6-INCH HORIZONTAL COMPOSITE FENCING PANEL

1. SCOPE
This specification covers the minimum material, mechanical, and noise reduction performance requirements of the Carsonite AcoustaShield sound barrier system which utilizes 6-inch horizontal composite panels.

This sound-barrier wall product may be used in conjunction with fiberglass, steel, concrete, or wood support posts to provide a noise-mitigation barrier along or adjacent to transportation corridors, commercial properties, industrial facilities, or construction sites. The product is also well suited for other sound-barrier applications requiring architectural appeal, long-term outdoor durability, vandal resistance, and ease of construction.

2. GENERAL REQUIREMENTS

2.1 DESIGN
The Carsonite sound 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. The panels are unfilled, and upon request, the panels may be filled with recycled rubber.

Individual panels shall be of sufficient weight to be installed without the use of lifting equipment. Optionally, individual panels may be joined and enclosed along their ends with continuous, corrosion-resistant, glass-reinforced, thermosetting composite U-channels. The resulting assembled section shall be capable of being lifted, stacked, and installed with conventional construction equipment.

2.2 MATERIAL
The structural panel components of the Carsonite AcoustaShield sound 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 sound 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 sound barrier panels shall be eighteen feet. The wall span must be specified on each order.

3.1.2 Height
The tongue-and-groove sound-barrier panels shall be available at six-and-one-sixteenth-inch (6.0625") height increments.
3.1.3 Thickness
The sound-barrier panels shall have an overall thickness, measured on the panel ends, of 2.125” maximum.

3.1.4 Weight
The unfilled sound barrier shall have a minimum weight of 3.5 lbs. per square foot and a maximum weight of 4.0 lbs. per square foot.

3.2 MECHANICAL PROPERTIES
The structural panel component of the sound barrier wall shall have minimum 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</td>
<td>1,600,000 psi</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>D-790</td>
<td>57,000 psi</td>
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<tr>
<td>Tensile Strength</td>
<td>D-638</td>
<td>60,000 psi</td>
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<tr>
<td>Tensile Modulus</td>
<td>D-638</td>
<td>3,500,000 psi</td>
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<tr>
<td>Elongation Percentage</td>
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<td>Compressive Strength</td>
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<tr>
<td>Barcol Hardness</td>
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<tr>
<td>Specific Gravity</td>
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<td>1.8</td>
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</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 standard. The sound 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 sound 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 15 and a maximum smoke-developed index of 600 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                  28

3.5.2 N.R.C. Rating - Sound Absorption ASTM C423 and E795
Wall Type                  NRC Rating
Unfilled                  .15