

Roof Cover:	Eraguard 2000 — Primer — FR is spray, roller or brush applied to metal panel roofs at a min rate of 0.5 gal/sq (0.2 L/m ²) with a min 0.004 in. (0.1 mm) dry thickness. After drying, Eraguard 1000 FR, White is applied in two coats with each coating applied at a min 0.75 gal/sq (0.3 L/m ²).
Substrate:	Insulated Metal Roof Deck Panel Systems or Protected Metal Panels
Application:	Spray, roller or brush applied at min 0.5 gal/sq (0.2 L/m ²) with a min 0.004 in. (0.1 mm) dry thickness. After drying, Eraguard 1000 FR, White is applied in a two coat application with each coating applied at min 0.75 gal/sq (0.3 L/m ²).
Hail Rating:	Class 1-SH
ASTM E 108:	Class A at 1 in 12 roof slope

ES Products Inc, 280 Franklin St, Bristol RI 02809

Roof Covers:	FM Approved organic or glass fiber felt built-up roof cover or FM Approved modified bitumen roof cover FM Approved for use with the base sheet or insulation.
Deck:	Cementitious Wood Fiber, Recover over Cementitious Wood Fiber
Coating:	See roof cover listing.
Laps:	See roof cover listing for roof cover laps, below for base sheet side laps.
Application:	Secured to mechanically fastened base sheet or insulation, or insulation secured with hot asphalt to mechanically fastened base sheet per roof cover listing.
Base Sheets:	Black Armor Glass Fiber Base Sheet, Black Armor Vented Glass Fiber Base Sheet, Black Armor Glass Fiber Felt, Black Armor Premium Glass Fiber Felt, Millennium Base Sheet, Prebase Base Sheet, Firestone MB Base, Firestone SBS Base Sheet, Firestone SBS Premium Base Sheet, Firestone APP 160, Firestone SBS Smooth, GAFGLAS #75, Stratavent Eliminator Venting Base Sheet (Nailable), GAFGLAS Ply 4, GAFGLAS Ply 6, GAFGLAS Mineral Surface Cap Sheet (granules down), All Weather/ Empire, GS Flex-I-Glas Base, GS Flex-I-Glas FR, GS Poly SMS, Garland HPR Glasbase, Garland HPR Premium Glasbase, Garland Tribase, DynaBase, GlasBase, Glasply Premier, Glasply IV, Johns Manville APP Base Sheet, Nordflex Duo Ply FR Base, Nord G-2 Base, Perma Ply No. 28, Perma Ply-R, Ventsulation, Glass Fiber Base Sheet, Organic Base Sheet, #502 Premium Fiberglass Mineral Cap Sheet (granules down), #515 Fiberglass Standard Base Sheet, #501 Premium 1 Fiberglass SBS Base Sheet, #605 Panoply SBS Base Sheet, Deribase, Glass Ply IV, Glass Base, Irex 30, Irex HT, Parabase, Parabase Plus, Sopra-G, Sopraglass 100, Glass-Base, Vapor-Chan, Versa Base, BURmastic Glass Ply-28#, BURmastic Glass Ply, BURmastic Composite Ply, Ultra Cap (granules down), Intec Modified Base Plus, Intec Modified Base 190P, Flex Base 30, Flex Base 60, Permavent, Ultra Base, Multi-Ply Glass, Multi-Ply Glass CL and Performance Ply.
Hail Rating:	See roof cover listing
ASTM E 108:	See roof cover listing

Construction #1: Cementitious wood fiber deck installed per deck listing. Base sheet secured to deck as follows:

Construction #1a: Insuldeck Loc-Nails installed 9 in. (230 mm) o.c. along center of min 4 in. (102 mm) wide base sheet side laps and 12 in. (305 mm) o.c. staggered in two rows equally spaced between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-60.

Construction #1b: Insuldeck Loc-Nails installed 7½ in. (190 mm) o.c. along center of min 4 in. (102 mm) wide base sheet side laps and staggered in two rows equally spaced between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-90.

Construction #1c: TWIN LOC-NAILS installed max 9 in. (230 mm) o.c. along center of min 2 in. (50 mm) wide base sheet side laps and max 18 in. (455 mm) o.c. staggered in two rows equally spaced between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-90.

Construction #2: Cementitious Wood Fiber deck installed per deck listing. Base sheet secured to deck per Construction #1a, #1b or #1c above. Min ½ in. (13 mm) thick Armor Board High Density Fiberboard, ESGARD HIGH-STRENGTH ½" 6-side Asphalt Coated High-Density Roof Board, ESGARD HIGH-STRENGTH ½" 1-side Asphalt Coated High-Density Roof Board, ESGARD ½", EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Fiber Base HD1, Fiber Base HD6, Structodek, GAFTEMP Permalite Recover Board, Permalite Recover Board, Retro-Fit Board or EnergyGuard Perlite Recover Board, min ¾ in. (19 mm) thick ConPerl, Permalite, GAFTEMP Perlite, GAFTEMP Permalite, Fesco Board, EnergyGuard Perlite Roof Insulation, min 1 in. (25 mm) thick Armor Board Regular Fiberboard, ESGARD 1", ESGARD HIGH-STRENGTH 1" High-Density Roof Board, GAFTEMP Fiberboard, Huebert Fiberboard or Kop-R Wood Fiber, min 1.5 in. (40 mm) thick Armor R Plus, Armor R Plus Tapered, ACFoam-II, ACFoam-II Tapered, ACFoam Composite/PB, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation, Hy-Therm Composite, Hy-Therm(a) Composite Roof Insulation, Hy-Therm TAPERED, Hy-Therm TAPERED Roof Insulation, Polycon-Posite, Iso 95+ GL, Iso 95+ Composite, GAFTEMP Composite, GAFTEMP Isotherm RA, GAFTEMP Tapered Isotherm RA, Kop-R, Kop-R Composite, Kop-R (WC), Kop-R (WII), Kop-R (WII) Tapered, ENRGY 3, Fesco Foam, ENRGY 3 Plus, PSI-25, Tapered PSI-25, Foamglas Board, Thermal Tec, Thermal Tec Tapered, Thermaroom Composite, Multi-Max, Fesco Foam, DuraBoard, UltraGard, UltraGard Tapered, Trisotech G2, Trisotech GF, Trisotech USIso, USIso Tapered, USIso/Perlite Composite or min 2 in. (50 mm) thick Arcor FM secured to the base sheet with hot asphalt at 25 lb/sq (1.2 kg/m²). Roof cover, FM Approved for use with the insulation, installed per the roof cover listing. Meets Class 1-60/1-90 per base sheet securement.

Construction #3: Cementitious wood fiber deck installed per deck listing. Min ¼ in. (6.5 mm) thick Dens Deck, min ½ in. (13 mm) thick High Density Fiberboard, Duraboard, Armor Board High Density Fiberboard, ESGARD HIGH-STRENGTH ½" 6-side Asphalt Coated High-Density Roof Board, ESGARD HIGH-STRENGTH ½" 1-side Asphalt Coated High-Density Roof Board, ESGARD ½", EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Dens Deck Fiber Base HD1, Fiber Base HD6, Structodek, GAFTEMP Permalite Recover Board, Permalite Recover Board, Retro-Fit Board, EnergyGuard Perlite Recover Board or min ¾ in. (19 mm) thick Fesco Board or Fiberglass Roof Insulation secured to roof deck through an existing Class 1-roof assembly, if present, with one Twin Loc-Nail [min 1 in. (25 mm) embedment in deck] per 2 ft² (0.19 m²) max contributory area per fastener in a diamond in a box pattern. Min 3-ply built-up or modified bitumen roof cover FM Approved for use with the roof insulation secured to the roof insulation with hot asphalt or torch application as required in the roof cover manufacturers listing. Meets Class 1-90.

Construction #3a: Cementitious wood fiber deck, new, installed per deck listing. Min 1.4 in. (36 mm) thick ACFoam-III, or min 1.5 in. (40 mm) thick HyTherm AP Roof Insulation secured as shown in Construction #3 followed by roof cover as shown in Construction #3. Meets Class 1-90.

Construction #4: Cementitious wood fiber deck installed per deck listing. Min ¼ in. (6.5 mm) thick Dens Deck, min ½ in. (13 mm) thick Duraboard, High Density Fiberboard, Armor Board High Density Fiberboard, ESGARD HIGH-STRENGTH ½" 6-side Asphalt Coated High-Density Roof Board, ESGARD HIGH-STRENGTH ½" 1-side Asphalt Coated High-Density Roof Board, ESGARD ½", EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Dens Deck, Fiber Base HD1, Fiber Base HD6, Structodek, or min 1.4 in. (36 mm) thick ACFoam-III, or min 1.5 in. (40 mm) thick HyTherm AP roof insulation secured to roof deck through an existing Class 1 roof assembly, if present, with Twin Loc-Nails [min 1 in. (25 mm) embedment in deck]. Single ply roof cover FM Approved for use with the roof cover fully adhered to the roof insulation with solvent based bonding adhesive as required in the roof cover manufacturers listing. Meets Class 1-75 with one Twin Loc-Nail per 1.78 ft² (0.165 m²) max contributory area per fastener. Meets Class 1-90 with one Twin Loc-Nail per 1.33 ft² (0.124 m²) max contributory area per fastener.

Roof Cover:	FM Approved mechanically fastened single-ply roof cover FM Approved for use with the insulation.
Deck:	Cementitious Wood Fiber
Coating:	See roof cover listing.
Laps:	See roof cover listing.
Application:	Mechanically fastened per roof cover listing.
Hail Rating:	See roof cover listing
ASTM E 108:	See roof cover listing

Construction #1a: Cementitious wood fiber deck installed per deck listing. ½ in. (13 mm) thick Armor Board High Density Fiberboard, BP High Strength Fiberboard, EnergyGuard High Density Roof Fiberboard, Roof Insulating Board, High Density Roof Fiberboard, Fiber Base HD1, Fiber Base HD6, Structodek, GAFTEMP Perlite Recover Board, Permalite Recover Board, Retro-Fit Board or **EnergyGuard Perlite Recover Board** roof insulation presecured to deck with Insuldeck Loc-Nails. Roof cover installed per roof cover listing. Meets windstorm classification per roof cover listing.

Construction #1b: Minimum ¼" (6.5 mm) thick Dens Deck or Dens Deck Prime or ½" (13 mm) through ¾" (95 mm) thick ACFoam; ACFoam Composite/PB; ACFoam Recover Board; ACFoam Tapered; ACFoam-II; AMOCOR-PB6; AMOCOR-PB6 PLUS; AMOCOR-PB6W; AMOCOR-PG38; AMOCOR-PG39; AMOFOAM-CM; AMOFOAM-CMX; AMOFOAM-SB; AMOFOAM-SL; AMOFOAM-SLX; Armor Board High Density ; Armor Board Regular; Armor Lite Perlite Roof Insulation; Armor Lite Recover Board; Armor-R Composite; Armor-R Glas; Armor-R Plus; Base Cap; ConPerl; CSFoam Insulation; Dens Deck; Dens Deck Prime; Derbiboard; Derbiboard Composite; Derbiboard Composite H; Derbiboard H; Derbiboard Tapered; DuraBoard; DuraBoard; DuraFoam; Duro-Fold; ENRGY 3 Plus; FC2S IsoHot; FC2T IsoHot Tapered; FC3S IsoCold; FC3T IsoCold Tapered; FC4S IsoComp; FC4T IsoComp Tapered; Fesco Board; Fesco Board HD; Fesco Foam; Fesco Foam; Fesco Foam "R"; Fiber Glass Roof Insulation; Fiberbase HD1; Fiberbase HD6; Fiberboard; Flat Top Fiberboard; FTR-VALUE; GAFTEMP Composite; GAFTEMP Composite H; GAFTEMP Composite NP; GAFTEMP Composite PH; GAFTEMP Composite RN; GAFTEMP Fiberboard; EnergyGuard High Density Roof Fiberboard; GAFTEMP Isotherm RA; GAFTEMP Isotherm RH; Genflex High Density Fiberboard; GenFlex Iso 1; GenFlex Iso 3; GenFlex Iso 5; GenFlex Iso HC 1; GenFlex Iso NB 1; GenFlex Isofiber 5; High Density Fiberboard; High Density Roof Fiberboard; HP Recovery Board; H-Shield; H-Shield-NB; H-Shield-P; H-Shield-WF; Huebert Fiberboard; Hy-Therm; Hy-Therm AP; Hy-Therm AP COMPOSITE; Insul-Air; ISO 2000; ISO 2000 Tapered; Iso 95+; Iso 95+ Composite; Iso 95+ GL; Iso 95+ Plus Composite; Iso-Vent; JM Iso 1; Kop-R; Kop-R (WII); Kop-R Composite; Kop-R Composite WF hO; Kop-R hO; Kop-R Wood Fiber; Mule-Hide Poly ISO 2; Mule-Hide Poly ISO 2 Tapered; Nailable Base; Nailable Base-3; Nailboard; NCFR/THERMOSOTE; Perform-A-Deck Nailable Roof Insulation; Perform-A-Deck Nailable Roof Insulation; Permalite; Permalite Recover Board; Permalite Roof Insulation; Polycon – Posite; Polyiso HP; Polyiso HP-H; Polyiso HP-H Composite; Polyiso HP-HNB; Polyiso HP-HP; Polyiso HP-N; Polyiso HP-W; Polyiso MP-H; Polyiso MP-H Composite; Polyiso MP-HNB; Polyiso MP-P; PSI-25; Retrofit; Sarnatherm; Sarnatherm C; Sarnatherm Nailboard; Sarnatherm Perlite Composite; Sarnatherm Wood Fiber Composite; Standard Fiberglas Roof Insulation; ThermoRoof Composite-3; ThermoRoof Composite; Thermo Iso/Composite; TP Iso Perlite Composite; Trisotech G; Trisotech GP; Ultra/M-II, Iso/glas; US Iso; US Iso N; US Iso OSB; US Iso Roof; VersiFoam MP-N; VersiFoam MP-W; or Wide Flute Fiberglass Roof Insulation presecured to deck with TWIN LOC-NAILS [min 1 in. (25 mm) embedment in deck]. Roof cover installed per roof cover listing. Meets windstorm classification per roof cover listing.

Roof Covers:	Min 3-ply FM Approved organic or glass fiber felt built-up roof cover or FM Approved modified bitumen roof cover FM Approved for use with the base sheet or insulation.
Deck:	Gypsum (reroof only). Sound existing poured gypsum roof decks constructed with gypsum products FM Approved at the time of roof deck construction.
Coating:	See roof cover listing
Laps:	See roof cover listing for roof cover laps, below for base sheet side laps
Application:	Secured to mechanically fastened base sheet or insulation or insulation secured with hot asphalt to mechanically fastened base sheet per roof cover listing
Base Sheets:	Black Armor Glass Fiber Base Sheet, Black Armor Vented Glass Fiber Base Sheet, Black Armor Glass Fiber Felt, Black Armor Premium Glass Fiber Felt, Millennium Base Sheet, Prebase Base Sheet, Firestone MB Base, Firestone SBS Base Sheet, Firestone SBS Premium Base Sheet, Firestone APP 160, Firestone SBS Smooth, GAFGLAS #75, Stratavent Eliminator Venting Base Sheet (Nailable), GAFGLAS Ply 4, GAFGLAS Ply 6, GAFGLAS Mineral Surface Cap Sheet (granules down), All Weather/Empire, GS Flex-I-Glas Base, GS Flex-I-Glas FR, GS Poly SMS, Garland HPR Glasbase, Garland HPR Premium Glasbase, Garland Tribase, DynaBase, GlasBase, Glasply Premier, Glasply IV, Johns Manville APP Base Sheet, Nordflex Duo Ply FR Base, Nord G-2 Base, Perma Ply No. 28, Perma Ply-R, Ventsulation, Glass Fiber Base Sheet, Organic Base Sheet, #502 Premium Fiberglass Mineral Cap Sheet (granules down), #515 Fiberglass Standard Base Sheet, #501 Premium 1 Fiberglass SBS Base Sheet, #605 Panoply SBS Base Sheet, Derbibase, Glass Ply IV, Glass Base, Irex 30, Irex HT, Parabase, Parabase Plus, Sopra-G, Sopraglass 100, Glass-Base, Vapor-Chan, Versa Base, BURmastic Glass Ply-28#, BURmastic Glass Ply, BURmastic Composite Ply, Eagle Base Ultra, Ultra Cap (granules down), Intec Modified Base Plus, Intec Modified Base 190P, Flex Base 30, Flex Base 60, PermaVent, Ultra Base, Multi-Ply Glass, Multi-Ply Glass CL and Performance Ply.
Hail Rating:	See roof cover listing
ASTM E 108:	See roof cover listing

Construction #1: Base sheet secured to an existing FM Approved poured gypsum deck as follows:

Construction #1a: FM-45, FM-60, Nail-Tite Type A or Nail-Tite Type R base ply fasteners installed 4 in. (100 mm) o.c. along center of min 4 in. (102 mm) wide base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-60.

Construction #1b: FM-45, FM-60, Nail-Tite Type A or Nail-Tite Type R base ply fasteners installed 9 in. (230 mm) o.c. along center of min 2 in. (50 mm) wide base sheet side laps and 18 in. (455 mm) o.c. staggered in two rows equally spaced between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-60 with FM-45 or FM-60 base ply fasteners. Meets Class 1-90 with FM-45 or FM-60 base ply fasteners and Perma Ply-R base sheet. Meets Class 1-90 with Nail-Tite Type A or Nail-Tite Type R base ply fasteners.

Construction #1c: FM-45 or FM-60 base ply fasteners and FM-30 discs FM-75 or FM-90 assembled base ply fasteners installed 9 in. (230 mm) o.c. along center of min 2 in. (50 mm) wide base sheet side laps and 18 in. (455 mm) o.c. staggered in two rows equally spaced between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-90.

Construction #1d: FM-45 or FM-60 base ply fasteners and FM-30 discs FM-75 or FM-90 assembled base ply fasteners installed 7½ in. (190 mm) o.c. along center of min 4 in. (102 mm) wide base sheet side laps and in one row centered between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-90.

Construction #1e: TWIN LOC-NAILS installed max 9 in. (230 mm) o.c. along center of min 2 in. (50 mm) wide base sheet side laps and max 18 in. (455 mm) o.c. staggered in two rows equally spaced between base sheet side laps. Roof cover, FM Approved for use with base sheet, installed per the roof cover listing. Meets Class 1-90.

Construction #2: Base sheet secured to deck per Construction #1a, #1b, #1c, #1d or #1e above. Min ½ in. (13 mm) thick Armor Board High Density Fiberboard, ESGARD HIGH-STRENGTH ½" 6-side Asphalt Coated High-Density Roof Board, ESGARD HIGH-STRENGTH ½" 1-side Asphalt Coated High-Density Roof Board, ESGARD ½", EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Fiber Base HD1, Fiber Base HD6, Structodek, GAFTEMP Permalite Recover Board, Permalite Recover Board, Retro-Fit Board or EnergyGuard Perlite Recover Board, min ¾ in. (19 mm) thick ConPerl, Permalite, GAFTEMP Permalite, GAFTEMP Perlite, Fesco Board or EnergyGuard Perlite Roof Insulation min 1 in. (25 mm) thick Armor Board Regular Fiberboard, ESGARD 1", ESGARD HIGH-STRENGTH 1" High-Density Roof Board, GAFTEMP Fiberboard, Huebert Fiberboard or Kop-R Wood Fiber, min 1.5 in. (40 mm) thick Armor R Plus, Armor R Plus Tapered, ACFoam-II, ACFoam-II Tapered, ACFoam Composite/PB, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation, Hy-Therm Composite, Hy-Therm(a) Composite Roof Insulation, Hy-Therm TAPERED, Hy-Therm TAPERED Roof Insulation, Polycon-Posite, Iso 95+ GL, Iso 95+ Composite, GAFTEMP Composite, GAFTEMP Isotherm RA, GAFTEMP Tapered Isotherm RA, Kop-R, Kop-R Composite, Kop-R (WC), Kop-R (WII), Kop-R (WII) Tapered, ENRGY 3, ENRGY 3 Plus, PSI-25, Tapered PSI-25, Foamglas Board, Thermal Tec, Thermal Tec Tapered, Thermarof Composite, Multi-Max, Fesco Foam, DuraBoard, UltraGard Tapered, Trisotech G2, Trisotech GF, USIso, USIso Tapered, USIso/Perlite Composite or min 2 in. (50 mm) thick Arcor FM secured to the base sheet with hot asphalt at 25 lb/sq (1.2 kg/m²). Roof cover, FM Approved for use with the insulation, installed per the roof cover listing. Meets Class 1-60/1-90 per base sheet securement.

Construction #3: Min ¼ in. (6.5 mm) Dens Deck, min ½ in. (13 mm) thick High Density Fiberboard, Duraboard, Armor Board High Density Fiberboard, BP High Strength Fiberboard, EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Dens Deck Fiber Base HD1, Fiber Base HD6, Structodek, GAFTEMP Permalite Recover Board, Permalite Recover Board, Retro-Fit Board or EnergyGuard Perlite Recover Board or min ¾ in. (19 mm) thick Fesco Board or Fiberglass Roof Insulation or min 1.4 in. (36 mm) thick ACFoam-III or min 1.5 in. (40 mm) thick HyTherm AP secured to roof deck through an existing Class 1 roof assembly, if present, with one TWIN LOC-NAIL [min 1 in. (25 mm) embedment in deck] per 2 ft² (0.19 m²) max contributory area per fastener in a diamond in a box pattern. Min 3-ply built-up or modified bitumen roof cover FM Approved for use with the roof cover secured to the roof insulation with hot asphalt or torch application as required in the roof cover manufacturers listing. Meets Class 1-90.

Construction #4: Min ¼ in. (6.5 mm) Dens Deck, min ½ in. (13 mm) thick High Density Fiberboard, Duraboard, Armor Board High Density Fiberboard, BP High Strength Fiberboard, EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Dens Deck Fiber Base HD1, Fiber Base HD6, or Structodek or min ¾ in. (19 mm) thick Fesco Board or min 1.4 in. (36 mm) thick ACFoam-III or min 1.5 in. (40 mm) thick HyTherm AP secured to roof deck through an existing Class 1 roof assembly, if present, with TWIN LOC-NAILS [min 1 in. (25 mm) embedment in deck]. Single ply roof cover FM Approved for use with the roof cover fully adhered to the roof insulation with solvent based bonding adhesive as required in the roof cover manufacturers listing. Meets Class 1-75 with one TWIN LOC-NAIL per 1.78 ft² (0.165 m²) max contributory area per fastener. Meets Class 1-90 with one TWIN LOC-NAIL per 1.33 ft² (0.124 m²) max contributory area per fastener.

Roof Cover:	Min 3-ply FM Approved organic or glass fiber felt built-up roof cover or FM Approved modified bitumen roof cover FM Approved for use with the base sheet or insulation. Specified single ply roof covers.
Deck:	Lightweight Insulating Concrete
Coating:	See roof cover listing
Laps:	See roof cover listing for roof cover laps, below for base sheet side laps
Application:	Secured to mechanically fastened base sheet or insulation secured with hot asphalt to mechanically fastened base sheet per roof cover listing.
Base Sheet:	Black Armor Glass Fiber Base Sheet, Black Armor Vented Glass Fiber Base Sheet, Black Armor Glass Fiber Felt, Black Armor Premium Glass Fiber Felt, Millennium Base Sheet, Prebase Base Sheet, Firestone MB Base, Firestone SBS Base Sheet, Firestone SBS Premium Base Sheet, Firestone APP 160, Firestone SBS Smooth, GAFGLAS #75, Stratavent Eliminator Venting Base Sheet (Nailable), GAFGLAS Ply 4, GAFGLAS Ply 6, GAFGLAS Mineral Surface Cap Sheet (granules down), All Weather/Empire, GS Flex-I-Glas Base, GS Flex-I-Glas FR, GS Poly SMS, Garland HPR Glasbase, Garland HPR Premium Glasbase, Garland Tribase, DynaBase, GlasBase, Glasply Premier, Glasply IV, Johns Manville APP Base Sheet, Nordflex Duo Ply FR Base, Nord G-2 Base, Perma Ply No. 28, Perma Ply-R, Ventsulation, Glass Fiber Base Sheet, Organic Base Sheet, #502 Premium Fiberglass Mineral Cap Sheet (granules down), #515 Fiberglass Standard Base Sheet, #501 Premium 1 Fiberglass SBS Base Sheet, #605 Panoply SBS Base Sheet, Derbibase, Glass Ply IV, Glass Base, Irex 30, Irex HT, Parabase, Parabase Plus, Sopra-G, Sopraglass 100, Glass-Base, Vapor-Chan, Versa Base, BURmastic Glass Ply-28#, BURmastic Glass Ply, BURmastic Composite Ply, Eagle Base Ultra, Ultra Cap (granules down), Intec Modified Base Plus, Intec Modified Base 190P, Flex Base 30, Flex Base 60, Permavent, Ultra Base, Multi-Ply Glass, Multi-Ply Glass CL and Performance Ply.
Hail Rating:	See roof cover listing
ASTM E 108:	See roof cover listing

Constructions Using Airlite Perlite Aggregate Roof Decks:

Construction #1: Steel Form Deck Construction – A slurry of Airlite Perlite Lightweight Insulating Concrete is placed on the form deck filling the corrugations plus a min of ⅛ in. (3 mm) thickness above the top flange, immediately followed by min 1 in. (26 mm) thick Dyplast Holey Board Polystyrene Insulation. The deck is either a Wheeling Corrugating Company Type BW fluted galvanized (G60) steel form deck which is 22 ga. [0.030 in. (0.76 mm)], 1.5 in. (40 mm) deep, and 30 in. (0.76 m) wide or a Wheeling Corrugating Company Tensiform 75 which is 26 ga. [0.018 in. (.46 mm)] thick, 1½ in. (24 mm) deep, and 30 in. (0.76 m) wide. A min of 2 in. (50 mm) thick Airlite Perlite Lightweight Insulating Concrete is immediately placed over the Polystyrene Insulation. Within 48 to 72 hours an *FM Approved base sheet is mechanically fastened as described below. The base sheet is covered with a roof covering consisting of a FM Approved 3 ply organic or glass felt BUR or hot asphalt applied FM Approved min 3 ply modified bitumen roof cover. An alternate construction is to install a hot asphalt applied **FM Approved insulations over the base sheet followed by either the described BUR or min 3 ply modified bitumen roof cover.

Construction #1a: The steel deck Tensiform 75 26 ga. [0.018 in. (.46 mm)] thick, $1\frac{5}{16}$ in. (24 mm) deep, and 30 in. (0.76 m) wide welded with standard $\frac{3}{8}$ in. (10 mm) welding washes at every other corrugation at $7\frac{1}{2}$ in. (190 mm) o.c. directly to the structural steel joists spaced 5 ft (1.5 m) o.c. Steel deck overlaps are secured with 2 #10 steel self tapping screws evenly spaced between purlins. The FM Approved* base Sheets are mechanically fastened with ES Products FM 90 Base Ply Fasteners at $7\frac{1}{2}$ in. (191 mm) o.c. in the 4 in. (102 mm) wide lap. In addition, fasteners are applied 10 in.o.c. in two rows evenly divided and staggered in the field of the sheet. The base sheet is covered as in Construction #1. Meets Class 1-60.

Construction #1b: The steel deck 22 ga. [0.030 in. (0.76 mm)] thick, 1.5 in. (40 mm) deep, and 30 in. (0.76 m) wide Type BW galvanized (G60) fluted steel form deck, welded at every corrugation 6 in. (152 mm) o.c. with average $\frac{5}{8}$ in. (16 mm) diameter puddle welds, directly to the structural steel joists spaced 5 ft (1.5 m) o.c. Steel deck overlaps are secured with 2 #10 steel self tapping screws evenly spaced between purlins. Airlite Perlite Lightweight Insulating Concrete poured over deck to $\frac{1}{8}$ to $\frac{1}{4}$ in. (3 to 6 mm) above top flanges of the form deck. The FM Approved* base Sheets are mechanically fastened with ES Products FM 90 Base Ply Fasteners at $7\frac{1}{2}$ in. (191 mm) o.c. in the 4 in. (102 mm) wide lap. In addition, fasteners are applied at $7\frac{1}{2}$ in. o.c. in two rows evenly divided and staggered in the field of the sheet. The base sheet is covered as in Construction #1. Meets Class 1-90.

Construction #2: New structural concrete deck is covered with a slurry of Airlite Perlite Lightweight Insulating Concrete the slurry coat is immediately followed by min 1 in. (26 mm) thick **Dyplast** Holey Board Polystyrene Insulation. A min of 2 in. (50 mm) thick Airlite Perlite Lightweight Insulating Concrete is immediately placed over the Polystyrene Insulation. The base sheet is covered as in Construction #1. Meets Class 1-90.

Construction #3: An existing structural concrete deck covered with asphaltic BUR roof cover is covered with a slurry of Airlite Perlite Lightweight Insulating Concrete the slurry coat is immediately followed by min 1 in. (26 mm) thick **Dyplast** Holey Board Polystyrene Insulation. A min of 2 in. (50 mm) thick Airlite Perlite Lightweight Insulating Concrete is immediately placed over the Polystyrene Insulation. The base sheet is covered as in Construction #1. The recover wind classification is determined by the classification of the existing roof system.

Constructions Using Celcore Roof Decks:

Construction #1: Steel Form Deck Construction – A slurry coat of Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is placed on the deck filling the corrugations plus min $\frac{1}{8}$ in. (3 mm) thick above the top flange immediately followed by a single layer of min 1 in. (25 mm) thick **Dyplast**, Carpenter or Cellofoam Holey Board Polystyrene Insulation. The following day, min 2 in. (50 mm) thick Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is placed. After setting to support foot traffic, Celcore PVA Curing Compound is applied at a nominal rate of 300 ft²/gal (7.2 m²/L). After curing several days, a roof covering is applied as described in Constructions #4a, #4b, #4c, #4d, #5a, #5b, #5c and #5d.

Construction #2: Structural Concrete Deck, New or Recover Construction – New Structural concrete deck is covered with hot asphalt applied vapor retarder (optional). Min $\frac{1}{8}$ in. (3 mm) thick slurry coat of Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is placed on the deck, hot asphalt applied vapor retarder or existing hot asphalt adhered BUR roof followed by a single layer of min 1 in. (25 mm) thick **Dyplast**, Carpenter or Cellofoam Holey Board Polystyrene Insulation. The remainder of the Celcore Cellular Concrete system is constructed as described in Construction #1 above. After curing several days, a roof covering is applied as described in Construction #6, or #7.

Construction #3: Structural Concrete Deck, New or Recover Construction. Min 2 in. (50 mm) thick Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is placed on the substrates described in Construction #2 followed by Celcore PVA Curing Compound applied as in Construction #1. After curing several days, a roof covering is applied as described in Constructions #6, or #7.

Construction #4: Steel Form Deck, New Construction. Min 0.029 in. (0.74 mm) thick, 1.5 in. (40 mm) deep Wheeling Corrugating Company BW galvanized deck is secured to min 0.25 in. (6.4 mm) thick structural supports with ITW Buildex ICH Traxx/5 screws placed at each bottom rib [6 in. (152 mm) o.c.] with structural supports spaced at max 4 ft (1.2 m) o.c. Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density is placed as described in Construction #1.

Construction #4a: Steel Form Deck, New Construction. Steel form deck per Construction #4 is secured to structural supports spaced at max 5 ft (1.5 m) o.c. with min $\frac{5}{8}$ in. (16 mm) dia. puddle welds or with $\frac{1}{2}$ in. (13 mm) dia. puddle welds and washers placed at every corrugation and at each support where sides lap. Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is then placed as described in Construction #1 followed by a GAFGLAS #75 Base Sheet, GAFGLAS #80 Ultima Base Sheet or Stratavent Eliminator Venting Base Sheet (Nailable) or DynaBase, Ventulation Base Sheet, Tremco BURmastic Composite Ply Base Sheet, Danosa Glasdan R-36, Esterdan R-36-4 or Garland HPR Tribase or Hickman Performance Ply, Multi Ply Glas or Johns Manville, Dynalastic 180S, Glas Ply Premier, Glasbase Plus or Soprema Glass Base, Sopra VI or Tamko Versa-Base, Glass-Base, Vapor-Chan, Base-N-Ply base sheet, max 39.37 in. (1000 mm) wide, secured to the deck with ES Products FM-90 Base Ply Fasteners spaced at max 7 in. (178 mm) o.c. through min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two rows in the field of the sheet. The lap fasteners are in-line perpendicular to the laps. The fastener rows in the field of the sheet are evenly spaced between side laps with the fasteners in these rows offset 3.5 in. (89 mm) from lap fasteners. A min 3-ply glass felt hot asphalt applied BUR or min 3-ply hot asphalt adhered modified bitumen roof covering is then applied. Meets Class 1-90.

Construction #4b: Steel Form Deck, New Construction. Steel form deck per Construction #4 is secured to structural supports as described in Constructions #4a above. Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is then placed as described in Construction #1. After curing several days, GAFGLAS #80 Premium Base Sheet or Stratavent Eliminator Venting Base Sheet (Nailable) max 39.37 in. (1000 mm) wide is secured to the deck with ES Products FM-90 Base Ply Fasteners spaced at max 7 in. (178 mm) o.c. through min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two rows in the field of the sheet. The lap fasteners are in-line perpendicular to the laps. The fastener rows in the field of the sheet are evenly spaced between side laps with the fasteners in these rows offset 3.5 in. (89 mm) from lap fasteners. ACFOam-II or Multi-Max FA is placed with all joints staggered and adhered with hot asphalt applied at a nominal rate of 20-25 lb/sq (1.0-1.2 kg/m²) in single or multiple layers-See insulation listings. An FM Approved Seaman single-ply roof cover is applied per roof cover listings. Meets Class 1-90.

Construction #4c: Steel form deck and Celcore Cellular Concrete, same as Construction #4a. Danosa Glasdan R-36, Esterdan R-36-4, Basedan II; Garland HPR Tribase, HPR Glasbase, HPR Premium Glasbase; Hickman Performance Ply, Multi Ply Glas; J. Manville Dynalastic 180S, Glasbase, Permaply-28, Glas Ply Premier, Glas Ply IV, Glasbase Plus; Soprema Glass Base, Sopra IV, Sopra VI; Tamko Versa Base, Glass Base, Base-N-Ply, Firestone APP 80 Glass Base, MB Base Sheet, APP 160, SBS Base Sheet, SBS Premium Base Sheet, SBS Smooth, SBS Poly Base max 39.37 in. (1000 mm) wide, secured to the deck with ES Products FM-90 Base Ply Fasteners spaced at max 7 in. (178 mm) o.c. through min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two rows in the field of the sheet. The lap fasteners are in-line perpendicular to the laps. The fastener rows in the field of the sheet are evenly spaced between side laps with the fasteners in these rows offset 3.5 in. (89 mm) from lap fasteners. A min three-ply glass felt hot asphalt applied BUR or min three-ply hot asphalt adhered modified bitumen roof covering is then applied. Meets Class 1-90.

Construction #4d: Steel form deck and Celcore Cellular Concrete, same as Construction #4a. Firestone APP 80 Glass Base, MB Base Sheet, APP 160, SBS Base Sheet, SBS Premium Base Sheet, SBS Smooth, SBS Poly Base max 39.37 in. (1000 mm) wide, secured to the deck with ES Products FM-90 Base Ply Fasteners spaced at max 7 in. (178 mm) o.c. through min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two rows in the field of the sheet. The lap fasteners are in-line perpendicular to the laps. The fastener rows in the field of the sheet are evenly spaced between side laps with the fasteners in these rows offset 3.5 in. (89 mm) from lap fasteners. The base sheet is covered with 2 plies of Firestone Type IV Ply Felt, each fully adhered with hot asphalt. Firestone APP 180 FR Cap sheet is torched applied. Meets Class 1-90.

Construction #5: Steel Form Deck, New Construction. Min 0.0179 in. (0.45 mm) thick Tensiform S-75 form deck or min 0.0205 in. (0.52 mm) thick Tensiform 75 form deck by Wheeling Corrugating Company is secured to the structural supports with FM Approved deck fasteners or with ½ in. (13 mm) dia. puddle welds and washers placed at every other corrugation [7.5 in. (191 mm) o.c.] and at each support where sides lap. Structural supports are spaced at max of 5 ft (1.5 m) o.c. Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is then placed as described in Construction #1 and covered with a roof covering installed as described in Constructions #5a, #5b #5c or #5d below. Meets Class 1-60.

Construction #5a: Celotex Vapor Bar Base Sheet, min 4 in. (102 mm) wide laps or Johns Manville PermaPly No. 28 Base Sheet, min 3 in. (76 mm) wide laps, both max 36 in. (914 mm) wide is secured to the deck with ES Products FM-90 Base Ply Fasteners spaced max 8 in. (203 mm) o.c. through the laps and at max 16 in. (406 mm) o.c. staggered in two rows in the field of the sheet. The base sheet is covered with a min 3 ply glass felt hot asphalt applied BUR or a min 3 ply hot asphalt adhered modified bitumen roof covering. Meets Class 1-75.

Construction #5b: Soprema Sopra G Base Sheet, 36.37 in. (1000 mm) wide is secured to the deck with ES Products FM-90 Base Ply Fasteners spaced max 6 in. (152 mm) o.c. through min 4 in. (102 mm) wide laps and at max 12 in. (305 mm) o.c. staggered in two rows in the field of the sheet. The base sheet is covered with min 3 ply glass felt hot asphalt applied BUR or min 2 ply hot asphalt adhered modified bitumen roof cover. Meets Class 1-60.

Construction #5c: GAF GAFGLAS #75 Base Sheet or US Intec Ultra Base, 39.37 in. (1000 mm) wide with min 2 in. (50 mm) wide laps is secured to the deck with ES Products FM-90 Base Ply Fasteners spaced at max 8 in. (203 mm) o.c. through the laps and max 8 in. (203 mm) o.c. in two rows in the field of the sheet. The lap fasteners are in-line perpendicular to the laps. The fastener rows in the field of the sheet are evenly spaced between side laps with the fasteners in these rows offset 4 in. (102 mm) from lap fasteners. The base sheet is then covered with a min 3 ply glass felt hot asphalt applied BUR or a min of 1 ply of hot asphalt adhered or torch adhered modified bitumen roof cover. Meets Class 1-75.

Construction #5d: Danosa Glasdan R-36, Esterdan R-36-4, Basedan II; Garland HPR Tribase, HPR Glasbase, HPR Premium Glasbase; Hickman Performance Ply, Multi Ply Glas; J. Manville Dynalastic 180S, Dynabase, Glasbase, Permaply-28, Glas Ply Premier, Glas Ply IV, Glasbase Plus; Soprema Glass Base, Sopra IV, Sopra VI; Tamko Versa Base, Glass Base, Base-N-Ply, max 39.37 in. (1000 mm) wide with min 2 in. (50 mm) wide laps is secured to the deck with ES Products FM-90 Base Ply Fasteners spaced at max 8 in. (203 mm) o.c. through the laps and max 8 in. (203 mm) o.c. in two rows in the field of the sheet. The lap fasteners are in-line perpendicular to the laps. The fastener rows in the field of the sheet are evenly spaced between side laps with the fasteners in these rows offset 4 in. (102 mm) from lap fasteners. The base sheet is then covered with a min three-ply glass felt hot asphalt applied BUR or a min of one-ply of hot asphalt adhered or torch adhered modified bitumen roof cover. Meets Class 1-60.

Construction #6: Structural Concrete Deck, New Construction. Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is placed as described in Constructions #2 or #3 for new construction followed by a glass felt or modified bitumen roof cover as described in Construction #4c. Meets Class 1-90.

Construction #7: Structural Concrete Deck, Recover Construction. Celcore Cellular Concrete, min 36 lb/ft³ (577 kg/m³) wet cast density, is as described in Constructions #2 or #3 for recover construction followed by a glass felt or modified bitumen built up roof covering as described in Construction #4a. Meets wind uplift rating of the existing roof, max Class 1-90.

Construction #8: Steel Form Deck, New Construction. Min 0.029 in. (0.74 mm) thick, 1.5 in. (40 mm) deep Marlyn Steel Decks or Wheeling Corrugating Company Type B Wide Rib galvanized deck is secured to the structural supports spaced at max 5 ft (1.5 m) o.c. with ½ in. (13 mm) diameter puddle welds and washers placed at every corrugation and at each support where sides lap or as described in Constructions #4. Celcore Cellular Concrete, min 42 pcf (673 kg/m³) wet cast density, is then placed as described in Construction #1. A base sheet with roof cover is then secured as described in Construction #4a. Meets Class 1-150.

Construction #8a: Steel Form Deck, New Construction. Steel form deck per Construction #8 is secured to structural supports as described in Constructions #4d or #8. Celcore Cellular Concrete, min 42 lb/ft³ (673 kg/m³) wet cast density, is then placed as described in Construction #1. Base sheet, insulation and roof cover are applied as described in Construction #4b. Meets Class 1-90.

Construction #9: Structural Concrete Deck, New Construction. Celcore Cellular Concrete, min 42 pcf (673 kg/m³), is placed as described in Construction #2 or #3 for new construction. A roof cover is applied per Construction #8. Meets Class 1-150.

Construction #10: Structural Concrete Deck, Recover Construction. Celcore Cellular Concrete, min 42 pcf (673 kg/m³), is placed as described in Construction #2 or #3 for recover construction. A roof cover is applied per Construction #8. Meets the wind uplift rating of the existing roof, max Class 1-150.

Constructions Using Cellular Concrete, LLC (Mearlcrete) Roof Decks:

Construction #1: Steel Form Deck Construction. A slurry of Mearlcrete with a min 35 pcf (466 kg/m³) wet density is placed on the steel deck filling the corrugations plus a min of ⅛ in. (3 mm) thickness above the top flange, immediately followed by a min 1 in. (26 mm) thick Dyplast Holey Board or Mearl Corrugated EPS Board Polystyrene Insulation. The Deck is a United Steel deck Type B which is galvanized (G60) steel form deck, 24 ga. (0.025 in., 0.63 mm) thick, 1.5 in. (40 mm) deep. A min 2 in. (50 mm) Mearlcrete with a min 35 pcf (466 kg/m³) wet density is immediately placed over the Polystyrene Insulation. Within 36 to 72 hours (when walkable), a roof covering is then applied as described below.

Construction #1a: The steel deck is welded with standard ⅜ in. (10 mm) welding washes at every corrugation, average 6 in. (152 mm) o.c., into purlins positioned at a max of 5 ft (1.5 m) o.c. Steel deck overlaps are secured with two #10 steel self-tapping screws evenly spaced between purlins. The FM Approved* base sheets are mechanically fastened with ES Products FM 90 Base Ply Fasteners at 7½ in. (191 mm) o.c. in the 3 in. wide lap. In addition, fasteners are applied at 10 in. o.c. in two rows evenly divided and staggered in the field. An FM Approved min 3 ply organic or glass felt BUR or **Modified Bitumen Roof System is then constructed with hot asphalt or ***Approved single ply roof cover is fully adhered to surface of Mearlcrete. Meets Class 1-60.

Construction #1b: New structural concrete deck is covered with an asphaltic vapor retarder. An alternate method is to simply wet the new concrete surface with water just prior to applying the slurry coat, in both cases EPS is optional. When EPS is used, the remainder of the Mearlcrete system is constructed above the deck. When EPS is not utilized then the min thickness of Mearlcrete is 2 in. A roof cover is applied as in Construction #1a above.

Construction #2: Recover. An existing structural concrete deck covered with asphaltic BUR roof cover has the option of EPS in the slurry coat. When EPS is used, the remainder of the Mearlcrete system is constructed above the deck. When EPS is not utilized then the min thickness of Mearlcrete is 2 in. A roof cover is applied as in Construction #1a above. The recover wind classification is determined by the classification of the existing roof system.

*The FM Approved base sheets include the following: Glas Base, Dynabase, Vensulation, Glasply Premier, Perma Ply-R or IV or No. 28 or No. 80 or Perma Cap, Vapor Bar, Hydrostop, Gafglas Ply 4, Gafglas #75, Stratavent, Black Armor Glass Fiber, Black Armor Vented Base, Black Armor Fiber Felt, Black Armor Premium Glass Fiber Felt and GS Products Base Sheets.

**Modified Bitumen Roof System include the following: Johns Manville, GAF, GS and Tamko.

Construction #3: Steel Form Deck Construction. The deck is a United Steel Deck (vented) Type BV galvanized (G60) steel form deck, min 22 ga. (0.029 in. [0.75 mm]) thick, 1.5 in. (40 mm) deep, and 36 in. (914 mm) wide. The steel deck is welded with standard $\frac{3}{8}$ in. (10 mm) welding washers at every corrugation, average 6 in. (152 mm) o.c. into purlins positioned at a max of 5 ft (1.5 m) o.c. Steel deck overlaps are secured with two #10 steel self-tapping screws evenly spaced between purlins. A slurry coat of Mearlcrete cast with a wet density of 40 pcf (642 kg/m³) is placed on the form deck filling the corrugations plus a min of $\frac{1}{8}$ in. (3 mm) thickness above the top flange, immediately followed by an optional min 1 in. (26 mm) to 12 in. (305 mm) thick FM Approved **Dyplast** Corrugated Holey Board or Mearl Corrugated EPS Polystyrene Insulation. A min of 2 in. (50 mm) thick Mearlcrete cast with a wet density of 40 pcf (648 kg/m³) is placed over the Polystyrene Insulation. Unless otherwise noted, the 2 in thick top coat is to be applied immediately over the polystyrene insulation, if present. Within 36 to 72 hours, an FM Approved base sheet is mechanically fastened as described below. The base sheet is covered with a roof covering consisting of either a FM Approved min 3-ply organic or glass felt BUR or a min two-ply modified bitumen roof system that is FM Approved for use over the described base sheets (unless otherwise specified below). The modified bitumen manufacturers are GS Roofing Products Company, U.S. Intec, Malarkey Roofing Company, Johns Manville Corporation, The Garland Company, Soprema, Inc., GAF Materials Corporation, WP Hickman Systems, Inc. Tamko Roofing Products, Inc. or Celotex Corporation Note: If the steel roof deck is oily to the touch, it is washed with a mild vinegar solution. When the mild vinegar solution is used, precautions must be taken to avoid damage to building components that may be affected by acidity, a means of neutralization of the acid must be present.

Construction #3a: A base sheet of GAFGLAS #75, Garland HPR Glasbase, HPR Premium Glasbase or HPR Tribase, Johns Manville Glasbase, Glasbase Plus, PermaPly No. 28, or Dynabase, Soprema Sopra-G or Modified Sopra-G, WP Hickman Multi Ply Glass or Performance Ply, Tamko Vapor Chan, Glass Base, Base N Ply or Versa Base is mechanically fastened with ES Products FM-90 Base Ply Fasteners at 7 in. (178 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows spaced equally between the overlaps and staggered in the field of the sheet. A Hyload Hybase SAM intermediate ply is self-adhered to the base sheet and a Hyload SAM cap is self-adhered to the intermediate ply. Meets Class 1-60.

Construction #3b: A base sheet of Tamko Vapor Chan or Firestone APP 80 Glass Base, MB Base Sheet, APP 160, SBS Base Sheet, SBS Premium Base Sheet, SBS Smooth, SBS Poly Base is mechanically fastened with ES Products FM-90 Base Ply Fasteners at 7 in. (178 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows spaced equally between the overlaps and staggered in the field of the sheet. Tamko 39.37 in. (1 m) wide base sheet fastened at 6 in. (152 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows evenly divided and staggered in the field at 6 in. (152 mm) o.c. A FM Approved hot asphalt applied min 3-ply organic or glass felt BUR or min 2-ply modified bitumen roof system is applied. Meets Class 1-90.

Construction #3c: A base sheet of Soprema Sopra-G or Modified Sopra-G, GAFGLAS #75, Johns Manville Glasbase, Glasbase Plus, PermaPly No. 28, or Dynabase, WP Hickman Multi-Ply Glass or Performance Ply, Garland HPR Glasbase, HPR Premium Glasbase or HPR Tribase, Tamko Glass Base, Base N Ply, or Versa Base or Firestone APP 80 Glass Base, MB Base Sheet, APP 160, SBS Base Sheet, SBS Premium Base Sheet, SBS Smooth, SBS Poly Base is mechanically fastened with ES Products FM-90 Base Ply Fasteners at 7 in. (178 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows spaced equally between the overlaps and staggered in the field of the sheet. Tamko 39.37 in. (1 m) wide base sheet fastened at 6 in. (152 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows evenly divided and staggered in the field at 6 in. (152 mm) o.c. A FM Approved min 3-ply organic or glass felt BUR or min 2-ply modified bitumen roof system is applied. Meets Class 1-105.

Construction #3d: A base sheet of Firestone APP 80 Glass Base, MB Base Sheet, APP 160, SBS Base Sheet, SBS Premium Base Sheet, SBS Smooth, SBS Poly Base is mechanically fastened with ES Products FM-90 Base Ply Fasteners at 7 in. (178 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows spaced equally between the overlaps and staggered in the field of the sheet. The base sheet is covered with 2 plies of Firestone Type IV Ply Felt, each fully adhered with hot asphalt. Firestone APP 180 FR Cap sheet is torched applied. Meets Class 1-90.

Construction #4: New structural concrete deck is either covered with an asphaltic vapor retarder or simply wet the concrete surface with water just prior to applying the Mearlcrete slurry coat at a 40 pcf (648 kg/m³) wet density. The slurry coat is immediately followed by an optional min 1 in. (26 mm) to 12 in. (305 mm) thick FM Approved **Dyplast** Corrugated Holey Board or Mearl Corrugated EPS Polystyrene Insulation. When the polystyrene insulation is used, the 2 in. (50 mm) thick cap of Mearlcrete is cast with a min 40 pcf (648 kg/m³) wet density over the insulation. Unless otherwise noted, the 2 in thick top coat is to be applied immediately over the polystyrene insulation, if present. When the polystyrene insulation is not utilized, then the min 2 in. (50 mm) thick cap of Mearlcrete, cast with a min 40 pcf (648 kg/m³) wet density, is placed directly to the concrete deck. Within 36 to 72 hours, a roof cover is installed as noted in Construction #3. Meets Classifications noted in respective construction listings.

Constructions Using Concrete Roof Decks:

Construction #1: Steel Form Deck Construction – Concrete Bonding Agent spray is applied to the form deck using a compressed air sprayer at a nominal rate of 600 ft²/gal (14.7 m²/L). After the Bonding Agent dries, a slurry coat of Concrete Concrete, min 43 lb/ft³ (689 kg/m³) wet cast density, is placed on the form deck filling the corrugations plus a min $\frac{1}{4}$ in. (6 mm) above the top flange immediately followed by a single layer of min 1 in. (25 mm) thick to max 12 in. (305 mm) thick **Dyplast** Holey Board Polystyrene Insulation or Carpenter Holey Board Polystyrene Insulation. The Holey Board insulation is tapped in as it is placed to remove trapped air bubbles below. The following day, the Holey board is inspected and any portions not bonded to the slurry coat below are removed and replaced. Over the Holey Board min 2 $\frac{1}{4}$ in. (57 mm) thick Concrete Concrete, min 43 lb/ft³ (689 kg/m³) wet cast density, is placed. After setting to support foot traffic, Concrete Curing Compound is applied at a nominal rate of 600 ft²/gal (14.7 m²/L). A roof covering is then applied as describe in Constructions #4, #4a, #4b, #4c, #4d, #4e, #4f and #4g.

Construction #2: Structural Concrete Deck, New or Recover Construction – New Structural concrete deck is covered with an asphaltic vapor retarded (optional). A min ¼ in. (6 mm) thick slurry coat of Concreteceel Concrete, min 43 lb/ft³ (689 kg/m³) wet cast density, is placed on the deck, asphaltic vapor retarder or existing asphaltic BUR roof followed by **Dyplast** Holey Board Polystyrene Insulation or Carpenter Holey Board Polystyrene Insulation and the remainder of the Concreteceel Concrete system installed as described in Construction #1 above. A roof covering is then applied as described in Constructions #5a, #5b, #5c, #5d, #5e, and #5f.

Construction #3: Structural Concrete Deck, New or Recover Construction – Min 2¼ in. (57 mm) thick Concreteceel Concrete, min 43 lb/ft³ (689 kg/m³) wet cast density, is placed on the substrates described in Construction #2 above followed by Concreteceel Curing Compound applied as in Construction #1 above. A roof covering is then applied as described in Constructions #6a, #6b, #6c, #6d, #6e, and #6f.

Construction #4: Steel Form Deck, New Construction – Min 0.030 in. (0.76 mm) thick Wheeling Corrugating Company BW36-22 GALV 90 Slotted, 0.5% pen area, 1.5 in. (40 mm) deep steel form deck is secured to the structural supports with min ⅝ in. (16 mm) diameter puddle welds and washers placed at every corrugation (6 in. [152 mm] o.c.). Structural supports are spaced at max 5 ft (1.5 m) o.c. Concreteceel Concrete is placed as described in Construction #1 above.

Construction #4a: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. Johns Manville Glasply Premier base sheet or W.P. Hickman Performance Ply Base Sheet or Firestone APP 80 Glass Base, MB Base Sheet, APP 160, SBS Base Sheet, SBS Premium Base Sheet, SBS Smooth, SBS Poly Base max 36 in. (914 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. through min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with a min 2 ply hot asphalt adhered modified bitumen roof cover or 2 plies of glass felt plus 1 ply of modified bitumen roof cover, all hot asphalt adhered. Meets Class 1-165.

Construction #4b: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. Tremco BURmastic Composite Ply Base base sheet, max 36 in. (914 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. through min 4 in. (102 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with a min 2 ply hot asphalt adhered modified bitumen roof cover or min 3 ply glass felt hot asphalt adhered BUR. Meets Class 1-135.

Construction #4c: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. Performance Roof Systems Deribase base sheet, max 39⅞ in. (1000 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. through min 4 in. (102 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with a min 1 ply hot asphalt adhered modified bitumen roof cover or Performance Roof Systems torch adhered modified bitumen roof cover or min 3 ply glass felt hot asphalt adhered BUR. Meets Class 1-120.

Construction #4d: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. GS Roofing Glasbase base sheet, max 36 in. (914 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. through min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with an additional ply of Glasbase and a min 1 ply hot asphalt adhered modified bitumen roof cover or min 3 ply glass felt hot asphalt adhered BUR. Meets Class 1-105.

Construction #4e: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. Johns Manville Schuller Glas Base base sheet, max 36 in. (914 mm) wide or W.P. Hickman Performance Ply base sheet, max 39⅞ in. (1000 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. through min 4 in. (102 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with an additional ply of Glasbase or Performance Ply and a min 1 ply hot asphalt or torch adhered modified bitumen roof cover or min 3 ply glass felt hot asphalt adhered BUR. Meets Class 1-90.

Construction #4f: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. Danosa Caribbean Basedan II base sheet, max 36 in. (914 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. through min 4 in. (102 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with min 1 ply hot asphalt or torch adhered modified bitumen roof cover or min 3 ply glass felt hot asphalt adhered BUR. Meets Class 1-60.

Construction #4g: Steel Form Deck, New Construction – Steel form deck and Concreteceel Concrete are placed per Constructions #1 and #4. GAF GAFGLAS #75 Base Sheet, max 39.37 in. (1000 mm) wide, is fastened to the deck using ES Products FM-90 Base Ply Fasteners applied at max 7 in. (178 mm) o.c. in the min 3 in. (76 mm) wide laps and at max 7 in. (178 mm) o.c. in two evenly spaced rows in the field of the sheet. The base sheet is covered with a min 3 Ply glass felt hot asphalt adhered BUR. Meets Class 1-60.

Construction #5: Structural Concrete Deck, New Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 for new construction. A roof covering is applied per Construction #4a. Meets Class 1-165.

Construction #5a: Structural Concrete Deck, New Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 for new construction. A roof covering is applied per Construction #4b. Meets Class 1-135.

Construction #5b: Structural Concrete Deck, New Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 for new construction. A roof covering is applied per Construction #4c. Meets Class 1-120.

Construction #5c: Structural Concrete Deck, New Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 for new construction. A roof covering is applied per Construction #4d. Meets Class 1-105.

Construction #5d: Structural Concrete Deck, New Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 for new construction. A roof covering is applied per Construction #4e. Meets Class 1-90.

Construction #5e: Structural Concrete Deck, New Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 for new construction. A roof covering is applied per Construction #4f or #4g. Meets Class 1-60.

Construction #6: Structural Concrete Deck, Recover Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 above for recover construction. A roof covering is applied per Construction #4a. Meets windstorm rating of existing roof, max Class 1-165.

Construction #6a: Structural Concrete Deck, Recover Construction – Concreteceel Concrete is placed as described in Construction #2 or #3 above for recover construction. A roof covering is applied per Construction #4b. Meets windstorm rating of existing roof, max Class 1-135.

Construction #6b: Structural Concrete Deck, Recover Construction – Concrecel Concrete is placed as described in Construction #2 or #3 above for recover construction. A roof covering is applied per Construction #4c. Meets windstorm rating of existing roof, max Class 1-120.

Construction #6c: Structural Concrete Deck, Recover Construction – Concrecel Concrete is placed as described in Construction #2 or #3 above for recover construction. A roof covering is applied per Construction #4d. Meets windstorm rating of existing roof, max Class 1-105.

Construction #6d: Structural Concrete Deck, Recover Construction – Concrecel Concrete is placed as described in Construction #2 or #3 above for recover construction. A roof covering is applied per Construction #4e. Meets windstorm rating of existing roof, max Class 1-90.

Construction #6e: Structural Concrete Deck, Recover Construction – Concrecel Concrete is placed as described in Construction #2 or #3 above for recover construction. A roof covering is applied per Construction #4f or #4g. Meets windstorm rating of existing roof, max Class 1-60.

Constructions Using Elastizell Roof Decks:

Construction #1: Steel Form Deck Construction – A slurry of Range II Elastizell Lightweight Insulating Concrete is placed on the form deck filling the corrugations plus a min of 1/8 in. (3 mm) thickness above the top flange, immediately followed by min 1 in. (26 mm) to a max 12 in. (305 mm) thickness of *FM Approved Polystyrene Insulation for a 1-60 wind classification and a min 2 in. (50 mm) to a max 12 in. (305 mm) thickness of Polystyrene Insulation for a 1-90 wind classification. The deck is either Wheeling Corrugating Company Type BW fluted (vented or nonvented unless specified) galvanized (G60) steel form deck which is 22 ga. [0.036 in. (0.91 mm)], 1.5 in. (40 mm) deep and 36 in. (0.91 m) wide or Wheeling Corrugating Company vented or nonvented Tensiform 75 which is 26 ga. [0.018 in. (0.46 mm)], 1 1/16 in. (24 mm) deep, and 30 in. (0.76 m) wide. A min of 2 in. (50 mm) thick Range II Elastizell Lightweight Insulating Concrete is immediately placed over the Polystyrene Insulation. Within 48 to 72 hours an **FM Approved base sheet is mechanically fastened as described below. The base sheet is covered with a roof covering consisting of a FM Approved 3 ply organic or glass felt BUR or min 2 ply torched or hot asphalt applied modified bitumen roof cover. An alternate construction is to install a hot asphalt applied*** FM Approved insulations over the base sheet followed by either the described BUR or modified bitumen roof cover.

Construction #1a: The steel deck Tensiform 75 26 ga. [0.018 in. (.46 mm)], 1 1/16 in. (24 mm) deep, and 30 in. (0.76 m) wide welded with standard 3/8 in. (10 mm) welding washes at every other corrugation at 7 1/2 in. (190 mm) o.c. directly to the structural steel joists spaced 5 ft (1.5 m) o.c. Steel deck overlaps are secured with 3 #10 steel self tapping screws evenly spaced between purlins. The FM Approved base sheets are mechanically fastened with ES Products FM 90 Base Ply Fasteners at 7 1/2 in. (191 mm) o.c. in the 4 in. (102 mm) wide lap. In addition, fasteners are applied 7 1/2 in. o.c. (191 mm) in two rows evenly divided and staggered in the field of the sheet. Tamko 39.37 in. (1 m) wide base sheet fastened at 6 in. (152 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows evenly divided and staggered in the field at 6 in. (152 mm) o.c. in the field. The base sheet is covered or the single ply alternate applied as described in Construction #1. Meets Class 1-60.

Construction #1b: The steel deck Type BW galvanized (G60) fluted steel form deck (vented), 22 ga. [0.030 in. (0.76 mm)], has 1.5 in. (40 mm) deep corrugations, and is a 36 in. (0.91 m) wide sheet. The deck is welded with standard 3/8 in. (10 mm) welding washers at every lower corrugation directly into the structural steel joists spaced 6 ft (1.8 m) o.c. Steel deck overlaps are secured with 3 #10 steel self tapping screws evenly spaced between purlins. The FM Approved base sheets are mechanically fastened with ES Products FM 90 Base Ply Fasteners at 7 1/2 in. (191 mm) o.c. in the 4 in. (102 mm) wide lap. In addition, fasteners are applied 7 1/2 in. o.c. (191 mm) in two staggered rows evenly divided and staggered in the field of the sheet. Tamko 39.37 in. (1 m) wide base sheet fastened at 6 in. (152 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows evenly divided and staggered in the field at 6 in. (152 mm) o.c. in the field. The base sheet is covered or the single ply alternate applied as described in Construction #1. Meets Class 1-60.

Construction #1c: The steel deck – Type BW galvanized (G60) fluted steel form deck 22 ga. [0.030 in. (0.76 mm)], 1.5 in. (40 mm) deep and 36 in. (0.91 m) wide, welded at every corrugation 6 in. (152 mm) o.c. with average 5/8 in. (16 mm) dia. puddle welds, directly to the structural steel joists spaced 5 ft (1.5 m) o.c. Steel deck overlaps are secured with 2 #10 steel self tapping screws evenly spaced between purlins. The FM Approved base sheets are mechanically fastened with ES Products FM 90 Base Ply Fasteners at 7 in. (178 mm) o.c. in the 4 in. (102 mm) wide lap. In addition, fasteners are applied at 7 in. (178 mm) o.c. in two rows evenly divided and staggered in the field of the sheet. Tamko 39.37 in. (1 m) wide base sheet fastened at 6 in. (152 mm) o.c. in the 4 in. (102 mm) wide lap and in two rows evenly divided and staggered in the field at 6 in. (152 mm) o.c. in the field. The base sheet is covered or the single ply alternate applied as described in Construction #1. Meets Class 1-90.

*The FM Approved Polystyrene include the following: **Dyplast** Holey Board, Starfoam Manufacturing, Inc. Star-R-Foam Gripper-HB Smooth, Starfoam Manufacturing, Inc. Star-R-Foam Smooth.

**The FM Approved Base Sheets include the following: Black Armor Glass Fiber Base Sheet, Black Armor Vented Glass Fiber Base Sheet, Black Armor Glass Fiber Felt, Black Armor Premium Glass Fiber Felt, Millennium Base Sheet, Prebase Base Sheet, Firestone MB Base, Firestone SBS Base Sheet, Firestone SBS Premium Base Sheet, Firestone APP 160, Firestone SBS Smooth, GAFGLAS #75, Stratavent Eliminator Venting Base Sheet (Nailable), GAFGLAS Ply 4, GAFGLAS Ply 6, GAFGLAS Mineral Surface Cap Sheet (granules down), All Weather/Empire, GS Flex-I-Glas Base, GS Flex-I-Glas FR, GS Poly SMS, Garland HPR Glasbase, Garland HPR Premium Glasbase, Garland Tribase, DynaBase, GlasBase, Glasply Premier, Glasply IV, Johns Manville App Base Sheet, Nordflex Duo Ply FR Base, Nord G-2 Base, Perma Ply No. 28, Perma Ply-R, Ventsulation, Glass Fiber Base Sheet, Organic Base Sheet, #502 Premium Fiberglass Mineral Cap Sheet (granules down), #515 Fiberglass Standard Base Sheet, #501 Premium 1 Fiberglass SBS Base Sheet, #605 Panoply SBS Base Sheet, Derbibase, Glass Ply IV, Glass Base, Irex 30, Irex HT, Parabase, Parabase Plus, Sopra-G, Sopraglass 100, Glass-Base, Vapor-Chan, Versa Base, BURmastic Glass Ply-28#, BURmastic Glass Ply, BURmastic Composite Ply, Ultra Cap (granules down), Intec Modified Base Plus, Intec Modified Base 190P, Flex Base 30, Flex Base 60, Permavent, Ultra Base, Julti-Ply Glass Ply, Multi-Ply Glass CL and Performance Ply.

***The FM Approved insulations include the following: Min 1/2 in. (13 mm) thick Armor Board High Density Fiberboard, BP High Density Fiberboard, BP High Strength Fiberboard, Traffic Top Fiberboard, High Density Fiberboard, FM-90 Traffic Top Fiberboard, FM-90 High Density Fiberboard, EnergyGuard High Density Roof Fiberboard, High Density Roof Fiberboard, Fiber Base HD1, Fiber Base HD6, Structodek, Permagrip Board, GAFTAMP Recover Board, GAFTAMP Perlite Recover Board, Insul-Roof or GAFTAMP Perlite, Permalite, GAFTAMP Permalite, Fesco Board, **EnergyGuard Perlite Roof Insulation**. Min 1 in. (26 mm) thick Armor Board Regular Fiberboard, Escard Fiberboard Roof Insulator, Celotex Fiberboard or Kopp-R Wood Fiber. Min 1.5 in. (40 mm) thick Armor Plus, Armor R Plus, Armor R Plus Tapered, AC Foam Composite/PB, Armor R Plus, Hy Therm AP, Hy-Therm Composite, Hy Therm tapered, Polycon Posite, ISO 95+ GL, ISO 95+ Composite, GAFTAMP Composite, GAFTAMP Isotherm RA, GAFTAMP Tapered Isotherm RA, Kop-R, Kop-R Composite, Kop-R (WC), Kop-R (WII), Kop-R (WII) Tapered, ENRGY 3 Plus, Fesco Foam PSI-25, Tapered PSI-25, Foamglas Board, Thermal Tec, Thermal Tec Tapered, Thermarof Composite, Multi Max, Fesco Foam, DuraBoard, UltraGard, UltraGard Tapered, Trisotech G2, Trisotech GF, USIso, USIso Tapered, USIso/Perlite Composite or min 2 in. (50 mm) thick Arcor FM or Fescor.

Construction #2: Steel Form Deck – Range II Elastizell Lightweight Insulating Concrete is cast according to Construction #1, #1a, #1b or #1c. Dynabase, Ventsulation, Glasply Premier, Perm Ply-R, PermaPly No. 28 or Glasbase or GAF Materials GAFGLAS #75, Stratavent Eliminator Venting Base Sheet (Nailable), GAFGLAS Mineral Surface Cap Sheet, GAFGLAS Ply 4 or GAFGLAS Ply 6 base sheet is secured to the deck using ES Products FM-90 Base Ply Fasteners applied at specified in Construction #1, #1a, #1b or #1c. A roof covering per Construction #1, #1a, #1b or #1c is then applied. Meets Class 1-60/1-90 per form deck type and base sheet securement.

Construction #3: Steel Form Deck – Range II Elastizell Lightweight Insulating Concrete is cast according to Construction #1 and #1c. An FM Approved base sheet** is fastened with ES Products FM 90 Base Ply Fasteners at 7 in. (178 mm) o.c. in the 4 in. (102 mm) wide lap and at 7 in. (178 mm) o.c. in two rows evenly divided and staggered in the field of the sheet. Optional insulation and coverboard as noted are adhered with hot asphalt. Two plies of a base sheet FM Approved with Hyload roof systems are adhered to the coverboard or base sheet followed by Hyload 150E or 250E adhered with asphalt. See Hyload listing for details. Meets Class 1-90.

Insulations: AC Foam-II, HyTherm AP or Multi-Max FA.

Coverboards: Min ¾ in. (19 mm) thick ConPerl, GAFTEMP Permalite, Permalite, Fesco Board, [EnergyGuard Perlite Roof Insulation](#).

Constructions Using Siplast Roof Decks:

Construction #1: Lightweight Insulating Concrete over concrete or recover concrete. NVS Concrete placed over structural concrete deck or properly prepared existing BUR or Paradiene 20, Irex base sheets torch applied, fully adhered with hot asphalt or PA 311 over structural concrete deck to min ⅛ in. (3 mm) thick immediately followed by min 1 in. (25 mm) thick Insulperm-1 or 5 insulation and followed immediately by min 1 in. (25 mm) thick NVS concrete. Roof system as described below:

Construction #1a: Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck with NVS Base Sheet Fasteners with Discs or ES Products FM-75 Base Ply Fasteners spaced 7 in. (178 mm) o.c. in the 3 in. (76 mm) wide base sheet lap and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. Fastener heads primed with PA-1125 Primer and then any Paradiene 20 series base membrane fully adhered with hot asphalt followed by any Paradiene 30 TG series roof cover hot torch adhered. Meets Class 1-150 over concrete. Meets the rating of the existing BUR up to Class 1-150.

Construction #1b: Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the concrete with ES Products FM-75 Base Ply Fasteners; FM-45 Base Ply Fasteners and FM-30 Discs or NVS Base Sheet Fastener with Disc spaced 7½ in. (190 mm) o.c. in the 3 in. (76 mm) wide side laps and 10 in. (254 mm) o.c. in two equally spaced and staggered rows in the field of the sheets. Optional one or two plies of FM Approved Type IV or Type VI glass felts fully adhered with hot asphalt. Two-ply roof cover system applied as above. Meets Class 1-90 over concrete. Meets the rating of the existing BUR up to Class 1-90.

Construction #1c: Three days after the top coat is placed, Parabase base sheet is mechanically fastened to the deck with NVS Base Sheet Fasteners with Discs or ES Products FM-75 Base Ply Fasteners spaced 7 in. (178 mm) o.c. in the 3 in. (76 mm) wide base sheet lap and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. Fastener heads primed with PA-1125 Primer and then any Paradiene 20 series base membrane fully adhered with PA-311 Cold Adhesive, applied at 1.5 gal/sq (0.6 L/m²) followed by any Paradiene 30 series roof cover fully adhered with PA-311 Cold Adhesive, applied at 1.5 gal/sq (0.6 L/m²). Meets Class 1-90 over concrete.

Construction #2: Lightweight Insulating Concrete (NVS) over steel form deck new construction or recover. Consolidated Systems, Inc. min 22 ga., 1.5 in. (40 mm) deep. Type B-Vented galvanized steel form deck conforming to ASTM A 653 Grade 40 secured to structural steel joists spaced 6 ft (1.8 m) o.c. with ⅝ in. (9.5 mm) diameter weld washers, at each bottom rib [6 in. (152 mm) o.c.]. ⅝ in. (16 mm) Dens Deck is mechanically fastened with 2 in. (50 mm) Siplast Parafast XHD or Tru-Fast HD 2 in. (50 mm) fasteners and Siplast Parafast Metal Plates or Tru-Fast MP-3 plates applied at 1.6 ft² (0.5 m²). Two plies of FM Approved Type IV glass felt 18 in. (457 mm) o.c. coverage are fully adhered with hot asphalt. Alternatively, one layer of Paradiene 20 or Irex series base sheet may be installed in hot asphalt or torch adhered. A ⅛ in. (3 mm) to ¼ in. (6 mm) slurry coat of NVS Concrete, min wet cast density of 75 lbs/ft³, is placed over the glass felts immediately followed by min 1 in. (25 mm) thick Insulperm-5 Insulation. The following day a min of 1 in. (25 mm) thick top coat of NVS Concrete with a wet density of 60 lbs/ft³ is applied over the Insulperm-5. Roof Systems as described below:

Construction #2a: Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck with NVS Fasteners or ES Products FM-75 Base Ply Fasteners spaced 7 in. (254 mm) o.c. in the 3 in. (76 mm) wide base sheet laps and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. A Paradiene 20 series or Irex series base membrane is fully adhered with hot asphalt or hot torch adhered if torch grade membrane is used followed by a Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-150.

Construction #3: Lightweight Insulating Concrete (1:4 ZIC and Insulcel) over steel form deck, new construction. Consolidated Systems, Inc. min 22 ga., 1.5 in. (40 mm) deep, Type B-Vented galvanized steel conforming to ASTM A 653 Grade 40 form deck secured to structural steel joists spaced 5 ft (1.5 m) o.c. with ⅝ in. (9.5 mm) diameter weld washers, at each bottom rib [6 in. (152 mm) o.c.] or Wheeling Corrugating Company min 24 ga., Tensilvent 125 deck secured to structural steel joists spaced 5 ft (1.5 m) o.c. with ⅝ in. (9.5 mm) diameter weld washers, at each bottom rib [3¾ in. (95 mm) o.c.]. A slurry coat of Insulcel Lightweight Insulating Concrete, min wet cast density of 44 lb/ft³ (700 kg/m³), is placed on the deck filling the corrugations plus min ⅛ in. (3 mm) thick above the top flange immediately followed by min 1 in. (25 mm) thick Insulperm-5 Insulation. The following day, min 2 in. (50 mm) thick Insulcel Lightweight Insulating Concrete, min wet cast density of 44 lb/ft³ (700 kg/m³), or min 2 in. (50 mm) thick ZIC (1:4 mix), min wet cast density of 61 lb/ft³ (980 kg/m³), is placed. Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck with Zono-tite fasteners or ES Products FM-60 Base Ply Fasteners and FM-30 disks, FM-90 Base Ply Fasteners, spaced 7 in. (178 mm) o.c. in the 3 in. (76 mm) wide base sheet lap and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. Fastener heads primed with PA-1125 Primer and then any Paradiene 20 series or Irex base membrane fully adhered with hot asphalt or torch adhered if torch grade membrane is used followed by any Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-150 when Type B-Vented deck is used. Meets Class 1-135 when Tensilvent 125 deck is used.

Construction #3a: A slurry coat of ZIC (1:4 mix), min wet cast density of 61 lb/ft³ (980 kg/m³), is placed on the deck filling the corrugations plus min ⅛ in. (3 mm) thick above the top flange immediately followed by min 1 in. (25 mm) thick Insulperm-5 Insulation. The following day, min 2 in. (50 mm) thick ZIC (1:4 mix), min wet cast density of 61 lb/ft³ (980 kg/m³), is placed. Meets class 1-120.

Construction #4: Tensilvent 75 or Tensilvent 125, 26 ga. steel form deck on max 5 ft (1.5 m) spans is secured to the structural substrate with welds utilizing ⅝ in. (10 mm) dia. weld washers located at every other corrugation (approximately 7½ in. [190 mm] o.c.) or at every corrugation (approximately 3¾ in. [95 mm] o.c.). Insulcel, Zonocel, ZIC 1:6, or ZIC 1:4 concrete is placed over the form deck to a min ⅛ in. (3 mm) thickness above the top flange of the form deck. Min 2 in. (50 mm) thick Insulperm polystyrene insulation is immediately placed in the concrete. A min 2 in. (50 mm) thickness of . Insulcel, Zonocel, ZIC 1:6, or ZIC 1:4 concrete is then immediately placed above the insulation and the surface is screeded. A roof covering is then applied as described immediately below.

Construction #4a: Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck by driving Zono-tite or ES Products FM-90 Base Ply Fasteners spaced 14 in. (355 mm) o.c. through the 3 in. (76 mm) wide base sheet laps and 14 in. (355 mm) o.c. in two equally spaced rows in the field of the sheet. Paradiene 20 series or Irex series base membrane is fully adhered with hot asphalt or hot torch adhered if torch grade membrane is used (hot torch not allowed when using Base-Lok Fastener) followed by a Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-75.

Construction #5: Lightweight Insulating Concrete (Insulcel) over steel form deck new construction or recover. Consolidated Systems, Inc. min 22 ga., 1.5 in. (40 mm) deep. Type B-Vented galvanized steel form deck conforming to ASTM A 653 Grade 40 (ASTM standard applies to 1-150 rating only) secured to structural steel joists spaced 6 ft (1.8 m) o.c. with $\frac{3}{8}$ in. (9.5 mm) diameter weld washers, at each bottom rib [6 in. (152 mm) o.c.]. $\frac{5}{8}$ in. (16 mm) Dens Deck is mechanically fastened with 2 in. (50 mm) Siplast Parafast XHD or Tru-Fast HD 2 in. (50 mm) fasteners and Siplast Parafast Metal Plates or Tru-Fast MP-3 plates applied at 1.6 ft² (0.5 m²). Two plies of FM Approved Type IV glass felt 18 in. (457 mm) o.c. coverage are fully adhered with hot asphalt. Alternatively, one layer of Paradiene 20 or Irex series base sheet may be installed in hot asphalt or torch adhered. A $\frac{1}{8}$ in. (3 mm) to $\frac{1}{4}$ in. (6 mm) slurry coat of Insulcel Lightweight Insulating Concrete is placed over the glass felts immediately followed by min 1 in. (25 mm) thick Insulperm-5 Insulation. The following day a min of 2 in. (50 mm) thick top coat of Insulcel Lightweight Insulating Concrete is applied over the Insulperm-5. Roof Systems as described below:

Construction #5a: Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck by driving Zono-tite fasteners or ES Products FM-90 Base Ply Fasteners spaced 7 in. (178 mm) o.c. through the 3 in. (76 mm) wide base sheet laps and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. Fastener heads are primed with PA-1125 Primer and then Paradiene 20 series or Irex series base membrane is fully adhered with hot asphalt or hot torch adhered if torch grade membrane is used followed by a Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-150 (new) or windstorm classification of the existing roof assembly with a maximum of Class 1-150.

Construction #5b: Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck by driving Zono-tite or ES Products FM-90 Base Ply Fasteners spaced 14 in. (355 mm) o.c. through the 3 in. (76 mm) wide base sheet laps and 14 in. (355 mm) o.c. in two equally spaced rows in the field of the sheet. Paradiene 20 series or Irex series base membrane is fully adhered with hot asphalt or hot torch adhered if torch grade membrane is used (hot torch not allowed when using Base-Lok Fastener) followed by a Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-75.

Construction #6: Lightweight Insulating Concrete (Insulcel) over Concrete or Recover Concrete. Insulperm is optional in this construction. When Insulperm is used, a slurry coat of Insulcel Lightweight Insulating Concrete is placed over the structural concrete deck or properly prepared existing built up roof over structural concrete to a minimum $\frac{1}{8}$ in. (3 mm) thick immediately followed by 1 in. (25 mm) thick Insulperm-1 or 5 Insulation. The following day, minimum 2 in. (50 mm) thick Insulcel Lightweight Insulating Concrete is placed. Roof Systems as described below:

Construction #6a: Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck by driving Zono-tite fasteners or ES Products FM-90 Base Ply Fasteners spaced 7 in. (178 mm) o.c. through the 3 in. (76 mm) wide base sheet laps and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. Zono-tite fastener heads are primed with PA-1125 Primer and then Paradiene 20 series or Irex series base membrane is fully adhered with hot asphalt or hot torch adhered if torch grade membrane is used followed by a Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-150 (new) or windstorm classification of the existing roof assembly with a maximum of Class 1-150.

Construction #6b: Three days after the top coat is placed, Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the deck by driving Zono-tite, ES Products FM-60 base ply fasteners and FM-30 discs, or FM-90 Base Ply Fasteners spaced 14 in. (178 mm) o.c. through the 3 in. (76 mm) wide base sheet laps and 14 in. (254 mm) o.c. in two equally spaced rows in the field of the sheet. Paradiene 20 series or Irex series base membrane is fully adhered with hot asphalt or hot torch adhered if torch grade membrane is used (hot torch not allowed when using Base-Lok Fastener) followed by a Paradiene 30 series, Paradiene 40 FR, Veral or Parafor 50 LT roof cover with hot asphalt or hot torch adhered if torch grade. Meets Class 1-75 (new) or windstorm classification of the existing roof assembly with a maximum of Class 1-75.

Construction #7: Lightweight Insulating Concrete. Zonocel Lightweight Insulating Concrete or Zonolite Insulating Concrete (see lightweight insulating concrete deck construction below). Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the concrete with ES Products FM-60 Base Ply Fasteners and FM-30 Discs, FM-90 Base Ply Fasteners, or Zono-tite Base Sheet Fastener with Disc spaced 7 $\frac{1}{2}$ in. (190 mm) o.c. in the 3 in. (76 mm) wide side laps and 10 in. (254 mm) o.c. in two equally spaced and staggered rows in the field of the sheets. Optional one or two plies of FM Approved Type IV or Type VI glass felts fully adhered with hot asphalt. Two-ply roof cover system applied as above. Meets Class 1-90.

Construction #8: Lightweight Insulating Concrete. Insulcel Lightweight Insulating Concrete (see lightweight insulating concrete deck construction below). Parabase, Parabase FS or Parabase Plus base sheet is mechanically fastened to the concrete with ES Products FM-90 Base Ply Fastener, or Zono-tite Base Sheet Fastener with Disc spaced 7 $\frac{1}{2}$ in. (190 mm) o.c. in the 3 in. (76 mm) wide side laps and 10 in. (254 mm) o.c. in two equally spaced and staggered rows in the field of the sheets. Optional one or two plies of FM Approved Type IV or Type VI glass felts fully adhered with hot asphalt. Two-ply roof cover system applied as above. Roof cover system is sealed airtight to the deck at the perimeter and all penetrations. Meets Class 1-60.

Construction #9: Lightweight Insulating Concrete over steel form deck, new construction. Consolidated Systems, Inc. min 22 ga., 1.5 in. (40 mm) deep, Type B-Vented galvanized steel conforming to ASTM A 653 Grade D form deck secured to structural steel joists spaced 5 ft (1.5 m) o.c. with $\frac{3}{8}$ in. (9.5 mm) diameter weld washers, at each bottom rib [6 in. (152 mm) o.c.] or Wheeling Corrugating Company min 24 ga., Tensilvent 125 deck secured to structural steel joists spaced 5 ft (1.5 m) o.c. with $\frac{3}{8}$ in. (9.5 mm) diameter weld washers, at each bottom rib [3 $\frac{3}{4}$ in. (95 mm) o.c.]. A slurry coat of Insulcel Lightweight Insulating Concrete, min wet cast density of 44 lb/ft³ (700 kg/m³), is placed on the deck filling the corrugations plus min $\frac{1}{8}$ in. (3 mm) thick above the top flange immediately followed by min 1 in. (25 mm) thick Insulperm-5 Insulation. The following day, min 2 in. (50 mm) thick Insulcel Lightweight Insulating Concrete, min wet cast density of 44 lb/ft³ (700 kg/m³), or min 2 in. (50 mm) thick Zonolite Insulating Concrete (1:4 mix), min wet cast density of 61 lb/ft³ (980 kg/m³), is placed. Three days after the top coat is placed, Parabase base sheet is mechanically fastened to the deck with Zonolite fasteners or ES Products FM-90 Base Ply Fasteners spaced 7 in. (178 mm) o.c. in the 3 in. (76 mm) wide base sheet lap and 10 in. (254 mm) o.c. in three equally spaced rows in the field of the sheet. Fastener heads primed with PA-1125 Primer and then any Paradiene 20 series base membrane fully adhered with hot asphalt followed by any Paradiene 30 TG series roof cover hot torch adhered. Meets Class 1-150 when Type B-Vented deck is used. Meets Class 1-135 when Tensilvent 125 deck is used.

Construction #10: Lightweight Insulating Concrete over steel form deck, new construction. Steel form deck as in Construction #20. A slurry coat of Zonolite Insulating Concrete (1:4 mix), min wet cast density of 61 lb/ft³ (980 kg/m³), is placed on the deck filling the corrugations plus min $\frac{1}{8}$ in. (3 mm) thick above the top flange immediately followed by min 1 in. (25 mm) thick Insulperm-5 Insulation. The following day, min 2 in. (50 mm) thick Zonolite Insulating Concrete (1:4 mix), min wet cast density of 61 lb/ft³ (980 kg/m³), is placed. Roof System as in Construction #20 meets class 1-120.

Roof Covers:	Asphaltic BUR, Modified Bitumen
Deck:	Zonocel Lightweight Insulating Concrete, NVS Insulating Concrete, Zonolite Insulating Concrete, Insulcel Lightweight Insulating Concrete
Base Sheet:	See below.

Construction #11: Tensilvent 75 or Tensilvent 125, 26 ga. steel form deck on max 5 ft (1.5 m) spans is secured to the structural substrate with welds utilizing $\frac{3}{8}$ in. (10 mm) dia. weld washers located at every other corrugation (approximately $7\frac{1}{2}$ in. [190 mm] o.c.) or at every corrugation (approximately $3\frac{3}{4}$ in. [95 mm] o.c.). Zonocel or Zonolite concrete is placed over the form deck to a min $\frac{1}{8}$ in. (3 mm) thickness above the top flange of the form deck. Min 2 in. (50 mm) thick Insulperm polystyrene insulation is immediately placed in the concrete. A min 2 in. (50 mm) thickness of Zonocel or Zonolite concrete is then immediately placed above the insulation and the surface is screeded. When Insulperm is used, the top coat of concrete must be placed before the bottom layer sets up. A roof covering is then applied as described immediately below.

Construction #11a: A base sheet is mechanically fastened to the concrete with fasteners spaced $7\frac{1}{2}$ in. (190 mm) o.c. in the 4 in. (102 mm) wide side laps and 10 in. (254 mm) o.c. in two equally spaced and staggered rows in the field of the sheets. Optional one or two plies of FM Approved Type IV or Type VI glass felts fully adhered with hot asphalt. A min 3-ply asphaltic BUR or min 3-ply asphalt adhered modified bitumen roof covering FM Approved for use over the base sheet is applied. Meets Class 1-90 when the form deck is secured at every flute or 1-60 when the form deck is secured at every other flute.

FM Approved mechanically fastened base sheets and base sheet fasteners are 1) Parabase, Parabase Plus, Ventsulation, GlasBase, Stratavent Eliminator Venting Base Sheet (Nailable), GAFGLAS #75, Dynabase, Tarmac SBS Base, or Perma Ply-R with FM-90 Base Ply Fasteners; FM-60 Base Ply Fasteners and FM-30 Ddiscs or 2) Parabase, Parabase Plus, Ventsulation, Dynabase, or BURmastic Composite Ply with ES Products FM-90 Base Ply Fasteners or Zono-tite Base Sheet Fastener with Disc.

Construction #12: NVS or Zonocel Concrete poured over structural concrete deck or a properly prepared existing BUR over structural concrete deck to min $\frac{1}{8}$ in. (3 mm) thickness. Min 1.0 in. (25 mm) thick Insulperm insulation is immediately applied over the slurry and followed by min 1 in. (25 mm) thick NVS or min 2 in. (50 mm) Zonocel concrete. A roof covering is then applied as described below.

Construction #12a: Base sheet, optional ply sheets and FM Approved 3-ply BUR (organic or glass felt) applied as in Construction #1a above. Roof cover system is sealed to deck in an airtight manner at the perimeter and all penetrations. Meets Class 1-120.

Construction #12b: Base sheet, optional ply sheets and FM Approved 3-ply BUR (organic or glass felt or modified bitumen) applied as in Construction #1a above. Meets Class 1-90.

Construction #13: NVS or Zonocel concrete poured over structural concrete deck or a properly prepared existing BUR over structural concrete deck to min 1 in. (25 mm) thick. A roof covering is then applied as in Construction #12 above.

Construction #14: Insulcel concrete placed over structural concrete deck or a properly prepared existing BUR over structural concrete deck to min $\frac{1}{8}$ in. (3 mm) thickness. Min 1.0 in. (25 mm) thick Insulperm-1 or 5 insulation is immediately applied over the slurry and followed by min 1 in. (25 mm) thick NVS or min 2 in. (50 mm) Zonocel concrete. A roof covering is then applied as in Construction #11a above. Roof cover system is sealed airtight to the deck at the perimeter and all penetrations. Meets Class 1-90.

Construction #15: Insulcel concrete poured over structural concrete deck or a properly prepared existing BUR over structural concrete deck to min 1 in. (25 mm) thick. A roof covering is then applied as in Construction #11a above. Roof cover system is sealed airtight to the deck at the perimeter and all penetrations. Meets Class 1-90.

ESI Inc, 831 Morley Drive, Saginaw MI 48601

Roof Cover:	Glass Felt BURs
Insulations:	ES Foam I _a
Decks:	Steel, Wood, Gypsum (reroof), Cementitious Wood Fiber, Concrete (where shown)

Construction #1: Min 1.5 in. (40 mm) ES Foam I_a is loose laid on the deck. Min 0.75 in. (19 mm) thick ConPerl, GAFTEMP Permalite, Permalite, Fesco Board, **EnergyGuard Perlite Roof Insulation** or min 1 in. (25 mm) thick Armor Board Regular, Esgard, Knight-Celotex Premium Fiberboard Roof Insulation, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber is placed with all joints staggered and mechanically fastened through the isocyanurate insulation to the deck. For deck types, fasteners, fastener densities and wind ratings, see individual cover board listings in the Insulation and Fastener Tables for FM Approved Glass and Organic Felt Built Up Roofs. May also be used with Organic Felt BUR covers. Meets Class 1-60/1-90 per insulation securement.

Construction #1a: Min 1.3 in. (32 mm) thick ES Foam I_a is loose laid over a min 22 ga. steel or structural concrete deck. Min $\frac{3}{4}$ in. (19 mm) thick ConPerl, GAFTEMP Permalite, Fesco Board or **EnergyGuard Perlite Roof Insulation** is placed over the insulation and mechanically fastened to the deck. For deck types, fasteners, fastener densities and wind ratings, see the individual cover board listings in the Insulation and Fastener Tables for FM Approved Glass and Organic Felt Built Up Roofs. May also be used with Organic Felt BUR covers and specific modified bitumen membranes. Meets Class 1-60/1-90 per insulation securement.

Construction #2: Min 1 in. (25 mm) ES Foam I_a is loose laid on the deck. Min 0.75 in. (19 mm) thick ConPerl, GAFTEMP Permalite, Permalite, Fesco Board, **EnergyGuard Perlite Roof Insulation** is placed with all joints staggered and mechanically fastened through the isocyanurate insulation to the deck. For deck types, fasteners, fastener densities and wind ratings, see individual cover board listings in the Insulation and Fastener Tables for FM Approved Glass and Organic Felt Built Up Roofs. May also be used with Organic Felt BUR covers. Meets Class 1-60/1-90 per insulation securement.

Construction #3: Concrete. Same as Construction #1 except that the cover board is optional. When the cover board is not provided, see the Insulation and Fastener Tables for FM Approved Glass and Organic Felt Built Up Roofs. May also be used with Organic Felt BUR covers. Meets Class 1-60/1-90 per insulation securement.

Construction #4: Min 1.3 in. (32 mm) thick ES Foam I_a is mechanically secured to the deck with fasteners applied at 4 ft² (0.4 m²) max contributory area per fastener. Min 0.5 in. (13 mm) thick ConPerl, GAFTEMP Permalite, Permalite, Fesco Board or **EnergyGuard Perlite Roof Insulation** is secured to the insulation with hot asphalt (all joints are staggered). For deck types and fasteners, see individual insulation listing in the Insulation and Fastener Tables for FM Approved Glass and Organic Felt Built Up Roofs. May also be used with Organic Felt BUR covers. Meets Class 1-90.