Polyethylene

Polyethylene
Polyethylene is a highly durable material that provides exceptional engineering characteristics in applications where ease of cleaning, stability, impact, wear, UV and weather resistance is desirable.

Performance
Polyethylene is available with a wide array of engineering properties to provide toughness, ease of processing, shrinkage rates, chemical abrasion and impact resistance, low coefficients of friction, durability in the elements and near-zero moisture absorption. These properties make polyethylene an ideal material for many applications.

Grades of Polyethylene
Landscape Forms utilizes the following grades of polyethylene.

**LLDPE** – Linear Low Density Polyethylene is strong and flexible.
Landscape Forms Applications:
• Litter receptacle liners

**LMDPE** – Linear Medium Density Polyethylene has the best overall properties for rotational molded components used in Landscape Forms’ products. They combine good stiffness and impact strength. They have a lower melting temperature making them desirable for rotationally molding.
Landscape Forms Applications:
• Planters
• Litter receptacle tops
• Litter receptacle liners
• Litter receptacle bodies
• Seating
• Bollard sleeves

**HDPE** – High Density Polyethylene has greater strength and higher tensile properties. It is the primary polyethylene used for milk, food and detergent containers which are recycled and used in Landscape Forms’ Polysite® seat boards.
Landscape Forms Applications:
• Polysite® seat boards

**UHMWPE** – Ultra-High Molecular Weight Polyethylene is a high-performance material. UHMWPE has the toughest, highest impact and lowest friction properties of any polyethylene. It machines very well. Pure UHMWPE cannot be injection molded unless it is alloyed with an injection moldable grade of polyethylene.
Landscape Forms Applications:
• Glides and bumpers
• Latch mechanisms

Processing Methods
Polyethylene is formed into components for Landscape Forms’ products by the following processes:
• Rotational Molding
• Injection Molding
• Extrusion
• Machining

Colors
Landscape Forms publishes a color chart that includes our standard colors for rotationally molded polyethylene.

Color and Gloss Loss UV Protection
All Landscape Forms polyethylene components that are exposed to sunlight are protected with UV inhibitors and stabilizers or pigmented with substances that screen out or block UV rays.


UL Flammability Rating
UL 94HB (Horizontal Burn)

Stain Resistance
Polyethylene is one of the most chemically inert thermoplastics, meaning it does not react with most chemicals and its near-zero water absorption gives polyethylene outstanding stain resistance properties.

Scuff Resistance
Polyethylene has engineering properties that give it excellent abrasion resistance; however it is not scuff proof. Care must be taken to avoid unnecessary abrasive contact of exposed surfaces (other than glides or surfaces intended for contact with the floor) with abrasive materials like stone, concrete, brick, etc. Scuff marks left by such abrasive materials are not covered under our product warranty.

Care and Maintenance
Landscape Forms’ polyethylene surfaces may be cleaned by washing with mild detergent in lukewarm water using a soft cotton cloth. Rinse well with clean water and wipe dry with a soft cotton cloth. Cleaning agents such as Scrubbing Bubbles® or Claire® Germicidal Cleaner may be used, following manufacturer’s instructions. Apply product and wipe dry with a clean soft cloth. If stronger cleaning agents become necessary, follow the manufacturer’s directions taking precaution not to expose surfaces less durable than polyethylene to stronger cleaning agents.

Do not use abrasive materials like sandpaper, steel wool or scraping tools, etc. to remove foreign substances from the surfaces of polyethylene. They can disrupt the surface texture and alter the appearance.
Polyethylene

Technical Information

Samples
To receive samples, contact Landscape Forms Sales/Service team at 800.521.2546.

Recycled Content
In many instances polyethylene can consist of 100% recycled content such as litter receptacle liners and Polysite® seat boards. However, depending on the processing method and part design, many products are not processed using recycled materials because the mixture of recycled materials is not homogenous enough to achieve optimal strength. All of Landscape Forms’ polyethylene however can be recycled at the end of its service life.

Mechanical Properties
LMDPE – Linear Medium Density Polyethylene for rotationally molded components is the most widely used polyethylene for Landscape Forms’ products. For specific properties of other grades of polyethylene, contact Landscape Forms.

<table>
<thead>
<tr>
<th>Physical</th>
<th>Test Method</th>
<th>Unit</th>
<th>Nominal Value</th>
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<tbody>
<tr>
<td>Density</td>
<td>ASTM D1505</td>
<td>g/cm³ (Lbs/in³)</td>
<td>0.935 (.0338)</td>
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<tr>
<td>Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)</td>
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<tr>
<td>Tensile Strength @ Yield</td>
<td>ASTM D638</td>
<td>psi</td>
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<tr>
<td>Tensile Stress at Yield</td>
<td>ISO 527-1, -2</td>
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<tr>
<td>Tensile Elongation @ Brk</td>
<td>ASTM D638</td>
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<tr>
<td>Tensile Strain at Break</td>
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<td>Flexural Modulus</td>
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<td>Shore Hardness (Shore D)</td>
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<tr>
<td>Vicat Softening Temperature (A120 (120°C/h 10N))</td>
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