

# ROOF GARDEN

## Root Barrier



### Overview

Carlisle's Root Barrier is a non-reinforced, heat-weldable, polypropylene sheet specifically formulated for use in below-grade and vegetated applications to resist root penetration and soil bacteria. Carlisle's Root Barrier is typically used in medium to deep Roof Garden assemblies where plants, such as grasses, with intrusive roots are used. This high-performance Root Barrier is based on a UV-stabilized polypropylene copolymer which does not require polymeric or liquid plasticizers to maintain flexibility. The relatively smooth surface of the Carlisle Root Barrier facilitates production of a total surface fusion weld that creates a consistent, watertight, monolithic sheet.

### Features and Benefits

- » Superb elongation
- » Plasticizer-free, does not contain liquid or polymeric plasticizers
- » Excellent low-temperature impact resistance
- » Excellent chemical and environmental stress-cracking resistance
- » Low water vapor permeance and water absorption
- » Hot melt extrusion processed (not calendered) for very low machine induced shrinkage

### Installation

After the insulation or protection layers are in place, simply hoist Carlisle Root Barrier to the roof and unroll the membrane making sure to overlap the sheets by 3" at the seams. Carlisle's Root Barrier shall terminate inside vegetation-free zones by extending a minimum of 3" past Aluminum Edge. To secure, spot weld to TPO membrane or spot tape to EPDM membrane. To complete field seams, 1.5" hot air welds are created using a Varimat hot-air welder or equivalent to create a monolithic sheet. Once the welds are completed, check the seams for any leaks using a seam probe.

During most installations, Carlisle's Root Barrier will be applied above a protection fabric such as CCW 300HV to prevent abrasion to the roofing membrane. MiraDRAIN® G4 Roof Garden drainage composite will typically be loose laid above the Root Barrier.

*Review Carlisle specifications and details for complete installation information.*

### Specifications

|                 |   |
|-----------------|---|
| Thickness       | 40 mils   |
| Standard Width  | 12'   |
| Standard Length | 100'  |
| Typical Weight  | 0.21 lb/ft <sup>2</sup> (1.03 kg/m <sup>2</sup> ) |
| Color           | Black   |

### LEED® Information

|                                |               |
|--------------------------------|---------------|
| Pre-consumer Recycled Content  | 0%            |
| Post-consumer Recycled Content | 0%            |
| Manufacturing Location         | Senotobia, MS |
| Solar Reflectance Index (SRI)  | N/A           |

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### Typical Properties and Characteristics

| Physical Property  | Test Method                                       | Property of Unaged Sheet                              | Property After Aging 30 days @ 185°F                  |
|--|---|---|---|
| Tolerance on nominal thickness, %  | ASTM D5199  | ± 10  |   |
| Mass per unit area, lb/ft <sup>2</sup> (g/ft <sup>2</sup> ) (kg/m <sup>2</sup> )   | ASTM D5261  | 0.21 (95) (1.03) typical                              |   |
| Tensile Strength, lbf/in. (kN/m)<br>(reported in lbf per inch of width)  | ASTM D638 or D6693<br>Dumbell IV                  | 72 (12.6) min.<br>110 (19.3) typical                  | 72 (12.6) min.<br>110 (19.3) typical                  |
| Tensile elongation, %<br>(strain at rupture)   | ASTM D638 or D6693<br>Dumbell IV                  | 700 min.<br>800 typical                               | 700 min.<br>800 typical                               |
| Tear Resistance, lbf (N)   | ASTM D1004 (max. load)<br>Die C                   | 12 (53.3) min.<br>15 (66.7) typical                   | 12 (53.3) min.<br>15 (66.7) typical                   |
| Low temperature flexibility, °F (°C)   | ASTM D2136<br>1/8 in. mandrel, 4 hour @ temp.     | -40 (-40) max.<br>-50 (-46) typical                   |   |
| Linear Dimensional change (shrinkage), %   | ASTM D1204  |   | ± 1.0 max.<br>-0.5 typical                            |
| Ozone Resistance, 100 pphm, 168 hours  | ASTM D1149  | No Cracks   | No Cracks   |
| Resistance to water (distilled) absorption<br>After 30 days immersion 122°F (50°C)<br>Change in mass, %                                    | ASTM D471   | 1.0 max.<br>0.5 typical                               |   |
| Field seam strength, lbf/in. (kN/m)<br>Seam tested in peel after weld  | ASTM D4437<br>1" wide                             | Cannot separate weld<br>(breaks outside weld)         |   |
| Water vapor permeance, Perms   | ASTM E96  | 0.10 max.<br>0.05 typical                             |   |
| Puncture resistance, lbf (N)   | ASTM D4833 (index puncture)                       | 30 (133) min.<br>45 (200) typical<br>55 (245) typical | 30 (133) min.<br>45 (200) typical<br>55 (245) typical |
| Resistance to xenon-arc weathering <sup>1</sup><br>Xenon-Arc, 15, 120 kJ/m <sup>2</sup> total radiant<br>exposure, visual condition at 10X | ASTM G155<br>0.70 W/m <sup>2</sup><br>80°C B.P.T. | No cracks<br>No loss of tensile strength              |   |

<sup>1</sup>Approximately equivalent to 12,000 hours exposure at 0.35 W/m<sup>2</sup> irradiance. B.P.T. is black panel temperature.

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.