

JOHNS MANVILLE INTERNATIONAL INC
MOUNTAIN TECHNICAL CENTER
LITTLETON, CO 80162 USA

June 19, 2000

R10167 (NBK)

1/2 in. thick (min) gypsum board or 1/4 in. thick (min) G-P Gypsum Dens-Deck® may be used in any existing noncombustible deck Classification. When this is done, the resulting roofing system is acceptable for use over combustible (15/32 in. min) roof decks. The joints in the gypsum board and overlayment board are offset 6 in. with the joints in the deck. Polystyrene insulation must be placed beneath the gypsum board and Dens-Deck®.

ASPHALT FELT SYSTEMS WITH HOT ROOFING ASPHALT

Unless otherwise specified, min insulation thicknesses shall be Johns Manville "Fesco" 3/4 in., "ISO 1" 1.4 in., "E'NRG'Y-2" 1.4 in., "Fesco-Foam" 1.5 in. min, "Fesco-Foam" 1.5 in. min placed foam side down over min 3/4 in. thick "Fesco", mechanically fastened to the deck, is a suitable alternate for 1.5 in. min "Fesco-Foam".

Uniform thickness or tapered insulation may be used in the following systems provided they do not exceed the indicated incline or thickness.

The following products may be used in lieu of "E'NRG'Y-2" or "ISO-1": "PSI-25-2", "Nailboard", "E'NRG'Y-2 Plus", "ISO 1 Foil Faced", "E'NRG'Y-2 Gypsum Composite" or "Fesco-Foam".

"GlasBase Plus" is a suitable alternate to "GlasBase" or "DynaBase".

"Fiber Glass Roof Insulation" or "Laminator Board" may be used in any noncombustible deck roofing systems.

Fiberglas Canada "Base Cap Roof Insulation" may be used as an alternate to "Fiber Glass Roof Insulation".

Vapor barriers or ply sheets are optional beneath roof insulation on all systems.

Taped joints are optional with "Fiber Glass Roof Insulation".

"PermaMop" modified asphalt is an acceptable alternate to hot roofing asphalt in the asphalt felt built-up roofing systems.

Red rosin paper must be used over combustible decks when "GlasPly IV" or "GlasPly Premier" are nailed as base sheets in asphalt membrane systems.

"PermaPly 28" or "Dibiglass Base Sheet" are suitable alternates to "GlasBase" fiber glass base sheet.

The Class A and B roof coverings are suitable for installation over min 3/4 in. thick "Fesco" or "Fiber Glass Roof Insulation". Min 3/4 in. thick wood fiber roof insulation is suitable any for assemblies over noncombustible decks unless otherwise specified.

"GlasTite Flexible" is a suitable alternate for "DynaBase", "GlasBase" or "PermaPly 28" .

"DynaWeld Base Sheet" and "DynaWeld Cap FR" are suitable substitutes for "DynaBase" and "DynaGlass 30 FR".

Barrett "Ram-Tough KLB-100" modified asphalt may be used in lieu of standard hot mopping asphalt in all applicable Classifications.

"Roof Defender Fiber Glass Cap Sheet" is a suitable alternate to "PermaPly 28" in all applicable Classifications. "DynaGlas S" and "DynaLastic 250S" may be used in lieu of "DynaPly" in all applicable Classifications.

Class A

1. Deleted.

2. Deck: C-15/32

Incline: 1

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: One ply Type G1 "GlasPly IV" or "GlasPly Premier", or Type G2 "Glas-Base" or "Ventsulaton", or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier", hot mopped.

Surfacing: Gravel, crushed stone or slag and hot roofing asphalt.

3. Deck: C-3/4

Incline: 3

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Type G2 "PermaPly 28", "GlasBase" or "Ventsulation", or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier", hot mopped.

Surfacing: Gravel, crushed stone or slag and hot roofing asphalt.

4. Deck: C-3/4

Incline: 3

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: Three or more plies Type G1 "GlasPly IV", "GlasPly Premier", nailed or hot mopped.

Surfacing: Gravel, crushed stone or slag and hot roofing asphalt.

5. Deck: NC

Incline: 1-1/2

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Type G2 "PermaPly 28", "GlasBase" or "Ventsulation" or "DynaBase" (modified bitumen), nailed or hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

6. Deck: NC

Incline: 1-1/2

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate

insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier", nailed or hot mopped.

Surfacing: Type G3 "GlasKap".

7. Deck: C-15/32

Incline: 1

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: One ply Type G1 "GlasPly Premier" or "GlasPly IV", or Type G2 "PermaPly 28" , "GlasBase" or "Ventsulation", or "DynaBase" (SBS modified bitumen), mechanically attached or hot mopped.

Ply Sheet: One or more plies Type G1 "GlasPly Premier", "GlasPly IV", hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

8. Deck: C-15/32

Incline: 1

Insulation: Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation. One layer of 1/2 in. "Retro-Fit Board" may be placed on top of the above insulations but is not acceptable by itself.

Base Sheet: "PermaPly 28" , "GlasBase", "Ventsulation", "DynaBase", "GlasPly IV", "GlasPly Premier", nailed.

Ply Sheet: "DynaPly" or "DynaBase", hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

9. Deck: C-15/32

Incline: 1

Base Sheet: "PermaPly 28" , "GlasBase", "Ventsulation" or "DynaBase", nailed.

Ply Sheet: "DynaPly" or "DynaBase", hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

10. Deck: C-15/32

Incline: 3

Base Sheet: "PermaPly 28" or "GlasBase", nailed or adhered with hot roofing asphalt.

Ply Sheet: Two or more plies "Roof Defender Fiber Glass Cap Sheet", "GlasBase", "GlasPly IV", "GlasPly Premier".

Surfacing: Gravel or slag.

11. Deck: C-15/32

Incline: 2

Base Sheet: "Roof Defender Fiber Glass Cap Sheet" or "GlasBase", nailed or adhered with hot roofing asphalt.

Insulation: Any thickness, one or more layers Johns Manville "Fesco" (must be 1 in. min at 1 in. incline), "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate, hot mopped or mechanically fastened, in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier".

Surfacing: Type G3 "GlasKap".

12. Deck: NC

Incline: 2

Base Sheet (Optional): "Roof Defender Fiber Glass Cap Sheet", "GlasBase", "GlasBase Plus" or "Ventsulation", nailed or adhered with hot roofing asphalt.

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate, hot mopped or mechanically fastened, in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier".

Surfacing: Type G3 "GlasKap".

Class B

1. Deck: NC

Incline: 3

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Type G2 "Roof Defender Fiber Glass Cap Sheet", "GlasBase" or "Ventsulation", or "DynaBase" (modified bitumen), nailed.

Ply Sheet: One or more plies "GlasPly IV", "GlasPly Premier", hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

2. Deck: NC

Incline: 3

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier", nailed or hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

3. Deck: C-15/32

Incline: No Limitation

Base Sheet (Optional): "Roof Defender Fiber Glass Cap Sheet", "GlasBase", "GlasPly IV", "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Ply Sheet: Two or more plies Type G1 "GlasPly IV", "GlasPly Premier".

Surfacing: Type G3 "GlasKap".

Class C

1. Deck: C-15/32

Incline: 1-1/2

Base Sheet (Optional): "PermaPly 28", "GlasBase", "GlasPly IV", "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: One or more plies "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier".

Surfacing: Type G3 "GlasKap".

2. Deck: C-15/32

Incline: 3

Base Sheet (Optional): "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: One or more plies Type G1 "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Hot roofing asphalt, "TopGard B", applied at a rate of 2-3 gal/sq, "TopGard A", applied at a rate of 1-3/4 - 2 gal/sq or "TopGard B", at the rate of 2-3 gal/sq in combination with "Fibrated Aluminum Roof Coating", applied at the rate of 2 gal/sq.

3. Deck: C-15/32

Incline: Unlimited

Base Sheet (Optional): "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Insulation (Optional): Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: One or more plies "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier".

Surfacing: Type G3 "GlasKap".

COLD APPLIED SYSTEMS (BUR)

"Roof Defender Fiber Glass Cap Sheet" is a suitable alternate to "PermaPly 28" in all applicable Classifications.

Class A

Ply sheets are fully adhered with "MBR Cold Application Adhesive", applied at 1-2 gal/sq.

1. Deck: NC

Incline: 1

Insulation (Optional): Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, 3.6 in. max, mechanically fastened, in combination with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Three or more plies Type G2 "PermaPly 28", "GlasBase".

Surfacing: "Fibrated Topgard Type B", 2-3 gal/sq.

2. Deck: C-15/32

Incline: 1

Insulation (Optional): One or more layers, any thickness, Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate roof insulation, in combination (optional) with 1/2 in. "Retro-Fit" cover board, first layer mechanically attached, subsequent layers adhered with "MBR Cold Application Adhesive" or 3/4 in. "Fesco" over polystyrene, mechanically attached.

Base Sheet: Type G2 "PermaPly 28", "GlasBase", "GlasBase Plus", "Ventsulation", "DynaBase" or "DynaPly", mechanically fastened or adhered with "MBR Cold Application Adhesive".

Ply Sheet: "DynaPly" or "DynaBase" (modified bitumen), adhered with "MBR Cold Application Adhesive".

Surfacing: Type G3 "GlasKap" adhered with "MBR Cold Application Adhesive".

3. Deck: C-3/4

Incline: 1-1/2

Insulation: Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation" (all joints taped), "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate, hot mopped or mechanically fastened, in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Ply Sheet: Two plies "PermaPly 28" or "GlasBase", adhered with "Gilsonite MC", "Gilsonite No. 601" at 4 gal/sq.

Surfacing: Gilsonite "Gilsonite No. 601" at 4 gal/sq.

Class B

1. Deck: NC

Incline: 1

Insulation: Johns Manville "Fiber Glass Roof Insulation" or "Fesco", 2-1/4 in. max, nailed or secured with Gibson-Homans "6150 Fibrated Adhesive" at 4 gal/sq.

Ply Sheet: Three or more plies "GlasPly IV" or "GlasPly Premier", applied with inner ply spreading of Gibson–Homans "6150 Fibrated Adhesive".

Surfacing (Optional): Gibson–Homans "6150 Fibrated Adhesive", 4 gal/sq and No. 11 roofing granules, 50 lb/sq.

Class C

1. **Deck:** C–3/4

Incline: 1–1/2

Insulation: Johns Manville "Fiber Glass Roof Insulation" (all joints taped) or "Fesco", 2–1/4 in. max, nailed.

Ply Sheet: Two or more plies "GlasPly IV" or "GlasPly Premier", applied with Gilsonite "601 Roof Coating" at 4 gal/sq.

Surfacing: Gilsonite "601 Roof Coating" at 4 gal/sq.

2. **Deck:** C–15/32

Incline: 1

Ply Sheet: Three or more plies "GlasPly IV" or "GlasPly Premier", applied with inner ply spreading of Gibson–Homans "6150 Fibrated Adhesive".

Surfacing (Optional): Gibson–Homans "6150 Fibrated Adhesive", 4 gal/sq and No. 11 roofing granules, 50 lb/sq.

3. **Deck:** C–15/32

Incline: 1

Insulation: Johns Manville "Fiber Glass Roof Insulation" (all joints taped) or "Fesco", any thickness, nailed, mechanically fastened, hot mopped or sprinkle mopped.

Ply Sheet: One or more plies "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: Kokem Products "Sunguard Acrylic Roof Coating" at 2 gal/sq.

COMBINATION HOT AND COLD SYSTEMS (BUR)

Unless otherwise specified, min insulation thicknesses shall be Johns Manville "Fesco" 3/4 in., "ISO 1" 1.4 in., "E'NRG'Y–2" 1.4 in., "Fesco–Foam" 1.5 in.

"Fesco–Foam" 1.5 in. placed foam side down over min 3/4 in. thick "Fesco", mechanically fastened to the deck, is a suitable alternate for 1.5 in. min "Fesco–Foam".

Uniform thickness or tapered insulation may be used in the following assemblies provided they do not exceed the indicated incline or thickness.

Red rosin paper must be used over combustible decks when "GlasPly IV" or "GlasPly Premier" are nailed as base sheets in asphalt membrane systems.

"Roof Defender Fiber Glass Cap Sheet" is a suitable alternate to "PermaPly 28" in all applicable Classifications.

Class A

1. **Deck:** NC

Incline: 1–1/2

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco–Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y–2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro–Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet (Optional): Type G1 "GlasPly Premier" or "GlasPly IV", or Type G2 "PermaPly 28", "GlasBase" or "Ventsulation", or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Three or more plies Type G1 "GlasPly Premier" or "GlasPly IV", hot mopped.

Surfacing: "Fibrated Topgard Type B", 2 to 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

2. **Deck:** NC

Incline: 2

Insulation (Optional): Johns Manville "Fesco", 3/4 in. max, "Fesco-Foam", 1.5 in. max, "Fiber Glass Roof Insulation", 2 in. max, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Three or more plies Type G1 "GlasPly IV" or "GlasPly Premier". Bottom ply may be nailed or hot mopped.

Surfacing: "Fibrated Topgard Type B", 2 to 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

3. **Deck:** NC

Incline: 1

Insulation: Any UL Classified, any thickness.

Ply Sheet: Three or more plies Type G1, adhered with hot roofing asphalt.

Surfacing: "Fibrated Topgard Type A" or "Topshield Aluminum Coating" at 2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

4. **Deck:** NC

Incline: 1-1/2

Base Sheet: Type G1 "GlasPly Premier" or "GlasPly IV" or Type G2 "PermaPly 28", "GlasBase" or "Ventsulation" or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Two or more plies Type G1 "GlasPly Premier" or "GlasPly IV", hot mopped.

Coating: "Fibrated Topgard Type B" at 3 gal/sq.

Surfacing: "Fibrated Aluminum Roof Coating" at 2 gal/sq.

5. **Deck:** NC

Incline: 1/4

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Type G1 "GlasPly Premier" or "GlasPly IV", Type G2 "PermaPly 28", "Glasbase" or "Ventsulation", or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Two or more layers Type G1 "GlasPly Premier", "GlasPly IV", hot mopped.

Coating: "Fibrated Topgard Type B" at 3 gal/sq.

Surfacing: "Fibrated Aluminum Roof Coating" at 2 gal/sq.

6. **Deck:** NC

Incline: 1

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit". One layer of 1/2 in. "Retro-Fit Board" may be placed on top of the above insulation but is not acceptable by itself.

Base Sheet: Type G2 "PermaPly 28", "GlasBase" or "Ventsulation", or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Two or more plies Type G1 "GlasPly Premier", "GlasPly IV", hot mopped.

Surfacing: "Fibrated Topgard Type B" at 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

7. **Deck:** NC

Incline: 1/4

Base Sheet: "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Ply Sheet: One or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Karnak "Karnak No. 97 Fibrated Aluminum Asphalt Roof Coatings" or "Karnak No. 97 Asbestos Free Aluminum Roof Coating", 1-1/2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

8. **Deck:** NC

Incline: 2

Insulation: Johns Manville "Fiber Glass Roof Insulation" or "Fesco", 1 in. max.

Ply Sheet: Three or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt (bottom layer may be nailed).

Surfacing: Gibson–Homans "No. 5176 Aluminum Coating" at 2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

9. **Deck:** NC

Incline: As specified below

Insulation (Optional): Polyisocyanurate, glass fiber, perlite or wood fiber, any thickness, nailed or adhered with hot roofing asphalt.

Ply Sheet: Two or more plies "GlasPly IV" or "GlasPly Premier", or fiber glass base ply, adhered with hot roofing asphalt.

Surfacing: One of the following coatings: a.) VIP Enterprises "VIP-4000" at 3-1/2 gal/sq; 2 in. incline. b.) Asphalt Products Oil "APOC 300 Sunbrite" at 1-1/3 gal/sq; 1/2 in. incline. c.) American Tar "ATCO 1846" at 3-1/2 to 4 gal/sq; 1/2 in. incline. d.) Karnak "397 Fibrated Aluminum Asphalt", 1-1/2 gal/sq; 1/2 in. incline. e.) Fibrated Aluminum Roof Coating, 2 gal/sq; 2 in. incline.

10. **Deck:** NC

Incline: 1

Ply Sheet: Three or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Asphalt Products Oil "APOC #302", 3 gal/sq.

11. **Deck:** NC

Incline: 1/4

Base Sheet (Optional): One or more layers "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Insulation (Optional): Johns Manville "Fesco", "Fesco–Foam", "Fiber Glass Roof Insulation", "ISO 1", unlimited thickness, mechanically fastened or adhered with hot roofing asphalt.

Ply Sheet: Two or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Karnak "Karnak No. 97 Fibrated Aluminum Asphalt Roof Coating" or "Karnak No. 97 Asbestos Free Aluminum Roof Coating", 1-1/2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

12. **Deck:** C-15/32

Incline: 1

Vapor Barrier (Optional): One ply Type G2, mechanically fastened or hot mopped.

Insulation (Optional): Johns Manville "Fesco", "Fesco–Foam", "Fiber Glass Roof Insulation", "ISO 1", "ENRG'Y-2" or "Retro–Fit", any thickness.

Base Sheet: One layer "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Ply Sheet: Two or more plies "GlasPly IV" or "GlasPly Premier", hot mopped.

Coating: Asphalt Products Oil "APOC 300 Plain Emulsion", 9 gal/sq min with 3 lb glass fiber reinforcement.

Surfacing (Optional): One of the following: Asphalt Products Oil "APOC 400 AF Sunbrite", 1-1/2 gal/sq, "APOC 208 AF Economy Aluminum Fibre Roof Coating", 1-1/2 gal/sq or "APOC 211 Aluminum Roof Paint", 1 gal/sq.

13. **Deck:** NC

Incline: 1/2

Insulation: Johns Manville "Fesco", "Fiber Glass Roof Insulation" or wood fiber, 3/4 in.

Ply Sheet: Three or more plies "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: Grundy "No. 20F–AF Asbestos Free Fibered Roof Emulsion" at a nom 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

14. **Deck:** NC

Incline: 1

Insulation: Johns Manville "Fesco", "Fiber Glass Roof Insulation" or wood fiber, 3/4 in. max.

Ply Sheet: Three or more plies "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: Grundy "No. 20F Nonfibered Roof Emulsion" at a nom 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

15. **Deck:** NC

Incline: 1

Insulation (Optional): Any thickness, Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "ISO 1" or "E'NRG'Y-2", hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board.

Ply Sheet: One or more plies "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: Grundy "al MB AF II Aluminum Roof Emulsion" at 1-2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

16. **Deck:** C-15/32 **Incline:** 3/4

Base Sheet: "GlasBase" (Type G2), nailed.

Insulation: Two layers 3/4 in. thick "Fesco", hot mopped.

Ply Sheet: Three or more plies "GlasPly IV" or "GlasPly VI" (Type G1), hot mopped.

Surfacing: "TopGard A", 1.75-2 gal/sq or "TopGard B", 2-3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

17. **Deck:** C-15/32 **Incline:** 1

Base Sheet: One ply "PermaPly 28" or "GlasBase", mechanically fastened.

Ply Sheet: Three or more plies "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: "TopGard A", 2 gal/sq.

18. **Deck:** NC **Incline:** 2

Insulation: "E'NRG'Y 2", 2 in. max, mechanically fastened.

Insulation (Optional): "Retro-Fit", 1/2 in. or perlite, 3/4 in., hot mopped.

Ply Sheet: Three or more plies Type G1 or G2, hot mopped.

Surfacing: "TopGard A", 1-1/2 gal/sq.

Class B

1. **Deck:** NC **Incline:** 3

Insulation: Johns Manville "Fesco" or "Fiber Glass Roof Insulation", 1 in. max.

Ply Sheet: Three plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Gibson Homans "No. 5176 Aluminum Coating" at 2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

2. **Deck:** C-15/32 **Incline:** 1/2

Base Sheet: "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Ply Sheet: Two or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Asphalt Products Oil "APOC 400 Sunbrite", 1 to 1-1/3 gal/sq or VIP Enterprises "VIP-4000", 3-1/2 gal/sq.

3. **Deck:** NC **Incline:** 2

Base Sheet: Two or more layers "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Surfacing: Grundy Industries "20 F Emulsion" at 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

4. **Deck:** NC **Incline:** 1/4

Base Sheet: "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Ply Sheet: One or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Karnak "Karnak No. 97 Fibrated Aluminum Asphalt Roof Coating", 1-1/2 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

5. **Deck:** C-15/32 **Incline:** 1/4

Base Sheet (Optional): One or more layers "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Insulation (Optional): Any thickness, Johns Manville "Fesco", "Fesco Foam", "Fiber Glass Roof Insulation", "ISO 1", "E'NRG'Y-2", hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board.

Ply Sheet: Two or more plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Karnak "Karnak No. 97 Fibrated Aluminum Asphalt Roof Coating", 1-1/2 gal/sq.

6. **Deck:** C-15/32

Incline: 2

Base Sheet: "PermaPly 28", "GlasBase", "GlasPly IV" or "GlasPly Premier", nailed or adhered with hot roofing asphalt.

Ply Sheet: Two plies Type G1 "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Grundy "20 F Emulsion" at 3 gal/sq.

7. **Deck:** NC

Incline: 3

Insulation: Johns Manville "Fesco" or "Fiber Glass Roof Insulation", 1 in. max.

Ply Sheet: Three plies "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt (bottom ply may be nailed).

Surfacing: Gibson-Homans "No. 5176 Aluminum Coating" at 2 gal/sq.

8. **Deck:** NC

Incline: 2

Base Sheet: Two or more layers "GlasPly IV" or "GlasPly Premier", adhered with hot roofing asphalt.

Surfacing: Grundy "20 F Emulsion" at 3 gal/sq or "Fibrated Aluminum Roof Coating", 2 gal/sq.

9. **Deck:** C-15/32

Incline: 1

Insulation (Optional): Any thickness, one or more layers Johns Manville "Fesco", "Fesco-Foam", "Fiber Glass Roof Insulation", "E'NRG'Y-2" or any UL Classified polyisocyanurate insulation, hot mopped or mechanically fastened in combination (optional) with 1/2 in. "Retro-Fit" cover board, or 3/4 in. "Fesco" over polystyrene.

Base Sheet: Type G1 "GlasPly Premier" or "GlasPly IV", or Type G2 "PermaPly 28", "GlasBase" or "Vensulation", or "DynaBase" (modified bitumen), nailed or hot mopped.

Ply Sheet: Two or more plies Type G1 "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: "Fibrated Topgard Type B", applied at 2 to 3 gal/sq.

MAINTENANCE AND REPAIR SYSTEMS (BUR)

Unless otherwise specified, min insulation thicknesses shall be Johns Manville "Fesco" 3/4 in., "ISO 1" 1.4 in., "E'NRG'Y-2" 1.4 in. or "Fesco-Foam" 1.5 in.

"Fesco-Foam" 1.5 in. min placed foam side down over min 3.4 in. thick "Fesco", mechanically fastened to the deck, is a suitable alternate for 1.5 in. min "Fesco-Foam".

Uniform thickness or tapered insulation may be used in the following assemblies provided they do not exceed the indicated incline or thickness.

"Fiber Glass Roof Insulation" is a suitable alternate to any of the following insulations used in Maintenance and Repair Systems.

"GlasBase Plus" or "PermaPly 28" are suitable alternates to "GlasBase".

Class A

1. **Deleted.**

2. **Deck:** NC

Incline: 3

Existing Roof System: Class A, B or C covered with:

Insulation: Any thickness, one or more layers Johns Manville "Retro-Fit Board", "Fesco", "Fesco-Foam", "ISO 1", "E'NRG'Y-2", 3/4 in. "Fesco" over polystyrene or any UL Classified polyisocyanurate insulation, mechanically fastened or hot mopped.

Surfacing: Any UL Classified Class A gravel surfaced BUR system.

3. **Deck:** C-15/32

Incline: 2

Existing Roof System: Class A, B or C, gravel or smooth surfaced, covered with:

Insulation: Any thickness, one or more layers Johns Manville "Retro-Fit Board", "Fesco", "Fesco-Foam", "ISO 1", "E'NRG'Y-2", 3/4 in. "Fesco" over polystyrene or any UL Classified polyisocyanurate insulation, mechanically fastened or hot mopped.

Surfacing: Any UL Classified Class A gravel surfaced BUR system.

4. **Deck:** C-15/32

Incline: 1

Existing Roof System: Class A, B or C, gravel or smooth surfaced, covered with:

Insulation: Any thickness, one or more layers Johns Manville "Retro-Fit Board", "Fesco", "Fesco-Foam", "ISO 1", "E'NRG'Y-2", 3/4 in. "Fesco" over polystyrene or any UL Classified polyisocyanurate insulation, mechanically fastened or hot mopped.

Base Sheet: Three or more plies Type G1 "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: Gravel, crushed stone or slag.

5. **Deck:** C-15/32

Incline: 1

Existing Roof System: Class A, B or C, gravel or smooth surfaced, covered with:

Insulation: Any thickness, one or more layers Johns Manville "Retro-Fit Board", "Fesco", "Fesco-Foam", "ISO 1", "E'NRG'Y-2", 3/4 in. "Fesco" over polystyrene or any UL Classified polyisocyanurate insulation, mechanically fastened or hot mopped.

Base Sheet: Two or more plies Type G1 "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: Type G3 "GlasKap", hot mopped.

6. **Deck:** C-15/32

Incline: 1

Existing Roof System: Class A, B or C, gravel or smooth surfaced, covered with:

Insulation: Any thickness, one or more layers Johns Manville "Retro-Fit Board", "Fesco", "Fesco-Foam", "ISO 1", "E'NRG'Y-2", 3/4 in. "Fesco" over polystyrene or any UL Classified polyisocyanurate insulation, mechanically fastened or hot mopped.

Base Sheet: Three or more plies Type G1 "GlasPly IV" or "GlasPly Premier", hot mopped.

Surfacing: "TopGard B" at 2 to 3 gal.sq.