

# ALT R230 Membrane Green Roof Specification



## Technical Data Sheet

### PART 1 GENERAL

<b>System:</b>	New cold liquid-applied reinforced roof membrane system, including all other ancillary roof work but not limited to installation of roof insulation, drainage mat, filter fabric, ballast system, drain, penetration and perimeter flashings, sealants and metal work as specified.
<b>Weather Restrictions:</b>	Do not apply membrane during or with the threat of inclement weather. Application of cold liquid-applied reinforced membrane may proceed while air temperature is between 32° F (0° C) and 95° F (35° C) for ALT primers and finish or 23° F (-5° C) and 95° F (35° C) for ALT R230 membrane, providing the substrate is a minimum of 5 degrees above the dew point temperature, clean and dry.
<b>Roofing Warranty:</b>	Manufacturer's Warranty: Provide 20-year standard manufacturer's warranty under provisions of this section.

### PART 2 PRODUCTS

<b>Membrane:</b>	Cold liquid-applied reinforced membrane with non-woven reinforcing fabric, for a finished dry film membrane thickness of .080 inch nominal per ply; slip-resistant aggregate and colored topcoat finish as selected by owner from manufacturer's standard palette of colors; conforming to ASTM C 836. Subject to compliance with requirements, provide ALT R230 resin for use in an adhered membrane waterproofing and surfacing system.
<b>Flashing:</b>	Cold liquid-applied membrane with a non-woven reinforcing fabric, for a finished dry film membrane thickness of .080 inch nominal per ply; integral color finish as selected by owner from manufacturer's standard palette of colors; conforming to ASTM C 836. Subject to compliance with requirements, provide ALT R230 Thixo resin for use in an adhered flashing membrane system.
<b>Accessories:</b>	Provide resin primers, additives, surfacing topcoats, and accessory products as required or recommended by the Membrane Manufacturer.
<b>Protection Layer:</b>	Provide an acceptable drainage composite, 1/8" to 1/4" (3.2 to 6.4 mm) asphaltic hardboard, or minimum 1" (25.4 mm) extruded high density polystyrene that has a minimum compressive strength of 10-lb/in <sup>2</sup> (69 kN/m <sup>2</sup> ) or as needed. Where required, adhered protection board to ALT R230 membrane using an acceptable adhesive.
<b>Drainage Course: (if required)</b>	Provide drainage composite consisting of a three dimensional, high-impact polystyrene core, and a non-woven filter fabric bonded to the individual dimples of the molded core.
<b>Insulation:</b>	Insulation may be installed an overlay, protection layer and/or to obtain the desired thermal value.  Foam Board Insulation: Minimum 2" thick closed-cell Extruded polystyrene board meeting ASTM C578, Types IV, VI or VII physical properties with natural skin surfaces; with minimum compressive strength of 40 psi, nominal 1.8 pcf density, maximum water absorption of <0.1% per ASTM C272; using non-HCFC hydrocarbon blowing agents.
<b>Air Layer: (if required)</b>	Provide drainage composite consisting of a three dimensional, high-impact polystyrene core, and a non-woven filter fabric bonded to the individual dimples of the molded core.

<b>Water Retention Mat: (if required)</b>	Provide non-woven synthetic fiber mat capable of retaining additional moisture for potential use by vegetation.
<b>Filter Fabric:</b>	Provide lightweight water-resistant polyester fiber mats or polypropylene- polyethylene, non-woven, non-biodegradable landscape fabric mats.
<b>Hard-scape/ Ballast: (optional)</b>	Provide screened, washed stone gravel meeting ASTM D-448, gradation #57; or ballast pavers with a compressive strength greater than 6,500 psi per ASTM C140, Flexural strength greater than 600 psi per ASTM C293, water absorption not greater than 5% per ASTM C140, Freeze/Thaw loss less than 1% dry weight (50 cycles) per ASTM C67, and a centered load capability of 1,750 lbs. minimum.
<b>Soil/Topsoil:</b>	Provide special soil engineered to support the proposed landscaping as specified by the landscape architect or landscaping professional.
<b>Planting Materials:</b>	Provide plants selected by the landscape architect or landscaping professional as required for the intended landscape plan and growing region.

### PART 3 EXECUTION

<b>Preparation:</b>	<p>All substrates must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and/or resin to the substrate. All traffic bearing surfaces require scarifying, sandblasting or grinding to achieve a suitable substrate.</p> <p>Substrate shall have maximum moisture content of six (6) percent or 75% relative humidity, and be prepared as required to provide adhesion of the membrane to substrate with minimum bond strength of 116 psi (0.8 N/mm<sup>2</sup>) for roofing applications or 219 psi (1.5 N/mm<sup>2</sup>) on concrete for traffic surfacing applications. Determinations of bond strength and moisture content shall be performed periodically by the Contractor throughout the course of work.</p>
<b>Primer:</b>	<p>Prime all substrates as recommended or required by Membrane Manufacturer. Primer is required on asphalt, concrete, wood and metals. For other substrates, contact the Membrane Manufacturer for recommendations.</p> <p><u>Asphalt/Concrete/Wood:</u> Apply two-component ALT Primer with a lambswool roller. Minimum consumption: 0.037 kg/ft<sup>2</sup> (0.4 kg/m<sup>2</sup>) Cure Time: Minimum of 45 minutes.</p> <p><u>Metal:</u> Apply single-component ALT Metal Primer with a lambswool roller. Minimum consumption: 0.016 - 0.02 kg/ft<sup>2</sup> (0.17 – 0.2 kg/m<sup>2</sup>) Minimum Cure Times: 1-hour minimum @ 86° F (30° C) 2-hours minimum @ 68° F (20° C) 3-hours minimum @ 50° F (10° C) 4-hours minimum @ 38° F ( 3° C)</p> <p><i>*Note: Consumption and yield of primer will vary depending upon smoothness and absorbency of the substrate.</i></p>
<b>Flashing:</b>	<p>Apply an even base layer of ALT R230 Thixo resin, work ALT Fleece reinforcement into the wet resin saturating from the bottom up removing trapped air using a lambswool roller. Apply supplemental ALT R230 resin directly over the fleece as required to complete saturation and allow to cure until solid.</p> <p>Base Coat: Minimum consumption of 0.21 kg/ft<sup>2</sup> (2.3 kg/m<sup>2</sup>) Top Coat: Minimum consumption of 0.09 kg/ft<sup>2</sup> (1.0 kg/m<sup>2</sup>)</p> <p>Laps/Seams: Maintain a minimum 2-inch (5 cm) overlap at all side laps of adjacent fleece rows and 4-inch (10 cm) overlaps at butt laps, tie-ins and flashings (reinforcing and resin).</p> <p>Curing: ALT R230 membrane is rainproof after approximately 30-minutes, and can be walked-on or top coated with aesthetic and/or skid resistant surface topcoat in approximately 45-minutes.</p>

<p><b>Main Deck Roof Membrane:</b></p>	<p>Apply an even base layer of ALT R230 resin, work ALT Fleece reinforcement into the wet resin saturating from the bottom up removing trapped air using a lambswool roller. Apply supplemental ALT R230 resin directly over the fleece as required to complete saturation and allow to cure until solid.</p> <p>Base Coat: Minimum consumption of 0.21 kg/ft<sup>2</sup> (2.3 kg/m<sup>2</sup>) Top Coat: Minimum consumption of 0.09 kg/ft<sup>2</sup> (1.0 kg/m<sup>2</sup>)</p> <p>Laps/Seams: Maintain a minimum 2-inch (5 cm) overlap at all side laps of adjacent fleece rows and 4-inch (10 cm) overlaps at butt laps, tie-ins and flashings (reinforcing and resin).</p> <p>Curing: ALT R230 membrane is rainproof after approximately 30-minutes, and can be walked-on or top coated with aesthetic and/or skid resistant surface topcoat in approximately 45-minutes.</p>
<p><b>Staging:</b></p>	<p>In a normal ALT R230 membrane application, flashings are installed first, followed by the application of the deck waterproofing, aggregate surfacing and seal-coats.</p> <p>Work Interruptions: If work is interrupted for more than 12-hours, use ALT Activator to reactivate the transition area. ALT Activator should be allowed a minimum of 20-minutes evaporation time after application, and over-coated within 60-minutes of application. Re-apply ALT Activator as required to assure proper reactivation of transition areas.</p> <p>Tie-ins: For all tie-in locations, provide a minimum overlap of 4 inches (10 cm), reinforcing fabric and resin.</p>
<p><b>Water Testing:</b></p>	<p>Prior to applying aggregate finish and seal-coat, flood test all horizontal applications with a minimum 2” (51 mm) head of water for 24 hours. Mark any leaks and repair when the membrane is dry. Before flood testing, be sure the structure will withstand the dead load of the water. For well-sloped decks, segment the flood test to avoid deep water near drains.</p> <p>Conduct the flood test after completing the ALT R230 membrane application. Immediately after the flood test and all necessary repairs are made apply surfacing and finish.</p>
<p><b>Membrane Protection Layer:</b></p>	<p>Install protection layer to avoid membrane damage by other trades’ or application of construction materials and backfill. Place protection layer immediately upon curing of ALT R230 membrane. Drainage composite or protection boards may be installed the same day the membrane is applied or immediately after a 24-hour flood test.</p> <p><b>Horizontal applications:</b> Use a drainage composite, or 1/8” to 1/4” (3.2 to 6.4 mm) asphaltic hardboard. When reinforced concrete slabs are placed over the membrane, use drainage composite or 1/4” (6.4 mm) hardboard. Where required, adhered protection board to ALT R230 waterproofing membrane using an acceptable adhesive.</p> <p><b>Vertical applications:</b> Use drainage composite, 1” (25.4 mm) expanded polystyrene or 1/4” (6.4 mm) extruded polystyrene that has a minimum compressive strength of 10 lb./in<sup>2</sup> (69 kN/m<sup>2</sup>). If 1/4” (6.4 mm) extruded polystyrene protection board is used, backfill should not contain sharp rock or aggregate over 2” (51 mm) in diameter. Drainage composite or polystyrene protection board may be adhered to ALT R230 membrane as required using an acceptable adhesive.</p>
<p><b>Drainage Mat: (if required)</b></p>	<p>Where specified, install optional drainage mat between membrane and insulation layer to facilitate movement of water to drain locations.</p>

<b>Insulation: (if required)</b>	Where specified, install optional foam board insulation loose laid in accordance with insulation manufacturer's requirements.
<b>Air Layer: (if required)</b>	Where specified, install optional drainage mat as an air layer between the insulation layer and water retention mat.
<b>Water Retention Mat: (if required)</b>	Where specified, install optional water retention mat over air layer/insulation, lapping adjacent rolls 4" (100 mm) minimum and turned up all vertical surfaces 6" (150 mm) minimum beyond anticipated soil level. After installation of soil, excess mat may be trimmed down to soil level.
<b>Filter Fabric:</b>	Install filter fabric below soil layer, lapping adjacent rolls 4" (100 mm) minimum and turned up all vertical surfaces 6" (150 mm) minimum beyond anticipated soil level. After installation of soil, excess filter fabric may be trimmed down to soil level.
<b>Soil/Planting Medium:</b>	Supply and install engineered soil mixes to the depths specified in the landscape plan.
<b>Plant Installation:</b>	Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.
<b>Hardscape/Accessory Installation:</b>	Where specified, install stone ballast or paver hardscape material for maintenance paths, control strips and walkways. Hardscape materials should be provided at all roof perimeters, building walls, penetrations, and access hatches.  Fit all drains with maintenance boxes/grills extended above soil level to allow inspection and cleaning of drains.
<b>Protection:</b>	Upon completion of new work (including all associated work), institute appropriate procedures for surveillance and protection of finished work during remainder of construction period. Protect all areas where membrane has been installed.

**DISCLAIMER**

**NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE.** User and certified ALT Global applicators determine suitability only. See individual ALT Global product data sheets, SDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of ALT Global products.