# CARBON



PROFESSIONALS WORKING WITH MOLTEN METAL, FLAMMABLE LIQUIDS, AND CERTAIN CHEMICALS ROUTINELY FACE THREE CHALLENGES IN CHOOSING FLAME-RESISTANT (FR) PROTECTIVE APPAREL—PROTECTION, DURABILITY, AND COMFORT. CARBONX C-59 EPIC HAS PROVEN AN IDEAL SOLUTION IN MEETING ALL THREE OF THESE CHALLENGES.



Sparks and spatter simply roll off C-59 Epic, making it ideal for use in jackets, sleeves, coveralls, aprons, bibs and spats.

## CARBON C-59 EPIC SHEDS MOLTEN METAL, FLAMMABLE LIQUIDS, AND CERTAIN CHEMICALS LIKE NO OTHER FABRIC.

**C-59 EPIC** 

CarbonX<sup>®</sup> C-59 Epic provides an extraordinary level of protection and durability. It is made of the patented CarbonX blend of high-performance fibers and a proprietary compound that enables the fabric to remarkably shed spatter, sparks, and splash. C-59 Epic is one of the few non-aluminized FR fabrics able to pass the ASTM F955 pour test for both molten iron and aluminum.

With an encapsulated barrier of silicone, C-59 Epic also shields against harsh weather conditions, reducing wind penetration and repelling water.

C-59 Epic is significantly lighter than other similar application protective options. Its lighter weight increases a wearer's comfort and productivity as it decreases the amount of muscle exertion and heat stress that builds up over the course of the work shift. Although C-59 Epic is water resistant, micropores in the fabric makes it breathable, further enhancing comfort.

Constructed to be truly non-flammable, C-59 Epic delivers:

**Unmatched Protection:** C-59 Epic will not burn, melt, or ignite, and greatly outperforms competing products when subjected to direct flame, extreme heat, molten metal, flammable liquids, and certain chemicals. Even after intense heat and flame exposure, C-59 Epic maintains its strength and integrity and continues to protect. It also limits heat transfer much more effectively than FR fabrics or similar weight.

**Comfortable Protection:** C-59 Epic is lightweight, flexible, and odor resistant, and it dries quickly.

**Permanent Protection:** Because C-59 Epic is inherently flame resistant, its thermal protective properties will not wash out or wear away. Apparel made from C-59 Epic can be worn again and again, even under conditions of daily exposure, providing significant value. As opposed to leather, C-59 Epic is chomium-free, making it easy to dispose of apparel at the end of its wear life. (Apparel that is torn or damaged should be removed from service).

# SETTING A NEW STANDARD IN FR PROTECTIVE APPAREL

While competitors work to ensure their products *meet* industry standards, **our goal is to** *exceed* **these standards** and go above the norm in providing a persistent thermal barrier with minimal heat conductivity. CarbonX fabrics and apparel offer protection far beyond the industry's No Melt, No Drip requirements, which typically only require that protective fabrics not contribute to burns in a thermal exposure as opposed to actually protecting the wearer from a thermal event.

### **ASTM F955 POUR TEST RESULTS**

| Maximum calorimeter temperature rise during the first 30 seconds and time to second-degree burn after impact with molten iron |          |                                      |             |  |  |
|---|----------|--------------------------------------|-------------|--|--|
|   |          | Max Temp. Rise (°C) After 30 Seconds |             | Time to Second-<br>Degree Burn<br>According to Stoll |  |
|   | Hazard   | Top Cal.                             | Bottom Cal. | Curve (Seconds)                                      |  |
| C-59 Epic   | Aluminum | 18.4                                 | 12.6        | None   |  |
| C-59 Epic   | Iron     | 15.2                                 | 10.6        | None   |  |

| Average visual rating of outer layer fabric exposed to molten iron* |          |          |           |           |             |  |
|---|----------|----------|-----------|-----------|-------------|--|
|   | Hazard   | Charring | Shrinkage | Adherence | Perforation |  |
| C-59 Epic   | Aluminum | 3        | 1         | 1         | 1           |  |
| C-59 Epic   | Iron     | 3        | 1         | 1         | 1           |  |

\* Evaluated visually on a scale of 1–5, with 1=none and 5=significant charring, shrinkage, adherence, or perforation.

ASTM F955 Pour Test: The standard test method for evaluating heat transfer through materials for protective clothing upon contact with molten substances.

#### PARTNERS IN PROTECTION

CarbonX has the advantage of being a signature brand of TexTech Industries Inc., a global market leader in providing Personal Protective Equipment (PPE) solutions and performance-driven materials since 1904. TexTech's in-house engineering, testing, and manufacturing capabilities facilitate the development of new CarbonX products to meet the requirements of a broad range of difficult and demanding protective applications for industrial safety, steel/welding, utilities, pulp and paper, oil and gas, firefighting, motorsports, construction, and tactical/police. When confronting dangerous conditions, professionals and enthusiasts can rely on CarbonX to provide them with the protection they deserve.

FOR MORE INFORMATION ABOUT CARBONX FABRICS AND APPAREL, CALL 801.415.0023 OR VISIT WWW.CARBONX.COM.



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| CARBONX C-59 EPIC PROPERTIES       |       |
|------------------------------------|-------|
| TOTAL WEIGHT (OZ/YD <sup>2</sup> ) | 8.7 0 |
| NFPA 70E HAZARD RISK CATEGORY      | :     |

#### AFTER FLAME

| C-59 Epic        | None/0 seconds    |
|------------------|-------------------|
| ASTM F1506       | 2 seconds or less |
| NFPA 1971 (2007) | 2 seconds or less |
| NFPA 1975 (2009) | 2 seconds or less |
| NFPA 1977 (2005) | 2 seconds or less |
| NFPA 2112 (2007) | 2 seconds or less |

### **CHAR LENGTH**

| C-59 Epic        | 10.16 | mm (0.4")  |
|------------------|-------|------------|
| ASTM F1506       |       | 6" or less |
| NFPA 1975 (2009) |       | 6" or less |
| NFPA 1977 (2005) |       | 4" or less |
| NFPA 2112 (2007) |       | 4" or less |

### THERMAL PROTECTIVE PERFORMANCE (TPP)



ASTM F1506: Standard performance specification for FR textiles in apparel worn by electrical workers exposed to momentary electric arc and related thermal hazards.

NFPA 1971 (2007): Standard on protective ensembles for structural firefighting and proximity firefighting. NFPA 1975 (2009): Standard on station/work uniforms for emergency services.

NFPA 1977 (2005): Standard on protective clothing and equipment for wildland firefighting. NFPA 2112 (2007): Standard on FR garments for

protection of industrial personnel against flash fire. Thermal Protective Performance (TPP): The TPP score is simply two times the number of seconds it takes for a second-degree burn to occur when exposed to a 2.0 cal/cm<sup>2</sup> flame. The higher the TPP rating, the higher the level of protection.

ATPV: ATPV is defined in the ASTM F1959-99 standard arc test method for FR fabrics as the incident energy that would cause the onset of a second-degree burn (1.2 cal/cm<sup>2</sup>).