent with a pH range between 6.0 and 10.5
  - Empty all pockets
  - Remove the liner and DRD
  - Fasten all closures on the outer shell, including pocket closures, hook and loop tape, zippers, snaps, and hook & dees. All hook tape must be covered to prevent pulling or snagging during laundering
  - Pre-treat heavily soiled or spotted areas by applying mild liquid detergent directly onto the soiled area(s) and gently rubbing the fabric together. For deeper stains on the outer shell, lightly scrub the soiled areas with a soft bristle brush. Treat stains as soon as possible to minimize permanent marks
  - Use a front loading machine whenever possible. Top loading washing machines use mechanical agitation to clean, which may reduce garment service life
  - Following the machine manufacturer’s instructions for proper settings or program selection for the items being laundered and for maximum service life ensure that the G force of the spin cycle does not exceed 100
  - Fill the washing machine to the desired level with warm water no exceeding 105° F (40° C)
  - Add the appropriate amount of mild liquid detergent
  - Turn the outer shell and liner inside out, place the DRD in a mesh bag and wash each item separately only with like items to prevent damage and cross contamination
  - Load size must permit the items being laundered to move freely throughout the wash and rinse cycles
  - Inspect for cleanliness and rewash if necessary
  - Rinse washing machine used to launder other clothing such as station wear by running a complete cycle empty, with detergent and the maximum fill level of water not exceeding 125° F (52° C)
- Drying
  - Air drying
    - Air drying is the preferred method of drying, as it minimizes the possibility of shrinkage and maximizes the garment service life

- Dry by hanging in a shaded area with good cross ventilation, or use a fan to circulate the air. Do not dry by hanging in direct sunlight, as ultraviolet light will cause exposed materials to degrade
- Machine drying
  - Remove the liner and DRD
  - Fasten all closures on the outer shell, including pocket closures, hook and loop tape, snaps, zippers and hooks & dees. All hook tape must be covered to prevent pulling or snagging during drying
  - Turn the outer shell and liner inside out, place the DRD in a mesh bag and dry each item separately only with like items to prevent damage
  - Do not exceed the recommended load capacity
  - Use a 'no heat' or 'air dry' setting
  - If neither of the options is available, select a setting which will result in the basket temperature not exceeding 105° F (40° C), discontinue drying prior to removal of all moisture to prevent shrinkage and follow the air drying instructions listed above
- Reinstall the liner and DRD
- Do not store in direct sunlight or in a wet, damp or contaminated condition

### **Advanced Cleaning of Proximity Outer Shells**

Proximity outer shells cannot be machine washed and accordingly cannot be advanced cleaned. Please follow the instructions for routine cleaning of proximity outer shells

#### ***Decontamination/Specialized Cleaning***

*Any garment that is known or suspected to be contaminated with a hazardous material, bodily fluid or blood should be evaluated at the emergency scene*

*A preliminary assessment should be performed at the scene to evaluate the extent of the contamination and whether the garments should be isolated, bagged and tagged or retired*

*Contact a verified ISP if your garments require decontamination or specialized cleaning (provide MSDS for any known exposures or contaminants)*

## **ROUTINE INSPECTION**

### ***A DAMAGED GARMENT MUST NEVER BE WORN***

#### **Routine Inspection Criteria for Structural Garments, Proximity Garments and DRDs**

*To be performed by the user after each use and after each cleaning*

If your garment has been exposed to excessive heat or flame or has sustained damage, it must be disassembled and have an advanced inspection performed.

Protective gloves should be worn when inspecting your garments.

Inspection findings (including specific locations) should be recorded

Inspect your garment for the following:

- Soiling
- Contamination
- Physical damage such as the following
  - Rips, tears and cuts
  - Damage corroded or missing hardware and closure
  - Thermal damage (charring, burn holes, melting, discoloration of any layer)
- (Structural outer shell only) Damaged or missing reflective trim
- Loss of seam integrity and broken or missing stitches
- Correct assembly and size compatibility of outer shell, liner and DRD

If any of these conditions exist, are deficient or are not functioning properly, your garment should be evaluated by trained personnel prior to returning to service.

#### **Additional Routine Inspection Criteria for Proximity Outer Shells**

- Loss of reflectivity
- Loss of reflective coating(s)

If any of these conditions exist, your garment should be evaluated by trained personnel prior to returning to service.

## **ADVANCED INSPECTION**

***Advanced Cleaning should be completed prior to performing an Advanced Inspection. A DAMAGED GARMENT MUST NEVER BE WORN***

#### **Advanced Inspection Criteria for Structural Garments and Proximity Garments**

*To be performed only by a verified ISP, a verified organization or organization personnel who are trained*

An advanced inspection should be performed at a minimum of every 12 months or whenever routine inspection indicates a problem could exist.

Protective gloves and eye/face splash protection should be worn when inspecting your garments.

Ricochet's NFPA 1851 Advanced Inspection Checklist can be used as a guide when performing visual advanced inspections.

Remove the liner and DRD from the outer shell (be sure to turn your liner inside out when inspecting the thermal barrier portion of your liner).

Inspection findings (including specific location) should be recorded.

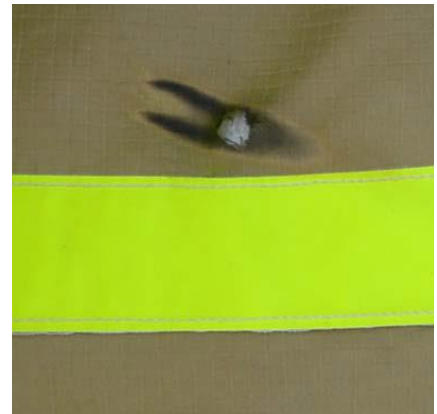
#### **What you will need to perform an Advanced Inspection**

- Clean garment
- Well lit work area
- Protective gloves
- 4"-6" piece of new reflective trim (matching your garment's reflective trim)

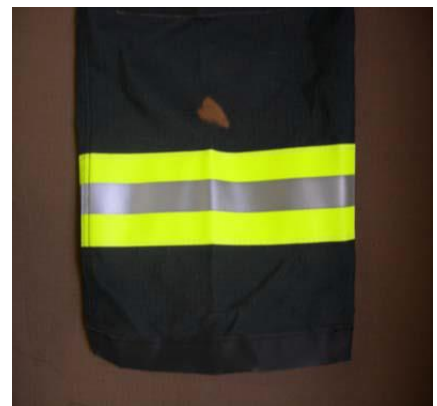
- Flashlight (with a bright adjustable focused light)
- Light source such as a fluorescent work light (the light should not produce enough heat to damage the liner composite and needs to fit into the sleeves of your coat and the legs of your pants)
- 5 gallon bucket
- Measuring cup
- Tap water
- Isopropyl alcohol (70%)
- Stopwatch or timer

**All separable layers of your garment should be inspected separately for the following:**

- Soiling
- Contamination
- Physical damage such as the following:
  - Rips, tears, cuts, and abrasions
  - Damaged, corroded or missing hardware and closures
  - Thermal damage (charring, burn holes, melting, discoloration of any layer)
- (Liner only) loss of moisture barrier integrity as indicated by any of the following:
  - Rips, tears or abrasions
  - Discoloration
  - Thermal Damage
- Evaluation of system fit and coat/pant overlap
- Loss of seam integrity and broken or missing stitches
- Loss of material physical integrity (ultraviolet (UV) or chemical degradation) as evidenced by discoloration, significant changes in material texture, loss of material strength, loss of liner material, and shifting of thermal liner material
  - Material discoloration can indicate many types of possible damage, including, but not limited to dye loss, heat degradation, chemical contamination and UV damage. (Prolonged exposure to UV or fluorescent light can severely reduce the strength of the material or seams and greatly impair its ability to provide protection). If you have discoloration on the outer shell or thermal liner, test its strength by firmly tugging that fabric of the garment between your fingers/hands. If the garment has any damage or can be easily torn it should be properly repaired prior to returning to service
  - When inspecting the liner, pay special attention to those area that correspond with damage on the outer shell
- Loss of elasticity, stretching, runs, cuts, or burn holes in the wristlets
- (Structural outer shell only) reflective trim integrity, attachment to



Burn hole on outer shell



Dye loss on outer shell



Discoloration on moisture barrier caused by thermal damage

garment, reflectivity or damage

- To assess the retro-reflectivity of trim do a side by side comparison with a sample of new reflective trim
  - Stand at least 40 feet away from the trim that needs to be evaluated and a sample of the new trim
  - Hold a flashlight directly next to your face or on the bridge of your nose
  - Aim the light beam of the flashlight at the trim
  - Compare the brightness of the reflected lights. If the reflected light of the trim being evaluated is substantially less than the new trim, the trim should be replaced
- Label integrity or legibility (if labels are illegible or loose contact Ricochet for instructions)
- Hook and loop tape functionality
- Liner attachment system functionality
- Closure system functionality
- Accessories that have been added after the original manufacture date
- Correct assembly and size compatibility of outer shell, liner and DRD (where applicable)

If any of these conditions exist, are deficient or are not functioning properly, your garment should be evaluated and/or repaired prior to returning to service.

**The DRD should be inspected separately for the following:**

- Proper installation in garment
- Soiling
- Contamination
- Physical damage such as the following
  - Rips, tears, cuts, abrasions and punctures
  - Cracking or splitting
  - Thermal damage (charring, burn holes, melting, discoloration)
- Loss of seam integrity and broken or missing stitches

If any of these conditions exist, are deficient or are not functioning properly, your garment should be evaluated and/or repaired prior to returning to service.



### Field Test for Moisture Barriers (Bucket Test):

As part of an advanced inspection, you must also test the moisture barrier for leaks.

Visually inspect the moisture barrier for any discoloration.

Discoloration may be a sign of damage.

Use the field test described below to test for leaks on any discolored areas:

- Separate the liner from the outer shell
- Mix (1) part Isopropyl alcohol with (6) parts tap water in a measuring cup
- Place the liner over a 5 gallon bucket on a flat surface. (The moisture barrier should be facing up and the thermal liner should be facing down)
- Cup the liner area that you want to evaluate so that it is lower than the surrounding liner
- Pour (1) cup of the alcohol-tap water mixture onto the moisture barrier
- After 3 minutes visually inspect the thermal liner side to see if the alcohol-tap water mixture has leaked. (If the alcohol/water solution has leaked through, the liner must be repaired or replaced)
- In addition to testing any discolored areas, high abrasion areas of your liner should also be tested. These areas include but are not limited to:
  - Coats:
    - Broadest part of shoulders
    - Back waist area
  - Pants:
    - Knees
    - Crotch
    - Seat area
- Record any leakage (including specific locations). If there is no leakage, a complete liner inspection is not required and the liner should be thoroughly washed and dried to remove all traces of the alcohol-tap water mixture.
- The liner and DRD can be reinstalled into the outer shell and the garment can be returned to service.



Bucket Test

A complete liner inspection is required for garments that showed signs of leakage.

*Please note that a complete liner inspection is required for garments that have been in service for three (3) years and annually thereafter or whenever advanced inspections indicate that a problem might exist*

### Light Evaluation Test for Thermal Liners:

As part of an advanced inspection, you must also evaluate the thermal liner for loss of thermal protection. Use the evaluation described below to test for loss of thermal protection:

- Turn your liner inside out so that the thermal liner is on the outside
- Using your fluorescent work light, slowly pass the light over the liner on the inside surface (batting) making sure that the light bulb does not make direct contact with the liner. As you look at the light, the brightness should be uniform. If the light is brighter in some areas than others, this could be an indication of the shifting of liner material or thin spots and a complete liner inspection should be performed prior to returning to service. Perform this test on:

- Coats:

- Front and back panels
- Upper back
- Shoulders
- Underarms
- Sleeves

- Pants:

- Waist
- Knees
- Crotch area

- Also check areas where thermal damage was identified during your visual evaluation of the outer shell and liner



Light Evaluation Test showing a thin spot on thermal liner

### Additional Advanced Inspection Criteria for Proximity Outer Shells

- Loss of reflectivity
- Loss of reflective coating(s)

If any of these conditions exist, your garment should be evaluated for repair prior to returning to service.

## COMPLETE LINER INSPECTION

Complete liner inspections should be performed at a minimum after three (3) years in service and annually thereafter or whenever advanced inspections indicate that a problem might exist. The liner should be opened to expose all layers.

If the moisture barrier has been replaced, a complete liner inspection should be performed after two (2) years in service and annually thereafter.

Complete liner inspections should be performed only by a verified ISP or organization personnel who have received training.

### What you will need to perform a Complete Liner Inspection:

- Clean garment
- Well lit work area
- Protective gloves
- Eye/face splash protection
- Tap water
- Hydrostatic Testing (Suter) Machine
- Stopwatch or timer

Protective gloves and eye/face splash protection should be worn when performing a complete liner inspection. The liner must be opened to expose all layers of the garment for visual examination. Separate the hook and loop tape of the liner inspection openings (collar for the coats/waist for the pants) and invert the moisture barrier to expose all composite layers.

Record your inspection findings.

### The thermal liner should be inspected for the following:

- Physical damage
  - Rips, tears, cuts and abrasions
  - Thermal damage (charring, burn holes, melting or discoloration)
- Loss of seam integrity, broken or missing stitches
- Material physical integrity; UV or chemical degradation as evidenced by discoloration, significant changes in material texture, loss of material strength, loss of liner material or shifting of liner material
  - Material discoloration can indicate many types of possible damage, including, but not limited to dye loss, heat degradation, chemical contamination and UV damage. (Prolonged exposure to UV or fluorescent light can significantly reduce the strength of the material or seams and greatly impair its ability to provide protection). If you have discoloration, test its strength by firmly tugging that fabric of the garment between your fingers/hands. If the liner has any damage or can be easily torn it should be properly repaired prior to returning to service
  - Check the inside surface (batting) of the thermal liner for thin spots or raised areas by visually examining the batting and also running your hand across the batting to feel for thin or raised areas. These thin spots could indicate wear, compression, damage or shifting of fibers.

Pay special attention to known compression areas such as shoulders, elbows and knees



Shifting of thermal liner material (batting)

- Pay special attention to those areas that correspond with damage on the outer shell or moisture barrier

**The moisture barrier should be inspected for the following:**

- Physical damage
  - Rips, tears, cuts and abrasions
  - Thermal damage (charring, burn holes, melting or discoloration)
- Loss of seam integrity, broken or missing stitches
- Loose or missing moisture barrier seam tape
- Material physical integrity; UV or chemical degradation as evidenced by discoloration, significant changes in material texture, loss of material strength or loss of moisture barrier material
  - Material discoloration can indicate many types of possible damage, including, but not limited to dye loss, heat degradation, chemical contamination and UV damage. (Prolonged exposure to UV or fluorescent light can severely reduce the strength of the material or seams and greatly impair its ability to provide protection). If you have discoloration, test its strength by firmly tugging that fabric of the garment between your fingers/hands. If the liner has any damage or can be easily torn it should be properly repaired prior to returning to service
  - Pay special attention to those areas that correspond with damage on the outer shell or thermal liner
- Delamination as evidenced by separation of film from substrate fabric, flaking, cracking or powdering

A Complete Liner Inspection also requires that a water penetration test be performed on the moisture barrier. This test requires the use of hydrostatic (suter) testing machine. With this machine, the moisture barrier is isolated with a clamp to provide a water tight seal. Water is pressurized to one (1) psi on the substrate side of the moisture barrier for fifteen (15) seconds. After fifteen (15) seconds with the water pressure still applied, visually inspect the film side to determine if the water is penetrating. The moisture barrier should show no signs of leakage. When testing areas with a seam, position the seams in the center of the clamped area, the test should be performed on at least three (3) areas on the moisture barrier and three (3) areas with a seam for a total of six (6) areas per liner.

The testing areas should be from high abrasion areas, including but not limited to:

- Coat:
  - Broadest part of shoulders
  - Back waist area
- Pant:
  - Knees
  - Crotch
  - Seat area

If there is water penetration (including pin holes) through the film to the substrate on any areas of the moisture barrier areas, record the results (including specific locations). If there are any signs of water penetration, the garment should be sent to a verified ISP for repair. If there are no signs of leakage on any of the tested areas, return it to its original configuration by reattaching the hook & loop tape and snap fasteners. Please contact your distributor if you are interested in purchasing hydrostatic testing equipment.

## REPAIRS

There are many repairs that can be performed to maintain your Ricochet garments. Repairs are necessary when the inspection criteria are not met for your garments.

NFPA 1851 requires that all repairs be performed by the original manufacturer, a verified ISP who has received training or a trained member of the organization.

A limited number of basic repairs as defined in NFPA 1851 can be performed by the manufacturer, the organization, manufacturer trained organizations, verified organizations or verified ISPs.

Basic repairs are defined as:

- Patching of minor tears, char marks and ember burns to an outer shell
- Repairing of skipped, broken, and missing stitches to an outer shell
- Replacement of missing hardware (excluding closure) to an outer shell
- Reclosing the liner of a garment after inspection

Advanced repairs as defined in NFPA 1851 can be performed by Ricochet, a verified ISP or a verified organization.

All repairs or alterations should be performed in a manner and using like materials and components that are compliant with NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting.

Ricochet recommends using 100% Nomex thread (tex size 80 or higher). All repairs or alterations should use the same stitch configurations as used in the original construction. Stitching shall be at least 7-8 stitches per inch.

Any part or component that contains moisture barrier material should not be stitched through except for around the edges or perimeter.

After completing repairs on a moisture barrier, the repaired area should be tested with the hydrostatic testing machine to ensure that the area is waterproof.

Only Ricochet is authorized to perform moisture barrier or thermal liner replacements. The outer shell must be returned to Ricochet before a new liner can be manufactured.

Minor tears, char marks, ember burns, and abraded areas can be covered by a maximum 25 in.<sup>2</sup> (160 cm<sup>2</sup>) patch of the same material that is compliant to NFPA 1971. The finished edges of the patch should extend at least (1 inch) in all directions beyond the damaged area.

All stress points should be reinforced, preferably with bartacks. Hardware should be secured at least through two layers of material or backed by a material that is compliant with NFPA 1971.

Replacement zippers and replacement outer shell reinforcements should be double stitched to the outer shell. Reflective trim being replaced should be removed prior to installing new reflective trim. When reflective trim is removed, an equal amount of reflective trim should be replaced.

Reflective trim patches should not exceed 3 inches in length. The reflective trim patch should extend 1 inch beyond the damaged area. A maximum of two reflective trim patches per stripe should be used.

NFPA 1971 requires that all components, including letters, patches, emblems, etc. be tested by a third party organization such as Underwriters Laboratories to meet the minimum heat and flame test requirements.

***Ricochet should be contacted if you are unsure as to whether a repair can be performed without adversely affecting the performance characteristics or the integrity of your garment***

## **USE OF ACCESSORIES**

Ricochet does not recommend adding any accessory that has not been tested to meet the performance and design requirements of NFPA 1971.

## **RETIREMENT**

In many cases, Ricochet garments can be repaired and returned to service. However, if a garment is worn or has been damaged beyond repair or if the organization deems it is not possible or cost effective to repair or decontaminate, the garment must be taken out of service and replaced.

NFPA 1851 requires that all structural and proximity garments be retired 10 years from the date of manufacture. In all cases, the aluminized proximity outer shell should be replaced at a maximum of 5 years.

Retirement and disposal should be recorded.

## **CERTIFICATION *(optional)***

Ricochet offers organization personnel the opportunity to receive written verification of their training in advanced cleaning and advanced inspection of Ricochet gear by successfully completing the online exam.

After successfully completing the exam, you will receive an Certificate of Completion which will allow you to perform advanced cleanings and advanced inspections of your organization's gear. Be sure to keep a copy for your organization's records.