

UL Listings - EPDM

"The name trusted in roofing since 1906"



**MULE-HIDE PRODUCTS, CO., INC.
UNDERWRITERS LABORATORIES (UL)
TGFU.R13850
ROOFING SYSTEMS - EPDM
Revised July 2019**

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* Note: Assembly numbers shown in the following listings correspond to the UL Master Listing number for all **Mule-Hide Products, Co., Inc.**

Note: Assembly numbers shown in the following listings correspond to the UL Master Listing number for **Atlas Roofing Corp.

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

Any system listed for use over a combustible deck can be installed over a non-combustible deck and achieve the same classification.

Unless otherwise indicated, on non-combustible decks, Mule-Hide Products "Poly ISO 1-NB", "Poly ISO 1-HD" or "Poly ISO 1-HD90" or "Poly ISO 1-HD-Composite" may replace, or be used in addition to, any Poly ISO 1 product or any UL Classified wood fiberboard, in any UL Classified insulated roofing system assembly and retain the classification of that assembly, though the max slope cannot exceed 1/2:12 if "Poly ISO 1- HD", "Poly ISO 1-HD-Composite" or " Poly ISO 1-HD90" is used directly below TPO membrane. Unless otherwise indicated, on combustible decks, "Poly ISO 1-NB", "Poly ISO 1-HD", "Poly ISO 1-HD-Composite", and "Poly ISO 1-HD90" may be used in addition to any Poly ISO 1 product or any UL Classified wood fiber board, in any insulated UL Classified roofing system assembly and retain the classification of that assembly, though the max slope cannot exceed 1/2:12 if "Poly ISO 1- HD", "Poly ISO 1-HD-Composite" or " Poly ISO 1-HD90" is used directly below TPO membrane.

Mule-Hide Products "Poly ISO 1-HD", "Poly ISO 1-HD-Composite" or "Poly ISO 1-HD90" (min. 1/2 in. thickness) may be used over any UL Classified polystyrene on non-combustible decks. Max incline shall be in accordance with the Classification established for the insulation/membrane roofing system, but cannot exceed 2:12.

1. Unless otherwise indicated, insulation is mechanically fastened to the roof deck.
2. The following adhesives are used for EPDM membrane systems:
 - A. Bonding adhesive — "Mule-Hide Bonding Adhesive" at 1 to 1-1/3 gal/sq.
 - B. Deleted
 - C. Lap splice adhesive — "Mule-Hide Tape Primer" at 0.4 gal/sq followed by "Mule-Hide Black Splice Adhesive" at 1.0 gal/sq or "Mule-Hide White Splice Adhesive" at 0.8 gal/sq.
 - D. Lap sealant — joint edges are sealed with a nom 1/4 in. bead of "Mule-Hide Black Lap Sealant" or "Mule-Hide White Lap Sealant".
 - E. Deleted.
 - F. Deleted.
 - G. Seam Tap — Lap splices may be sealed with "Seam Tape" and covered with "Coverstrip".

Unless otherwise indicated in the systems described below, "In-Seam Tape Black" or " In-Seam Tape White", 3 to 11 in. wide, may be used for field membrane splices in any Classification. An appropriate primer may be used to clean membrane surface.

Unless otherwise indicated, when referring to gypsum board in the following classifications, the following will be referenced: G-P Gypsum DensDeck®, 1/4 in. min, SECUROCK Glass-Mat Roof Board (Type SGMRX) or SECUROCK Gypsum-Fiber Roof Board (Type FRX-G), minimum 1/4 in., Regular gypsum board (not Classified) laid with staggered joints (6 in. offset) measuring 0.463 in. thick min and weighing 184 lbs/sq min or Georgia Pacific "Sound Deadening" Board, measuring 0.208 in. thick min and weighing 109 lbs/sq min. 1/4 in. (min) SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) is limited to a maximum 3:12 slope when used as a thermal barrier over a combustible deck in a system with any UL Classified insulation except polystyrene. 1/2 in. (min) SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) is limited to a maximum 1:12 slope when used as a thermal barrier over a combustible deck in a system without insulation or with any UL Classified polystyrene insulation.

1/4 in. thick (min) G-P Gypsum DensDeck®, 1/4 in. thick (min.) Owens Corning Strataguard, 1/4 in. thick (min) SECUROCK Glass-Mat Roof Board (Type SGMRX) or SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) or regular gypsum board may replace "HP Recovery Board" 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 are offset 6 in. with the joints in the deck. 1/4 in. (min) SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) is limited to a maximum 3:12 slope when used over a combustible deck in a system with any UL Classified insulation except polystyrene. 1/2 in. (min) SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) is limited to a maximum 1:12 slope when used over a combustible deck in a system without insulation or with any UL Classified polystyrene insulation.

1/2 in. thick (min) gypsum board, 1/4 in. thick (min.) Owens Corning Strataguard, 1/4 in. thick (min) SECUROCK Glass-Mat Roof Board (Type SGMRX) or SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) or 1/4 in. thick (min) G-P Gypsum DensDeck® 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. 1/4 in. (min) SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) is limited to a maximum 3:12 slope when used as a thermal barrier over a combustible deck in a system with any UL Classified insulation except polystyrene. 1/2 in. (min) SECUROCK Gypsum-Fiber Roof Board (Type FRX-G) is limited to a maximum 1:12 slope when used as a thermal barrier over a combustible deck in a system without insulation or with any UL Classified polystyrene insulation.

Unless otherwise indicated, any UL Classified wood fiber board, any oriented strand board (OSB), Mule-Hide Poly ISO 1-NB or Hunter Panels H-Shield-NB may replace "HP Recovery Board" in any of the systems mentioned below.

Straight or tapered insulation may be used in the following assemblies provided they do not exceed the indicated incline or thickness and carry a UL label.

A vapor barrier (non-UL Classified) may be used below the insulation in any of the following systems without affecting the Classification.

Unless otherwise indicated, the term "Referenced Insulations" will include the following: Atlas Roofing "ACFoam II" or "ACFoam III", Mule-Hide Poly ISO 2, Dow "Hy-Therm AP", Hunter Panels "H-Shield", "H-Shield ca", "H-Shieldw", "H-Shield-CG", "H-Shield CGw", "H-Shield HD", "H-Shield HD90", "H-Shield HD Composite" or "H-Shield HD Composite CG", Mule-Hide Poly ISO 1, Poly ISO 1 DWD, Poly ISO 1-HD, Poly ISO 1-HD90, Poly ISO 1-HD-Composite, Johns Manville "ENRGY- 2", or "ENRGY-3", Firestone Building Products "ISO 95+GL", "GW" or "HF", Rmax "Multi-Max", any thickness.

Any UL Classified United Solar Systems Corp Photovoltaic (Solar) Module System may be installed over any of the following UL Classified Mule-Hide roofing membrane assemblies that utilizes gypsum board, provided that the roofing membrane is applied directly over the gypsum (either adhered to, mechanically fastened over or loosely-laid over the gypsum): Standard EPDM, FR EPDM, White-On-Black EPDM, Standard Reinforced EPDM, FR Reinforced EPDM

The Module system is either self-adhered directly to the roofing membrane in the field or self-adhered to an intermediate roofing material layer in the factory and then attached to the roofing membrane in the field using liquid adhesive, tape adhesive or fasteners. The Classification applies to combustible and non-combustible decks. Any UL Classified insulation, any combination, any thickness, may be installed below the gypsum. The maximum incline and Classification (Class A, B or C) shall be in accordance with the Classification established for the membrane roofing assembly, however the incline can not exceed 1-1/2:12.

Any UL Classified Mule-Hide EPDM roofing system is Classified for Class 4 Impact Resistance when either of the following conditions are met:

1. Minimum 75 mil (nominal thickness) Mule-Hide Standard Reinforced EPDM or Mule-Hide FR Reinforced EPDM is applied over any combination of substrate layers, as specified in the roofing systems, and the substrate layer(s) are attached with Carlisle fasteners and minimum 2 in. metal or plastic plates.
2. Minimum 60 mil (nominal thickness) Mule-Hide Standard Reinforced EPDM or Mule-Hide FR Reinforced EPDM is applied over any of the following substrates: Barrier Board, Oriented Strand Board, Plywood or Slipsheet over Plywood. These substrates may be placed over insulation or additional substrate layers as specified in the roofing systems. The substrate layer(s) are attached with Mule-Hide fasteners and minimum 2 in. metal or plastic plates.
3. Minimum 45 mil (nominal thickness) any Mule-Hide EPDM membrane is applied over any combination of substrate layers, as specified in the roofing systems, and the top substrate layer is attached with adhesives or asphalt. Lower substrate layer(s) may be attached with fasteners and plates, adhesives or asphalt
4. Any UL Classified Mule-Hide ballasted roofing system described below is Classified for Class 4 Impact Resistance.

ALL SYSTEMS

Class A, B or C (See Note 1)

GEORGIA-PACIFIC GYPSUM LLC UNDERWRITERS LABORATORIES (UL) TGFU.R.15206, ROOFING SYSTEMS

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

Incline: See Notes 1 and 4

Insulation: — Any UL Classified, any thickness.

Barrier Board: (See Note 2) — ¼-in., ½-in. or 5/8-in. thick "DensDeck® Roofboard" or "DensDeck Prime® Roofboard" or "DensDeck Prime 2™ Roofboard" or "DensDeck DuraGuard® Roofboard" with all joints staggered a min of 6 in. from the plywood joints.

Membrane: — Any UL Classified modified bitumen system, BUR system or CPE, CSM, CSPE, EPDM, NBP, PIB, PVC, TPO or TRE membrane system suitable for use with any roof insulation.

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

Incline: See Notes 1 and 4

Barrier Board: (See Note 3) — ¼-in., ½-in. or 5/8-in. thick "DensDeck® Roofboard," or "DensDeck Prime® Roofboard" or "DensDeck Prime 2™ Roofboard" or "DensDeck DuraGuard® Roofboard" with all joints staggered a min of 6 in. from the plywood joints.

Insulation (Optional): — Fiberglass, polyisocyanurate, perlite or wood fiber, any thickness.

Membrane: — Any UL Classified modified bitumen system, BUR system or CPE, CSM, CSPE, EPDM, NBP, PIB, PVC, TPO or TRE membrane system suitable for use with any roof insulation.

Note 1: Classification (A, B or C) and max incline will be the same as that of the Classified Roofing System (TGFU) currently limited to noncombustible deck.

Note 2: The use of the "DensDeck® Roofboard," or "DensDeck Prime® Roofboard" or (min ½ in.) DensDeck Prime 2™ Roofboard" or "DensDeck DuraGuard® Roofboard" as a barrier board over the insulation permits the use of any Classified Roofing System (TGFU) which otherwise is limited to use over noncombustible deck.

Note 3: The use of the "DensDeck® Roofboard," or "DensDeck Prime® Roofboard" or (min ½ in.) DensDeck Prime 2™ Roofboard" or "DensDeck DuraGuard® Roofboard" as a barrier board directly over the combustible deck permits the use of any Classified Roofing System (TGFU) which otherwise is limited to use over noncombustible deck. When used, insulation must consist of one of the types specified.

Note 4: The use of ¼ in. thick "DensDeck Prime 2™" limited to a slope of 2-1/2 in. or less.

ALL SYSTEMS

Class A, B or C

**UNITED STATES GYPSUM CO,
UNDERWRITERS LABORATORIES (UL) TGFU.R.1319, ROOFING SYSTEMS**

9. Deck: C-15/32

Incline: See Note 2

Insulation: — Fiberglass, polyisocyanurate, perlite or wood fiber, (UL Classified, any thickness).

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Membrane: — Any modified bitumen system, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

10. Deck: C-15/32

Incline: See Note 5

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Insulation: — Fiberglass, polyisocyanurate, perlite or wood fiber, (UL Classified, any thickness).

Membrane: — Any modified bitumen system, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use over the types of insulation specified above Classified under Roofing Systems (TGFU).

Note 2: Classification (A, B or C) and incline limited to membrane manufacturer's insulated or non-insulated roofing systems (TGFU) Certifications but incline is not to exceed 3-in.

Note 3: The use of SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) as a barrier board directly over the combustible deck permits the use of any Classified Roofing System (TGFU) which otherwise is limited to use over noncombustible deck. When used, the insulation must consist of one of the types specified.

Note 5: Classification (A, B or C) and incline limited to membrane manufacturer's insulated roofing systems (TGFU) Certifications but incline is not to exceed 3-in.

ALL SYSTEMS

Class A

For Combustible Decks - Class A: Incline: 1/2

1. A minimum 3 in. layer or a minimum two layers of 1.5 in. of "Poly ISO 1-DWD" or "Poly ISO 1-HD-Composite" is placed directly over a combustible deck and is covered with any UL Classified roofing membrane used in any UL Class A roofing assembly to achieve a Class A fire Classification. As an alternative, any UL Classified insulation (except expanded or extruded polystyrene), any combination, any thickness, may be used below the 3 in. minimum total thickness of "Poly ISO 1-DWD" or "Poly ISO 1-HD-Composite". The insulation may be loosely laid or attached with fasteners and plates, hot roofing asphalt or cold adhesive. A vapor barrier (non-UL classified) may also be used below the insulation. All insulation joints must be staggered a minimum of 6 in. from the deck joints or from the insulation joints directly below. The maximum incline shall be in accordance with the Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.
2. A minimum 1.9 in. layer of "Poly ISO 1-DWD" or "Poly ISO 1-HD-Composite" is placed over a minimum 1 layer of Carlisle "FR Base Sheet 1S" or Elk "VersaShield FB-1S" over a combustible deck. The insulation is covered with any UL Classified roofing membrane used in any UL Class A roofing assembly to achieve a Class A fire Classification. As an alternative, any UL Classified insulation (except expanded or extruded polystyrene), any combination, any thickness, may be used below the 1.9 in. minimum total thickness of "Poly ISO 1-DWD" or "Poly ISO 1-HD-Composite". The insulation may be loosely laid or attached with fasteners and plates, hot roofing asphalt or cold adhesive. A vapor barrier (non-UL classified) may also be used below the insulation. All insulation joints must be staggered a minimum of 6 in. from the deck joints or from the insulation joints directly below. The maximum incline shall be in accordance with the Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.
3. A minimum 1 in. layer of Mule-Hide Panels "Poly ISO 1-WD-Class A" is placed directly over a combustible deck and is covered with any UL Classified roofing membrane used in any UL Class A roofing assembly to achieve a Class A fire Classification. As an alternative, any UL Classified insulation (except expanded or extruded polystyrene), any combination, any thickness, may be used below the 1 in. minimum thickness of Mule-Hide Panels "Poly ISO 1-WD-Class A ". The insulation may be loosely laid or attached with fasteners and plates, hot roofing asphalt or cold adhesive. A vapor barrier (non-UL classified) may also be used below the insulation. All insulation joints must be staggered a minimum of 6 in. from the deck joints or from the insulation joints directly below. The maximum incline shall be in accordance with the Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.

Class A – All Systems (Continued)

**** For Combustible Decks - Class A:**

A minimum 1 in. layer of "AC Foam IV" placed directly over a combustible deck and covered with any UL Classified roofing membrane used in any UL Class A roofing assembly to achieve a Class A fire Classification. As an alternate, any UL Classified insulation (except expanded or extruded polystyrene), any combination, any thickness, may be used above or below the 1 in. minimum total thickness of "AC Foam IV." All insulation joints must be staggered a minimum of 6 in. from the deck joints or from the insulation joints directly below. The maximum incline shall be in accordance with the Classification established for the membrane/insulation roofing assembly, however the incline cannot exceed 1:12.

ALL SYSTEMS

Class B

For Combustible Decks - Class B: Incline: 1/2

1. A minimum 1.9 in. layer of "Poly ISO 1-DWD" or "Poly ISO 1-HD-Composite", or a minimum 2 in. thick layer of Carlisle "Polyiso HP-WLC" or Atlas "AC Foam III" is placed directly over a combustible deck and is covered with any UL Classified roofing membrane used in any UL Class B roofing assembly to achieve a Class B fire Classification. As an alternative, any UL Classified insulation (except expanded or extruded polystyrene), any combination, any thickness, may be used below the 1.9 in. minimum thickness layer of "Poly ISO 1-DWD" or "Poly ISO 1-HD-Composite". The insulation may be loosely laid or attached with fasteners and plates, hot roofing asphalt or cold adhesive. A vapor barrier (non-UL classified) may also be used below the insulation. All insulation joints must be staggered a minimum of 6 in. from the deck joints or from the insulation joints directly below. The maximum incline shall be in accordance with the Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.

CLASS A - BALLASTED

Unless otherwise indicated in the systems described below, the insulation and the membrane are laid loosely and surfaced with river bottom stone, nom 1-1/2 in. diameter, at 1000 lbs/sq min. Suitable alternates are size Nos. 1, 2, 24, 3 and 4 (as per ASTM D448), also at 1000 lbs/sq min. In addition, concrete pavers or crushed stone may be used. Pavers must weigh 1000 lbs/sq min and spaced no more than 1/8 in. apart and the crushed stone must meet the above size and weight requirements. Membrane splices, 3 to 4 in. wide are adhered with "Mule-Hide Black Splice Cement" at 130 to 150 lin ft/gal. Before the splice is assembled, a 3/16 in. bead of "Mule-Hide Inseam Sealant" is applied to the seam area.

Unless otherwise indicated, any of the reinforced membranes (Mule-Hide Standard Reinforced EPDM or Mule-Hide White-On-Black Reinforced EPDM) may be substituted for the membrane described in the following ballasted systems.

- 3. Deck: NC** **Incline: 2**
Insulation: — Wood fiber, polystyrene, glass fiber, Owens Corning "Roof Deck", perlite/urethane composite, phenolic, polyisocyanurate, urethane, any thickness, any combination.
Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.
- 4. Deck: C-15/32** **Incline: 2**
Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.
- 5. Deck: C-15/32** **Incline: 1**
Insulation: — 3/4 in. min perlite over 1/2 in. min wood fiber; 3/4 in. min perlite over 1/2 in. min wood fiber over 5 in. max polystyrene.
Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.
- 6. Deck: C-15/32** **Incline: 2**
Insulation: — One of or combination of the following, any thickness:
A. Gypsum Board.
B. Wood fiber over gypsum board.
C. Polystyrene over gypsum board.
D. Fiberglass, perlite, polyisocyanurate, urethane, phenolic.
Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.
- 7. Deck: C-15/32** **Incline: 2**
Insulation (Below Membrane-Optional): — One layer, any Classified insulation, any thickness.
Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.
Insulation (Above Insulation): — Dow Chemical "Styrofoam -LG, -RM, or -RM-60", 4 in. max, or UC Industries "Foamular 154, 254 and 404", 8 in. max.
Surfacing: — As an alternate to loose laid ballast, insulation boards may be surfaced with 3/8 in. min concrete topping.

Class A – Ballasted (Continued)

11. **Deck:** NC

Incline: 2

Insulation: — Polyisocyanurate, glass fiber or perlite, any thickness.

Membrane: — Any UL Classified EPDM, adhered to the insulation with "WBBA 2000" applied at 1-gal/100-ft².

Surfacing: — River bottom stone (3/4 to 1-1/2 in. diameter) 1000-lbs/100-ft².

12. **Deck:** NC

Incline: 2

Insulation: — "Poly ISO 1", "Poly ISO 2", "Poly ISO 1-WF" or "Poly ISO 1-NB", any thickness

Membrane: — Any UL Classified membrane, loose laid.

Surfacing: — River Bottom Stone (3/4 - 1-1/2 in. diameter), 1000 lbs / sq.

13. **Deck:** NC

Incline: 2

Insulation: — "Poly ISO 1", "Poly ISO 1-NB" or "Poly ISO 1-WF", any thickness.

Membrane: — Any UL Classified, laid loosely.

Surfacing: — River Bottom Stone (3/4 - 1-1/2 in. diam), 1000 lbs/sq.

CLASS A – FULLY ADHERED

Unless otherwise indicated, the specified membrane is adhered to the insulation with Mule-Hide Bonding Adhesive at 1-1/3 gal/sq. Field membrane splices, 3 to 4 in. wide are adhered with "Mule-Hide Black Splice Cement" at 130-150 lin ft/gal. Before the splice is assembled a 3/16 in. bead of "Mule-Hide in-Seam Sealant" is applied to the seam area.

Unless otherwise indicated membranes are adhered to barrier board (wood fiberboard or gypsum board covered insulation) EPDM Systems only, with "Mule Hide Acrylic Water Based Bonding Adhesive" at 1 gal per 100 sq/ft. The field membrane splices are sealed with "Mule Hide Seam Tape".

In the Mule-Hide White-On-Black EPDM Systems described below, the installation is the same as listed above except "Mule-Hide White Splice Cement" is used in the place of "Mule-Hide Black Splice Cement". Coverage rates are the same.

Unless otherwise indicated, 7/16 in. (min) thick nonveneer APA rated oriented strand board may be substituted for wood fiber in the following systems.

13. Deck: NC

Incline: 1

Insulation: — Wood fiber, 1/2 to 3 in; wood fiber, 1/2 in. min, over polystyrene, phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, pre-cast concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in. or "Mule-Hide FR EPDM", 0.045 or 0.060 in.

14. Deck: NC

Incline: 1/2

Insulation: — Poly ISO 2, Atlas Roofing "ACFoam II", Johns Manville "ENRGY-1A", "ENRGY-1G" or "Barrier Board Plus", Rhoflex "Isocyanurate GL, GW" or Rmax Inc. "Multi-Max-3", any thickness.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.

15. Deck: C-15/32

Incline: 1/2

Barrier Board: — Gypsum board.

Insulation: — Poly ISO 2, Atlas Roofing "ACFoam II", Johns Manville "ENRGY-1A", "ENRGY-1G", "Barrier Board Plus", Rhoflex "Isocyanurate GL, GW" or Rmax Inc. "Multi-Max-3", any thickness.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.

16. Deck: C-15/32

Incline: 1

Insulation: — One of or combination of the following:

A. Gypsum board

B. Gypsum board over phenolic, polyisocyanurate, polystyrene, urethane, any thickness; wood fiber, 1/2 in. min over gypsum board; wood fiber, 1/2 in. min over phenolic, polyisocyanurate, urethane, any total thickness, over gypsum board.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.

Class A – Fully Adhered (Continued)

17. **Deck:** NC **Incline:** 1/2
Insulation: — See "Reference Insulations".
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.
18. **Deck:** NC **Incline:** 1-1/2
Insulation: — Wood fiber, 1/2 to 3 in. or wood fiber, 1/2 in. min, over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured-in-place) concrete.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.
19. **Deck:** NC **Incline:** 1
Insulation: — Wood fiber, 1/2 in. min, over polystyrene, any thickness.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.
20. **Deck:** C-15/32 **Incline:** 1-1/2
Insulation: — One of or combination of the following:
A. Gypsum board.
B. Gypsum board over phenolic, polyisocyanurate, polystyrene, urethane, any thickness.
C. Wood fiber, 1/2 in. min, over gypsum board.
D. Wood fiber, 1/2 in. min, over phenolic, polyisocyanurate, urethane, any total thickness, over gypsum board.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.
21. **Deck:** C-15/32 **Incline:** 1/2
Barrier Board: — Gypsum board.
Insulation: — See "Referenced Insulations".
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.
22. **Deck:** NC **Incline:** 1/4
Insulation: — "See Referenced Insulations".
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.
23. **Deck:** NC **Incline:** 1
Insulation: — Wood fiber, 1/2 to 3 in.; wood fiber, 1/2 in. min over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured in place) concrete.
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.
24. **Deck:** C-15/32 **Incline:** 1/4
Barrier Board: — Gypsum board.
Insulation: — See "Referenced Insulations".
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.

Class A – Fully Adhered (Continued)

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

Insulation: — One or or combination of the following:

- A. Gypsum board.
- B. Gypsum board over phenolic, polyisocyanurate, urethane, any thickness; wood fiber, 1/2 in. min over gypsum board; wood fiber, 1/2 in. min over phenolic, polyisocyanurate, urethane, any thickness, over gypsum board.

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.

26. **Deck:** NC

Incline: 1

Insulation: — Wood fiber, 1/2 in. min over polystyrene, any thickness.

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.

27. **Deck:** NC

Incline: 2-1/2

Insulation: — Oriented strand board; oriented strand board over phenolic, polyisocyanurate, urethane, any thickness.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.

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

Incline: 2-1/2

Insulation: — One of or combination of the following:

- A. Oriented Strand Board over gypsum board.
- B. Oriented strand board over phenolic, polyisocyanurate, polystyrene, urethane, any total thickness, over gypsum board.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.

29. **Deck:** NC

Incline: 1

Insulation: — Wood fiber, 1/2 to 3 in.; wood fiber, 1/2 in. min, over polystyrene, phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, pre-cast concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide Standard EPDM", 0.060 in., adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.

30. **Deck:** NC

Incline: 1

Insulation: — Wood fiber, 1/2 to 3 in.; wood fiber, 1/2 in. min, over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, pre-cast concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in. adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.

31. **Deck:** NC

Incline: 1/2

Insulation: — Poly ISO 2, Atlas Roofing "ACFoam II", Johns Manville "ENRGY-1G", any thickness.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in., adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.

Class A – Fully Adhered (Continued)

32. **Deck:** NC **Incline:** 1/2

Insulation: — Wood fiber, 1/2 to 3 in. or wood fiber, 1/2 in. min, over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in. adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.

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

Incline: Unlimited

Insulation: — One of or combination of the following:

A. Gypsum Board.

B. Gypsum Board over polyisocyanurate, polystyrene, urethane, any thickness; Structodeck or Struditop wood fiberboard 1/2 in. min thickness over gypsum, Structodeck or Sturditop wood fiberboard 1/2 in. min thickness over polyisocyanurate, urethane, any total thickness, over gypsum board.

Membrane: — Mule-Hide "FR Reinforced EPDM", .045 or .060 in.

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

Incline: 1/2

Barrier Board: — 1/2 in. min thick gypsum board or 1/4 in. min G-P Gypsum DensDeck®, mechanically fastened with insulation fasteners (6 in. offset of gypsum board joints from plywood deck joints).

Membrane: — "Mule-Hide Standard EPDM", .045 or .060 in. or "Mule-Hide White-on-Black EPDM", .045 or .060 in. or "Mule-Hide Standard Reinforced EPDM", .045 or .060 in. adhered with "Mule-Hide Acrylic Water-Base Bonding Adhesive" at 1 gal/sq.

49. **Deck:** NC

Incline: 1/4

Insulation: — Celotex "Hy-Therm White Line", "Hy-Therm AP" or "Hy-Therm Pyrox", any thickness.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.

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

Incline: 1/4

Barrier board: — Gypsum board.

Insulation: — Celotex "Hy-Therm White Line", "Hy-Therm AP", "Hy-Therm Pyrox", any thickness.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in.

51. **Deck:** NC

Incline: 1/4

Insulation: — Celotex "Hy-Therm White Line", "Hy-Therm AP", "Hy-Therm Pyrox", any thickness.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.

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

Incline: 1/4

Barrier Board: — Gypsum board.

Insulation: — Celotex "Hy-Therm White Line", "Hy-Therm AP", "Hy-Therm Pyrox", any thickness.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in.

Class A – Fully Adhered (Continued)

53. **Deck:** NC **Incline:** 1/4
Insulation: — Celotex "Hy-Therm White Line", "Hy-Therm AP", "Hy-Therm Pyrox", any thickness.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in., adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.
61. **Deck:** C - 7/16-in. "Mule-Hide FR Deck Panel A" or Barrier Technology Corp. "Blazeguard A"*
Incline: 1/2
Membrane: — Any UL Classified fully adhered EPDM, PVC, TPO or self-adhered modified bitumen cap sheet. Maximum incline is determined by the existing membrane Classification but cannot exceed 1/2:12.

* - All deck with non-coated edges require all deck joints blocked with 2 x 4 lumber. Gaps in "Mule-Hide FR Deck Panel" or Barrier Technology Corp. "Blazeguard A" are caulked with Rectorseal "FlameSafe® FS900+" caulk. All FR Deck panel with edges coated with "Blazeguard Fire-Resistant Paint", 80-250 ft²/gal., only require blocking below the open joints with 2 x 4 lumber.

104. **Deck:** NC **Incline:** 1/2
Insulation: — "Poly ISO 1", "Poly ISO 2", "Poly ISO 1-WF" or "Poly ISO 1-NB", any thickness, mechanically fastened.
Membrane: — "Mule-Hide Standard EPDM (.060)", fully adhered with "Mule-Hide Bonding Adhesive", 1-2/3 gal/sq or "Mule-Hide SP-100 Adhesive".
106. **Deck:** NC **Incline:** 1/2
Insulation: — "Poly ISO 1", any thickness, mechanically fastened.
Membrane: — "Mule-Hide Standard EPDM", 0.045 to 0.090-in., fully adhered with Carlisle "90-8-30A", 1-2/3 gal/100-ft.²
108. **Deck:** NC **Incline:** See Note
Insulation (Optional): — Any UL Classified insulation, any thickness.
Barrier Board: — "Mule-Hide FR Deck Panel A" or Barrier Technology Corp. "Blazeguard A"*
Membrane: — Any UL Classified Mule-Hide fully adhered EPDM, PVC, TPO or self-adhered modified bitumen cap sheet,

Note: Maximum incline is determined by the existing membrane/adhesive Classification.

112. **Deck:** NC **Incline:** 2
Insulation: — Wood fiber, 1/2 to 3-in; wood fiber, 1/2-in. minimum thick, over polystyrene, phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, pre-cast concrete with grouted joints or structural (poured-in-place) concrete.
Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

Class A – Fully Adhered (Continued)

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

Incline: 2

Insulation: — One of or combination of the following:

A. Gypsum board.

B. Gypsum board over phenolic, polyisocyanurate, polystyrene, urethane, any thickness; wood fiber, 1/2-in. minimum over gypsum board; wood fiber, 1/2-in. minimum over phenolic, polyisocyanurate, urethane, any total thickness, over gypsum board.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

114. **Deck:** NC

Incline: 1/2

Insulation: — Wood fiber, 1/2 to 3-in. thick or wood fiber, 1/2-in. thick minimum, over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

115. **Deck:** NC

Incline: 1/2

Insulation: — Wood fiber, 1/2- in. thick minimum, over polystyrene, any thickness.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.090-in. fully adhered with Choice Brand Adhesives Ltd."CBA-904A "applied at a rate of 1-gal/100-ft.²

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

Incline: 1/2

Insulation: — One of or combination of the following:

A. Gypsum board.

B. Gypsum board over phenolic, polyisocyanurate, polystyrene, urethane, any thickness.

C. Wood fiber, 1/2-in. thick minimum, over gypsum board.

D. Wood fiber, 1/2-in. thick minimum, over phenolic, polyisocyanurate, urethane, any total thickness, over gypsum board.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

117. **Deck:** NC

Incline: 1/2

Insulation: — Wood fiber, 1/2 to 3-in. thick; wood fiber, 1-1/2 in. thick minimum over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured in place) concrete.

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0. 0.075-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

Class A – Fully Adhered (Continued)

118. **Deck:** C-15/32 **Incline:** 1/2
Insulation: — One or more combination of the following:
A. Gypsum board.
B. Gypsum board over phenolic, polyisocyanurate, urethane, any thickness; wood fiber, 1/2-in. thick minimum over gypsum board; wood fiber, 1/2-in. thick minimum over phenolic, polyisocyanurate, urethane, any thickness, over gypsum board.
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.075-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²
119. **Deck:** NC **Incline:** 1/2
Insulation: — Wood fiber, 1/2-in. thick minimum over polystyrene, any thickness.
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.075-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²
120. **Deck:** NC **Incline:** 1/2
Insulation: — Oriented strand board; oriented strand board over phenolic, polyisocyanurate, urethane, any thickness.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²
121. **Deck:** C-15/32 **Incline:** 1/2
Insulation: — One or combination of the following:
A. Oriented Strand Board over gypsum board.
B. Oriented strand board over phenolic, polyisocyanurate, polystyrene, urethane, any total thickness, over gypsum board.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²
122. **Deck:** NC **Incline:** 2
Insulation: — Wood fiber, 1/2 to 3-in. thick; wood fiber, 1/2-in. thick minimum, over polystyrene, phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, pre-cast concrete with grouted joints or structural (poured-in-place) concrete.
Membrane: — "Mule-Hide Standard EPDM", 0.045 to 0.090-in., fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²
123. **Deck:** NC **Incline:** 1/2
Insulation: — Wood fiber, 1/2 to 3-in. thick; wood fiber, 1/2-in. thick minimum, over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, pre-cast concrete with grouted joints or structural (poured-in-place) concrete.
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.075-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

Class A – Fully Adhered (Continued)

124. **Deck:** NC

Incline: 1/2

Insulation: — Wood fiber, 1/2 to 3-in. thick or minimum 1/2-in. thick wood fiber over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.090-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

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

Incline: 2-1/2

Insulation: — One of or combination of the following:

A. Gypsum Board.

B. Gypsum Board over polyisocyanurate, polystyrene, urethane, any thickness; Structodeck or Struditop wood fiberboard 1/2-in. thick minimum over gypsum, Structodeck or Sturditop wood fiberboard 1/2-in. thick minimum over polyisocyanurate, urethane, any total thickness, over gypsum board.

Membrane: — "Mule-Hide FR Reinforced EPDM", 0.045 or 0.060-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

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

Incline: 1/2

Barrier Board: — Minimum 1/2-in. thick gypsum board or minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard",

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.090-in. or "Mule-Hide White-on-Black EPDM", 0.045 or 0.090-in. or "Mule-Hide Standard Reinforced EPDM", .045 or 0.075-in. fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.²

127. **Deck:** C - 7/16-in. "Mule-Hide FR Deck Panel A" or Barrier Technology Corp. "Blazeguard A" *

Incline: 1/2

Membrane: — Any UL Classified fully-adhered Mule-Hide Product Co. Inc. EPDM membrane fully adhered with "Acrylic Water Base Bonding Adhesive" applied at a rate of 1-gal/100-ft.². Maximum incline is determined by the existing membrane Classification but cannot exceed 1/2:12.

* All deck with non-coated edges require all deck joints blocked with 2 x 4 lumber. Gaps in "Mule-Hide FR Deck Panel" or Barrier Technology Corp. "Blazeguard A" are caulked with Rectorseal "FlameSafe® FS900+" caulk. All deck edges are to be coated with "Blazeguard Fire-Resistance Paint, 80 to 250-ft²/gal., only require blocking below the open joints with 2 x 4 lumber.

Class A – Fully Adhered (Continued)

128 (44). **Deck:** NC

Incline: 1/2

Insulation (Optional): — See "Referenced Insulations", any combination, any thickness.

Membrane: — "Mule-Hide Standard EPDM", "Mule-Hide White-on-Black EPDM", "Mule-Hide Standard Reinforced EPDM" or "Mule-Hide FR Reinforced EPDM", adhered with "AeroWeb". Total application rate is 0.45-gal/100-ft.².

129 (45). **Deck:** NC

Incline: 1

Insulation: — Carlisle Syntec Inc. "Carlisle HP Recovery Board", 1/2 to 3 in. thick or minimum 1/2 in. thick Carlisle Syntec Inc. "Carlisle Recovery Board", applied over any Classified insulation, any combination, any thickness; cellular concrete with grouted joints or structural (poured in place) concrete.

Membrane: — "Mule-Hide Standard EPDM", "Mule-Hide White-on-Black EPDM", "Mule-Hide Standard Reinforced EPDM" or "Mule-Hide FR Reinforced EPDM", adhered with "AeroWeb". Total application rate is 0.45-gal/100-ft.².

130 (46). **Deck:** C-15/32

Incline: 3

Insulation (Optional): — Any UL Classified, any combination, any thickness.

Barrier Board: — Minimum 1/2 in. thick gypsum board or minimum 1/4 in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard" or "DensDeck DuraGuard™ Roofboard".

Membrane: — "Mule-Hide Standard EPDM", "Mule-Hide Standard Reinforced EPDM" or "Mule-Hide FR Reinforced EPDM", adhered with "AeroWeb". Total application rate is 0.45-gal/100-ft.².

131 (47). **Deck:** C-15/32

Incline: 2

Insulation (Optional): — Any UL Classified, any combination, any thickness.

Barrier Board: — Minimum 1/2 in. thick gypsum board or minimum 1/4 in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard" or "DensDeck DuraGuard™ Roofboard".

Membrane: — "Mule-Hide White-on-Black EPDM" adhered with "AeroWeb". Total application rate is 0.45-gal/100-ft.².

CLASS B – FULLY ADHERED

1. **Deck:** NC **Incline:** 1/4
Insulation: — See "Referenced Insulations".
Membrane: — "Mule-Hide White-On-Black Reinforced EPDM", 0.045 or 0.060 in.

2. **Deck:** C-15/32 **Incline:** 1/4
Barrier Board: — Gypsum board.
Insulation: — See "Referenced Insulations".
Membrane: — "Mule-Hide White-On-Black Reinforced EPDM", 0.045 or 0.060 in.

3. **Deck:** NC **Incline:** 1/2
Insulation: — "Poly ISO 1", "Poly ISO 2", "Poly ISO 1-WF" or "Poly ISO 1-NB", any thickness, mechanically fastened.
Membrane: — "Mule-Hide FR EPDM (.060)", fully adhered with "Mule-Hide Bonding Adhesive", 1-2/3 gal/sq

CLASS C – FULLY ADHERED

1. **Deck:** NC **Incline:** 1
Insulation: — UC Industries "Foamular 150 or 250" or "Durapink", 2 in. max, mechanically fastened.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in., adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.

2. **Deck:** C-15/32 **Incline:** 1
Barrier Board: — Gypsum board, 0.463 in. thick min, weighing 184 lb/sq min.
Insulation: — UC Industries "Foamular 150 or 250" or "Durapink", 2 in. max, mechanically fastened.
Membrane: — "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in., adhered with Mule-Hide Acrylic Water-Base Bonding Adhesive at 1 gal/sq.

3. **Deck:** C - 7/16-in. "Mule-Hide FR Deck Panel C" or Barrier Technology Corp Blazeguard C"
Incline: 2
Membrane: — Any UL Classified fully adhered EPDM, PVC, TPO or self-adhered modified bitumen cap sheet. Maximum incline is determined by the existing membrane Classification but cannot exceed 2:12.

CLASS A – MECHANICALLY FASTENED

The membrane is mechanically fastened with metal strips and screws or secured over the insulation by mechanical fasteners and plates placed in the field splices. Field membrane splices, 6 in. min wide, are adhered with "Mule-Hide Black Splice Cement" at 85 to 95 lin ft/gal. Before the splice is assembled, a 3/16 in. bead of "Mule-Hide In-Seam Sealant" is applied to the seam area.

In the Mule-Hide White-On-Black EPDM Mechanically Fastened Systems Described below, the installation is the same as listed above except "Mule-Hide White Splice Cement" is used in place of "Mule-Hide Black Splice Cement". Coverage rates are the same.

Mule-Hide Products insulation boards designated as "Poly ISO 1-NB" or "Poly ISO 1-WF" are acceptable substitutes in any assembly which utilizes "Poly ISO 1".

Unless otherwise indicated, the insulation and membrane are fastened to the deck with metal screws and metal or plastic discs.

- **24. Deck: C-15/32** **Incline: 3/4, See Note**
Slipsheet: — Two layers Atlas "FR-10," mechanically fastened
Insulation (Optional): — Any UL Classified, any thickness (except EPS and wood fiberboard).
Membrane: — Any UL Classified PVC, CPE, CSM, CSPE, EPDM, NBP, PIB, TPO, EIP or TRE membrane. (Note: Membrane must be currently Classified for use over the insulation used. Actual incline is determined by the maximum existing membrane/insulation Classification incline.)
- 1. Deck: NC** **Incline: 1**
Insulation: — Wood fiber, 1/2 to 3-in.; wood fiber, 1/2-in. thick minimum, over phenolic, polyisocyanurate, urethane, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured-in-place) concrete.
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 to 0.075-in.
- 2. Deck: C-15/32** **Incline: 1**
Insulation: — One of or combination of the following:
A. Gypsum board.
B. Gypsum board over phenolic, polyisocyanurate, polystyrene, urethane, any thickness; wood fiber, 1/2-in. thick minimum, over gypsum board; wood fiber, 1/2-in. thick minimum over phenolic, polyisocyanurate, polystyrene, urethane, any thickness, over gypsum board.
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 to 0.075-in.
- 3. Deck: C-15/32** **Incline: 1/4**
Barrier Board: — Gypsum board.
Insulation: — See "Referenced Insulation".
Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 to 0.075-in.

Class A – Mechanically Fastened (Continued)

6. **Deck:** NC

Incline: 1/2

Insulation: — "Poly ISO 1", "Poly ISO 2", "Poly ISO 1-WF" or "Poly ISO 1-NB", any thickness.

Membrane: — "Mule-Hide Standard EPDM", 0.045 to 0.090-in..

8. **Deck:** NC

Incline: 1/2

Insulation: — "Poly ISO 1", any thickness.

Membrane: — Mule-Hide Standard EPDM" 0.045 to 0.090-in.

9. **Deck:** NC

Incline: 1/4

Insulation: — See "Referenced Insulations".

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 to 0.075-in.

CLASS B – MECHANICALLY FASTENED

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

Incline: 1/2, See Note

Slipsheet: — One Ply Atlas "FR-10," mechanically fastened

Membrane: — Any UL Classified PVC, CPE, CSM, CSPE, EPDM, NBP, PIB, TPO, EIP or TRE membrane. (Note: Membrane must be currently Classified for use over the insulation used. Actual incline is determined by the maximum existing membrane/insulation Classification incline, but cannot exceed 1/2:12.)

1. Deck: C-15/32

Incline: 1

Base Sheet: — One layer, mechanically fastened, one of the following:

- A. Owens Corning "Perma Ply No. 28".
- B. GAF "Gafglas #75 Base Sheet".
- C. Johns Manville "Glasbase".
- D. Tamko "Glass Base".
- E. Celotex Type G2 "Vaporbar GB".

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.

MAINTENANCE AND REPAIR SYSTEMS

CLASS A, B, AND C

UNITED STATES GYPSUM CO, UNDERWRITERS LABORATORIES (UL) TGFU.R.1319, ROOFING SYSTEMS

1. Deck: C-15/32

Incline: See Note

Existing roof system: — (To maintain existing Classification) Any Class A, B or C, coated or uncoated, insulated or un-insulated, smooth surfaced, Type G3 mineral surfaced cap sheet or mineral surfaced modified bitumen membrane BUR system.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board joints staggered a minimum of 6 in. from the plywood deck butt joints.

Roof System: — Any UL Classified insulated or un-insulated roof covering system, mechanically fastened or fully adhered.

2. Deck: NC

Incline: See Note

Existing roof system: — (To maintain existing Classification) Any Class A, B or C, gravel covered BUR system. Gravel may be removed.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Roof System: — Any UL Classified insulated or un-insulated roof system, mechanically fastened or fully adhered.

Note: Classification (A, B or C) and maximum incline limited to manufacturer's insulated or un-insulated roofing systems Certifications.

MAINTENANCE AND REPAIR SYSTEMS

CLASS A, B AND C

1. **Deck:** C-15/32 **Incline:** 1/2
Existing Roof System: — Class A, B or C mineral or smooth surfaced asphalt coated (not modified) cap sheet roofing system, to retain the existing Classification, is covered with:
Membrane: — "Mule-Hide Standard EPDM" or "Mule-Hide White-On-Black EPDM" 0.045 or 0.060 in., fully adhered.
2. **Deck:** C-15/32 **Incline:** 1/2
Existing Roof System: — Class A, B or C mineral or smooth surfaced asphalt coated (not modified) cap sheet roofing system, to retain the existing Classification, is covered with:
Slip Sheet: — Atlas Roofing " FR-50", laid loosely.
Membrane: — "Mule-Hide Standard Reinforced EPDM" or "Mule-Hide White-On-Black Reinforced EPDM", 0.045 or 0.060 in., mechanically fastened.
12. **Deck:** C-15/32 or NC **Incline:** See Note
Existing Roof System: — Any Class A, B or C roofing system, to retain the existing Classification, is covered with:
Insulation: — Hunter Panels "Poly ISO 1-HD" or " Poly ISO 1-HD90".
Membrane: — Any UL Classified membrane.
- Max incline shall be in accordance with Classification established for insulation/membrane roofing system, but cannot exceed 2:12. TPO membranes are limited to a 1/2:12. max. slope.
13. **Deck:** C-15/32 or NC **Incline:** See Note
Existing Roof System: — Any Class A, B or C roofing system, to retain the existing Classification, is covered with:
Insulation: — Hunter Panels " Poly ISO 1-HD-Composite ".
Membrane: — Any UL Classified membrane.

Note: Max incline shall be in accordance with Classification established for insulation/membrane roofing system, but cannot exceed 2:12. TPO membranes are limited to a 1/2:12. max. slope.

MAINTENANCE AND REPAIR SYSTEMS - CLASS A

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

Incline: 1/2

Existing Roof System: — Class A, B or C roofing system is covered with:

Barrier Board: — Gypsum board.

Membrane: — "Mule-Hide Standard Reinforced EPDM" or "Mule-Hide White-On-Black Reinforced EPDM", 0.045 or 0.060 in., mechanically fastened.

9. **Deck:** NC

Incline: 1

Existing Roof System: — Class A, B or C built-up system, cap sheet or gravel surfaced, gravel maintained.

Insulation: — UC Industries "Fan-Fold", one layer or "Durapink", 1 in. max, mechanically fastened.

Ply Sheet: — One or more plies Type G2.

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.

21. **Deck:** NC

Incline: See Note

Existing Roof System: — Class A, B or C roofing system (gravel may be removed from gravel built-up or ballasted single-ply system).

Insulation: — A minimum 3 in. layer or minimum two layers of "Poly ISO 1-DWD".

Membrane: — Any UL Classified roofing membrane.

Note: The maximum incline shall be in accordance with the Class A Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.

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

Incline: See Note

Existing Roof System: — Class A, B or C roofing system (gravel may be removed from gravel built-up or ballasted single-ply system).

Insulation: — A minimum 3 in. layer or minimum two layers of "Poly ISO 1-DWD".

Membrane: — Any UL Classified roofing membrane.

Note: The maximum incline shall be in accordance with the Class A Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.

MAINTENANCE AND REPAIR SYSTEMS - CLASS B

4. Deck: C-15/32

Incline: 1/2

Existing Roof System: — Class A or B roofing system covered with:

Insulation: — Wood fiber, 1/2 to 3 in., wood fiber over polystyrene, phenolic, polyisocyanurate, urethane, any thickness.

Membrane: — "Mule-Hide Standard EPDM", 0.045 or 0.060 in., "Mule-Hide White-On-Black EPDM", 0.045 or 0.060 in., fully adhered as described for Design A, Brite-Ply Adhered. Optionally, "Mule-Hide Standard Reinforced EPDM" or "Mule-Hide White-On-Black Reinforced EPDM", 0.045 or 0.060 in., may be mechanically fastened.

6. Deck: NC

Incline: See Note

Existing Roof System: — Class A, B or C roofing system (gravel may be removed from gravel built-up or ballasted single-ply system).

Insulation: — A minimum 1.9 in. layer of "Poly ISO 1-DWD".

Membrane: — Any UL Classified roofing membrane.

Note: The maximum incline shall be in accordance with the Class A Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.

7. Deck: C-15/32

Incline: See Note

Existing Roof System: — Class A, B or C roofing system (gravel may be removed from gravel built-up or ballasted single-ply system).

Insulation: — A minimum 1.9 in. layer of "Poly ISO 1-DWD".

Membrane: — Any UL Classified roofing membrane.

Note: The maximum incline shall be in accordance with the Class A Classification established for the membrane/insulation roofing assembly, however the incline can not exceed 1/2:12.

MAINTENANCE AND REPAIR SYSTEMS - CLASS C

1. Deck: NC

Incline: 1

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

Insulation: — Wood fiber, 1/2 to 3 in.

Membrane: — "Mule-Hide Standard EPDM", 0.045 in., mechanically attached as described for Design NP. Optionally, the above membrane or the 0.060 in. membrane can be fully adhered.

2. Deck: NC

Incline: 1

Existing Roof System: — Class A, B or C built-up system, cap sheet or gravel surfaced, gravel may be removed.

Insulation: — UC Industries "Fan-Fold", one layer or "Durapink", 1 in. max, mechanically fastened.

Slip Sheet (Optional): — Atlas Roofing "FR-10".

Membrane: — "Mule-Hide Standard Reinforced EPDM", 0.045 or 0.060 in.