1. PRODUCT NAME & MANUFACTURER

1.1 Product:
Forbo Marmoleum® Composition Sheet (MCS) linoleum sheet resilient floor covering

1.2 Manufacturer:
Forbo Flooring Systems
Humboldt Industrial Park
Hazleton, PA 18202
www.forboflooringNA.com
Phone: +1-800-842-7839 (US)
+1-800-268-8108 (CA)
Fax: +1-570-450-0258

1.3 Product Description:
Construction: Marmoleum® Composition Sheet (MCS) is a homogeneous floor covering made from natural ingredients including flax seed oil, rosin binders, wood flour, limestone and dry pigments which are mixed and then calendared onto a natural jute backing. Topshield2™ is a high performance finish. Its double UV cured double layer technology delivers extraordinary performance and clear and vibrant colors that remain over time. Topshield2™ creates a ‘ready to use’ Marmoleum® Composition Sheet (MCS) that requires no initial maintenance or polymer application. The surface can be repaired or refreshed in cases of accidents or after years of intensive use.

1.4 Physical Characteristics:
(dimensions are approximate)
Gauge ----------------------1/10” (2.5 mm)
Backing --------------------Jute
Width ----------------------79” (2 meters)
Length ---------------------105’ (32 meters)
Roll Size -------------------77 yards^2 (64 meters^2)

2. PRODUCT PERFORMANCE & TECHNICAL DATA

2.1 Reference Specification:
Meets or exceeds all technical requirements as set forth in ASTM F 2034 Standard Specification for Linoleum Sheet Flooring, Type I

2.2 Environmental:
100% USDA Certified BioBased Product.
Compliant with CDPH 01350 requirements for VOC emissions and indoor air quality.
Forbo Marmoleum® Composition Sheet (MCS) contributes to LEED® v4 credits. For additional information, contact Forbo Flooring Systems.

2.3 Flexibility:
Marmoleum® Composition Sheet (MCS) will not crack or break when bent around a 1.4” (3.5mm) diameter cylinder.

2.4 Static Load Limit:
Residual compression of 0.002’” with 250 pounds per square inch when tested in accordance with ASTM F 970-17, Standard Test Method for Static Load Limit.

2.5 Slip Resistance:
Meets or exceeds the industry recommendation of >0.5 for flat surfaces when tested in accordance with ASTM D 2047, Standard Test Method for Static Coefficient of Friction.

2.6 Castor Resistance:
Suitable for office chairs with castors when tested in accordance with EN 425, Castor Chair Test.

2.7 Impact Sound Reduction:
6dB when tested in accordance with ISO 717-2, Impact Sound Insulation Test.

2.8 Resistance to Bacteria:
Provides a self-sanitizing quality in the form of a bactericidal effect. Independent testing has shown that a sterile zone around the material inhibits the growth of organisms such as staphylococcus aureus and Clostridium difficile.

2.9 Anti-Static Properties:
Naturally anti-static. This property makes cleaning easier because dirt and dust does not cling to the surface as it may with other materials.

2.10 Fire Testing:

2.11 Cigarette Resistance:
Resists cigarette burns. Burning cigarettes will leave only a brown mark, which can be rubbed out using steel wool or a scouring pad.
2.12 Chemical Resistance:
(Exposure Time – 1h)*

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diluted Acids – Sulfuric, Nitric, Hydrochloric</td>
<td>No Change</td>
</tr>
<tr>
<td>Acetic, Lactic, Citric</td>
<td>No Change</td>
</tr>
<tr>
<td>Isopropyl Alcohol (70%)</td>
<td>No Change</td>
</tr>
<tr>
<td>Sodium Hydroxide (5%)</td>
<td>Softening</td>
</tr>
<tr>
<td>Ammonia (5%), Acetone</td>
<td>Possible Softening/Staining</td>
</tr>
<tr>
<td>Soda Solution, Soap Solution</td>
<td>No Change</td>
</tr>
<tr>
<td>(Slightly Alkaline)</td>
<td>No Change</td>
</tr>
<tr>
<td>Gasoline, Kerosene, White Spirit, Paraffin</td>
<td>No Change</td>
</tr>
<tr>
<td>Benzene, Toluene, Methyl Alcohol, Ethyl</td>
<td>No Change</td>
</tr>
<tr>
<td>Acetate</td>
<td>No Change</td>
</tr>
<tr>
<td>Methyl Ethyl Ketone, Ether, Phenol (5%)</td>
<td>No Change</td>
</tr>
<tr>
<td>Mineral Oil, Olive Oil, Vegetable Oil</td>
<td>No Change</td>
</tr>
<tr>
<td>Animal Fat</td>
<td>No Change</td>
</tr>
<tr>
<td>Blood, Urine, Excrement</td>
<td>No Change</td>
</tr>
<tr>
<td>Formaldehyde, Hydrogen Peroxide 3%</td>
<td>No Change</td>
</tr>
<tr>
<td>Hot Chili Paste, Iodine, Betadine, Hair Dye</td>
<td>No Change</td>
</tr>
<tr>
<td>Shoe Polish, Lipstick</td>
<td>Staining</td>
</tr>
<tr>
<td>Silver Nitrate</td>
<td>Staining/Possible Softening</td>
</tr>
<tr>
<td>Bitumen, Salt Water</td>
<td>No Change</td>
</tr>
<tr>
<td>Methylene Blue</td>
<td>Staining</td>
</tr>
<tr>
<td>Gel-Based Hand Sanitizer, Bleach</td>
<td>No Change</td>
</tr>
</tbody>
</table>

Tested in accordance with ASTM F 925, Standard Test Method Resistance to Chemicals of Resilient Flooring.

*Marmoleum® Composition Sheet (MCS) is NOT resistant to prolonged exposure to high alkalis.

3. INSTALLATION

3.1 Adhesive:
Use Forbo L 885, Forbo Sustain 1195, Forbo Sustain 1299, Forbo Sustain 100 or Forbo 660 adhesive.

3.2 Heat Welding:
Heat welding is not necessary for all installations, however it is optional. For seamless, hygienic watertight installation requirements, use Forbo Marmoweld welding rod.
Welding rod dimensions: 4 mm; 165 linear feet per spool.

3.3 Heat Welding Is Not Required:
Forbo Marmoweld... EZ to use is a color-matched sealant used to complete the installation of Forbo Marmoleum® Composition Sheet (MCS) in place of heat welding. To use, sparingly apply Forbo Marmoweld... EZ to use to all seams on the floor with a 1” (2.54cm) putty knife or plastic applicator. Ensure there are no sharp or damaged edges on the applicator that might scratch or damage the Forbo Marmoleum® Composition Sheet (MCS). Wipe all excess Forbo Marmoweld... EZ to use off the surface of the Forbo Marmoleum® Composition Sheet (MCS) with a clean, damp white cloth.

3.4 Flash Coving (OPTIONAL):
Flash cove up walls to the desired height. Use L 885, Forbo Sustain 1195, Forbo Sustain 1299, Forbo Sustain 100 or Forbo 660 adhesive.

3.5 Installation Guidelines:
Refer to Forbo’s Installation Guidelines for complete installation recommendations.

4. WARRANTY
Limited 30-year warranty. For complete details, contact Forbo Flooring.

5. CARE & CLEANING
Refer to Forbo’s Floor Care Guidelines for complete care recommendations.