ATTACHMENT F

TECHNICAL SPECIFICATIONS

FOR

SEAT BOTTOMS

FOR

PASSENGER RAILCARS
1. **OBJECTIVE**

This specification defines the general requirements for new seat bottom cushions.

2. **APPLICABLE DOCUMENTS**

The Contractor shall perform work in accordance with the following applicable documents:

A. 49 CFR Part 238.233, Interior Fittings and Surfaces
B. 49 CFR Part 238.435, Interior Fittings and Surfaces
C. 49 CFR Part 238 Appendix B – Flammability and Smoke Emissions
D. American Public Transportation Association (APTA) PR-CS-S-016-99, Rev. 2 - Standard for Passenger Seats in Passenger Rail Cars
E. Bombardier SMP 800-C, Toxic Gas Generation
F. Boeing BSS 7239, Toxic Gas Generation

3. **REQUIREMENTS**

A. The following types of bottom seat cushions shall be provided by the Contractor in accordance with this specification:

1. Two (2) passenger seat bottom cushions
2. One (1) passenger seat bottom cushion
3. Flip seat bottom cushions

B. Seat cushions and all associated components provided under this Contract shall comply with Federal Railroad Administration (FRA) Regulation 49 CFR Part 238 and the American Public Transportation Association (APTA) Standard PR-CS-S-016-99, Rev. 2. Seats and associated components shall also meet toxic gas generation standards, Bombardier SMP 800-C or Boeing BSS-7239. Where these specifications conflict with FRA regulations and/or APTA standards (or conflict between regulations or standards exist) the most stringent requirements shall apply.

C. The seat cushion upholstery physical properties shall meet the test criteria listed in the table below. Test reports shall be provided by the Contractor to VRE within two (2) calendar days of request.
Table 3.1 Test Criteria for Upholstery

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Requirement</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Weight</td>
<td>33.0 oz./yd @ 54&quot;wide (linear yard)</td>
<td>CFFA-700D</td>
</tr>
<tr>
<td>Thickness</td>
<td>45 mils</td>
<td>CFFA-700C</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>65 lbs. (long direction)</td>
<td>CFFA-17</td>
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<tr>
<td></td>
<td>60 lbs. (cross direction)</td>
<td></td>
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<tr>
<td>Tearing Strength (Trapezoid)</td>
<td>14 lbs. (long direction)</td>
<td>CFFA-16C</td>
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<tr>
<td></td>
<td>12 lbs. (cross direction)</td>
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<tr>
<td>Coating Fabric Bond</td>
<td>3 lbs., Jin.</td>
<td>CFFA-3A</td>
</tr>
<tr>
<td>Stretch</td>
<td>5% (long direction)</td>
<td>CFFA-15</td>
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<tr>
<td></td>
<td>25% (cross direction)</td>
<td></td>
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<tr>
<td>Abrasion Resistance</td>
<td>a) No wear through skin @ 500 double rubs with 240-grit silicon-carbon cloth</td>
<td>CFFA-la Wyzenbeek</td>
</tr>
<tr>
<td></td>
<td>b) No wear through skin @ 250,000 double rubs with #8 cotton duck</td>
<td></td>
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<tr>
<td>Crocking</td>
<td>Good-Minimum</td>
<td>CFFA-7, dry</td>
</tr>
<tr>
<td>Blocking</td>
<td>Scale Rating No. 3 (Maximum)</td>
<td>CFFA-4</td>
</tr>
<tr>
<td>Cold Resistance</td>
<td>-20°F, No cracking</td>
<td>CFFA-6A, 5# roller</td>
</tr>
<tr>
<td>Accelerated Weathering Resistance Test</td>
<td>No fading, discoloration, or stiffness after 225.6 kJ</td>
<td>CFFA-2, Al, (SAE-J1885) Bl, (ASTM G26-A) Cl, (ASTM D4329)</td>
</tr>
</tbody>
</table>

D. All stitching shall be in accordance with ASTM D6193 and subject to VRE approval.

E. All seat cushion assemblies shall be compatible with the existing Kustom Seating Unlimited Inc. (KSU) seat hardware and closely match the existing seat cushion assembly appearance, design and function. The following drawings of each seat cushion assembly including dimensions and construction information are included herein as ATTACHMENT G:

1. Two (2) Passenger Bottom Cushion (2P)
2. One (1) Passenger Bottom Cushion (1P)
3. Flip Seat Bottom Cushion
F. All materials used for the seat cushions shall include Safety Data Sheets (SDS) and must comply with the Smoke, Flame and Toxicity (SF&T) requirements under 49 CFR 238. The following materials are recommended for the seat cushions:

1. **External Vinyl**: Uniroyal (Naugahyde) PH-55 “Royal Blue” or approved equal.

2. **Internal Foam**: Chestnut Ridge Safeguard XL Medium or approved equal. Laminated cushions shall be bonded together. Cushion material shall be properly cured to prevent any objectionable odor.

3. **Suspension Fabric**: Entransit Flame Retardant Suspension Fabric or approved equal.


5. **Rivet Material**: 304 stainless steel. Rivets shall have rivet holes well matched and aligned so that rivets, when driven, properly fill holes and have bodies without offsets. Exposed heads shall be concentric with the shank and free from rings, fins, pits and burrs.


7. **Bottom Pan**: painted steel. The paint must be fire retardant, black. The Contractor shall submit a paint plan to VRE for approval during the design review process that identifies areas to be painted, proposed colors, the paint to be utilized and any special process requirements necessary in applying the paint.

Note: If alternate materials are used, applicable durability and equivalency test results must be submitted to VRE for approval.

### 4. FIRST ARTICLE INSPECTION

VRE reserves the right to perform a First Article Inspection (FAI) to verify full compliance with the specifications and drawings. It is the Contractor’s responsibility to verify all dimensions with VRE prior to production. The Contractor shall provide VRE with at least ten (10) days of advance notice of such inspection. VRE retains the right to waive the inspection. The Contractor shall prepare a FAI Plan, which must be submitted to VRE for approval prior to the FAI. The seat bottoms shall meet all requirements including FRA, APTA, as well as any railroad and industry regulations. The Contractor shall prove that all such requirements are fully satisfied as part of the FAI.
5. REQUIRED DOCUMENTATION

The Contractor shall submit the following documents to VRE for review and approval within sixty (60) calendar days from the date set forth in the written Notice-To-Proceed (NTP):

A. A detailed Bill of Materials with the item descriptions, images or pictures, part numbers, and supplier names for each item.

B. Safety Data Sheets for each material used.

C. Smoke, Flame and Toxicity (SF&T) Testing information for each material.

D. Paint Plan.

E. First Article Inspection (FAI) Plan.

F. Maintenance Manuals.