



NEWTEX® ALUMINIZED PERSONAL PROTECTIVE APPAREL

Overview

Aluminized personal protective apparel is used to protect against molten metal splash and excessive radiant heat. Often called proximity gear, or proximity suits - it is commonly used in foundries, metal processing operations, furnace maintenance jobs, industrial firefighting and a host of other applications and industries.

The best PPE for your environment depends on numerous factors including the exposure times and temperatures, ambient temperatures, the weight of the objects you handle, your need for dexterity, and your durability requirements.

Understanding Heat Risks

It is also important to determine the types of heat that pose the greatest risk -radiant, conductive, and/or convective heat:

- **Radiant Heat:** Transmitted through space by hot objects in the form of infrared radiation. Aluminized materials are designed to reflect radiant heat and shed molten metal splash to keep the wearer cool and protected.
- **Conductive Heat:** Transmitted through direct contact. Most aluminized materials are not designed for direct contact with objects over 350°F (175°C). However, fiberglass, aramids, or another high temperature material can be incorporated into aluminized PPE in areas like the palms of the gloves that may be in direct contact with higher temperatures.
- **Convective Heat:** Transmitted through gases, like air. A vapor barrier can be added to protect from convective heat like steam, and layers of fiberglass insulation beneath an aluminized shell can protect from conductive and convective heat.

High-Performance Base Fabrics

Aluminized PPE can be purchased with various base fabrics depending on your needs:

- **Rayon:** For comfort and value in moderate radiant exposures.
- **Pre-Oxidized Fiber (PreOx) /Preox Aramid Blends:** Excellent molten metal protection for intense radiant environments.
- **Aramid (Kevlar or Twaron):** For strength, abrasion in moderate to severe radiant exposures.
- **Filament Fiberglass:** For value and lightweight comfort. Often paired with liner.
- **Texturized Fiberglass:** For value and insulation. Often paired with liner.
- **PBI / Aramid Knit Blend:** Engineered for NFPA proximity use in military & ARFF applications. NFPA 1970 certified protective apparel and PPE applications.



Advanced Fabric Technologies: Z-Flex® II & DualMirror® II

Newtex manufactures aluminized fabrics in both single-sided and double-sided configurations.

- **Z-Flex® II:** Newtex uses the Z-Flex II brand primarily for filament and texturized fiberglass fabric offerings. It features Newtex proprietary multilayer VVD aluminized film coupled with the most advanced and durable high temperature adhesive available. No competitive product has yet matched Newtex system for radiant reflectivity.
- **DualMirror® II:** DualMirror II aluminized fabrics reflect a remastered version of Gentex original formulation using the Newtex system. It improves durability, radiant reflectivity, and hand. DualMirror fabrics include aramid, aramid/preox, preox, Lenzing FR rayon and other technical fabric substrates.
- **Z-Flex® & DualMirror Air™:** Newtex pioneered breathable aluminized fabrics in 2010 and all fabrics can now be ordered with this technology. This micro-perforated shell provides the same protection as the standard materials, but it allows perspiration and body heat to escape, increasing THL and lowering overall body temperature and keeping first responders and workers safe for a longer period.

The Newtex PPE Solution (NXP)

Since the early 1980's, Newtex has been designing, fabricating, testing, and perfecting high temperature gloves, aprons, proximity and fire entry suits, and related apparel for OEM customers and select international distributors. We are still manufacturing the high quality, American-made safety apparel known as Newtex Extreme Protective (NXP). NXP is trusted by customers in over 70 countries around the world.

Our extensive line of NXP apparel includes:

- **X Series Proximity and Fire Entry Suits:** These range from the X10 Ultra-Lite jacket and pant combo to the heavily insulated X60 Advanced Fire Entry Suit designed for total flame and engulfment. Our manufacturing capabilities also allow us to produce finished proximity apparel and PPE solutions utilizing our advanced DualMirror® II materials.
- **Protective Apparel & Hand Protection:** We also manufacture more than 40 styles of Zetex®, ZetexPlus®, Z-Flex®, and Core Spun Aramid hand protection and Z-Flex Aluminized aprons, jackets, pants, and boots designed to protect from extreme environments.



Newtex PPE Fabrics for Manufacturers

In addition to offering already fabricated NXP products, Newtex Performance Materials—including our NFPA 1970 aluminized materials—are also available to garment manufacturers for purchase. Many of the most reputable PPE garment manufacturers utilize Zetex®, ZetexPlus, and Z-Flex® fabrics in their gloves, apparel, and proximity suits.