MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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**DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)**
**BOARD AND CODE ADMINISTRATION DIVISION**

# NOTICE OF ACCEPTANCE (NOA)

**SOPREMA, Inc.**
**310 Quadral Drive**
**Wadsworth, OH 44281**

## SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: SOPREMA ALSAN RS Roofing Systems over Steel Decks.**

**LABELING:** Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews and revises NOA No. 15-0707.06 and consists of pages 1 through 67.

The submitted documentation was reviewed by Jorge L. Acebo.

## ROOFING SYSTEM APPROVAL

**Category:** Roofing
**Sub-Category:** Liquid Applied Roof Systems
**Material:** PMMA
**Deck Type:** Steel
**Maximum Design Pressure:** -180 psf.

## TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

**TABLE 1**

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Alsan RS 230 Field | Various | Proprietary | A two component, rapid curing, PMMA liquid membrane. |
| Alsan RS 260 LO Field | Various | Proprietary | Low odor, rapid curing, PMMA liquid membrane. |
| Alsan RS 230 Flash | Various | Proprietary | A two component, rapid curing, PMMA liquid membrane. |
| Alsan RS 260 LO Flash | Various | Proprietary | Low odor, rapid curing, PMMA liquid membrane. |
| Alsan RS Fleece | Various | Proprietary | Non-woven, needle-punched polyester fabric reinforcement used as fabric reinforcement in Alsan RS systems |
| Modified Sopra G | 39" x 108' (3.5 sq.) | ASTM D4601 | Fiberglass reinforced modified asphalt base sheet for bonding or mechanically attaching to substrate. **For use as a base/ply sheet only.** |
| Soprabase | 39" x 99' (3 sq.) | ASTM D4601 | Oxidized asphalt, polyester reinforced, sand-surface base sheet. **For use as a base/ply sheet only.** |
| Soprabase S | 39" x 65' (2 sq.) | ASTM D4601 | SBS modified bitumen, polyester reinforced, sand-surfaced base sheet. **For use as a base/ply sheet only.** |
| Soprabase TG | 39" x 65' (2 sq.) | ASTM D4601 | SBS modified bitumen, polyester reinforced, film-surfaced base sheet. **For use as a base/ply sheet only.** |
| Sopra IV | 36" x 180' (5 sq.) | ASTM D2178 Type IV | Type IV, fiberglass reinforced, smooth surfaced ply sheet used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive. |
| Sopra VI | 36" x 180' (5 sq.) | ASTM D2178 Type IV | Type IV, fiberglass reinforced, smooth surfaced ply sheet used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive. |
| Colvent Flam 180 TG | 39" x 33' (1 sq.) | ASTM D6164 | Polyester reinforced, modified bitumen membrane with 1" wide factory applied heat weld strips on back side and a plastic burn-off film surface. |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Sopralene Stick | 39" x 33' (1 sq.) | ASTM D6164 | Self-adhered, polyester reinforced membrane with a release film on the bottom and a sanded top. |
| Colphene Stick | 39" x 33' (1 sq.) | ASTM D6164 | Self-adhered, polyester reinforced membrane with a release film on the bottom and a sanded top. |
| Colphene Sanded | 39" x 49' (1.5 sq.) | ASTM D6163 | Fiberglass reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Elastophene Sanded 2.2 | 39" x 49' (1.5 sq.) | ASTM D6163 | Fiberglass reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Elastophene Sanded 3.0 | 39" x 33' (1sq.) | ASTM D6163 | Fiberglass reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripped. |
| Elastophene HS | 39” x 66’ (2 sq.) | ASTM D6163 | Fiberglass reinforced modified bitumen membrane with fire retardants and sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Elastophene PS | 39" x 49' (1.5 sq.) | ASTM D6163 | Glass reinforced modified bitumen membrane with a plastic burn-off film for heat weld bonding to the top side. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Elastophene PS 3.0 | 39" x 49' (1.5 sq.) | ASTM D6163 | Glass reinforced modified bitumen membrane with a plastic burn-off film for heat weld bonding to the top side. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Elastophene SP 2.2 | 39" x 49' (1.5 sq.) | ASTM D6163 | Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |
| Colphene SP 2.2 | 39" x 49' (1.5 sq.) | ASTM D6163 | Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |
| Elastophene SP 3.0 | 39" x 49' (1 sq.) | ASTM D6163 | Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |
| Colphene SP 3.0 | 39" x 49' (1 sq.) | ASTM D6163 | Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Elastophene Flam | 39" x 33' (1 sq.) | ASTM D6163 | Fiberglass reinforced modified bitumen membrane covered on both sides with a plastic burn-off film. Applied by heat welding. |
| Elastophene Flam 2.2 | 39" x 49' (1.5 sq.) | ASTM D6163 | Fiberglass reinforced modified bitumen membrane covered on both sides with a plastic burn-off film. Applied by heat welding. |
| Elastophene Flam HS | 39” x 33’ (1 sq.) | ASTM D6162 | Woven fiberglass/polyester composite reinforced modified bitumen membrane with fire retardants and plastic burn-off film on both sides. Applied by heat welding. |
| Colphene 180 Sanded | 39" x 49' (1.5 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Colphene 180 PS | 39" x 49' (1.5 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and a plastic burn-off film on the top. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Elastophene Stick | 39" x 49' (1.5 sq.) | ASTM D6163 | Self-adhered, sanded surfaced, fiberglass reinforced membrane. |
| Sopralene 180 Sanded | 39" x 33' (1 sq.)<br>39” x 26’ (¾ sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Sopralene 250 Sanded | 39" x 33' (1 sq.)<br>39” x 26’ (¾ sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Sopralene 180 Sanded 2.2 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt or cold adhesive. |
| Sopralene 180 PS | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the top and sanded on the bottom. |
| Sopralene 180 PS 2.2 | 39" x 49' (1.5 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and a plastic burn-off film on the top. Applied in hot asphalt, cold adhesive or ribbon stripping. |
| Sopralene 180 SP 3.5 | 39” x 33’ (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |
| Colphene 180 SP 3.5 | 39” x 33’ (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Sopralene 180 SP 3.0 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. |
| Sopralene 250 SP | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. |
| Soprafix Base 611 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a film surface. Applied by mechanical attachment. |
| Soprafix Base 612 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a film surface on both sides. Applied by mechanical attachment. |
| Soprafix Base 613 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a film surface on both sides. Applied by mechanical attachment. |
| Soprafix Base 614 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a film surface on both sides. Applied by mechanical attachment. |
| Soprafix Base 622 | 39” x 33’ (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a 4-inch or 5-inch wide side lap with a plastic burn-off film on the bottom and sanded on the top. Applied by mechanical attachment. Lap heat welded or sealed with an approved cold adhesive. |
| Soprafix Base 641 | 39” x 33’ (1 sq.) | ASTM D6164 | Non-woven polyester reinforced modified bitumen membrane with a 5-inch wide side lap with a self-adhering compound and release film and sanded on the bottom and top surfaces. Applied by mechanical attachment. Lap self-adhered or sealed with approved cold adhesive. |
| Sopralene Flam Stick | 39" x 33' (1 sq.) | ASTM D6164 | Self-adhered, polyester reinforced membrane with a release film on the bottom and a plastic burn-off film on the top. |
| Sopralene Flam 180 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with a plastic burn-off film. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |
| Colphene Flam 180 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with a plastic burn-off film. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |
| Sopralene Flam 250 | 39" x 33' (1 sq.) | ASTM D6164 | Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with a plastic burn-off film. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film). |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Alsan RS 222 Primer | Various | Proprietary | Two-component, rapid curing PMMA acrylic primer |
| Alsan RS 276 Primer | Various | Proprietary | Two-component, rapid curing PMMA acrylic primer |
| Alsan RS 233 Self-Leveling Mortar | Various | Proprietary | Two-component surfacing composed of Alsan RS 223 Powder and Alsan RS 210 Low Odor Resin. |
| Alsan RS 263 LO Self Leveling Mortar | Various | Proprietary | Two-component surfacing composed of Alsan RS 223 Powder and Alsan RS 240 LO resin. |
| Alsan RS 281 Finish | Various | Proprietary | Two-component, rapid curing, PMMA acrylic clear finish resin. |
| Alsan RS 287 Color Finish Base | Various | Proprietary | Rapid curing, PMMA base resin. |
| Alsan RS 289 Textured Base | Various | Proprietary | Rapid curing, PMMA aggregated trafficable surface finish resin. |
| Alsan RS Deco Chips | Various | Proprietary | Polymer flat, pigmented, flakes used as a textured and decorative surfacing finish. |
| Elastocol 500 | Various | ASTM D41 | Asphalt primers. |
| Elastocol Stick | Various | ASTM D41 | Asphalt primers. |
| Elastocol Stick Zero | Various | ASTM D41 | Asphalt primers. |
| DUOTACK | Dual cartridges, 5 gallon, 50 gallon | Proprietary | Two part elastomeric urethane foam adhesive. |
| DUOTACK NEO | Dual cartridges, 5 gallon, 50 gallon | Proprietary | Two part polyurethane foam adhesive. |
| COLPLY Adhesive | 5 gallon, 55 gallon, 350 gallon tote | Proprietary | Polymer modified cold process membrane adhesive. |
| COLPLY EF Adhesive | 5 gallon | Proprietary | Solvent free, polymeric adhesive. |
| Sopravap'r | 45" x 133' | Various | A self-adhering air/vapor barrier membrane applied direct to deck for use in steel deck assemblies, composed of a SBS modified bitumen adhesive bottom layer and a tri-laminated woven polyethylene top layer. |

## APPROVED INSULATIONS:

**TABLE 2**

| Product Name | Product Description | Manufacturer (With Current NOA) |
|---|---|---|
| ACFoam-II, ACFoam-III | Polyisocyanurate foam insulation | Atlas Roofing Corporation |
| ISO 95+ GL | Polyisocyanurate foam insulation | Firestone Building Products Company, LLC |
| DensDeck, DensDeck Prime | Water resistant gypsum board | Georgia Pacific Gypsum LLC |
| M-Shield | Polyisocyanurate foam insulation | SOPREMA, Inc. |
| H-Shield, H-Shield CG | Polyisocyanurate foam insulation | Hunter Panels, a division of Carlisle Construction Materials, LLC. |
| ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR, ENRGY 3 AGF | Polyisocyanurate foam insulation | Johns Manville Corp. |
| Ultra-Max, Multi-Max FA-3 | Polyisocyanurate foam insulation | Rmax, A Business Unit of Sika Corporation |
| SECUROCK Gypsum-Fiber Roof Board | Gypsum board | USG Corp. |
| SECUROCK Cement Roof Board | Gypsum board | USG Corp. |
| Sopraboard | Mineral fortified asphaltic cored coverboard | SOPREMA, Inc. |
| Sopra-ISO s, Sopra-ISO+ s | Polyisocyanurate foam insulation | SOPREMA, Inc. |
| Sopra-ISO x, Sopra-ISO+ x | Polyisocyanurate foam insulation | SOPREMA, Inc. |
| Sopra-ISO r, Sopra-ISO+ r | Polyisocyanurate foam insulation | SOPREMA, Inc. |
| EnergyGuard POLYISO Insulation, EnergyGuard Ultra POLYISO Insulation | Polyisocyanurate foam insulation | GAF |
| DEXcell Glass Mat Roof Board, DEXcell FA Glass Mat Roof Board, DEXcell Cement Roof Board | Gypsum board | National Gypsum Company |
| SopraRock DD, SopraRock DD Plus | Mineral wool insulation | SOPREMA, Inc. |
| TopRock DD, TopRock DD Plus | Mineral wool insulation | Roxul, Inc., dba Rockwool. |

## APPROVED FASTENERS:

TABLE 3

| Fastener Number | Product Name | Product Description | Dimensions | Manufacturer (With Current NOA) |
|---|---|---|---|---|
| 1. | SOPREMA #12 Fastener, #14 Fastener, #15 Fastener | Fasteners for membrane or insulation attachment to wood, steel or concrete decks. | Various | SOPREMA, Inc. |
| 2. | Dekfast DF-#12-PH3, DF-#14-PH3 & DF-#15-PH3 | Insulation fastener | Various | SFS Group USA, Inc. |
| 3. | OMG 3" Galvalume Steel Plate | Galvalume stress plate. | 3" round | OMG, Inc. |
| 4. | #12 Standard Roofgrip, #14 Roofgrip, #15 Roofgrip | Insulation fastener. | Various | OMG, Inc. |
| 5. | Trufast #14 HD Fastener | Insulation fastener for wood, steel and concrete. | Various | Altenloh, Brinck & Co. U.S., Inc. |
| 6. | Trufast #15 EHD Fastener | Insulation fastener for wood, steel and concrete. | Various | Altenloh, Brinck & Co. U.S., Inc. |
| 7. | Trufast 3" Metal Insulation Plate | Galvalume AZ50 steel plate | 3" round | Altenloh, Brinck & Co. U.S., Inc. |
| 8. | Dekfast PLT-R-3 | Galvalume AZ50 steel plate | 3" round | SFS Group USA, Inc. |
| 9. | SOPREMA 3" Round Insulation Plate | Stress plate | 3" diameter | SOPREMA, Inc. |
| 10. | Soprafix 2-3/8" SB Stress Plate | Stress plate | 2-3/8" diameter | SOPREMA, Inc. |
| 11. | SOPREMA #12 DP Fastener, SOPREMA #14 MP Fastener, SOPREMA #15 HD Fastener | Insulation and membrane fasteners | Various | SOPREMA, Inc. |
| 12. | Dekfast PLT-R-2-3/8-6B | Galvalume AZ55 steel barbed plate | 2.37" Round | SFS Group USA, Inc. |
| 13. | Trufast 2" Barbed Metal Seam Plate | Galvalume steel stress plate | 2" Round | Altenloh, Brinck & Co. U.S., Inc. |
| 14. | Trufast 2.4" Barbed Metal Seam Plate | Galvalume steel stress plate | 2.4" Round | Altenloh, Brinck & Co. U.S., Inc. |
| 15. | SOPREMA 2" Seam Plate | Stress plate | 2" diameter | SOPREMA, Inc. |
| 16. | SOPREMA 3" Metal Insulation Plate | Stress plate | 3" diameter | SOPREMA, Inc. |
| 17. | Trufast 2.4" Scoop Seam Plate | Galvalume steel stress plate | 2.4" Round | Altenloh, Brinck & Co. U.S., Inc. |

## APPROVED FASTENERS:

TABLE 3

| Fastener Number | Product Name | Product Description | Dimensions | Manufacturer (With Current NOA) |
|---|---|---|---|---|
| 18. | SOPREMA 2.4" Seam Plates | Galvalume steel stress plate | 2.4" Round | SOPREMA, Inc. |
| 19. | OMG Heavy-Duty | Insulation fastener for wood, steel and concrete. | Various | OMG, Inc. |
| 20. | OMG 2-3/8" Barbed XHD Plate | Galvalume stress plate | 2-3/8" Round | OMG, Inc. |
| 21. | AccuTrac Flat Bottom | Aluminized square stress plate | 3" square | OMG, Inc. |
| 22. | Trufast #12 DP Fastener | Insulation fastener for wood and steel. | Various | Altenloh, Brinck & Co. U.S., Inc. |
| 23. | Millennium One Step Foamable Adhesives | Polyurethane two component high rise insulation adhesive | Various | H.B. Fuller Company |
| 24. | Millennium One Step Green Foamable Adhesive | Polyurethane two component high rise insulation adhesive | Various | H.B. Fuller Company |
| 25. | Millennium PG-1 Low Viscosity Insulation Adhesive | Polyurethane two component high rise insulation adhesive | Various | H.B. Fuller Company |
| 26. | Insta-Stik Quik Set Insulation Adhesive | Polyurethane two component adhesive | Various | DuPont de Nemours, Inc. |
| 27. | OlyBond 500 | Polyurethane one component moisture curing adhesive | Various | OMG, Inc. |

## APPROVED SURFACING/COATING OPTIONS:

**TABLE 4**

**Chosen components must be applied according to manufacturer's application instructions. Any coating, listed below, used as a surfacing, must be listed within a current NOA.**

| System Number | Manufacturer | Application |
|---|---|---|
| 1. | SOPREMA, Inc. | Alsan RS 281 Finish applied at a rate of 0.74 gal. per 100 $ft^2$ for smooth surfaced or 1.23 gal./sq. for aggregated surfaces. |
| 2. | SOPREMA, Inc. | Alsan RS 233 Self-Leveling Mortar applied at a rate of 1.8 gal. per 100 $ft^2$. Optional dried quartz aggregate applied at a rate of 100 lbs. per 100 $ft^2$ into wet Alsan RS 233 Self-Leveling Mortar. Optional finish coat of Alsan RS 281 Finish applied at a rate of 0.74 gal. per 100 $ft^2$. |
| 3. | SOPREMA, Inc. | Alsan RS 263 LO Self Leveling Mortar applied at a rate of 1.8 gal. per 100 $ft^2$. Optional dried quartz aggregate applied at a rate of 100 lbs. per 100 $ft^2$ into wet Alsan RS 263 LO Self-Leveling Mortar. Optional finish coat of Alsan RS 281 Finish applied at a rate of 0.74 gal. per 100 $ft^2$. |
| 4. | SOPREMA, Inc. | Alsan RS 230 Field applied at 2.6 gal. per 100 $ft^2$. Finish coat of Alsan RS 287 Color Finish Base applied at 1.2 gal. per 100 $ft^2$ with optional Alsan RS Deco Chips applied at 1.3 lbs. per 100 $ft^2$ embedded into wet top coat |
| 5. | SOPREMA, Inc. | Alsan RS 233 Self-Leveling Mortar applied at 8.7 gal. per 100 $ft^2$. Finish coat of Alsan RS 287 Color Finish Base applied at 1.2 gal. per 100 $ft^2$ with optional Alsan RS Deco Chips applied at 1.3 lbs. per 100 $ft^2$embedded into wet top coat. |
| 6. | SOPREMA, Inc. | Alsan RS 260 LO Field applied at 2.6 gal. per 100 $ft^2$. Finish coat of Alsan RS 287 Color Finish Base applied at 1.2 gal. per 100 $ft^2$ with optional Alsan RS Deco Chips applied at 1.3 lbs. per 100 $ft^2$ embedded into wet top coat. |
| 7. | SOPREMA, Inc. | Alsan RS 263 LO Self-Leveling Mortar applied at 8.7 gal. per 100 $ft^2$. Optional finish coat of Alsan RS 287 Color Finish Base applied at 1.2 gal. per 100 $ft^2$ with optional Alsan RS Deco Chips applied at 1.3 lbs. per 100 $ft^2$ embedded into wet top coat. |
| 8. | SOPREMA, Inc. | Alsan RS 233 Self-Leveling Mortar applied at 8.7 gal. per 100 $ft^2$. Optional finish coat of Alsan RS 289 Textured Base applied at 3.2 gal. per 100 $ft^2$. |
| 9. | SOPREMA, Inc. | Alsan RS 230 Field applied at 2.6 gal. per 100 $ft^2$. Finish coat of Alsan RS 289 Textured Base applied at 3.2 gal. per 100 $ft^2$ with optional Alsan RS Deco Chips applied at 1.3 lbs. per 100 $ft^2$ embedded into wet top coat. |
| 10. | SOPREMA, Inc. | Alsan RS 287 Color Finish Base applied at 1.2 gal. per 100 $ft^2$. |
| 11. | SOPREMA, Inc. | Alsan RS 289 Textured Base applied at 3.2 gal. per 100 $ft^2$. |

## EVIDENCE SUBMITTED:

| Test Agency/Identifier | Report | Name | Date |
|---|---|---|---|
| FM Approvals | 3002351 | FM 4470 | 02/28/03 |
| | 3023458 | FM 4450 | 07/18/06 |
| | 3024311 | FM 4470 | 11/01/06 |
| | 3028410 | FM 4470 | 02/19/07 |
| | 3026964 | FM4470 | 07/25/07 |
| | 3034124 | FM 4470 | 02/23/09 |
| | 3036182 | FM 4470 | 07/31/09 |
| | 3035625 | FM 4470 | 09/17/10 |
| | 3042559 | FM 4470 | 10/18/11 |
| | 3044801 | FM 4470 | 02/27/12 |
| | 3045101 | FM 4470 | 11/05/12 |
| | 3046765 | FM 4470 | 02/15/13 |
| | 3047439 | FM 4470 | 07/22/13 |
| | 3046941 | FM 4470 | 12/19/13 |
| | 3049322 | FM 4470 | 01/17/14 |
| | 3048085 | FM 4470 | 02/07/14 |
| | 3051408 | FM 4470 | 08/13/14 |
| | 3047351 | FM 4470 | 10/09/14 |
| | 3053841 | FM 4470 | 03/27/15 |
| | 3051109 | FM 4470 | 05/11/15 |
| | RR201064 | FM 4470 | 05/15/15 |
| | RR201595 | FM 4470 | 07/25/15 |
| | RR202234 | FM 4470 | 08/13/15 |
| | RR202938 | FM 4470 | 10/20/15 |
| | RR203007 | FM 4470 | 12/14/15 |
| | 3054633 | FM 4470 | 12/18/15 |
| | RR203650 | FM 4470 | 12/18/15 |
| | RR203157 | FM 4470 | 01/19/16 |
| | RR203472 | FM 4470 | 02/05/16 |
| | 3053475 | FM 4470 | 02/11/16 |
| UL LLC | R11436 | UL 790 | 06/17/21 |
| Trinity \| ERD | 2752.02LAB.05.02-1 | TAS 114 | 05/24/02 |
| | 02843.02.05-2 | TAS 117 | 02/10/05 |
| | 2779.11.05-R1 | TAS 114 | 04/18/07 |
| | S30440.03.10-2-R2 | TAS 114 | 06/01/10 |
| | 02848.04.05-R1 | TAS 114 | 10/19/10 |
| | S11440.11.10-4 | ASTM D2178 | 11/17/10 |
| | S39500.02.12 | Physical Properties | 02/23/12 |
| | S39320.01.12-R1 | TAS 114 | 05/24/12 |
| | S39970.07.12-2 | ASTM D6164 | 07/12/12 |
| | S35860.05.12-1-R2 | ASTM D6163 | 02/14/13 |
| | S35860.05.12-3-R1 | ASTM D6164 | 03/14/13 |
| | S45340.10.13 | TAS 114 | 10/02/13 |
| | S45010.02.14 | ASTM D6506 | 02/07/14 |
| | S45520.11.13-R2 | Physical Properties | 03/26/14 |
| | S47170.05.14-1 | TAS 114 | 05/12/14 |

## EVIDENCE SUBMITTED: (CONTINUED)

| Test Agency/Identifier | Report | Name | Date |
|---|---|---|---|
| Trinity \| ERD | S11440.11.10-3-R2 | ASTM D4601/TAS 117(B) | 08/26/14 |
| | S43400.08.14-6 | ASTM D6164 | 08/26/14 |
| | S35860.05.12-2-R3 | ASTM D6164 | 08/28/14 |
| | S44110.09.14-7C | ASTM D6164 | 09/02/14 |
| | S43400.08.14-4-R1 | ASTM D6163 | 10/24/14 |
| | S43210.11.14 | ASTM D1876 | 11/10/14 |
| | S32840.06.10-R1 | TAS 117 (B) | 12/11/14 |
| | S47160.01.14-R1 | TAS 114 (H) | 12/11/14 |
| | S44110.01.15-4A-R3 | ASTM D6164 | 05/01/15 |
| | SOPC-S42600.08.15-R2 | Physical Properties | 03/21/16 |
| | S41370.07.12-R1 | TAS 114 | 04/27/16 |
| PRI Construction Materials Technologies, LLC | SOP-041-02-01 | ASTM D2178 | 02/27/12 |
| | SOP-040-02-01 | ASTM D2178 | 02/27/12 |
| | SOP-049-02-01 | ASTM D1644 /D2196 | 05/31/12 |
| | SOP-050-02-01 | ASTM D3019 | 07/12/12 |
| | SOP-056-02-01 | Physical Properties | 09/12/12 |
| | SOP-071-02-01 | Physical Properties | 02/12/16 |
| NEMO ETC, LLC | 4S-SOP-18-002.02.19 | Physical Properties | 02/04/19 |
| | 4q-SOP-19-SSMBB-01.A | ASTM D4601 | 03/11/19 |
| | 4q-SOP-19-SSMBB-01.B | ASTM D4601 | 03/11/19 |
| | 4q-SOP-19-SSMBB-01.C | ASTM D4601 | 03/11/19 |
| | 4q-SOP-20-SSMBB-01.A | ASTM D6163 | 11/5/2020 |
| | 4q-SOP-20-SSMBB-01.B | ASTM D6164 | 11/5/2020 |
| | 4q-SOP-20-SSMBB-01.C | ASTM D6164 | 11/5/2020 |

## DECK STRESS ANALYSIS CALCULATIONS/REPORTS

| Engineer/Agency | Identifier | Assemblies | Date |
|---|---|---|---|
| Robert Nieminen, P.E. | Signed/Sealed Calculations | B(2), B(3), C(2), C(3), C(4), C(7), D(1), D(8), D(12) | 04/29/16 |
| FM Approval Deck Limitations | N/A | B(1), B(4), B(5), B(6), B(7), C(1), C(5), C(6), D(2), D(3), D(4), D(5), D(6), D(7), D(9), D(10), D(11), D(13), D(14) | 01/01/13 |

## APPROVED ASSEMBLIES:

**Membrane Type:** Liquid Applied Membrane

**Deck Type 3I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened 6" o.c. with Traxx/5 fasteners into ¼" steel supports spaced maximum 6 ft. o.c. Deck side laps are attached with Traxx/1 fasteners spaced max. 24" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type B(1):** Optional vapor barrier followed by base layer of insulation mechanically attached, top layer adhered with approved adhesive.

**All General and System Limitations apply.**

**Vapor Barrier:** Sopravap'r, self-adhered to the top flanges of the steel deck.

**(Optional)**

One or more layers of any of the following insulations.

| Base Insulation Layer (Minimum 2 layers) | Insulation Fasteners (Table 3) | Fastener Density/ft2 |
|---|---|---|
| **H-Shield, H-Shield CG, M-Shield, Sopra-ISO r, Sopra-ISO+ r, ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, Multi-Max FA-3, UltraMax, Sopra-ISO x, Sopra-ISO+ x, ENRGY 3, ENRGY 3 AGF, ENRGY 3 CGF, EnergyGuard POLYISO Insulation** | | |
| **Minimum 1.5" thick** | **6, 11 (#15)** | **1:1.78 ft$^2$** |

**Note: Base layer shall use minimum two layers of insulation panels listed. Insulation panel joints shall be staggered, mechanically attached with fasteners and density described above. Alternately the first layer of insulation may be mechanically fastened as above and the second layer adhered with DUOTACK or DUOTACK NEO applied in ½" to ¾" wide ribbons spaced maximum 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft$^2$ |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **N/A** | **N/A** |
| **DEXcell FA Glass Mat Roof Board, DensDeck, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 1/4" thick** | **N/A** | **N/A** |
| **DEXcell Cement Roof Board** | | |
| **Minimum 7/16" thick** | **N/A** | **N/A** |

**Note: All insulations shall be adhered with DUOTACK or DUOTACK NEO applied in ½" to ¾" wide ribbons spaced maximum 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.**

| | |
|---|---|
| **Base Sheet:** | One or two plies of Modified Sopra G, Soprabase, Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Elastophene PS*, Elastophene PS 3.0*, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Colphene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS* or Sopralene 250 Sanded, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. or in COLPLY EF Adhesive at 1.5-2.5 gal./sq.<br>Or<br>One layer of Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene Flam 180*, Colphene Flam 180*, Sopralene Flam 250*, Sopralene 250 SP, Colvent Flam 180 TG*, torch-applied.<br>Or<br>One layer of Elastophene Stick, Sopralene Stick, Colphene Stick, Elastophene Flam Stick*, Sopralene Flam Stick* self-adhered.<br>*Requires torch-applied ply or cap membrane. |
| **Ply Sheet: (Optional)** | One layer of Modified Sopra G, Soprabase, Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or in COLPLY EF Adhesive at 1.5-2.5 gal./sq.<br>Or<br>One layer of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.<br>Or<br>One layer of Elastophene Stick, Sopralene Stick or Colphene Stick, self-adhered. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1.0 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -52.5 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** Min. 22 ga., Type B, Grade 33 steel fastened with puddle welds spaced 6" o.c. to supports spaced maximum 6' o.c. Deck side laps are fastened max. 24" o.c. with Tek/1 fasteners.

**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type B(2):** Optional vapor barrier followed by base layer of insulation mechanically attached, top layer adhered with approved adhesive, roof cover fully adhered.

**All General and System Limitations apply.**

**Vapor Barrier:** Sopravap'r, self-adhered to the top flanges of the steel deck.

**(Optional)**

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **ACFoam-II, Sopra-ISOs or ENRGY 3 Minimum 2" thick** | **4 (#12 or #14) with 21, 4 (#12) or 19 with 3, 2 (#12 or #14) with 8, 22, 11 (#12) or 5 or 11 (#14) with 7 or 9 or 1 (#12 or #14) with 16** | **1:2 ft$^2$** |

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board Minimum 3/8" thick** | **N/A** | **N/A** |
| **SECUROCK Cement Roof Board Minimum ½" thick** | **N/A** | **N/A** |

**Note: All insulations shall be adhered with hot asphalt full mop applied at a rate of 25 lbs./sq. or with DUOTACK, DUOTACK NEO, Millennium One Step Foamable Adhesive, Millennium One Step Green Foamable Adhesive, Millennium PG-1 Low Viscosity Insulation Adhesive applied in continuous ribbons maximum spacing of 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.**

| | |
|---|---|
| **Base Sheet:** | Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or in COLPLY EF Adhesive at 1.5-2.5 gal./sq.<br>Or<br>Elastophene Flam HS*, Elastophene Flam 2.2*, Elastophene Flam*, Sopralene Flam 180*, Colphene Flam 180*, Sopralene Flam 250*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.<br>Or<br>One layer of Sopralene Stick, Colphene Stick, Elastophene Flam Stick* or Sopralene Flam Stick* self-adhered.<br>*Requires torch-applied ply sheet. |
| **Ply Sheet: (Optional)** | Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or in COLPLY EF Adhesive at 1.5-2.5 gal./sq.<br>Or<br>One layer of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.<br>Or<br>One layer of Elastophene Stick, Sopralene Stick or Colphene Stick, self-adhered. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1.0 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -60 psf. (See General Limitation #7.) |

**Membrane Type:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** Min. 22 ga., Type B, Grade 33 steel fastened to structural supports spaced 6' o.c. with Tek/5 screws in every flute spaced 6" o.c. Deck side laps are fastened max. 24" o.c. with Tek/1 fasteners.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type B(3):** Insulation layer mechanically attached followed by vapor barrier and insulation layers adhered with approved adhesive, roof cover fully adhered.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Separation Sheet:** Sopravap'r, self-adhered.
**(Optional)**

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board** | | |
| **Min. 0.625-inch thick** | **5 with 7 or 11 (#14) with 16** | **1:2 ft$^2$** |

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

**Vapor Barrier:** Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied.

| **Middle Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **EnergyGuard POLYISO Insulation or ENRGY 3 CGF** | | |
| **Minimum 2" thick** | **N/A** | **N/A** |

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.25" thick** | **N/A** | **N/A** |

**Note: Middle and Top insulation shall be adhered with DUOTACK or DUOTACK NEO applied in continuous ¾" to 1" wide ribbons at a maximum spacing of 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate**

| | |
|---|---|
| **Base Sheet:** | Elastophene Flam*, Elastophene Flam 2.2*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Elastophene Flam HS*, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene Flam 180*, Colphene Flam 180*, Sopralene Flam 250* or Sopralene 250 SP, torch-applied.<br><br>Or<br><br>Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded adhered in COLPLY EF Adhesive at a rate of 1.5 gal./sq. or adhered in hot asphalt at 25 lbs./sq. or Sopra-G, Modified Sopra-G, Sopra IV, Sopra VI or Soprabase applied in hot asphalt at 25 lbs./sq.<br><br>*Requires torch-applied ply sheet |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.<br><br>Or<br><br>Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded adhered in COLPLY EF Adhesive at a rate of 1.5 gal./sq. or adhered in hot asphalt at 25 lbs./sq. or Sopra-G, Modified Sopra-G, Sopra IV, Sopra VI or Soprabase applied in hot asphalt at 25 lbs./sq. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1.0 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -75 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel fastened to ¼" thick structural supports spaced 6' o.c. with Traxx/5 fasteners spaced 6" o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 24" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type B(4):** Insulation layer mechanically attached followed by vapor barrier and insulation layers adhered with approved adhesive, roof cover fully adhered.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ½" thick** | **5, 6, 11 (#14 MP or #15 HD)** | **1:2 ft²** |

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

**Primer: (Optional)** Elastocol 500, Elastocol Stick Zero or Elastocol Stick at a rate of 0.5 gal./sq.

**Vapor Barrier:** Sopravap'r, Elastophene Stick, Sopralene Stick or Colphene Stick, self-adhered over primed gypsum board.
Or
Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied over primed gypsum board.
Or
Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded, Elastophene PS, Elastophene PS 3.0, Colphene 180 PS, Sopralene 180 PS 2.2, adhered in hot asphalt at 25 lbs./sq. or applied in COLPLY Adhesive, at a rate of 1.5 gal./sq.

| **Middle Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **H-Shield, H-Shield CG, M-Shield, Sopra-ISO r, Sopra-ISO+ r, ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, Multi-Max FA-3, UltraMax, Sopra-ISO x, Sopra-ISO+ x, ENRGY 3, ENRGY 3 AGF, ENRGY 3 CGF, EnergyGuard POLYISO Insulation** | | |
| **Minimum 1.5" thick (flat or tapered)** | **N/A** | **N/A** |

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer of insulation shall be adhered with DUOTACK or DUOTACK NEO applied in ½" to ¾" wide ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

| | |
|---|---|
| **Base Sheet:** | One or more layers of Soprabase, Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or applied in COLPLY EF Adhesive applied at a rate of 1.5 – 2 gal./sq.<br><br>Or<br><br>One layer of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, torch-applied.<br><br>Or<br><br>One layer of Elastophene Stick, Sopralene Stick, Colphene Stick, self-adhered to substrate primed with Elastocol Stick or Elastocol Stick Zero. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -82.5 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel fastened to ¼" thick structural supports spaced 6' o.c. with Traxx/5 fasteners spaced 6" o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 24" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type B(5):** Base layer of insulation mechanically fastened, top layer adhered with approved adhesive.

**All General and System Limitations apply.**

**Thermal Barrier: (Optional)** Min. ¼" thick DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, DEXcell Glass Mat Roof Board, DEXcell Cement Roof Board or min. 7/16" thick DEXcell Cement Roof Board, loose-laid.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **H-Shield, M-Shield, Sopra-ISO r, ACFoam-II, Sopra-ISO s, Multi-Max FA-3, UltraMax, Sopra-ISO x, Sopra-ISO+ x (flat or tapered)** | | |
| **Minimum 2 thick** | **11 (#14 MP or #15 HD), 5 or 6** | **1:1.6 ft²** |

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer of insulation shall be adhered with DUOTACK or DUOTACK NEO applied in ½" to ¾" wide ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Base Sheet:** One or more layers of Soprabase, Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or applied in COLPLY EF Adhesive applied at a rate of 1.5 – 2 gal./sq.
Or
One layer of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, torch-applied.
Or
One layer of Elastophene Stick, Sopralene Stick, Colphene Stick, self-adhered to substrate primed with Elastocol Stick or Elastocol Stick Zero.

| | |
|---|---|
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -82.5 psf. (See General Limitation #7) |

| | |
|---|---|
| **Membrane:** | Liquid Applied Membrane |
| **Deck Type 2I:** | Steel, Insulated |
| **Deck Description:** | 18-22 ga., Type B, Grade 33 steel deck fastened to supports spaced maximum deck spans of 6 ft. o.c. with two Traxx/5 fasteners and ¾" washers spaced 6" o.c. Deck side laps are attached with Traxx/1 screws spaced 12" o.c. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.** |
| **System Type B(6):** | Base layer of insulation mechanically fastened, top layer adhered with approved adhesive. |

**All General and System Limitations apply.**

| | |
|---|---|
| **Vapor Barrier: (Optional)** | Sopravap'r, self-adhered to the top flanges of the steel deck. |

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ISO 95+ GL, ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r, ENRGY 3 Minimum 1.5" thick** | **1, 2, 4 (14), 6, 11(#15), 19** | **1:1 ft²** |

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **SECUROCK Cement Roof Board Minimum ½" thick** | **N/A** | **N/A** |

**Note: Top layer of insulation shall be adhered with OlyBond 500 Adhesive Fastener, Insta-Stik, Millennium One Step Foamable Adhesive, Millennium One Step Green Foamable Adhesive or Millennium PG-1 Low Viscosity Insulation Adhesive, DUOTACK or DUOTACK NEO applied in continuous ½" to ¾" wide ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

| | |
|---|---|
| **Primer:** | Alsan RS 276 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -82.5 psf. (See General Limitation #7.) |

| | |
|---|---|
| **Membrane:** | Liquid Applied Membrane |
| **Deck Type 2I:** | Steel, Insulated |
| **Deck Description:** | 18-22 ga., Type B, Grade 80 steel deck fastened to supports spaced maximum deck spans of 6 ft. o.c. with two Traxx/5 fasteners and ¾" washers spaced 6" o.c. Deck side laps are attached with Traxx/1 screws spaced 12" o.c. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.** |
| **System Type B(7):** | Base layer of insulation mechanically fastened, top layer adhered with approved adhesive. |

**All General and System Limitations apply.**

| | |
|---|---|
| **Vapor Barrier: (Optional)** | Sopravap'r, self-adhered to the top flanges of the steel deck. |

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft2** |
|---|---|---|
| **ISO 95+ GL, ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r, ENRGY 3** | | |
| **Minimum 1.5" thick** | **1, 2, 4 (14), 6, 11(#15), 19** | **1:1 ft²** |

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **SECUROCK Cement Roof Board** | | |
| **Minimum ½" thick** | **N/A** | **N/A** |

**Note: Top layer of insulation shall be adhered with OlyBond 500 Adhesive Fastener, Insta-Stik, Millennium One Step Foamable Adhesive, Millennium One Step Green Foamable Adhesive or Millennium PG-1 Low Viscosity Insulation Adhesive, DUOTACK or DUOTACK NEO applied in continuous ½" to ¾" wide ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

| | |
|---|---|
| **Primer:** | Alsan RS 276 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -127.5 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(1):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered to the top flanges of the steel deck.

One or more layers of any of the following insulations.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft2 |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ACFoam-III, Sopra-ISO+ s, EnergyGuard POLYISO Insulation, EnergyGuard Ultra POLYISO Insulation, ENRGY 3, ENRGY 3 FR, ENRGY 3 AGF, ENRGY 3 CGF, H-Shield, Sopra-ISO r, M-Shield, H-Shield CG, Sopra-ISO+ r, Multi-Max FA-3, Sopra-ISO x (flat or tapered)** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft2 |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.5" thick** | **4 (#12 or #14) with 21, 4 (#12) or 19 with 3, 2 (#12 or #14) with 8, 22, 11 (#12) or 5 or 11 (#14) with 7 or 9 or 1 (#12 or #14) with 16** | **1:1.78 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer: (Optional)** Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 $ft^2$/gal.

**Base Sheet:** Elastophene Flam HS*, Elastophene Flam 2.2*, Elastophene Flam*, Sopralene Flam 180*, Colphene Flam 180*, Sopralene Flam 250*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.
*Requires torch-applied ply sheet.

**Ply Sheet: (Optional)** Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Soprabase, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or in COLPLY EF Adhesive at 1.5-2.5 gal./sq.
Or
Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.

| | |
|---|---|
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1.0 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -52.5 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(2):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Any Approved Polyisocyanurate, EPS or XPS Insulation listed in Table 2 Minimum 1" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard Minimum 1/8" thick** | **1, 2, 4, 5, 6** | **1:2 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

**Primer: (Optional)** Elastocol 500, Elastocol Stick, Elastocol Stick Zero applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer.

**Base Sheet:** One or more layers of Sopralene 180 Sanded, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 PS 2.2*, Sopralene 180 PS*, Sopralene 250 Sanded, adhered in COLPLY EF Adhesive at 1.5-2.5 gal./sq.

Or

Sopralene Flam 180*, Colphene Flam 180*, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene Flam 250*, Sopralene 250 SP, Colvent Flam 180 TG*, torch-applied.
*Requires torch-applied ply sheet.

| | |
|---|---|
| **Ply Sheet: (Optional)** | One or more plies of Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded, Sopralene 180 Sanded 2.2 or Sopralene 250 Sanded adhered in hot asphalt at 25 lbs./sq. or in COLPLY EF Adhesive at a rate of 1.5 gal./sq.<br><br>Or<br><br>Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1.0 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -67.5 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.

**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(3):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

**Vapor Barrier (Optional):** Sopravap'r, self-adhered to the top flanges of the steel deck.

One or more layers of any of the following insulations.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ACFoam-III, Sopra-ISO+ s, EnergyGuard POLYISO Insulation, EnergyGuard Ultra POLYISO Insulation, ENRGY 3, ENRGY 3 FR, ENRGY 3 AGF, ENRGY 3 CGF, H-Shield, Sopra-ISO r, M-Shield, H-Shield CG, Sopra-ISO+ r, Multi-Max FA-3, Sopra-ISO x (flat or tapered)** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.375" thick** | **6 or 11(#15) with 7 or 16** | **1:1.33 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

**Base Sheet:** Elastophene Flam HS*, Elastophene Flam 2.2*, Elastophene Flam*, Sopralene Flam 180*, Colphene Flam 180*, Sopralene Flam 250*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.

*Requires torch-applied Ply or Cap.

**Ply Sheet (Optional):** Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied.

Or

Colphene Sanded, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Soprabase, Sopralene 180 Sanded or Sopralene 250 Sanded applied in hot asphalt at 25 lbs./square or in COLPLY EF Adhesive at 1.5 – 2.0 gal./sq.

**Primer (Optional):** Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq.

| | |
|---|---|
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -75 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Type B, Grade 80 steel fastened 6" o.c. with Traxx/5 fasteners to steel supports spaced maximum 5 ft. o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 20" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(4):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Any Approved Polyisocyanurate Insulation listed in Table 2 (flat or tapered) loose laid.** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **2, 4, 6 (#15) or 11 (#15)** | **1:1.25 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

**Primer: (Optional)** Elastocol 500, Elastocol Stick, Elastocol Stick Zero applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer.

**Base Sheet:** One or more layers of Colphene Sanded, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Soprabase, Sopralene 180 Sanded, Sopralene 250 Sanded, adhered in COLPLY EF Adhesive at 1.5-2.5 gal./sq.

Or

Elastophene Flam*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied.
*Requires torch-applied ply sheet.

| | |
|---|---|
| **Ply Sheet: (Optional)** | One or more layers of Colphene Sanded, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Soprabase, Sopralene 180 Sanded, Sopralene 250 Sanded, adhered in COLPLY EF Adhesive at 1.5-2.5 gal./sq.<br><br>Or<br><br>Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1.0 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -90 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** Min. 18-22 ga., Type B, Grade 80 steel deck secured to min. ¼" thick supports spaced a max. 6' o.c. with Traxx/5 fasteners spaced a max. 6" o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(5):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

One or more layers of any of the following insulations.

| **Base Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **DensDeck or DensDeck Prime Minimum .25" thick** | **N/A** | **N/A** |

| **Middle Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **H-Shield, M-Shield, Sopra-ISO r, ACFoam-II, Sopra-ISO s, ISO 95+ GL, Multi-Max FA-3, Sopra-ISO x, ENRGY 3 Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| **Top Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum .5" thick** | **5, 6 with 7; 11 (#14 or #15) with 16** | **1:1.33 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

**Base Sheet:** Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Soprabase, Sopralene 180 Sanded, Sopralene 250 Sanded adhered in COLPLY EF Adhesive at a rate of 1.5 gal./sq. or adhered in hot asphalt at 25 lbs./sq.
Or
Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP torch-applied.

**Primer: (Optional)** Alsan RS 222 Primer applied at a rate of 1.0 gal./sq.

| | |
|---|---|
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -90 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-20 ga., Type B, Grade 80 steel deck fastened to min. ¼" thick steel structural supports spaced a maximum 6 ft. o.c. with Traxx/5 screws and ¾" diameter washers spaced maximum 6 in. o.c. Side laps are fastened with Traxx/1 screws spaced maximum 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(6):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

One or more layers of any of the following insulations.

| **Base Insulation Layer:** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **H-Shield, ACFoam-II, M-Shield, Sopra-ISO r, Sopra-ISO s** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| **Top Insulation Layer:** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ½" thick** | **5 with 7; 11 (#14) with 16** | **1:1.33 ft²** |
| **Minimum ½" thick** | **5 with 7; 11 (#14) with 16** | **1:1 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

**Base Sheet:** Two or three plies of Sopra IV, Sopra VI or two plies of Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Soprabase, Sopralene 180 Sanded, Elastophene PS*, Elastophene PS 3.0*, Colphene 180 PS*, Sopralene 180 PS 2.2* or Sopralene 180 PS* adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or adhered in COLPLY Adhesive, COLPLY EF Adhesive at a rate of 1.5 gal./sq.

| | |
|---|---|
| **Base Sheet: (continued)** | Or<br>Two plies of Elastophene Flam*, Elastophene Flam 2.2*, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Elastophene Flam HS*, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene Flam 180*, Colphene Flam 180*, Sopralene Flam 250*, Sopralene 250 SP, Colvent Flam 180 TG*, torch-applied over coverboard primed with ASTM D41 primer at a rate of 100-150 $ft^2$/gal.<br>Or<br>One layer of Elastophene Stick, Sopralene Stick, Colphene Stick, Elastophene Flam Stick*, Sopralene Flam Stick* self-adhered.<br>*Requires torch-applied ply sheet. |
| **Ply Sheet: (Optional)** | One ply of Sopra IV, Sopra VI or Colphene Sanded, Elastophene Sanded 2.2, Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Soprabase, Sopralene 180 Sanded adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or adhered in COLPLY EF Adhesive at a rate of 1.5 gal./sq.<br>Or<br>One ply of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied over coverboard primed with ASTM D41 primer at a rate of 100-150 $ft^2$/gal.<br>Or<br>One layer of Elastophene Stick, Sopralene Stick or Colphene Stick self-adhered. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing:** | Surfacing is Optional on granular surfaced field cap membranes.<br>Surfacing is Required for smooth or sanded surfaced field cap membranes.<br>Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.<br>Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. |
| **Maximum Design Pressure:** | -157.5 psf. (fastener density of 1:1.33 $ft^2$) (See General Limitation #7)<br>-172.5 psf. (fastener density of 1:1 $ft^2$) (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 80 steel deck fastened to structural supports spaced a maximum 6 ft. o.c. with Traxx/5 screws and ¾" diameter washers spaced maximum 6 in. o.c. at each flute. Side laps are fastened with Traxx/1 screws spaced maximum 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type C(7):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer:** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **H-Shield, M-Shield, Sopra-ISO r Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

| **Top Insulation Layer:** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick** | **5 with 7; 11 (#14) with 16** | **1:1 ft²** |

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

**Base Sheet:** Two or three plies of Sopra IV, Sopra VI or two plies of Elastophene Sanded 3.0, Elastophene HS, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Colphene 180 Sanded, Sopralene 180 Sanded, Sopralene 250 Sanded, applied in hot asphalt at a rate of 20-40 lbs./sq.

Or

Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied.

Or

One layer of Sopralene Stick or Colphene Stick, self-adhered.

**Primer: (Optional)** Alsan RS 222 Primer applied at a rate of 1 gal./sq.

**Base Coat:** Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq.

**Reinforcement:** Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment.

| | |
|---|---|
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -180 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened to structural supports spaced a maximum of 6' o.c. with Tek/5 screws and spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 screws spaced maximum 24 in. o.c. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(1):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid.

One or more layers of any of the following insulations.

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft$^2$ |
|---|---|---|
| **H-Shield, M-Shield, Sopra-ISO r Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Base Sheet:** One layer of Soprafix Base 622, or Soprafix Base 641 fastened to the deck as described below:

**Fastening:** Attach base sheet using Trufast #15 EHD Fasteners or SOPREMA #15 HD Fasteners with Trufast 2.4" Barbed Metal Seam Plates or Dekfast 14 fasteners with Dekfast Galvalume Steel Round 2-3/8" 20-Ga Barbed Plates or SOPREMA #14 Fasteners with Soprafix 2-3/8" SB Stress Plates with row spacing at a maximum 35" o.c. The fasteners are spaced 12" o.c. in a 4" or 5" wide heat-welded base sheet side laps.

**Ply Sheet: (Optional)** One or more plies of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied.

**Primer: (Optional)** Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq.

**Base Coat:** Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq.

**Reinforcement:** Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment.

| | |
|---|---|
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -67.5 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 24 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(2):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer (LWC)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Celcore MF Cellular Concrete, Siplast Lightweight Insulating Concrete, Elastizell Lightweight Insulating Concrete, Concrecel Lightweight Insulating Concrete or Mearlcrete Lightweight Insulating Concrete** | | |
| **Minimum 2.0" thick, Minimum 300 psi.** | **N/A** | **N/A** |

**Note: Load capacity of the structural substrate must be verified for the additional load of the LWC. The LWC must be properly vented.**

| **Middle Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, H-Shield, M-Shield, Sopra-ISO r, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer (other than LWC) shall have preliminary attachment, prior to the installation of the base sheet. Additional Insulation (other than LWC) shall be limited to maximum 1" total thickness and shall be applied over a barrier sheet to separate from the LWC. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of –67.5 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of –75 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 24 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(3):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, Sopra-ISO+ x, H-Shield, M-Shield, Sopra-ISO r, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of –67.5 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of –75 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. (**See fastening options for steel gage**), Type B, Grade 33 ksi steel deck fastened to ¼" thick steel structural supports spaced a maximum of 62"- 72" o.c. (**see fastening options for support spans**) with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 24 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(4):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid. Minimum ½" thickness required if applying a vapor barrier.

**Vapor Barrier: (Optional)** An FM approved vapor barrier approved for use with torch-adhered, self-adhered, hot asphalt or cold applied may be applied to the deck or over the base insulation layer.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, Sopra-ISO+ x, H-Shield, M-Shield, Sopra-ISO r** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 622, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 Sanded or Sopralene 250 SP fastened to the deck as described below: |
| **Fastening #1:** | ***(Min. 18-22 ga. Steel in max. 72" support span)***<br>Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide, torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of –67.5 psf. See General Limitation #7.)*** |
| **Fastening #2:** | ***(Min. 18-22 ga. Steel in max. 72" support span)***<br>Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide, torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -75 psf. See General Limitation #7.)*** |
| **Fastening #3:** | ***(Min. 18 ga. Steel in max. 72" support span; Min. 20 ga. Steel in max. 69" support span; Min. 22 ga. steel in max. 62" support span.)***<br>Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates or SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of –112.5 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

| | |
|---|---|
| **Membrane:** | Liquid Applied Membrane |
| **Deck Type 2I:** | Steel, Insulated |
| **Deck Description:** | 18-22 ga., Type B, Grade 80 ksi steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c.<br>**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.** |
| **System Type D(5):** | Membrane fastened over preliminarily secured insulation. |

**All General and System Limitations apply.**

| | |
|---|---|
| **Fire Barrier: (Optional)** | Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid. Minimum ½" thickness required if applying a vapor barrier. |
| **Vapor Barrier: (Optional)** | An FM approved vapor barrier approved for use with torch-adhered, self-adhered, hot asphalt or cold applied may be applied to the deck or over the base insulation layer. |

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, Sopra-ISO+ x, H-Shield, M-Shield, Sopra-ISO r** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum $^1/_8$" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 622, Colphene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 Sanded or Sopralene 250 SP fastened to the deck as described below: |
| **Fastening #1:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps. ***(Meets Maximum Design Pressure of -67.5 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps. ***(Meets Maximum Design Pressure of -75 psf. See General Limitation #7.)*** |
| **Fastening #3** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps. ***(Meets Maximum Design Pressure of -97.5 psf. See General Limitation #7.)*** |
| **Fastening #4:** | Attach base sheet using Trufast #14 HD or Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or Trufast 2.4" Scoop Seam Plates or SOPREMA #14 MP or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates or SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. and centered inside the 4" wide torch-applied base sheet side laps. ***(Meets Maximum Design Pressure of -120 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Grade 80, Type B steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(6):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, Sopra-ISO+ x, H-Shield, M-Shield, Sopra-ISO r, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 0.125" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.25" thick** | **N/A** | **N/A** |

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -67.5 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -75 psf. See General Limitation #7.)*** |
| **Fastening #3:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -120 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 80 steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(7):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer (LWC)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **Celcore MF Cellular Concrete, Siplast Lightweight Insulating Concrete, Elastizell Lightweight Insulating Concrete, Concrecel Lightweight Insulating Concrete or Mearlcrete Lightweight Insulating Concrete** | | |
| **Minimum 2.0" thick, Minimum 300 psi.** | **N/A** | **N/A** |

**Note: Load capacity of the structural substrate must be verified for the additional load of the LWC. The LWC must be properly vented.**

| **Middle Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Multi-Max FA-3, Ultra-Max, H-Shield, M-Shield, Sopra-ISO r, Sopra-ISO x, Sopra-ISO+ x, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 0.125" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.25" thick** | **N/A** | **N/A** |

**Note: Top layer (other than LWC) shall have preliminary attachment, prior to the installation of the base sheet. Additional Insulation (other than LWC) shall be limited to maximum 1" total thickness and shall be applied over a barrier sheet to separate from the LWC. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -67.5 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -75 psf. See General Limitation #7.)*** |
| **Fastening #3:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -120 psf. See General Limitation #7.)*** |
| **Fastening #4:** | Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -135 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 33 steel deck fastened to structural supports spaced a maximum of 6' o.c. with Tek/5 screws and spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 screws spaced maximum 24 in. o.c. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(8):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid.

One or more layers of any of the following insulations.

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft$^2$ |
|---|---|---|
| **H-Shield, M-Shield, Sopra-ISO r Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: Base layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Base Sheet:** One layer of Soprafix Base 622, or Soprafix Base 641 fastened to the deck as described below:

**Fastening #1:** Attach Soprafix Base 622 using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates, Trufast 2.4" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates or Dekfast 14 fasteners with Dekfast Galvalume Steel Round 2-3/8" 20-Ga Barbed Plates or SOPREMA #14 Fasteners with Soprafix 2-3/8" SB Stress Plates or OMG Heavy-Duty fasteners with OMG 2-3/8" Barbed XHD Plates with row spacing at a maximum 34" o.c. The fasteners are spaced 6" o.c. in a 4" or 5" wide heat-welded base sheet side laps.

**Fastening #2:** Attach Soprafix Base 641 using Trufast #15 EHD Fasteners or SOPREMA #15 HD Fasteners with Trufast 2.4" Barbed Metal Seam Plates or Dekfast 14 fasteners with Dekfast Galvalume Steel Round 2-3/8" 20-Ga Barbed Plates or SOPREMA #14 Fasteners with Soprafix 2-3/8" SB Stress Plates or OMG Heavy-Duty fasteners with OMG 2-3/8" Barbed XHD Plates with row spacing at a maximum 34" o.c. The fasteners are spaced 6" o.c. in a 4" or 5" wide heat-welded base sheet side laps.

| | |
|---|---|
| **Ply Sheet: (Optional)** | One or more plies of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -82.5 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 80, Type B steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(9):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer (LWC)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Celcore MF Cellular Concrete, Siplast Lightweight Insulating Concrete, Elastizell Lightweight Insulating Concrete, Concrecel Lightweight Insulating Concrete or Mearlcrete Lightweight Insulating Concrete** | | |
| **Minimum 2.0" thick, Minimum 300 psi.** | **N/A** | **N/A** |

**Note: Load capacity of the structural substrate must be verified for the additional load of the LWC. The LWC must be properly vented.**

| **Middle Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Multi-Max-3, H-Shield, M-Shield, Sopra-ISO r, Sopra-ISO x, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer (other than LWC) shall have preliminary attachment, prior to the installation of the base sheet. Additional Insulation (other than LWC) shall be limited to maximum 1" total thickness and shall be applied over a barrier sheet to separate from the LWC. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 614 fastened to the deck as described below: |
| **Fastening:** | Attach base sheet using Trufast #15 EHD Fasteners and SOPREMA #15 HD Fasteners with Trufast 2.4" Scoop Seam Plates and SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 12" o.c. and centered inside the 4" wide torch-applied base sheet side laps. |
| **Ply Sheet:** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -97.5 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., **(See Fastening Options for Steel Grade)**, Type B steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(10):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, Sopra-ISO+ x, H-Shield, M-Shield, Sopra-ISO r, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum $^1/_8$" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | **(*Grade 80 steel deck*)** Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps. |
| **Fastening #2:** | **(*Grade 33 steel deck*)** Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps. |
| **Ply Sheet: (Optional)** | One or more plies of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -112.5 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 4I:** Steel, Insulated

**Deck Description:** 18-22 ga., **(See fastening options for steel grade)**, Type B steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners and ¾" diameter steel washers spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(11):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer (LWC)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Celcore MF Cellular Concrete, Siplast Lightweight Insulating Concrete, Elastizell Lightweight Insulating Concrete, Concrecel Lightweight Insulating Concrete or Mearlcrete Lightweight Insulating Concrete** | | |
| **Minimum 2.0" thick, Minimum 300 psi.** | **N/A** | **N/A** |

**Note: Load capacity of the structural substrate must be verified for the additional load of the LWC. The LWC must be properly vented.**

| **Middle Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Multi-Max FA-3, Ultra-Max, H-Shield, M-Shield, Sopra-ISO r, Sopra-ISO x, Sopra-ISO+ x, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 1/8" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum ¼" thick** | **N/A** | **N/A** |

**Note: Top layer (other than LWC) shall have preliminary attachment, prior to the installation of the base sheet. Additional Insulation (other than LWC) shall be limited to maximum 1" total thickness and shall be applied over a barrier sheet to separate from the LWC. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 630*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | **(*Grade 80 steel deck*)** Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps. |
| **Fastening #2:** | **(*Grade 33 steel deck*)** Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. in a 4" wide torch-applied base sheet side laps. |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -112.5 psf. (See General Limitation #7.) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** Minimum 22 ga., Grade 33, Type B steel deck attached to supports having a maximum span of 5' o.c. attached to structural supports with one Traxx/5 fasteners spaced 6" o.c. Side laps are fastened 24" o.c. with Traxx/1 fasteners. **This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(12):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

One or more layers of any of the following insulations.

| **Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **H-Shield, M-Shield, Sopra-ISO r Minimum 1.5" thick** | **N/A** | **N/A** |

**Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Base Sheet:** One layer of Soprafix Base 611*, Soprafix Base 612*, Soprafix Base 613*, Soprafix Base 614*, Soprafix Base 622, fastened to the deck as described below: *Requires torch-applied ply sheet

**Fastening:** Attach base sheet using Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Seam Plates, Trufast 2.4" Scoop Seam Plates or SOPREMA #15 HD with SOPREMA 2" Seam Plates, SOPREMA 2.4" Seam Plates spaced 6" o.c. within min. 4" wide, heat-welded side laps.

**Ply Sheet: (Optional)** One or more plies of Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, torch-applied.

**Primer: (Optional)** Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq.

**Base Coat:** Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq.

**Reinforcement:** Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment.

| | |
|---|---|
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | -79 psf. (See General Limitation #7) |

**Membrane:** Liquid Applied Membrane

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 80 ksi steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(13):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

**Vapor Barrier: (Optional)** Sopravap'r, self-adhered.

**Fire Barrier: (Optional)** Minimum ¼" thick DensDeck or DensDeck Prime, loose-laid.

One or more layers of any of the following insulations.

| **Base Insulation Layer** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Ultra-Max, Sopra-ISO+ x, H-Shield, M-Shield, Sopra-ISO r, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft²** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 0.125" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.25" thick** | **N/A** | **N/A** |

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below: |
| **Fastening #1:** | Attach base sheet using Trufast #14 HD Fasteners and SOPREMA #14 MP Fasteners with Trufast 2" Barbed Metal Seam Plates and SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. and centered inside the 4" wide torch-applied base sheet side laps. ***(Meets Maximum Design Pressure of -120 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. and centered inside the 4" wide torch-applied base sheet side laps. ***(Meets Maximum Design Pressure of -135 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | One or more plies of Elastophene Flam, Elastophene Flam 2.2, Elastophene Flam HS, Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene Flam 180, Colphene Flam 180, Sopralene Flam 250, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5, Sopralene 250 SP, Soprafix Base 613, Soprafix Base 612, or Soprafix Base 614, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

**Membrane:** Liquid Applied Membrane

**Deck Type 4I:** Steel, Insulated

**Deck Description:** 18-22 ga., Type B, Grade 80 steel deck fastened to ¼" thick steel structural supports spaced a maximum of 6' o.c. with Traxx/5 fasteners spaced a maximum 6" o.c. at the supports. Side laps are fastened with Traxx/1 fasteners spaced 12 in. o.c.
**This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.**

**System Type D(14):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| **Base Insulation Layer (LWC)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **Celcore MF Cellular Concrete, Siplast Lightweight Insulating Concrete, Elastizell Lightweight Insulating Concrete, Concrecel Lightweight Insulating Concrete or Mearlcrete Lightweight Insulating Concrete** | | |
| **Minimum 2.0" thick, Minimum 300 psi.** | **N/A** | **N/A** |

**Note: Load capacity of the structural substrate must be verified for the additional load of the LWC. The LWC must be properly vented.**

| **Middle Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **ACFoam-II, Sopra-ISO s, ISO 95+ GL, Multi-Max FA-3, Ultra-Max, H-Shield, M-Shield, Sopra-ISO r, Sopra-ISO x, Sopra-ISO+ x, TopRock DD, TopRock DD Plus, SopraRock DD, SopraRock DD Plus** | | |
| **Minimum 1.5" thick** | **N/A** | **N/A** |

| **Top Insulation Layer (Optional)** | **Insulation Fasteners (Table 3)** | **Fastener Density/ft$^2$** |
|---|---|---|
| **Sopraboard** | | |
| **Minimum 0.125" thick** | **N/A** | **N/A** |
| **DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board** | | |
| **Minimum 0.25" thick** | **N/A** | **N/A** |

**Note: Top layer (other than LWC) shall have preliminary attachment, prior to the installation of the base sheet. Additional Insulation (other than LWC) shall be limited to maximum 1" total thickness and shall be applied over a barrier sheet to separate from the LWC. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment**.

| | |
|---|---|
| **Base Sheet:** | One layer of Soprafix Base 611*, Soprafix Base 622, Soprafix Base 612*, Soprafix Base 613*, or Soprafix Base 614* fastened to the deck as described below:<br>*Requires torch applied ply sheet. |
| **Fastening #1:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2" Barbed Metal Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -120 psf. See General Limitation #7.)*** |
| **Fastening #2:** | Attach base sheet using Trufast #14 HD Fasteners with Trufast 2.4" Scoop Seam Plates or SOPREMA #14 MP Fasteners with SOPREMA 2.4" Seam Plates with row spacing at a maximum 35.5" o.c. The fasteners are spaced 6" o.c. and centered inside the 4" wide torch-applied base sheet side laps.<br>***(Meets Maximum Design Pressure of -135 psf. See General Limitation #7.)*** |
| **Ply Sheet: (Optional)** | Elastophene SP 2.2, Colphene SP 2.2, Elastophene SP 3.0, Colphene SP 3.0, Sopralene 180 SP 3.0, Sopralene 180 SP 3.5, Colphene 180 SP 3.5 or Sopralene 250 SP, torch-applied. |
| **Primer: (Optional)** | Alsan RS 222 Primer applied at a rate of 1-1.5 gal./sq. |
| **Base Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 3.91 gal./sq. |
| **Reinforcement:** | Alsan RS Fleece is firmly applied and rolled into the base coat while still wet to ensure adhesion and remove air bubbles. Reinforcement shall be placed carefully to avoid wrinkles and maintain alignment. |
| **Top Coat:** | Alsan RS 230 Field, Alsan RS 260 LO Field, Alsan RS 230 Flash or Alsan RS 260 LO Flash applied at a rate of 1.95 gal./sq. |
| **Surfacing: (Optional)** | Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. |
| **Maximum Design Pressure:** | See Fastening Requirements above. |

## STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

## GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.
   **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.

# END OF THIS ACCEPTANCE