12-INCH HORIZONTAL COMPOSITE FENCING PANEL

1. SCOPE
This specification covers the minimum material, mechanical, and noise reduction performance requirements of the Shakespeare SafeFence non-conductive safety barrier system, which utilizes 12-inch horizontal composite panels. This perimeter barrier fencing may be used in conjunction with fiberglass, steel, concrete, or wood support posts. SafeFence barrier provides safety and security around substations, transformer yards, and other utility properties with installed power-delivery assets. The product is also well suited for other barrier applications requiring architectural appeal, long-term outdoor durability, vandal resistance, and ease of construction.

2. GENERAL REQUIREMENTS

2.1 DESIGN
The SafeFence non-conductive barrier system consists of horizontally oriented, stacked, tongue-and-groove structural panels. The panels shall be comprised of a glass-reinforced, thermoset composite structural shell meeting the dimensions in Figure 1.

2.2 MATERIAL
The structural panel components of the Shakespeare SafeFence safety barrier wall shall be constructed of a durable, UV-resistant, continuous glass-fiber-reinforced, flame-retardant, thermosetting composite material which is also resistant to degradation from ozone, hydrocarbons, and freeze/thaw cycling.

2.3 WORKMANSHIP
The safety barrier shall exhibit good workmanship and shall be free of burns, discolorations, cracks, or other objectionable marks that would adversely affect the barrier’s performance or serviceability.

3. PHYSICAL AND MECHANICAL REQUIREMENTS

3.1 DIMENSIONS

3.1.1 Span
The maximum span of individual safety barrier panels shall be twenty-four feet. The wall span must be specified on each order.

3.1.2 Height
The tongue-and-groove safety barrier panel shall be available at twelve-inch height increments.

3.1.3 Thickness
The safety barrier panel shall have an overall thickness, measured on the panel ends, of 3.125" maximum.
3.1.4 Weight
The safety barrier wall shall have a minimum weight of 4.2 lbs. per square foot and a maximum weight of 4.4 lbs. per square foot.

3.2 MECHANICAL PROPERTIES
The structural panel component of the barrier wall shall have average mechanical properties as follows:

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>ASTM TEST METHOD</th>
<th>MINIMUM VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexural Modulus</td>
<td>D-790-10</td>
<td>4,140,000 psi</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>D-790-10</td>
<td>103,000 psi</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>D-638-10</td>
<td>94,710 psi</td>
</tr>
<tr>
<td>Tensile Modulus</td>
<td>D-638-10</td>
<td>5,520,000 psi</td>
</tr>
<tr>
<td>Elongation Percentage</td>
<td>D-638-10</td>
<td>1.76</td>
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<tr>
<td>Compressive Strength</td>
<td>D-695-10</td>
<td>81,400 psi</td>
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<tr>
<td>Barcol Hardness</td>
<td>D-22583</td>
<td>50</td>
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<tr>
<td>Specific Gravity</td>
<td>D-792-13</td>
<td>1.98</td>
</tr>
</tbody>
</table>

Test reports available upon request.

3.3 COLOR
The customer shall specify the color. Colors shall be in accordance with Federal Standard 595B or RAL color standards. The safety barrier shall be coated with a UV-resistant polymer.

3.4 TEMPERATURE RESISTANCE
When assembled and loaded in a configuration similar to a vertical wall installation, the safety barrier shall not exhibit any cracking, deformation or separation when cycled from a temperature of -40°F to +140°F and back again.

3.4.1 Flame Resistance
The structural reinforced composite panel shall have a maximum flame spread index of 25 when tested in accordance with ASTM E84.

3.5 ACOUSTICAL PROPERTIES
3.5.1 S.T.C. Rating - Sound Blockage ASTM E90, C423 and E795
Wall Type: STC Rating
Unfilled: 35

3.5.2 N.R.C. Rating - Sound Absorption ASTM C423 and E795
Wall Type: NRC Rating
Unfilled: .05