

SPECIFICATIONS

Modified Bitumen On Steel Deck

General

T. Clear approves smooth surfaced, reinforced APP or SBS Modified Bitumen (see materials listing) for a 2 ply membrane. It is constructed by mechanically attaching a fiberglass (ASTM D-4601) or modified bitumen base sheet through a minimum 1/2" Type X gypsum board, Densdeck or other T. Clear approved underlayment, to the metal deck. Attachment shall be in accordance with requirements of types and patterns of fasteners noted in either Factory Mutual Approval Guide (1-60 or 1-90 classification) or UL listing for system being installed. This is followed by modified bitumen sheet(s) mopped or torched to the base sheet. Minimum thickness of this system shall be 160 mils not including the base sheet. The completed membrane is covered with Lightguard® Ballasted Roof Insulation. All installations of the Lightguard system shall be in accordance with current specifications approved by T. Clear, installed by a T. Clear approved contractor, and will be covered by a warranty from T. Clear. All membrane and flashing materials used on a roof shall be supplied by a single manufacturer.

It is the contractors responsibility to operate in a safe manner. It is recommended that all roofing applicators attend a qualified educational program for torch applications such as those offered by RIEI or SERTA.

Deck Condition

The erection and design properties for performance of the deck are not the responsibility of T. Clear and should be in accordance with applicable regulatory agency requirements and industry standards. Prior to the commencement of work, all roof surfaces shall be approved by the T. Clear applicator.

The deck shall be constructed per all latest Factory Mutual Engineering or Steel Deck Institute recommendations, including: 1) Deck gauge shall be no lighter than 22 gauge, 2) Side and end joints shall be adequately lapped and mechanically fastened or welded with all loose and broken welds repaired prior to roofing, and 3) Decking shall be adequately supported at all penetrations.

Deck Slope Requirements

Roofs shall be designed and constructed to drain water within 48 hours after a rain. A 1/4" per foot slope is recommended. "Dead level" decks of this construction are acceptable with a sufficient number of correctly placed drains. Where a negative slope exists, consideration may be given to increasing the thickness of the insulation over the membrane to displace water. The drain body shall be recessed into the deck so that the clamping ring is flush with or below the deck surface. Sumps are recommended. The maximum slope that will be covered by Lightguard roof insulation systems is 2 inches per foot. The use of ASTM D 312-89, type III asphalt is preferred for all slopes. Lower melt asphalt can be used for low or no-slope applications.

Other Rated Roof Constructions

As an alternate to minimum 1/2" Type X gypsum board, Factory Mutual Class 1 insulated steel deck roof construction is accomplished when the individual components of the roof system are as required by the Factory Mutual Approval Guide.

Modified Bitumen Roof Installation

Attach a minimum 1/2" Type X gypsum board, Densdeck or other approved underlayment to the metal deck with a minimum of four fasteners per 4' x 8' sheet. The gypsum board or other underlayment shall be placed with edges parallel to the direction of the flutes and bear on the top surface. Sweep the deck free of dust and debris. Immediately install the mechanically attached base sheet.

Base Sheet Installation

Starting at the low point of the roof, with a 1/2 width sheet as the first sheet and following with full sheets, lay one ply of fiberglass base sheet (ASTM D-4601), or a modified bitumen sheet perpendicular to the slope lapping the side joints 2" and end joints

4". Mechanically fasten into the steel deck along the laps at a maximum 9" intervals. Additional fasteners must be placed at the 1/3 points of the sheet in two rows which are staggered-fastened at 18" O.C.. maximum. Fastener caps must be a minimum of 2" in diameter. The end laps must be staggered no less than 12" apart.

Hot Mopped Application

Starting at the low point of the roof, mop the modified bitumen sheets to the base sheet. The smooth surfaced modified bitumen sheets are applied perpendicular to the slope, with ASTM D-312-89 type III asphalt, applied at the EVT of the asphalt and at a rate of 20-25 lbs. per square. A flow of at least a 1/4" shall be obtained around all seams. The sheet is installed with a minimum 3" side laps and 6" end laps. Offset end laps a minimum of 12". Minimum thickness of this system shall be 160 mils not including the base sheet. If additional modified bitumen plies are used to achieve the 160 mil thickness, they must be installed in shingle fashion.

Torched Application

Starting at the low point of the roof, weld the torchable smooth surfaced modified bitumen sheets to the base sheet, perpendicular to the slope. A flow of at least a 1/4" shall be obtained around all seams. The sheet is installed with a minimum 3" side laps and 6" end laps. Offset end laps a minimum of 12". Minimum thickness of this system shall be 160 mils not including the base sheet. If additional modified bitumen plies are used to achieve the 160 mil thickness, they must be installed in shingle fashion.

Temporary Membrane

It is not acceptable to include any temporary membrane as a part of a completed membrane. Install completed membrane in final form on a day-to-day basis. If the slope of the deck is such that water might flow under the secured modified bitumen membrane, temporary water cut-offs are necessary at the end of the workday. Water cut-offs shall be removed prior to continuing the membrane application.

Flashing Installation

T. Clear flashing specifications call out granule surfaced modified bitumen sheets adhered with ASTM D-312-89, type III asphalt or torch applied. All flashings must be completed in each area prior to installing Lightguard Ballasted Roof Insulation. Conform to details shown in architectural drawings, and install according to T. Clear flashing specifications. Non granule surfaced modified bitumen sheets may be used, but require additional periodic maintenance due to weathering. Maintenance is not included in the T. Clear warranty.

Other Relevant T. Clear Specifications

For installation of Lightguard Ballasted Roof Insulation panels, see:

1. Lightguard installation, wind design, and securement specifications (LIDS 1994)
2. Lightguard flashing details (LFD 1994)

Fire Classification Information For Lightguard Roof Assemblies

1. All Lightguard assemblies are considered as ballasted systems with respect to Factory Mutual (F.M.). Refer to current F.M. data sheet 1-29.
2. All Lightguard roof assemblies are rated Class A. (fire from without). Obtain specific configuration details from Underwriter's Laboratory (U.L.) from the current roofing materials and Systems Directory.
3. For information on hourly rated constructions (fire from without), see the current U.L. Fire Resistance Directory.



P.O. Box 416
Hamilton, Ohio 45012
1-800-544-7398

NOTICE: T. CLEAR CORP. believes the information and recommendations herein to be accurate and reliable as of November 1990. However, since any assistance furnished by T. CLEAR CORP. with reference to the proper use and disposal of its products is provided without charge, and since use conditions and disposal are not within its control, T. CLEAR CORP. assumes no obligation or liability for such assistance and does not guarantee results from use of such products or other information herein; no warranty, expressed or implied, is given nor is freedom from any patent owned by T. CLEAR CORP. or others to be inferred. Information herein concerning laws and regulations is based on U. S. federal laws and regulations except where specific reference is made to those of other jurisdictions. Since use conditions and governmental regulations may differ from one location to another and may change with time, it is the Buyer's responsibility to determine whether T. CLEAR CORP.'s products are appropriate for Buyer's use, and to assure Buyer's workplace and disposal practices are in compliance with laws, regulations, ordinances, and other governmental enactments applicable in the jurisdiction(s) having authority over Buyer's operations.