

# ALT R230 Membrane Insulated Roof & Vapor Barrier Specification



## Technical Data Sheet

PART 1 GENERAL	
<b>System:</b>	New cold liquid-applied reinforced roof membrane and optional light roof traffic surfacing system, including all other ancillary roof work but not limited to installation of roof insulation, overlay board, drain, penetration and perimeter flashings, sealants and metal work as specified. This specification is recommended for roofing applications with limited access. For projects intended with regular roof traffic, see <i>ALT R230 Membrane Roofing &amp; Walk-able Surfacing</i> specification.
<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 37° F (3° 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>Modified Bitumen Vapor Barrier:</b>	Acceptable APP granulated cap sheet, SBS granulated cap sheet, SBS heavy base sheet; applied over structural substrate to provide a vapor barrier and temporary waterproofing. The vapor barrier membrane shall be installed as a permanent roof component and remain in place as a substrate for application of the new roofing membrane system.
<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>Insulation:</b>	<p>Insulation may be installed as a separation layer over the existing substrate and/or to obtain the desired thermal value as follows:</p> <p><b>Foam Roof Insulation:</b> Minimum 1" thick closed-cell polyisocyanurate foam core integrally laminated to heavy non-asphaltic fiber-reinforced felt facers; complying with ASTM C 1289, Type II, Class 1, Grade 2; with minimum compressive strength of 20 psi, nominal 2.0 pcf density; using non-HCFC hydrocarbon blowing agents.</p> <p><b>Cover Board Insulation:</b> Provide appropriate cover board insulation over rigid foam board insulation where required, and when hot mopping base sheet in asphalt adhesive. Cover board insulation may be a minimum ½" thick fiberboard, 4' x 4' maximum board dimension, complying with ASTM C208, C209 &amp; C165 with 45 psi compressive strength; or other acceptable roof cover board as recommended and/or approved on a case-by-case basis by Membrane Manufacturer.</p>

<b>Overlay Board:</b>	Cementitious sheathing, ASTM C79; 1/2 inch thick minimum; moisture resistant, fire rated USG Securock barrier board, cement board or approved equal applied over roof insulation to provide a rigid monolithic substrate for application of the roofing membrane.
<b>Insulation/Overlay Attachment:</b>	<p>Roof insulation and overlay board may be attached using mechanical fasteners, adhesive or a combination of fasteners and adhesive in accordance with the Membrane Manufacturer's recommendations and as follows:</p> <p><b>Mechanical Fasteners:</b> Proprietary corrosion resistant insulation fasteners of appropriate length with plates, as supplied or recommended by the Membrane Manufacturer.</p> <p><b>Asphalt Adhesive:</b> Asphalt cutback solvent type primer conforming to ASTM D-41 and steep roofing asphalt conforming to ASTM D-312, Type III; as recommended or approved by the Membrane Manufacturer.</p> <p><b>Polyurethane Adhesive:</b> Single component, moisture-cured polyurethane roofing adhesive dispensed from a portable, pre-pressurized container requiring no external power source as supplied or recommended by the Membrane Manufacturer.</p>
<b>Modified Base Sheet Overlay: (Optional)</b>	APP granulated cap sheet, SBS granulated cap sheet, SBS heavy base sheet; applied over roof insulation or overlay board to provide a monolithic substrate for application of the roofing membrane.

### 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>Modified Bitumen Vapor Barrier:</b>	<p>Install acceptable modified bitumen membrane in accordance with approved manufacturer's current published specifications and recommendations as vapor barrier and temporary waterproofing. The waterproofing membrane shall be installed as a permanent roof component and remain in place as a substrate for application of the new cold liquid-applied roofing membrane system. Modified bitumen membrane may be attached using mechanical fasteners, hot asphalt adhesive, self-adhered (peel &amp; stick) or torch applied methods.</p> <p><b>Overlap Joints:</b> Overlap side laps a minimum of 2" and end laps a minimum of 4", or as recommended by the base sheet manufacturer. All joints and overlaps are to be heat-sealed before end of each days work.</p>
<b>Insulation/Overlay Board Installation:</b>	<p>Install acceptable roof insulation and overlay board in accordance with insulation manufacturer's requirements. Install only as much insulation and overlay board as can be covered with roofing membrane and completed before the end of each day's work or before the onset of inclement weather.</p> <p><b>Joint Treatment:</b> After coating the exposed top face of the insulation or overlay board ALT Primer, fill all voids and fastener points with ALT R290 Paste and strip joints with 4 inch (10 cm) minimum wide strips of ALT R230 fleece reinforced membrane.</p>

<p><b>Insulation/Overlay Board Attachment:</b></p>	<p>Insulation may be mechanically fastened using corrosion resistant insulation fasteners and plates, adhered using hot asphalt or cold polyurethane adhesive.</p> <p><b>Mechanical Attachment:</b> Consult Membrane Manufacturer to obtain acceptable fastening patterns for the specified insulation, overlay board and substrate. Mechanically fasten through composite of insulation and overlay board with appropriate fastener, plate, deck penetration and pull-out value requirements.</p> <p><b>Polyurethane Adhesive:</b> Consult Membrane Manufacturer for acceptable polyurethane adhesive (PU) manufacturers. PU adhesive shall be applied as recommended by the adhesive manufacturer and approved by Membrane Manufacturer.</p> <p><b>Hot Asphalt Adhesive:</b> When approved by Membrane Manufacturer, set each layer of insulation board and overlay board in a full mopping of hot steep asphalt (Type III) at the recommended EVT range and at the rate of 25 lbs. per 100 square feet over the prepared and primed deck or vapor barrier (if applicable).</p>
<p><b>Modified Base Sheet Overlay: (Optional)</b></p>	<p>Install base sheet in accordance with base sheet manufacturer's current published specifications and recommendations for use as a substrate for a cold liquid-applied membrane. Base sheet may be attached using mechanical fasteners, hot asphalt adhesive, or torch applied.</p> <p>Overlap Joints: Overlap side laps a minimum of 2" and end laps a minimum of 4", or as recommended by the base sheet manufacturer. All joints and overlaps are to be heat-sealed before end of each day's work.</p>
<p><b>Primer:</b></p>	<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>
<p><b>Flashing:</b></p>	<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>

<b>Main Deck Roof Membrane:</b>	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.
<b>Main Deck Roof Membrane: (cont.)</b>	<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>
<b>Overlap Surfacing Preparation: (Optional)</b>	When required for improved aesthetics, apply ALT R290 Paste to cured ALT R230 membrane at all fleece laps and joints. ALT R290 Paste should be applied in a spackling fashion to “feather-in” the high side of the overlap. After curing the ALT R290 Paste may be lightly sanded as needed.
<b>Surfacing Option 1: LD Wearing Layer (1-year warranty)</b>	<p>This option provides for slip-resistant wearing surface for light-duty roof traffic using ALT Finish 288 (pigmented) or ALT Finish 288 mixed with ALT Anti-Slip Additive.</p> <p><u>Wearing Coat:</u>            Apply an even layer of ALT Finish 288 (with or without pre-mixed with ALT Anti-Slip Additive) using the lambswool roller at the following minimum consumption rates:</p> <p>On smooth surfaces:     0.05 kg/ft<sup>2</sup> (0.6 kg/m<sup>2</sup>)            Mixed with AS-Additive: 0.04 kg/ft<sup>2</sup> (0.5 kg/m<sup>2</sup>)</p> <p style="text-align: center;"><i>Note: Mix approximately 1 to 2 bags (0.23-0.46 kg) of ALT A-S Additive with each 10-kg unit of ALT Finish 288 Resin.</i></p> <p>Curing:            ALT Finish is rainproof after approximately 30-minutes, and can be walked-on in approximately 2-hours. ALT Finish should be applied within 24-hours of the membrane application. If the finished is applied any time after this, the top layer of the membrane must be cleaned with ALT Activator.</p>
<b>Surfacing Option 2: MD Wearing Layer (3-year warranty)</b>	<p>This option provides for slip-resistant wearing surface for medium-duty roof traffic using a combination of ALT RS291 Textured Finish.</p> <p><u>Wearing Coat:</u>            Apply an even layer of ALT RS291 Textured Finish using the lambswool roller.</p> <p>Wearing Coat: Minimum consumption of 0.11 kg/ft<sup>2</sup> (1.2 kg/m<sup>2</sup>)</p> <p>Curing:            ALT RS291 Textured Finish is rainproof after approximately 30-minutes, and can be walked-on in approximately 2-hours. ALT Finish should be applied within 24-hours of the membrane application. If the finished is applied any time after this, the top layer of the membrane must be cleaned with ALT Activator.</p>
<b>Staging:</b>	<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>

<b>Water Testing:</b>	Prior to applying aesthetic finish or 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.  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.
<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**

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