MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

# NOTICE OF ACCEPTANCE (NOA)

**Siplast**
**1111 Highway 67 South**
**Arkadelphia, AR 71923**

**SCOPE:**
This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) 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 Division (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. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division 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 and the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Siplast Modified Bitumen Roof System over LWC Deck.**

**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 revises NOA No. 06-0612.08 and consists of pages 1 through 22.
The submitted documentation was reviewed by Jorge L. Acebo.

## ROOFING ASSEMBLY APPROVAL

| | |
|---|---|
| Category: | Roofing |
| Sub-Category: | SBS/SBS Foil Modified Bitumen |
| Deck Type: | Lightweight Concrete |
| Maximum Design Pressure | -172.5 psf |
| Fire Classification: | See General Limitation #1 |

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

**TABLE 1**

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Parabase | 3' x 108' | ASTM D 4601 | Asphalt coated fiberglass base sheet for mechanically fastened applications. |
| Parabase FS | 3' x 108' | ASTM D 4601 | Asphalt coated fiberglass base sheet with a polyolefin back surfacing for mechanically fastened applications. |
| Parabase Plus | 3.28' x 102.3'; 28 lbs./sq. | ASTM D 5147 | Elastomeric asphalt coated base sheet. |
| Paraglas | 3' x 180'; 12 lbs./sq. | ASTM D 2178 Type IV | Asphalt coated fiberglass mat used as a base or ply sheet. |
| Paravent | 3' x 108' | ASTM D 4601 | Asphalt coated venting fiberglass base sheet with 1.5 inch perforations. |
| Paravent FS | 3' x 108' | ASTM D 4601 | Asphalt coated venting fiberglass base sheet with 1.5 inch perforations and a polyolefin back surfacing.. |
| Paradiene 20 | 3.28' x 50'; 90 lbs./ sq. | ASTM D 6163 | Asphalt elastomer sheet with random fiberglass mat reinforcement used as the base ply of a Paradiene 20/30 system. |
| Paradiene 20 HT | 3.28' x 50'; 90 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with fiberglass scrim reinforcement for use as a base ply of a Paradiene 20/30 system. |
| Paradiene 20 EG | 3.28' x 33.5'; 90 lbs./sq. | ASTM D 6163 | Heavy duty asphalt elastomer sheet with fiberglass scrim reinforcement for use as a base ply in Paradiene systems. |
| Paradiene 20 HV | 3.28' x 33.5'; 90 lbs./sq. | ASTM D 6163 | Heavy duty asphalt elastomer sheet with random fiberglass mat reinforcement used as a base ply of a Paradiene 20/30 system. |
| Paradiene 20 PR | 3.28' x 50'; 55 lbs./sq. | ASTM D 6162 | Asphalt elastomer sheet with polyester fiberglass scrim composite reinforcement used as the top ply of a Paradiene 20/20 PR system having a gravel surfacing. Has additional puncture resistance. |
| Paradiene 20 TG | 3.28' x 33.5'; 70 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with random fiberglass reinforcement used as the base ply of a Paradiene 20/30 TG Series system. |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Paradiene 20 TG F | 3.28' x 33.5'; 70 lbs./sq. | ASTM D 4601 | Asphalt elastomer sheet with random fiberglass reinforcement and a silica parting agent on the top surface, for use as the base ply of a Paradiene 20/30 TG Series system. |
| Paradiene 20 HT TG | 3.28' x 33.5'; 70 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with fiberglass scrim reinforcement for use as a base ply of a Paradiene 20/30 system. |
| Paradiene 20 EG TG | 3.28' x 33.5'; 100 lbs./sq. | ASTM D 5147 | Heavy duty asphalt elastomer sheet with fiberglass scrim reinforced for use as a base ply in Paradiene 20TG/30TG systems. |
| Paradiene 20 HV TG | 3.28' x 33.5'; 100 lbs./sq. | ASTM D 6163 | Heavy duty asphalt elastomer sheet with random fiberglass mat reinforcement used as a base ply of a Paradiene 20TG/30TG system. |
| Paradiene 20 PR TG | 3.28' x 33.5'; 96 lbs./sq. | ASTM D 6164 | High performance SBS modified bitumen finish ply designed for use in gravel surfaced. Used as a surface ply of a Paradiene 20/20TG system. |
| Paradiene 20 TS | 3.28' x 33.5'; 76 lbs./sq. | ASTM D 6163 | High performance, semi adhered SBS modified bitumen with random fiberglass mat reinforcement used as a base ply of Paradiene 20/30 systems. |
| Paradiene 20 TS SA | 3.28' x 33.5'; 76 lbs./sq. | ASTM D 6163 | High performance, semi adhered, self adhesive, SBS modified bitumen with random fiberglass mat reinforcement used as a base ply of Paradiene 20/30 systems. |
| Paradiene 20 HT TS SA | 3.28' x 33.5'; 73 lbs./sq. | ASTM D 6163 | High performance, semi adhered, self adhered, SBS modified bitumen with random fiberglass mat/fiberglass scrim reinforcement used as a base ply of Paradiene 20/30 systems. |
| Paradiene 20 SA | 3.28' x 33.5'; 72 lbs./sq. | ASTM D 6163 | High performance, self adhesive, SBS modified bitumen with random fiberglass mat reinforcement used as a utility sheet. |
| Paradiene 20 EG SA | 3.28' x 33.5'; 90 lbs./sq. | ASTM D 6163 | High duty, self-adhesive, asphalt elastomer sheet with fiberglass scrim reinforcement for use as a base ply in Paradiene systems. |
| Paradiene 20 HT SA | 3.28' x 50'; 90 lbs./sq. | ASTM D 6163 | High performance, self adhesive, asphalt elastomer sheet with fiberglass scrim reinforcement for use as a base ply of a Paradiene 20/30 systems. |
| Terabase | 3.28' x 50'; 90 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with random fiberglass mat reinforcement used as the base ply for Teranap systems. |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Terabase TG | 3.28' x 33.5'; 70 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with random fiberglass reinforcement used as the base ply for Teranap systems. |
| Teranap | 3.28' x 26'; 97 lbs./sq. | ASTM D 5147 | A non-woven polyester mat impregnated and coated with high quality SBS modified bitumen. The surface of the sheet is protected by a polyester film or by sand. |
| Paradiene 30<br>Paradiene 30 CR | 3.28' x 33.5'; 85 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with mineral surfacing and random glass mat reinforcement, for use as the top ply of a Paradiene 20/30 system. |
| Paradiene 30FR<br>Paradiene 30 CRFR | 3.28' x 33.5'; 85 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with mineral surfacing and random glass mat reinforcement, for use as the top ply of a Paradiene 20/30 system. |
| Paradiene 30 HT | 3.28' x 33.5'; 85 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with mineral surfacing and fiberglass scrim reinforcement for use as the top ply of a Paradiene 20/30 system. |
| Paradiene 30 HTFR | 3.28' x 33.5'; 87 lbs./sq. | ASTM D 6163 | Fire-rated asphalt elastomer sheet with mineral surfacing and fiberglass scrim reinforcement for use as the top ply of a Paradiene 20/30 FR system. |
| Paradiene 30 MW | 3.28' x 33.5'; 87 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with mineral surfacing and ultra high tensile fiberglass reinforcement for use as the top ply of a Paradiene 20/30 FR system. |
| Paradiene 30 MW FR | 3.28' x 33.5'; 87 lbs./sq. | ASTM D 6163 | Fire rated asphalt elastomer sheet with mineral surfacing and ultra high tensile fiberglass reinforcement for use as the top ply of a Paradiene 20/30 FR system. |
| Paradiene 30 TG<br>Paradiene 30 CRTG | 3.28' x 25.25'; 80 lbs./sq. | ASTM D 5147 | Fire rated asphalt elastomer sheet with mineral surfacing and random fiberglass mat reinforcement for use as the top ply sheet of a Paradiene 20/30 TG Series system. |
| Paradiene 30 FRTG<br>Paradiene 30 CRFRTG | 3.28' x 25.25'; 80 lbs./sq. | ASTM D 6163 | Fire rated asphalt elastomer sheet with mineral surfacing and random fiberglass mat reinforcement for use as the top ply sheet of a Paradiene 20/30 TG Series system. |
| Paradiene 30 HTTG | 3.28' x 25.25'; 80 lbs./sq. | ASTM D 6163 | Asphalt elastomer sheet with mineral surfacing and fiberglass scrim reinforcement for use as the top ply of a Paradiene 20/30 TG Series system requiring high tensile strength. |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| Paradiene 30 HTFRTG | 3.28' x 25.25'; 80 lbs./sq. | ASTM D 6163 | Fire rated asphalt elastomer sheet with mineral surfacing and fiberglass scrim reinforcement for use as the top ply of a Paradiene TG Series system. |
| Paradiene 40 FR | 3.28' x 26'; 115 lbs./sq. | ASTM D 5147 | Fire rated asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim reinforced. |
| Parafor 50 LT | 3.28' x 17.5'; 114 lbs./sq. | ASTM D 6162 | Heavy duty asphalt elastomer sheet with mineral surfacing, polyester mat/fiberglass scrim reinforced. |
| Paralosa TS | 3.28' x 26.25'; 141 lbs./sq. | ASTM D 6162 | Heavy duty asphalt elastomer sheet with mineral surfacing, polyester mat/fiberglass scrim reinforced. For use as single ply membrane over concrete decks. |
| IREX 30 | 3.28' x 34'; 74 lbs./sq. | ASTM D 5147 | High-melt asphalt sheet with random fiberglass mat reinforcement for use as the base ply sheet for a Veral system. |
| IREX 40 | 3.28' x 34'; 89 lbs./sq. | ASTM D 5147 | High-melt asphalt sheet with random fiberglass mat reinforcement for use as the base ply sheet for a Veral system. |
| IREX HT | 3.28' x 34'; 89 lbs./sq. | ASTM D 5147 | High-melt asphalt sheet with fiberglass scrim reinforcement for use as a base ply sheet for the Veral system. |
| IREX PR | 3.28' x 34'; 89 lbs./sq. | ASTM D 5147 | High-melt asphalt sheet with polyester mat / fiberglass scrim reinforcement for use as a mechanically fastened base sheet with the Veral system. |
| Veral Aluminum | 3.28' x 33.5'; 90 lbs./sq. | ASTM D 6298 | Aluminum clad asphalt elastomer sheet with woven fiberglass reinforcement for use as the top ply sheet of a Veral system. |
| Veral Copper | 3.28' x 33.5'; 105 lbs./sq. | ASTM D 6298 | Copper clad asphalt elastomer sheet with fiberglass scrim reinforcement for use as the top ply of a Veral system. |
| Veral Stainless Steel | 3.28 ' x 33.5'; 105 lbs./sq. | ASTM D 6298 | Stainless steel clad asphalt elastomer sheet with fiberglass scrim reinforcement for use as the top ply sheet of a Veral system. |
| Veral Spectra Series | 3.28' x 33.5'; 90 lbs./sq. | ASTM D 6298 | Aluminum clad asphalt elastomer sheet with fiberglass scrim reinforcement and factory finished with a Kynar PVDF coating. |
| PA 100 Mopping Asphalt | | ASTM D 312 Type IV | Mopping Asphalt |
| PA 311/311 M Adhesive | 5 or 55 gal. | ASTM D 4479 | Blend of adhesive asphalts and quick-drying solvents. |

| Product | Dimensions | Test Specification | Product Description |
|---|---|---|---|
| PA 828 Flashing Cement | 5 gal. | ASTM D 4586 | Flashing Cement |
| PA 1021 Plastic Cement | 5 gal. | ASTM D 4586 | Asphalt cutback reinforced general purpose cement with non-asbestos fibers. |
| PA 1125 Asphalt Primer | 5 or 55 gal. | ASTM D 41 | Asphalt primer. |
| PC-227 | 5 or 55 gal. | ASTM D 6083 | Elastomeric Roof Coating. |

## APPROVED INSULATIONS:

TABLE 2

| Product Name | Product Description | Manufacturer (With Current NOA) |
|---|---|---|
| N/A | N/A | N/A |

## APPROVED FASTENERS:

TABLE 3

| Fastener Number | Product Name | Product Description | Dimensions | Manufacturer (With Current NOA) |
|---|---|---|---|---|
| 1. | NVS Base Sheet Fastener | Galvanized steel base ply fastener for lightweight concrete deck | N/A | Siplast, Inc. |
| 2. | Zono-tite Base Sheet Fastener | Galvanized steel base ply fastener for lightweight concrete deck | N/A | Siplast, Inc. |
| 3. | Base Sheet Disc | Galvalume steel base ply stress plate for lightweight concrete deck | 2-¾" Round | Siplast, Inc. |
| 4. | FM-30, FM-45, FM-60, FM-90 Fasteners | Base ply fastening systems for lightweight concrete decks. | N/A | ES Products, Inc. |
| 5. | CR Base Sheet Fastener | Galvanized steel base ply fastener for lightweight concrete deck | | Olympic Mfg. Group |
| 6. | CR Base Sheet Disc | Galvalume steel base ply stress plate for lightweight concrete deck | 2-¾" Round | Olympic Mfg. Group |
| 7. | Olympic XHD Screws | Extra Heavy Duty Fastener for Steel and Wood Decks | N/A | Olympic Mfg. Group |
| 8. | Olympic Base Sheet Disc | Barbed Steel Plates | 2-3/4" Round | Olympic mfg. Group |
| 9. | Parafast XHD Screws | Extra Heavy Duty Fastener for Steel and Wood Decks | N/A | Siplast, Inc. |
| 10. | Parafast Base Sheet Disc | Barbed Steel Plates | 2-3/4" | Siplast, Inc. |

## EVIDENCE SUBMITTED

| Test Agency/Identifier | Name | Report | Date |
|---|---|---|---|
| Factory Mutual Research Corp. | FMRC 4470 - TAS 114 | J.I. 2Y1A1.AM | 04.15.96 |
| | FMRC 4470 - TAS 114 | J.I. 3Z3A7.AM | 04.12.96 |
| | FMRC 4454 | 3005387 | 04.26.00 |
| | FMRC 4454 | 3008210 | 04.10.01 |
| | FMRC 4454 | 3011768 | 02.14.02 |
| | FMRC 4454 | 3018480 | 11.10.03 |
| Underwriters Laboratories, Inc. | UL 790 - TAS 114 | R10630 | 01.01.96 |
| Exterior Research & Design, LLC | TAS 114 | #4701.02.96-1 | 02.28.96 |
| | TAS 114 | #4701.09.96-1 | 08.22.96 |
| IRT Consulting of S. Florida, Inc. | TAS 114 | 00026 | 10.28.00 |
| Atlantic & Caribbean Roof Consulting, LLC | TAS 114-J | 05-003 | 03.14.05 |
| | TAS 114-J | 07-012 | 04-02-07 |

## APPROVED ASSEMBLIES:

**Membrane Type:** SBS

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Cellular or Aggregate Lightweight Concrete

**System Type E(1):** Base sheet mechanically fastened.

**Deck Types:** 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Deck was washed with distilled vinegar. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight or ZIC (1:4) insulating concrete.

**(Maximum Design Pressure –75 psf; See General Limitation #7)**

Or

Minimum 24 ga. Wheeling Tensilvent 125 steel deck shall be secured 3-3/4" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Deck was washed with distilled vinegar. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete or ZIC (1:4) insulating concrete.

**(Maximum Design Pressure –67.5 psf; See General Limitation #7)**

Or

18-22 ga steel deck shall be secured 6" o.c. or minimum 24 ga. Wheeling Tensilvent 125 steel deck shall be secured 3-3/4" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Deck was washed with distilled vinegar. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of ZIC (1:4) insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of ZIC (1:4) insulating concrete.

**(Maximum Design Pressure –60 psf; See General Limitation #7)**

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below:

Fastening: Fasten base sheet with FM-90, Olympic Base Sheet Fasteners, or Zonotite Fasteners on a 3" side lap fastened 7" o.c. on lap and three equally spaced rows 10" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terabase TG adhered by torch or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terabase adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or with PA 311/311M adhesive.

Membrane: Paradiene 20 PR, 30,30 CR, 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311M adhesive; Paradiene 20 PR TG,30 FRTG,30CRFRTG 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: See Deck Type Options Above

**Membrane Type:** SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Cellular or Aggregate Lightweight Concrete

**System Type E(2):** Base sheet mechanically fastened.

**Deck Types:** 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Deck was washed with distilled vinegar. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight or ZIC (1:4) insulating concrete.

**(Maximum Design Pressure –75 psf; See General Limitation #7)**

Or

Minimum 24 ga. Wheeling Tensilvent 125 steel deck shall be secured 3-3/4" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Deck was washed with distilled vinegar. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete or ZIC (1:4) insulating concrete.

**(Maximum Design Pressure –67.5 psf; See General Limitation #7)**

Or

18-22 ga steel deck shall be secured 6" o.c. or minimum 24 ga. Wheeling Tensilvent 125 steel deck shall be secured 3-3/4" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Deck was washed with distilled vinegar. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of ZIC (1:4) insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of ZIC (1:4) insulating concrete.

**(Maximum Design Pressure –60 psf; See General Limitation #7)**

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below:

Fastening: Fasten base sheet with FM 90, Olympic Base Sheet Fasteners, or Zonotite Fasteners on a 3" side lap fastened 7" o.c. on lap and three equally spaced rows 10" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, or 20 EGTG adhered by torch, or Paradiene 20, 20 FR, 20 HT, 20 HV or 20 EG, adhered with approved mopping asphalt at an application rate of 20-25 lbs./sq.

or

Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Veral adhered in approved mopping asphalt or by torch

**Note:** **Refer to manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: See Deck Type Options Above

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Cellular or Aggregate Lightweight Concrete

**System Type E(3):** Base sheet mechanically fastened.

**Deck Types:** Minimum 24 ga. Wheeling Tensilvent 125 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 6 ft on centers with 3/8" puddle welds and washers. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight Insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete or ZIC (1:4) insulating concrete.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below:

Fastening: Fasten base sheet with FM-90, Olympic Base Sheet Fasteners, or Zonotite Fasteners on a 3" side lap fastened 11" o.c. on lap and three equally spaced rows 11" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terabase TG adhered by torch or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terabase adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or with PA 311/311M adhesive.
Or
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Paradiene 20 PR, 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311C adhesive; Paradiene 20 PRTG, 30 FRTG, 30 CRFRTG 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch
Or
Veral adhered in approved mopping asphalt or by torch

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure –45 psf (See General Limitation #7)

| | |
|---|---|
| **Membrane Type:** | SBS/SBS Foil |
| **Deck Type 4:** | Lightweight Concrete, Non-insulated |
| **Deck Description:** | NVS Lightweight Concrete |
| **System Type E(4):** | Base sheet mechanically fastened. |

**All General and System limitations apply.**

| | |
|---|---|
| Base Sheet: | One ply of Parabase, Parabase FS, Parabase Plus, Ventsulation, Vaporbar GB, GlasBase, Stratavent, HydroStop, GAFGLAS #75, Dynabase, Tarmac SBS Base, Perma Ply-R mechanically attached using ES Products FM-45 Fasteners and FM-30 plates, NVS Base Sheet Fasteners or FM 75 spaced 7½" o.c. in the 4" wide side lap and 10" o.c. in two equally spaced and staggered rows in the field of the sheets<br>Or<br>Parabase, Parabase FS, Parabase Plus, Ventsulation, Dynabase, BURmastic Composite Ply or Hydro-Stop mechanically attached using 1.2" long CR Base Felt Fasteners and Discs or NVS Base Sheet Fasteners and Discs spaced 7½" o.c. in the 4" wide side lap and 10" o.c. in two equally spaced and staggered rows in the field of the sheets |
| Ply Sheet: | Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terabase TG adhered by torch or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terabase adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or with PA 311/311C adhesive.<br>Or<br>(For Veral System) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch. |
| Membrane: | Paradiene 20 PR, 30, 30 CR, 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311M adhesive; Paradiene 20 PR TG, 30 FRTG, CRFRTG 30 HTFRTG or Teranap adhered by torch<br>Or<br>Veral adhered in approved mopping asphalt or by torch. |
| **Note:** | **Refer to manufacturer's specifications for specific application requirements.** |
| Surfacing: | None |
| Maximum Design Pressure: | -45 psf (See General Limitation #7) |

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated,

**Deck Description:** Zonocel or ZIC Lightweight Concrete

**System Type E(5):** Base sheet mechanically fastened.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus, Ventsulation, Vaporbar GB, GlasBase, Stratavent, HydroStop, GAFGLAS #75, Dynabase, Tarmac SBS Base, Perma Ply-R mechanically attached using FM-60 with FM 30 bearing stress plate, FM 90, or Zono-tite Base Sheet Fasteners spaced 7½" o.c. in the 4" wide side lap and 10" o.c. in two equally spaced and staggered rows in the field of the sheets
or
Parabase, Parabase FS, Parabase Plus, Ventsulation, Dynabase, BURmastic Composite Ply or Hydro-Stop mechanically attached using 1¾" long CR Base Felt Fasteners and Discs or Zono-tite Base Sheet Fasteners and Discs spaced 7½" o.c. in the 4" wide side lap and 10" o.c. in two equally spaced and staggered rows in the field of the sheets

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terebase TG adhered by torch, or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terebase, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311 M.
Or
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Paradiene 20 PR, 30, 30 CR, 30 FR, 30 CRFR, 30 HT 30 HTFR, 30 MW, 30 MWFR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or PA 311/311M adhesive; Paradiene 20 PRTG, 30 FRTG, 30 CRFRTG 30 HTTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch.
Or
Veral adhered in approved mopping asphalt or by torch.

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -45 psf (See General Limitation #7)

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** NVS Lightweight Concrete

**System Type E(6):** Base sheet mechanically fastened.

**Deck Type:** Structural Concrete deck or existing BUR over structural concrete deck. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of NVS Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 1" topcoat cast of NVS Lightweight concrete. Allowed to cure for 3 days.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below:

Fastening: Fasten base sheet with FM 75, NVS Fastener or Olympic CR 1.2" Fasteners on a 3" side lap fastened 7" o.c. on lap and three equally spaced rows 10" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG S, 20 HVTG, 20 HTTG, or 20 EGTG adhered by torch, or Paradiene 20, 20 FR, 20 HT, 20 HV or 20 EG, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311.
Or
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Paradiene 20 PR, 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or PA 311/311M adhesive; Paradiene 20 PRTG, 30 FRTG, 30 CRFRTG 30 HTTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch.
Or
Veral adhered in approved mopping asphalt or by torch.

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -75 psf (See General Limitation #7)

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Cellular Lightweight Concrete

**System Type E(7):** Base sheet mechanically fastened.

**Deck Type:** Structural Concrete deck or existing BUR over structural concrete deck. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Cellular Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Cellular Lightweight concrete. Allowed to cure for 3 days.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below:

Fastening: Fasten base sheet with Zono-tite 1.75" base sheet Fasteners on a 4" side lap fastened 7" o.c. on lap and three equally spaced rows 10" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terebase TG adhered by torch, or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terebase, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311M.
Or
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Paradiene 20 PR, 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or PA 311/311M adhesive; Paradiene 20 PRTG, 30 TG, 30 CRTG 30 FRTG, 30 CRFRTG 30 HTTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch.
Or
Veral adhered in approved mopping asphalt or by torch

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** NVS Lightweight Concrete

**System Type E (8):** Base sheet mechanically fastened.

**Deck Type:** Min. 22 ga, vented steel deck attached with 3/8" puddle welds at every corrugation to steel supports spaced a maximum of 6 ft o.c. Deck side laps fastened at 24" o.c. with #10 TEK screws. One layer 5/8" thick Dens Deck fastened to deck with Siplast Parafast XHD or Olympic XHD Fasteners with 3" Metal Plates or Tru-Fast HD Fastener with MP-3 Plates at a fastener density of 1:1.6 $ft^2$. A two-ply ASTM D 2178 Type IV fully adhered to Dens Deck with Siplast PA-100 roofing asphalt. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of NVS Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of NVS Lightweight Insulating concrete. Allow to cure for 3 days.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus mechanically fastened as detailed below:

Fastening: Fasten base sheet with FM 75, NVS Fastener or Olympic CR 1.2" Fasteners on a 3" side lap fastened 7" o.c. on lap and three equally spaced rows 10" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terebase TG adhered by torch, or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terebase, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311 M.
Or
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Paradiene 20 PR, 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or PA 311/311M adhesive; Paradiene 20 PRTG, 30 TG, 30 CRTG 30 FRTG, 30 CRFRTG 30 HTTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch.
Or
Veral adhered in approved mopping asphalt or by torch

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -75 psf (See General Limitation #7)

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Insulcel Lightweight Concrete

**System Type E (9):** Base sheet mechanically fastened.

**Deck Type:** Min. 22 ga, vented steel deck attached with 3/8" puddle welds at every corrugation to steel supports spaced a maximum of 5 ft o.c. Deck side laps fastened at 24" o.c. with #10 TEK screws. One layer ½" thick Dens Deck fastened to deck with GAFTITE (Drill-Tec) STD 3-¼"fasteners and 3" dia. plates at a fastener density of 1:1.33 $ft^2$. A two-ply ASTM D 2178 Type IV fully adhered to Dens Deck with Siplast PA-100 roofing asphalt. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete. Allow to cure 3 days.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below:

Fastening: Fasten base sheet with Zono-tite 1.75" base sheet Fasteners on a 4" side lap fastened 7" o.c. on lap and three equally spaced rows 10" o.c. in the field.

Ply Sheet: Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terebase TG adhered by torch, or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terebase, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311.
Or
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch.

Membrane: Paradiene 20 PR, 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MWFR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or PA 311/311M adhesive; Paradiene 20 PRTG, 30 TG, 30 CRTG 30 FRTG, 30 CRFRTG, 30 HTTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch.
Or
Veral adhered in approved mopping asphalt or by torch

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

**Membrane Type:** SBS

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Hybrid lightweight concrete (Zonocel), cellular lightweight concrete (Insulcel) or aggregate lightweight concrete (ZIC).

**System Type E (10):** Base sheet mechanically fastened.

**Deck Type:** Min. 22 ga. vented steel decking fastened to structural supports spaced a maximum of 5 ft. o. c. Lightweight concrete consists of min. 1/8" thick slurry coat followed by min. 1" thick Insulperm EPS board *(optional)* and a min. 2" thick top coat.

Base Sheet: One ply of Parabase, Parabase FS or Parabase Plus mechanically attached using Zono-tite Fasteners spaced 7" o.c. at the 3" side lap and two staggered rows in the center of the sheet, fastened 7" o.c.

Ply Sheet: Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terabase adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs/sq or with PA 311/311 M adhesive or Paradiene 20 TG, 20 TG S, 20 HVTG, 20 HTTG, 20 EGTG or Terabase TG torch applied.

Membrane: Paradiene 20 PR, 30, 30 CR 30 HT, 30 FR, 30 CRFR, 30HTFR, 40FR or Parafor 50 LT adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs/sq or PA 311/311M or Paradiene 20 PRTG, 30TG, 30 CRTG, 30 HTTG, 30 FRTG, 30 CRFRTG, 30 HTFRTG, Teranap or Parafor 50 LT torch applied.

Maximum Design Pressure: -75 psf (See General Limitation #9)

**Membrane Type:** SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Hybrid lightweight concrete (Zonocel), cellular lightweight concrete (Insulcel) or aggregate lightweight concrete (ZIC)

**System Type E(11):** Base sheet mechanically fastened.

**Deck Type:** Min. 22 ga. vented steel decking. Lightweight concrete consists of min. 1/8" thick slurry coat followed by min. 1" thick Insulperm EPS board *(optional)* and a min. 2" thick top coat.

Base Sheet: One ply of Parabase, Parabase FS or Parabase Plus mechanically attached using Zono-tite Fasteners spaced 7" o.c. at the 3" side lap and two staggered rows in the center of the sheet, fastened 7" o.c.

Ply Sheet: Paradiene 20, 20 FR, 20 HT, 20 HV or 20 EG or Irex 30, Irex HT, Irex 40 adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs/sq or with PA 311/311 M adhesive or Paradiene 20 TG, 20 TG S, 20 HVTG, 20 HTTG or 20 EGTG, and Irex 40 and Irex HT adhered by torch.

Membrane: Veral adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs/sq. or adhered by torch.

Maximum Design Pressure: -75 psf (See General Limitation #9)

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|---|---|
| **Membrane Type:** | SBS/SBS Foil |
| **Deck Type 4:** | Lightweight Concrete, Insulated |
| **Deck Description:** | Cellular lightweight concrete (Insulcel) |
| **System Type E(12):** | Base sheet mechanically fastened. |
| **Deck Type:** | Minimum 22 ga. Type steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 3/8" puddle welds and washers. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight Insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete. Insulcel RT Surface Treatment pellets are applied a rate or 4 lbs/sq. to the freshly poured lightweight concrete. After three days of curing the lightweight concrete the pellets are melted by torch. |
| Base Sheet: | None. |
| Ply Sheet: | Paradiene TS is adhered by torch. |
| Membrane: | Paradiene 30 TG, 30 CRTG, 30 FRTG, 30 CRFRTG, 30 HTFRTG, Veral or Parafor 50 LT adhered by torch |
| **Note:** | **See manufacturer's specifications for specific application requirements.** |
| Maximum Design Pressure: | -97.5 psf (See General Limitation #9) |

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|---|---|
| **Membrane Type:** | SBS/SBS Foil |
| **Deck Type 4:** | Lightweight Concrete, Insulated |
| **Deck Description:** | Cellular lightweight concrete (Insulcel) |
| **System Type E(13):** | Base sheet mechanically fastened. |
| **Deck Type:** | Structural Concrete (min. 2500 psi) deck. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight Insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete. Insulcel RT Surface Treatment pellets are applied a rate or 4 lbs/sq. to the freshly poured lightweight concrete. After three days of curing the lightweight concrete the pellets are melted by torch. |
| Base Sheet: | None. |
| Ply Sheet: | Paradiene TS is adhered by torch. |
| Membrane: | Paradiene 30 TG, 30 CRTG, 30 FRTG, 30 CRFRTG, 30 HTFRTG, Veral or Parafor 50 LT adhered by torch |
| **Note:** | **See manufacturer's specifications for specific application requirements.** |
| Maximum Design Pressure: | -97.5 psf (See General Limitation #9) |

**Membrane Type:** SBS/SBS Foil

**Deck Type 4:** Lightweight Concrete, Non-insulated

**Deck Description:** Cellular or Aggregate Lightweight Concrete

**System Type E(14):** Base sheet mechanically fastened.

**Deck Types:** 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 6 ft on centers with 3/8" puddle welds and washers. Insulperm insulation panels shall be placed in a minimum 1/8" slurry-coat of Insulcel Lightweight insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Insulcel Lightweight insulating concrete.
**(Maximum Design Pressure –45 psf; See General Limitation #7)**

**All General and System limitations apply.**

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|---|---|
| Base Sheet: | One ply of Parabase, Parabase FS, Parabase Plus or GAFglas #75 mechanically fastened as detailed below: |
| Fastening: | Fasten base sheet with FM-90, Olympic Base Sheet Fasteners, or Zonotite Fasteners on a 3" side lap fastened 10" o.c. on lap and three equally spaced rows 10" o.c. in the field. |
| Ply Sheet: | Paradiene 20 TG, 20 TG F, 20 HVTG, 20 HTTG, 20 EGTG or Terabase TG adhered by torch or Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terabase adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. or with PA 311/311M adhesive.<br>Or<br>(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch. |
| Membrane: | Paradiene 20 PR, 30, 30 CR, 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. or PA 311/311M adhesive; Paradiene 20 PRTG, 30 FRTG, 30 CRFRTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch<br>Or<br>Veral adhered in approved mopping asphalt or by torch |
| **Note:** | **See manufacturer's specifications for specific application requirements.** |
| Surfacing: | None |
| Maximum Design Pressure | –45 psf (See General Limitation #7) |

**Membrane Type:** SBS

**Deck Type 4:** Lightweight Concrete,

**Deck Description:** ZIC Lightweight Concrete Design Mix 1:4 ratio.

**System Type E (15):** Base sheet mechanically fastened.

**Deck Type:** Min. 22 ga, x 1.5" Deep corrugations, Canam Steel 1.5% vented, G-90 finish steel deck. Steel deck installed over 0.25" (6mm) thick structural supports having 6'-0" o.c. (1.8m) spans. The steel deck welded to the steel supports with 5/8" puddle weld 0.6" o.c. at the perimeter and at each flute in the field side laps fastened with tek screws 12" o.c.

**All General and System limitations apply.**

Base Sheet: One ply of Parabase, Parabase FS, Parabase Plus mechanically fastened as detailed below:

Fastening: Fasten base sheet with Zonotite base sheet fasteners 7" o.c. on the 3"side laps and three rows evenly spaced in the field at 7"o.c.

Ply Sheet: Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terebase, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. with 3"side laps.
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch with 3"side laps.

Membrane: Paradiene 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. with 3"side laps. Or Veral adhered in approved mopping asphalt or by torch with 3"side laps.

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

**Membrane Type:** SBS

**Deck Type 4:** Lightweight Concrete,

**Deck Description:** ZIC Lightweight Concrete Design Mix 1:4 ratio.

**System Type E (16):** Base sheet mechanically fastened.

**Deck Type:** Min. 22 ga, x 1.5" Deep corrugations, type B Steel 1.5% vented, G-90 finish steel deck. Steel deck installed over 0.25" (6mm) thick structural supports having maximum 6'-0" o.c. (1.8m) spans. The steel deck fastened with one ITW Buildex Traxx-5 fastener at 6" O.C. along the perimeter and Two ITW Buildex Traxx-5 and ¾" washer in each flute of the metal deck along the joist in the field and 12" O.C. along the side laps with ITW Buildex Traxx-1 self drilling screws.

**All General and System limitations apply.**

Base Sheet: One ply of Paradiene 20 PR

Fastening: Fasten base sheet with Olympic XHD Screws with Olympic Base Sheet Disc or Parafast XHD Screws with Parafast Base Sheet Disc plates at 12" O.C. in the 4" lap and two staggered rows 12" O.C. in the field of the sheet.

Ply Sheet: Paradiene 20, 20 FR, 20 HT, 20 HV, 20 EG or Terebase, adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq. with 3"side laps or Paradiene 20 TG, 20 FR TG, 20 HT TG, 20 HV TG.
(For Veral system) Irex 30, Irex 40 or Irex HT adhered in approved mopping asphalt or by torch with 3"side laps.

Membrane: Paradiene 30, 30 CR 30 FR, 30 CRFR 30 HT 30 HTFR, 30 MW, 30 MW FR, 40 FR or Parafor 50 LT adhered with approved mopping asphalt at an application rate of 20-40 lbs/sq. with 3"side laps or Paradiene 30 FRTG, 30 CRFRTG, 30 HTFRTG, Parafor 50 LT or Teranap adhered by torch Or Veral adhered in approved mopping asphalt or by torch.

**Note:** **See manufacturer's specifications for specific application requirements.**

Surfacing: None

Maximum Design Pressure: -172.5 psf (See General Limitation #7)

## LIGHTWEIGHT INSULATING CONCRETE 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 137, 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.
3. For Systems where specific lightweight insulating concrete is referenced consult current lightweight insulating concrete NOA for specific deck construction and limitations. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.

## 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 Engineer, 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.)**

# END OF THIS ACCEPTANCE