THERE IS A COMMON PERCEPTION AMONG PROFESSIONALS WORKING IN MOLTEN-METAL AND HIGH-HEAT ENVIRONMENTS THAT ALUMINIZED PROTECTIVE APPAREL MUST BE HEAVY AND RIGID IN ORDER TO ADEQUATELY PROTECT AGAINST BOTH RADIANT HEAT AND MOLTEN METAL SPLASH. LIGHTER-WEIGHT ALTERNATIVES ARE REGARDED FOR RADIANT HEAT PROTECTION ALONE AND PROVIDE LITTLE RESISTANCE TO MOLTEN SPLASH HAZARDS.

CONSIDERING ALUMINIZED GARMENTS ARE USUALLY WORN IN ENVIRONMENTS WHERE AMBIENT TEMPERATURES CAN EXCEED 200°F, THE USE OF HEAVY, RIGID APPAREL MAY POSE SERIOUS RISKS TO THE WEARER’S SAFETY AND PRODUCTIVITY. ADDED WEIGHT COMBINED WITH RESTRICTED MOVEMENT CAN CAUSE THE WEARER TO EXPEND MORE ENERGY IN DOING THEIR JOB, THEREBY INCREASING THE POTENTIAL FOR HEAT-STRESS RELATED INJURIES WHILE REDUCING PRODUCTIVITY.

CARBONX ALUMINIZED SOLUTIONS DEFY THESE PERCEPTIONS AND REALITIES OF ALUMINIZED APPAREL.

CARBONX ALUMINIZED SOLUTIONS ARE LIGHTWEIGHT, YET OFFER MAXIMUM PROTECTION AND ENHANCED COMFORT

CarbonX® Aluminized Solutions enhance both protection and comfort for professionals working in molten-metal and high-heat environments. Our aluminized products are flexible and lightweight yet still provide maximum temperature resistance and extraordinary protection against molten metal splash.

CarbonX aluminized fabrics incorporate the Gentex® proprietary Dual Mirror® system, a proven five-layer structure that ensures a high level of abrasion resistance so the fabric remains highly reflective.

Upon contact with certain molten substances, the aluminized coating will melt away; however, the high-performance CarbonX base fabric will continue to protect and provide a persistent barrier. CarbonX copper fabrics are among the lightest materials on the market able to pass the ASTM F955 pour test for molten iron and copper. They remarkably shed spatter, sparks, and other hot liquids and molten substances and withstand extremely high temperatures.

Constructed to be truly non-flammable, CarbonX Aluminized Solutions deliver:

Unmatched Protection: The base fabric will not burn, melt, or ignite, and significantly outperforms competing fabrics when subjected to extreme heat and molten metal splash. Even after intense exposure, the fabric maintains its strength and integrity and continues to protect. It also limits heat transfer much more effectively than other aluminized products of similar weight. In addition, results of an NFPA 1971 Radiant Reflective test show Gentex Dual Mirror aluminized fabrics provide six times better protection at higher heats than similar weight non-aluminized fabrics.

Comfortable Protection: The base fabric maintains its flexibility even after it is aluminized and is soft to the touch, enhancing the wearer’s comfort and productivity. Its lighter weight also significantly reduces a wearer’s potential for fatigue and heat stress.

Permanent Protection: Because the base fabric is inherently flame resistant, its thermal protective properties will not wear away. Proper care and cleaning will extend the life of garments made from the fabric. (Apparel that is torn or damaged should be removed from service.)

Applications for CarbonX Aluminized Solutions: coats, jackets, hoods, full-body suits, pants, leggings, and overshoes/spats.
While competitors work to ensure their products meet industry standards, our goal is to exceed those 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.

### TECHNICAL PERFORMANCE—ASTM F955 POUR TEST RESULTS

<table>
<thead>
<tr>
<th>Baselayer</th>
<th>Time to Second-Degree Burn According to Stoll Curve (Seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CarbonX FL-100A (upon contact with copper)</td>
<td>10.1, 8.0, None</td>
</tr>
<tr>
<td>CarbonX FL-100A (upon contact with iron)</td>
<td>11.7, 8.6, None</td>
</tr>
<tr>
<td>CarbonX CR-80A (upon contact with iron)</td>
<td>15.8, 13.2, None</td>
</tr>
</tbody>
</table>

### Average visual rating of outer layer fabric exposed to molten substance*

<table>
<thead>
<tr>
<th>Baselayer</th>
<th>Charring</th>
<th>Shrinkage</th>
<th>Adherence</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CarbonX FL-100A (upon contact with copper)</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CarbonX FL-100A (upon contact with iron)</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CarbonX CR-80A (upon contact with iron)</td>
<td>3</td>
<td>1.5</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

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

### EN TESTING

CarbonX FL-100A passes all requirements of EN ISO 11612:

- ISO 17493@180°C Heat Resistance: -2.5% (ISO 9151 Convective Heat: B1)
- ISO 17493@260°C Heat Resistance: -2.5% (ISO 6942 Radiant Heat: C4)
- ISO 13937-2 Tear Strength: 23N/26N (ISO 12127 Contact Heat: F1)
- ISO 13938-1 Burst Strength kPa: 1040

EN ISO 11612 (2015): European standard for protective clothing designed to defend against heat and flame. European standard testing is not currently available for CarbonX CR-80A.

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