The increased thermal protection that garments made from DuPont™ NOMEX® and DuPont™ KEVLAR® offer is clearly demonstrated in simulated fire testing using instrumented thermal manikins such as the DuPont™ THERMO-MAN® system.

DuPont™ NOMEX® and DuPont™ KEVLAR® brand fibers are widely used in firefighter clothing systems. These fibers will not melt, drip, or support combustion, providing a stable barrier that helps minimize burn injuries. The flame resistant properties of NOMEX® and KEVLAR® are permanent; they cannot be washed out or removed in any way.

Each layer of flame resistant clothing provides a protective barrier from the heat source and traps insulating air. Multiple layers provide more thermal insulation but can also trap metabolic heat, increasing heat stress.

DuPont™ THERMO-MAN® system consists of a life size manikin with 122 thermal sensors used to predict level, extent, and location of potential burns of whole garments in simulated flame exposures. THERMO-MAN® tests are performed in accordance with ASTM 1930 guidelines.

THERMO-MAN® Burn Injury Profiles

- **No Burn Injury**
- **2nd Degree Burn**
- **3rd Degree Burn**
- **No Information**

<table>
<thead>
<tr>
<th>Test Conditions:</th>
<th>THERMO-MAN® Burn Injury Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0 sec exposure</td>
<td>NFPA 1977 Compliant Wildland Coverall 61%</td>
</tr>
<tr>
<td>2.0 cal/cm²-sec heat flux</td>
<td>NFPA 1985 Compliant 2 Layer USAR Gear 14%</td>
</tr>
<tr>
<td>Cotton undergarments</td>
<td>NFPA 1971 Compliant 3 Layer Turnout Gear 7%</td>
</tr>
</tbody>
</table>

Note: The head is uncovered in the test system and contributes to 7% of the predicted body burn.

THERMO-MAN® tests demonstrate the higher level of flame protection that multi-layer garments offer. Material selection and garment designs balance protection, mobility, and heat stress.
Product safety information is available upon request. This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own determinations. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. It is the user’s responsibility to determine the level of risk and the proper protective equipment needed for the user’s particular purposes. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, DUPONT MAKES NO WARRANTIES AND ASSUMES NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any trademark or patent right.