

UL Listings - PVC

"The name trusted in roofing since 1906"



**MULE-HIDE PRODUCTS, CO., INC.
UNDERWRITERS LABORATORIES (UL)
TGFU.R13850
ROOFING SYSTEMS - PVC
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.

Unless otherwise indicated, Classifications for Mule-Hide "PVC Membrane" include 50 mil, 60 mil and 80 mil thick membranes. Mule-Hide "PVC KEE HP" is an acceptable alternate to "PVC Membrane" in any mechanically attached Classification. Mule-Hide "PVC KEE HP" is an acceptable alternate to "PVC Membrane" in any applicable fully adhered Classification. For adhered "Mule-Hide PVC" Membrane assemblies, the membrane is adhered with Mule-Hide "PVC Bonding Adhesive" or "Low VOC PVC Bonding Adhesive" at 45 to 65 ft²/gal, Mule-Hide "WBBA 2000" bonding adhesive at 120 ft²/gal, or "HydroBond Water-Based PVC Bonding Adhesive" at 125 ft²/gal.

Unless otherwise indicated, insulation is mechanically fastened to the roof deck.

Unless otherwise indicated, when referring to gypsum board in the following Certifications, the following will be referenced: minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" or minimum, United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" or "SECUROCK™ Roof Board Type SGMRX" or regular gypsum board (not Certified) laid with staggered joints (minimum of 6-in. offset) measuring 0.463 in. thick minimum and weighing a minimum of 184-lbs/100-ft.2 or Georgia-Pacific Gypsum LLC "Sound Deadening" Board, measuring minimum 0.208-in. thick and weighing a minimum of 109-lbs/100-ft.2 or minimum ¼-in. thick United States Gypsum Co. "SECUROCK™ 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 Certified insulation except polystyrene. Minimum ½-in. thick United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" is limited to a maximum 1:12 slope when used as a thermal barrier over a combustible roof deck in a system without insulation or with any UL Certified polystyrene insulation. Minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" or minimum ¼-in. thick Owens Corning "Strataguard" or minimum ¼-in. thick United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" or "SECUROCK™ Glass-Mat Roof Board Type SGMRX" or regular gypsum board may replace Carlise Syntec Inc. "HP Recovery Board" in any existing noncombustible deck Certification. When this is done, the resulting roofing system is acceptable for use over combustible (15/32-in. minimum) roof decks. The joints in the gypsum board are offset a minimum of 6-in. with the butt joints in the roof deck. Minimum ¼-in. United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" is limited to a maximum 3:12 slope when used over a combustible roof deck in a system with any UL Certified insulation except polystyrene. Minimum ½-in. thick United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" is limited to a maximum 1:12 slope when used over a combustible roof deck in a system without insulation or with any UL Certified polystyrene insulation.

Minimum ½-in. thick gypsum board or minimum ¼-in. thick Owens Corning "Strataguard" or minimum ¼-in.1 United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" or "SECUROCK™ Glass-Mat Roof Board Type SGMRX" or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" may be used in any existing noncombustible roof deck Certification. When this is done, the resulting roofing system is acceptable for use over combustible (15/32-in. minimum) roof decks. The joints in the gypsum board and overlayment board are offset a minimum of 6-in. with the butt joints in the roof deck. Minimum ¼-in. thick United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" is limited to a maximum 3:12 slope when used as a thermal barrier over a combustible roof deck in a system with any UL Certified insulation except polystyrene. Minimum ½-in. thick United States Gypsum Co. "SECUROCK™ Roof Board Type FRX-G" is limited to a maximum 1:12 slope when used as a thermal barrier over a combustible roof deck in a system without insulation or with any UL Certified 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.

Unless otherwise indicated, Classifications for "Mule-Hide PVC" include 50 mil, 60 mil and 80 mil thick membranes.

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

1. Minimum 80 mil (nominal thickness) Mule-Hide PVC membrane is applied over any combination of substrate layers, as specified in the roofing systems, and the substrate layer(s) are attached with fasteners and minimum 2 in. metal or plastic plates.
2. Minimum 50 mil (nominal thickness) Mule-Hide PVC 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.
3. 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" 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". 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" 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". 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.

**** 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 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". 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 – FULLY ADHERED

Unless otherwise indicated the term "FAST Adhesive" will include the following: "FAST® 100 Spray Polyurethane Foam Adhesive", "FAST® 100-P Spray Polyurethane Foam Adhesive", "FAST® 102 Spray Polyurethane Foam Adhesive" or "FAST® Adhesive Box Set".

The Mule-Hide "PVC KEE HP Fleece Back membrane" include Mule-Hide "PVC KEE HP Fleece Back 105", Mule-Hide "PVC KEE HP Fleece Back 115" and "PVC KEE HP Fleece Back 135". The Mule-Hide "PVC Fleece Back membrane" include "PVC Fleece Back 105", PVC Fleece Back 115" and "PVC Fleece Back 135".

The membrane is adhered to an acceptable insulation or substrate with a two-component spray applied low-rise polyurethane foam adhesive (FAST Adhesive). The coverage for FAST Adhesive, "FAST® 100 LV" and "Flexible FAST® Adhesive" is approximately 100 ft²/gal. The addition of catalyst to the FAST Adhesive may be required depending upon weather conditions. The membrane may also be adhered with Mule-Hide "WBBA 2000" at a rate of approximately 120-ft²/gal., "HydroBond Water-Based PVC Bonding Adhesive" at a rate of approximately 100-ft²/gal. may be used as a Certified alternate to the "WBBA 2000".

In any of the following systems, concrete decking or Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" board may be primed with "CCW-702 Primer" or "CCW-714 Primer" and optionally covered with Carlisle Syntec Inc. "Carlisle 725TR Self Adhering Air and Vapor Barrier".

Unless otherwise indicated the "FAST Adhesive", "FAST 100® LV" or "Flexible FAST® Adhesive" may be applied in 2 to 3-in. beads spaced 12-in. OC max as an alternate to full coverage. "FAST Dual Cartridge Adhesive" or "FAST Bag in a Box Adhesive" may be used as an alternate to "FAST 100 LV" and "Flexible FAST Dual Cartridge Adhesive" or "Flexible FAST Bag in a Box Adhesive" may be used as an alternate to "Flexible FAST® Adhesive" in any of the following systems.

Unless otherwise noted, Insulfoam LLC "Insulfoam SP", minimum 1-in. thick, can be used in lieu of polyisocyanurate insulation in any of the following systems.

Unless otherwise indicated membranes, for adhered "Mule-Hide PVC" assemblies, the membrane is adhered with "Mule-Hide PVC Bonding Adhesive" at 45 to 65-ft²/gal.

61. Deck: C - 7/16-in. "Mule-Hide FR Deck Panel 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 FR Deck Panel with non-coated edges require all deck joints blocked with 2 x 4 lumber. Gaps in ""Mule-Hide FR Deck Panel" 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.

Class A – Fully Adhered (continued)

1. Deck: NC Incline: 1-1/2
Insulation: — Any UL Certified wood fiberboard, ½ to 3-in.; any UL Certified Wood Fiberboard or oriented strand board (OSB), ½-in. minimum, over any Certified insulation, any combination, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured-in-place) concrete.
Membrane: — Mule-Hide "PVC Membrane".

2. Deck: NC Incline: 2
Insulation: — See "Referenced Insulations", any combination, any thickness.
Membrane: — Mule-Hide "PVC Membrane".

3. Deck: C-15/32 Incline: Unlimited
Insulation (Optional): — Any UL Classified , any combination, any thickness.
Barrier Board: — ½-in. minimum gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".
Membrane: — Mule-Hide "PVC Membrane".

4. Deck: NC Incline: 3
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — Oriented strand board.
Membrane: — Mule-Hide "PVC Membrane".

5. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers Carlisle "FR Base Sheet 2S", GAF "VersaShield Underlayment" or "VersaShield FB-2S", or three layers Carlisle "FR Base Sheet 1S" or GAF "VersaShield FB-1S".
Insulation: — Any UL Certified (except EPS), any combination, any thickness.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system, but cannot exceed 2:12.

5A. Deck: C-15/32 Incline: See Note
Slip Sheet: — Three layers Carlisle "FR Base Sheet 1S" or GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used.

Class A – Fully Adhered (continued)

5B. Deck: C-15/32

Incline: See Note

Slip Sheet: — Two layers Carlisle "FR Base Sheet 1S" or GAF "VersaShield FB-1S" or Atlas "FR-10".

Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed ¾:12

6. Deck: C-15/32

Incline: See Note

Slip Sheet: — One layer Atlas Roofing "FR-10" or "FR-50", Carlisle "FR Base Sheet 1S", "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — "Polyiso HP-WLC" or Atlas Roofing "ACFoam III", minimum 1.5 in. thick with joints staggered min 6 in. from the deck joints.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system.

7. Deck: C-15/32

Incline: Unlimited

Slip Sheet: — Three layers Carlisle "FR Base Sheet 2S", GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — Any UL Certified (except EPS or fiberboard), any combination, any thickness.

Membrane: — Mule-Hide "PVC Membrane".

20. Deck: NC

Incline: 1-1/2

Insulation: — Cellular concrete, precast concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — "Mule-Hide PVC".

21. Deck: NC

Incline: 3/4

Insulation: — "Poly ISO 2" or Atlas Roofing Corp. "ACFoam II", "ACFoam III" or Dow "Hy-Therm AP" or Johns Manville "ENRGY- 2", or "ENRGY-3", Firestone Building Products Co. LLC "Isocyanurate GL, GW or HF", Rmax Operating LLC "Multi-Max-3", any combination, any thickness.

Membrane: — "Mule-Hide PVC".

Class A – Fully Adhered (continued)

22. Deck: C-15/32 Incline: Unlimited
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — Minimum ½-in. thick gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".
Membrane: — "Mule-Hide PVC".

23. Deck: NC Incline: 3
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — Oriented strand board.
Membrane: — Mule-Hide "PVC Membrane".

24. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers GAF "VersaShield Underlayment" or "VersaShield FB-2S" or three layers GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system, but cannot exceed 2:12.

25. Deck: C-15/32 Incline: See Note
Slip Sheet: — Three layers GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used.

26. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed ¾:12.

Class A – Fully Adhered (continued)

27. Deck: C-15/32 Incline: See Note
Slip Sheet: — One layer Atlas Roofing Corp. "FR-10" or "FR-50", GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation: — Atlas Roofing "ACFoam III", minimum 1.5-in. thick with joints staggered minimum of 6-in. from the deck joints.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system.

28. Deck: C-15/32 Incline: Unlimited
Slip Sheet: — Three layers GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation: — Any UL Certified (except EPS or fiberboard), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

29. Deck: NC Incline: 1/4
Insulation: — "Poly ISO 1" or Hunter Panels "H-Shield", any combination, any thickness.
Membrane: — "Mule-Hide PVC".

33. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers Carlisle "FR Base Sheet 2S", GAF "VersaShield Underlayment" or "VersaShield FB-2S", or three layers Carlisle "FR Base Sheet 1S" or GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS), any combination, any thickness.
Membrane: — Any UL Certified Mule-Hide Fleece Back membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 2:12.

34. Deck: NC Incline: 3/4
Insulation: — See "Referenced Insulations", any combination, any thickness.
Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane".

35. Deck: NC Incline: 1-1/2
Insulation: — Any UL Certified, any thickness.
Insulation: — Any UL Certified ½-in. (minimum) wood fiberboard.
Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane".

Class A – Fully Adhered (continued)

36. Deck: C-15/32 Incline: Unlimited
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — ½-in. min gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".
Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane".

37. Deck: NC Incline: 2-1/2
Insulation: — See "Referenced Insulations", any combination, any thickness.
Membrane: — Mule-Hide "PVC Fleece Back Membrane".

38. Deck: NC Incline: 2-1/2
Insulation (Optional): — Any UL Certified, any thickness.
Insulation: — Carlisle HP Recovery Board or ½-in. (minimum) wood fiberboard.
Membrane: — Mule-Hide "PVC Fleece Back Membrane".

39. Deck: C-15/32 Incline: 3
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — ½-in. minimum gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".
Membrane: — Mule-Hide "PVC Fleece Back Membrane".

40. Deck: NC Incline: 2
Insulation (Optional): — Any UL Certified, any thickness, covered with Carlisle HP Recovery Board or 1/2 in. (min) wood fiberboard.
Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

41. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers Carlisle "FR Base Sheet 1S", "FR Base Sheet 2S", GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation (Optional): — Any UL Certified (except EPS), any combination, any thickness, covered with Carlisle HP Recovery Board or ½-in. (minimum) wood fiberboard.
Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 2:12.

Class A – Fully Adhered (continued)

42. Deck: C-15/32

Incline: See Note

Slip Sheet: — Three layers Carlisle "FR Base Sheet 1s" or GAF "VersaShield FB-1S".

Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.

Membrane: — Any UL Certified Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used.

43. Deck: C-15/32

Incline: See Note

Slip Sheet: — Two layers Carlisle "FR Base Sheet 1s" or GAF "VersaShield FB-1S" or Atlas "FR-10".

Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.

Membrane: — Any UL Certified Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt..

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 3/4:12

44. Deck: NC

Incline: 2

Slip Sheet: — One or more layers of the following - Carlisle "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or VersaShield FB-2S", or Type G2 base sheet, hot mopped or mechanically fastened.

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

45. Deck: C-15/32

Incline: See Note

Slip Sheet (Optional): — One or more layers of Carlisle "FR Base Sheet 2S" or GAF "VersaShield Underlayment", "VersaShield FB-2S", Type G2 base sheet or Uncertified slip sheet, hot mopped or mechanically fastened.

Barrier Board: — Minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" or minimum ¼- in. thick Strataguard or minimum ½-in. thick gypsum wallboard.

Slip Sheet: — One or more layers of Carlisle "FR Base Sheet 2S" or GAF "VersaShield Underlayment", "VersaShield FB-2S" or Type G2 base sheet, hot mopped or mechanically fastened.

Insulation (Optional): — Any UL Certified (except EPS), any combination, any thickness, covered with ½-in. wood fiberboard, hot mopped or mechanically fastened.

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

Class A – Fully Adhered (continued)

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 2:12.

46. Deck: C-15/32

Incline: 2

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

Insulation: — Roxul "MonoBoard", "MonoBoard Plus", "MonoBoard Plus S", "TopRock DD", "TopRock DD Plus" or "TopRock DD Plus S", ¾-in. minimum thickness with joints staggered 6 in. from the combustible deck joints.

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

47. Deck: C-15/32

Incline: 2

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

Insulation: — Roxul "MonoBoard", "MonoBoard Plus", "MonoBoard Plus S", "TopRock DD", "TopRock DD Plus" or "TopRock DD Plus S", ¾-in. minimum thickness with joints staggered 6 in. from the combustible deck joints.

Membrane: — Any UL Certified Mule-Hide "PVC KEE HP Fleece Back Membrane", fully adhered with hot roofing asphalt.

48. Deck: NC

Incline: Unlimited

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

Barrier Board: — 1½-in. minimum gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".

Membrane: — Any UL Certified Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

50. Deck: NC Incline: 1-1/2

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

Membrane: — "PVC KEE HP Fleece Back Membrane".

51. Deck: NC Incline: 2-1/2

Insulation: — Any UL Classified, any thickness. Insulation: — "Carlisle HP Recovery Board" or minimum 1/2-in. thick wood fiberboard. Membrane: — "PVC KEE HP Fleece Back Membrane".

52. Deck: C-15/32 Incline: Unlimited

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®". Membrane: — "PVC KEE HP Fleece Back Membrane".

57. Deck: NC Incline: 1/4

Insulation: — Rmax Operating LLC "Multi-Max-3", any thickness. Membrane: — "PVC Membrane"

CLASS B – FULLY ADHERED

1. Deck: C-15/32

Incline: See Note

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

A.) Type G2 Base Sheet.

B.) Carlisle "FR Base Sheet".

C.) GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — See "Referenced Insulations", minimum 1½-in. thick; any UL Certified wood fiber board, minimum 1in. thick; any UL Certified wood fiber board, minimum ½-in. thick over any Classified insulation (any combination), min 1 in. thick. The bottom insulation layer joints are to be staggered a min 6 in. from the deck joints.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system but not to exceed 1-in.

2. Deck: C-15/32

Incline: See Note

Slip Sheet: — One layer Carlisle "FR Base Sheet 1s" or GAF "VersaShield FB-1S" or Atlas "FR-10".

Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.

Membrane: — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness. Membrane: — Any UL Classified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed 1/2:12.

3. Deck: NC

Incline: 2-1/2

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

Membrane: — Mule-Hide "PVC Membrane".

4. Deck: C-15/32

Incline: See Note

Slip Sheet: — One layer "FR Base Sheet 1S" or Atlas "FR-10".

Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.

Membrane: — Any UL Certified Mule-Hide "PVC Fleece Back membrane".

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed 1/2:12.

5. Deck: C-15/32

Incline: 4

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

Barrier Board: — ½-in. minimum gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".

Membrane: — Mule-Hide "PVC Fleece Back Membrane".

Class B – Fully Adhered (continued)

6. Deck: NC

Incline: 1/2

Insulation: — See "referenced insulations", any combination, any thickness.

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

7. Deck: C-15/32

Incline: See Note

Slip sheet: — One layer Carlisle "FR Base Sheet 2S", GAF "VersaShield Underlayment" or "VersaShield FB-2S" or Atlas Roofing Corp. "FR-10", hot mopped or mechanically fastened.

Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 1/2:12.

CLASS C – FULLY ADHERED

5. **Deck:** C - 7/16-in. "Mule-Hide FR Deck Panel C" or Barrier Technology Corp.
"Blazeguard C" Incline: 2

Membrane: — Any UL Certified fully adhered PVC membrane. Maximum incline is determined by the existing membrane Certification but cannot exceed 2:12.

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

Insulation: — Any UL Certified wood fiberboard, ½-in. thick minimum.

Membrane: — "Mule-Hide PVC".

7. **Deck:** NC Incline: Unlimited

Insulation: — "Poly ISO 2" or Atlas Roofing "ACFoam II", "ACFoam III" or Dow "Hy-Therm AP" or Johns Manville "ENRGY- 2", "ENRGY-3" or Firestone Building Products Firestone Building Products Co. LLC "Isocyanurate GL, GW or HF" or Rmax Operating LLC "Multi-Max-3", any combination, any thickness.

Membrane: — "Mule-Hide PVC".

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

Insulation: — "Poly ISO 2" or Atlas Roofing "ACFoam II", "ACFoam III" or Dow "Hy-Therm AP" or Johns Manville "ENRGY- 2", "ENRGY-3" or Firestone Building Products Co. LLC "Isocyanurate GL, GW or HF", Rmax Operating LLC "Multi-Max-3", any combination, minimum 2-in. thick.

Membrane: — "Mule-Hide PVC".

9. **Deck:** NC Incline: 4-1/2

Insulation: — "Poly ISO 1" or Hunter Panels "H-Shield", any combination, any thickness.

Membrane: — "Mule-Hide PVC".

10. **Deck:** C-15/32 Incline: 4-1/2

Insulation: — "Poly ISO 1" or Hunter Panels "H-Shield", any combination, minimum 2-in. thick.

Membrane: — "Mule-Hide PVC".

18. **Deck:** NC Incline: See Note

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

Barrier Board: — "Mule-Hide FR Deck Panel C" or Barrier Technology Corp. "Blazeguard C", 7/16 in. min."

Membrane: — Any UL Classified Mule-Hide fully adhered PVC membrane.

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

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

Insulation: — Johns Manville "ENRGY 3 Plus" (composite) insulation or any UL Classified wood fiberboard, 1/2-in. thick minimum.

Membrane: — "Mule-Hide TPO-c Fleece Back" fully adhred with "FAST Adhesive".

Class C – Fully Adhered (continued)

21. **Deck:** C-15/32 Incline: 1
Insulation: — Any UL Certified wood fiberboard, ½-in. thick minimum.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.
22. **Deck:** NC Incline: Unlimited
Insulation: — See "Referenced Insulations", any combination, any thickness.
Membrane: — Mule-Hide "PVC Membrane".
23. **Deck:** C-15/32 Incline: Unlimited
Insulation: — See "Referenced Insulations", any combination, minimum 2-in. thick.
Membrane: — Mule-Hide "PVC Membrane".
24. **Deck:** C-15/32 Incline: Unlimited
Insulation: — See "Referenced Insulations", any combination, minimum 2-in. thick.
Membrane: — Any of the Mule-Hide KEE HP Fleece Back or Mule-Hide "PVC Fleece Back Membrane" adhered with "FAST Adhesive", "FAST® 100 LV", "Flexible FAST® Adhesive" or "WBBA 2000" bonding adhesive.
25. **Deck:** C-15/32 Incline: 1
Insulation: — Any UL Certified wood fiberboard, ½-in. thick minimum.
Membrane: — Any UL Certified Mule-Hide "PVC Fleece Back membrane" or Mule-Hide "PVC KEE HP Fleece Back membrane".
26. **Deck:** C-15/32 Incline: 1
Insulation: — Any UL Certified wood fiberboard, ½-in. thick minimum.
Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" fully adhered with hot roofing asphalt.
28. **Deck:** NC Incline: 4-1/2
Insulation: — Rmax Operating LLC "Multi-Max-3", any thickness. Membrane: — "PVC Membrane" or
29. **Deck:** C-15/32 Incline: 4-1/2
Insulation: — Rmax Operating LLC "Multi-Max-3", minimum 2-in. thick. Membrane: — "PVC Membrane"

CLASS A – MECHANICALLY ATTACHED

14. Deck: NC Incline: ½
Insulation: — "Poly ISO 2" or Atlas Roofing "ACFoam II", "ACFoam III" or Dow "Hy-Therm AP" or Johns Manville "ENRGY-2", "ENRGY-3" or Firestone Building Products Co. LLC "Isocyanurate GL, GW or HF" or Rmax Operating LLC "Multi-Max-3", any combination, any thickness.
Membrane: — "Mule-Hide PVC".

15. Deck: NC Incline: Unlimited
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — Minimum ½-in. thick gypsum wallboard or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard"
Membrane: — "Mule-Hide PVC".

16. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation: — Any UL Certified (except EPS), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system, but cannot exceed 2:12.

17. Deck: C-15/32 Incline: Unlimited
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — Minimum ½-in. thick gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" with all butt joints staggered and minimum of 6-in. from plywood roof deck butt joints.
Membrane: — "Mule-Hide PVC".

18. Deck: C-15/32 Incline: See Note
Slip Sheet: — One layer Atlas Roofing "FR-10" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation: — Atlas Roofing "ACFoam III", 1.5-in. thick with joints staggered minimum 6-in. from the deck joints.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system.

19. Deck: C-15/32 Incline: ½
Slip Sheet: — Two plies Atlas Roofing Corp. "FR-50".
Membrane: — "Mule-Hide PVC".

Class A – Mechanically Attached (Continued)

20. **Deck:** C-15/32 Incline: See Note
Slip Sheet: — Two layers GAF "VersaShield Underlayment" or VersaShield FB-2S".
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed 1½:12.

21. **Deck:** C-15/32 Incline: See Note
Slip Sheet: — Two layers GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation (Optional): — Any UL Certified (except EPS), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 2:12.

22. **Deck:** NC Incline: 1
Insulation: — Any UL Certified expanded or extruded polystyrene, any combination, any thickness.
Slip Sheet: — One layer Atlas Roofing Corp. "FR-10" or "FR-50" or GAF "VersaShield Underlayment" or "VersaShield FB-2S"
Membrane: — "Mule-Hide PVC".

23. **Deck:** C-15/32 Incline: See Note
Slip Sheet: — Two layers GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Insulation: — Any UL Certified (except EPS), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 2:12.

24. **Deck:** C-15/32 Incline: See Note
Slip Sheet: — Three layers GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Classification established for the insulation/membrane roof covering system when insulation is used or established for the membrane roof covering system applied over fiberboard or gypsum when insulation is not used.

Class A – Mechanically Attached (Continued)

30. **Deck:** NC Incline: 2-1/2

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

Membrane: — Mule-Hide "PVC Membrane".

31. **Deck:** NC Incline: 1

Insulation: — Any UL Certified Wood Fiberboard, ½ to 3-in. Any UL Certified UL Wood Fiberboard or oriented strand board (OSB), ½-in. minimum, over any Certified insulation, any combination, any thickness; cellular concrete, precast concrete with grouted joints or structural (poured-in-place) concrete.

Membrane: — Mule-Hide "PVC Membrane".

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

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

Membrane: — ½-in. thick gypsum wallboard or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".

Membrane: — Mule-Hide "PVC Membrane".

33. **Deck:** C-15/32 Incline: See Note

Slip Sheet: — Two layers Carlisle Syntec Inc. "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — Any UL Certified (except EPS), any combination, any thickness.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system, but cannot exceed 2:12.

34. **Deck:** C-15/32 Incline: Unlimited

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

Barrier Board: — Minimum ½-in. thick gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard" with staggered joints (6-in. offset).

Membrane: — Mule-Hide "PVC Membrane".

35. **Deck:** C-15/32 Incline: See Note

Slip Sheet: — One layer Atlas Roofing "FR-10", "FR-50" or Carlisle Syntec Inc. "FR Base Sheet 1S", "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — "Polyiso HP-WLC" or Atlas Roofing Corp. "ACFoam III", 1.5-in. thick with joints staggered minimum 6-in. from the deck joints.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system.

Class A – Mechanically Attached (Continued)

40. Deck: C-15/32 Incline: See Note
Slip Sheet: — Three layers Carlisle Syntec Inc. "FR Base Sheet 1s" or GAF "VersaShield FB-1S".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used.

41. Deck: C-15/32 Incline: See Note
Slip Sheet: — Two layers Carlisle Syntec Inc. "FR Base Sheet 1S" or GAF "VersaShield FB-1S" or Atlas "FR-10".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system when insulation is used or established for the membrane roofing system applied over fiberboard or gypsum when insulation is not used, but cannot exceed 3/4:12.

42. Deck: NC Incline: 2-1/2
Insulation: — See "Referenced Insulations", any combination, any thickness.
Membrane: — Mule-Hide "PVC Fleece Back Membrane" or Mule-Hide "PVC KEE HP Fleece Back Membrane".

42A. Deck: NC Incline: 2-1/2
Insulation (Optional): — Any UL Certified, any thickness.
Insulation: — Minimum ½-in. thick wood fiberboard.
Membrane: — Mule-Hide "PVC Fleece Back Membrane" or Mule-Hide "PVC KEE HP Fleece Back Membrane".

43. Deck: C-15/32 Incline: Unlimited
Insulation (Optional): — Any UL Certified, any combination, any thickness.
Barrier Board: — Minimum ½-in. thick gypsum board or minimum ¼-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard", "DensDeck Prime® Roofboard", "DensDeck DuraGuard™ Roofboard".
Membrane: — Mule-Hide "PVC Fleece Back Membrane" or Mule-Hide "PVC KEE HP Fleece Back Membrane".

CLASS B – MECHANICALLY ATTACHED

4. Deck: C-15/32

Incline: See Note

Base Sheet: — One layer, mechanically fastened, of one 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".

F. Elk "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — Atlas Roofing "ACFoam II" or "ACFoam III", Poly ISO 2, Dow "Hy-Therm AP", Hunter Panels "H-Shield", Poly ISO 1, Johns Manville "ENRGY- 2", or "ENRGY-3", Firestone Building Products "ISO 95+GL", "GW" or "HF", Rmax Operating LLC "Multi-Max-3", min 1½-in. thickness; UL Certified wood fiber board, minimum 1-in. thick; UL Certified wood fiber board, minimum ½-in. thick over any Certified insulation (any combination), minimum 1-in. thick. The bottom insulation layer joints are to be staggered a min 6 in. from the deck joints.

Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system but not to exceed 1-in.

5. Deck: C-15/32

Incline: See Note

Insulation: — UL Certified wood fiber board, minimum 1½-in. thick. The bottom insulation layer joints are to be staggered a minimum 6-in. from the deck joints.

Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system but not to exceed 1-in.

6. Deck: C-15/32

Incline: See Note

Slip Sheet: — GAF "VersaShield Underlayment" or VersaShield FB-2S".

Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed 1½:12.

7. Deck: C-15/32

Incline: See Note

Slip Sheet: — One layer GAF "VersaShield FB-1S".

Membrane: — "Mule-Hide PVC".

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed ½:12.

Class B – Mechanically Attached (Continued)

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

Incline: 1/2

Insulation (Optional): — Polyisocyanurate, minimum 1-in. thick.

Slip Sheet: — Two layers Atlas Roofing Corp. "FR 50" or GAF "VersaShield

Underlayment" or "VersaShield FB-2S".

Membrane: — "Mule-Hide PVC".

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

Incline: 1/2

Slip Sheet: — One ply Atlas Roofing Corp. "FR-50".

Membrane: — "Mule-Hide PVC".

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

Incline: See Note

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

A. Type G2 Base Sheet.

B. Carlisle Syntec Inc. "FR Base Sheet 2S".

C. GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Insulation: — See "Referenced Insulations", minimum 1½-in. thick; UL Certified wood fiber board, minimum 1-in. thick; UL Certified wood fiber board, minimum ½-in. thick over any Certified insulation (any combination), minimum 1-in. thick. The bottom insulation layer joints are to be staggered a minimum of 6-in. from the deck joints.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system but not to exceed 1-in.

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

Incline: See Note

Insulation: — UL Certified wood fiber board, minimum 1½-in. thick. The bottom insulation layer joints are to be staggered a minimum 6-in. from the deck joints.

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the insulation/membrane roofing system but not to exceed 1-in.

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

Incline: See Note

Slip Sheet: — One layer Carlisle Syntec Inc. "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or VersaShield FB-2S".

Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed 1½:12.

Class B – Mechanically Attached (Continued)

13. **Deck:** C-15/32 Incline: See Note
Slip Sheet: — One layer Carlisle Syntec Inc. "FR Base Sheet 1s" or GAF "VersaShield FB-1S" or Atlas "FR-10".
Insulation (Optional): — Any UL Certified (except EPS and wood fiberboard), any combination, any thickness.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

Note: Maximum incline shall be in accordance with Certification established for the membrane roofing system applied over fiberboard or gypsum, but cannot exceed 1/2:12.

14. **Deck:** C-15/32 Incline: 1/2
Insulation (Optional): — Polyisocyanurate, minimum 1-in. thick.
Slip Sheet: — Two layers Atlas Roofing Corp. "FR 50" or Carlisle Syntec Inc. "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

15. **Deck:** C-15/32 Incline: 1/2
Slip Sheet: — One ply "FR Base Sheet 2S" Atlas Roofing Corp. "FR-50".
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

16. **Deck:** C-15/32 Incline: 1/2
Base Sheet: — Inverted Type G3 cap sheet.
Membrane: — Any UL Certified "Mule-Hide PVC" membrane.

17. **Deck:** NC Incline: Unlimited
Insulation: — See "Referenced Insulations", any combination, any thickness.
Membrane: — Mule-Hide "PVC Membrane".

CLASS C – MECHANICALLY ATTACHED

5. Deck: C-15/32

Incline: 1

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

- A. Johns Manville "Perma Ply No. 28".
- B. GAF "GAFGLAS #75 Base Sheet".
- C. Johns Manville "Glasbase".
- D. Tamko "Glass Base".
- E. Celotex Type G2 "Vaporbar GB".
- F. Elk "VersaShield Underlayment" or "VersaShield FB-2S".

Membrane: — "Mule-Hide PVC".

10. Deck: C-15/32

Incline: 1

Insulation: — Any UL Classified wood fiberboard, 1/2 in. thick min.

Membrane: — "Mule-Hide PVC".

11. Deck: NC

Incline: Unlimited

Insulation: — Atlas Roofing "ACFoam II" or "ACFoam III", Dow "Hy-Therm AP", Johns Manville "ENRGY- 2", or "ENRGY-3", Rhoflex "Isocyanurate GL, GW or HF", Rmax Inc. "Multi-Max-3", any combination, any thickness.

Membrane: — "Mule-Hide PVC".

12. Deck: C-15/32

Incline: Unlimited

Insulation: — Atlas Roofing "ACFoam II" or "ACFoam III", Dow "Hy-Therm AP", Johns Manville "ENRGY- 2", or "ENRGY-3", Rhoflex "Isocyanurate GL, GW or HF", Rmax Inc. "Multi-Max-3", any combination, min 2" thickness.

Membrane: — "Mule-Hide PVC".

13. Deck: NC

Incline: 4-1/2

Insulation: — Hunter Panels "H-Shield", any combination, any thickness.

Membrane: — "Mule-Hide PVC".

14. Deck: C-15/32

Incline: 4-1/2

Insulation: — Hunter Panels "H-Shield", any combination, min 2" thickness.

Membrane: — "Mule-Hide PVC".

15. Deck: C-15/32

Incline: 1

Base Sheet: — One layer, mechanically fastened, of one of the following: A. Type G2 Base Sheet. B. Carlisle Syntec Inc. "FR Base Sheet 2S". C. GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Membrane: — Any UL Classified "PVC Membrane"

16. Deck: C-15/32

Incline: 1

Insulation: — Any UL Classified wood fiberboard, 1/2-in. thick minimum. **Membrane:** — Any UL Classified "PVC Membrane"

17. Deck: NC

Incline: Unlimited

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

Membrane: — "PVC Membrane"

Class C – Mechanically Attached (Continued)

18. **Deck:** C-15/32 Incline: Unlimited
Insulation: — See "Referenced Insulations", any combination, minimum 2-in. thickness.
Membrane: — "PVC Membrane"

20. **Deck:** NC Incline: 4-1/2
Insulation: — Rmax Operating LLC "Multi-Max-3", any thickness. Membrane: — "PVC Membrane"

21. **Deck:** C-15/32 Incline: 4-1/2
Insulation: — Rmax Operating LLC "Multi-Max-3", minimum 2-in. thick. Membrane: — "PVC Membrane"

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 cap sheet roofing system, to retain the existing Classification, is covered with:

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane", adhered.

2. Deck: C-15/32

Incline: 1/2

Existing Roof System: — Class A, B or C mineral or smooth surfaced cap sheet roofing system, to retain the existing Classification, covered with:

Membrane: — Mule-Hide "PVC Fleece Back Membrane" or Mule-Hide "PVC KEE HP Fleece Back Membrane" adhered with "Fast Adhesive", "FAST® 100 LV", "Flexible FAST® Adhesive", "WBBA 2000 Bonding Adhesive", or "HydroBond Water-Based PVC Bonding Adhesive"; or Mule-Hide "PVC KEE HP Fleece Back Membrane", hot mopped.

3. Deck: C-15/32

Incline: 1/2

Existing Roof System: — Class A, B or C roofing system, to retain the existing Classification, is covered with:

Slip Sheet: — One or more layers of the following - Lydall "Manniglas 1200" mat, 15-mil or Atlas Roofing Corp. "FR-10" or GAF "Versashield" or Carlisle Syntec Inc. "FR Base Sheet 1s", "FR Base Sheet 2S" or Type G2 base sheet, laid loosely.

Membrane: — Mule-Hide "PVC Membrane", mechanically fastened.

4. Deck: C-15/32

Incline: 3/4

Existing Roof System: — Class A, B or C roofing system, to retain the existing Classification, is covered with:

Slip Sheet: — One or more layers of the following - Lydall "Manniglas 1200" mat, 15-mil or Atlas Roofing Corp. "FR-10" or GAF "Versashield" or Carlisle Syntec Inc. "FR Base Sheet 1s", "FR Base Sheet 2S" or Type G2 base sheet, laid loosely.

Membrane: — Mule-Hide "PVC Membrane", mechanically fastened.

5. Deck: C-15/32 or NC

Incline: 1

Existing Roof System: — Class A, B or C roofing, gravel to be maintained on gravel built-up system, to retain the existing Classification, is cover with:

Insulation: — Owens Corning Specialty & Foam Products "Durapink", 1-in. maximum.

Membrane: — Any Classified Mule-Hide "PVC Membranes" mechanically attached assembly.

Class A, B & C – Maintenance and Repair (continued)

6. **Deck:** C-15/32 **Incline:** See Note

Existing Roof System: — Class A, B or C roofing system, to retain the existing Classification, is covered with:

Slip Sheet (Optional): — One or more layers Carlisle Syntec Inc. "FR Base Sheet" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".

Membrane: — Any UL Classified Mule-Hide "PVC membranes".

Note: Maximum incline shall be in accordance with Classification established for the existing roof covering system, but cannot exceed 1-1/2:12.

7. **Deck:** C-15/32 **Incline:** See Note

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

Membrane: — Mule-Hide "PVC Fleece Back Membrane" or Mule-Hide "PVC KEE HP Fleece Back Membrane", adhered "Fast Adhesive", "FAST® 100 LV", "Flexible FAST® Adhesive", "WBBA 2000" bonding adhesive or "HydroBond Water-Based PVC Bonding Adhesive".

Note: Maximum incline shall be in accordance with Classification established for the existing roof covering system, but cannot exceed 2:12.

8. **Deck:** C-15/32 **Incline:** See Note

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

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" or Mule-Hide "PVC Fleece Back Membrane" adhered with "FAST Adhesive".

Note: Maximum incline shall be in accordance with Classification established for the existing roof covering system, but cannot exceed 1:12.

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

Existing Roof System: — Class A, B or C mineral or smooth surfaced non-modified asphalt coated cap sheet roofing system, retain the existing Classification, covered with:

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" or Mule-Hide "PVC Fleece Back Membrane" adhered with "Fast Adhesive", "FAST® 100 LV", "Flexible FAST® Adhesive", "WBBA 2000" bonding adhesive or "HydroBond Water-Based PVC Bonding Adhesive".

Note: Maximum incline shall be in accordance with Classification established for the existing roof covering system, but cannot exceed 1:12.

Class A, B & C – Maintenance and Repair (continued)

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

Incline: 1

Existing Roof System: — (To maintain existing Classification) Any Class A, B or C coated or uncoated, insulated or uninsulated, Type G3 mineral surfaced cap sheet, BUR, or modified bitumen membrane roofing system covered with:

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" or Mule-Hide "PVC Fleece Back Membrane", mechanically fastened.

Note: Maximum incline shall be in accordance with Classification established for the existing roof covering system, but cannot exceed 1:12.

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

Incline: See Note

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

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane" or Mule-Hide "PVC Fleece Back Membrane" adhered with "Cold Process Adhesive".

Note: Maximum incline shall be in accordance with Classification established for the existing roof covering system, but cannot exceed 1:12.

12. **Deck:** NC

Incline: 1/2

Existing Roof System: — Class A, B or C built-up or modified bitumen system, (smooth surface, cap sheet or gravel surfaced with gravel maintained). Or Class A, B or C single-ply system (polystyrene in existing single-ply system must be below a coverboard or minimum 1-in. thickness of polyisocyanurate), to retain the existing Classification.

Insulation: — Insulfoam "R-TECH" Type "I", "VIII", "II", "IX" or "FanFold" 1-in. maximum thick.

Membrane: — Mechanically fastened one of the following UL Classified "PVC Membrane" or "PVC KEE HP Membrane".

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

Incline: 1/2

Existing Roof System: — Class A, B or C built-up system, smooth surface, cap sheet or gravel surfaced (gravel maintained) to retain the existing Classification.

Insulation: — Insulfoam "R-TECH" Type "I", "VIII", "II", "IX", "FanFold" or "Insulfoam" Type "I", "VIII", "II", "IX", 1-in. maximum thick.

Membrane: — Any UL Mule-Hide "PVC Membrane", mechanically attached.

Class A – Maintenance and Repair (continued)

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.

1. **Deck:** NC

Incline: 1/2

Existing Roof System: — Class A, B or C mineral or smooth surfaced cap sheet roofing system covered with:

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane", Mule-Hide "PVC Fleece Back Membrane" adhered.

2. **Deck:** NC

Incline: 1/2

Existing Roof System: — Class A, B or C mineral or smooth surfaced cap sheet roofing system covered with:

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane", or Mule-Hide "PVC Fleece Back Membrane" adhered, with "Fast Adhesive", "FAST® 100 LV", "Flexible FAST® Adhesive", "WBBA 2000" bonding adhesive, or "HydroBond Water-Based PVC Bonding Adhesive"; or Mule-Hide "PVC KEE HP Fleece Back Membrane", hot mopped.

6. **Deck:** NC

Incline: 1/2

Existing Roof System: — Class A, B or C BUR or modified bitumen roofing system gravel may be removed, covered with:

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

Insulation (Optional): — Any UL Classified 1/2-in. thick (minimum) wood fiberboard

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane", or Mule-Hide "PVC Fleece Back Membrane" mechanically attached or adhered FAST.

Class A – Maintenance and Repair (continued)

7. **Deck:** NC

Incline: 2

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

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane", or Mule-Hide "PVC Fleece Back Membrane" adhered with "Fast Adhesive", "FAST® 100 LV", "Flexible FAST® Adhesive", "WBBA 2000" bonding adhesive or "HydroBond Water-Based PVC Bonding Adhesive".

8. **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. thick layer or minimum two layers of 1.5-in. thick Mule-Hide "Poly ISO 1" or Mule-Hide "Poly ISO 1 HD Composite", or Hunter Panels "H-Shield-CG", "H-Shield HD Composite" or "H-Shield HD Composite CG".

Membrane: — Any Classified "PVC Membrane"

Note: The maximum incline shall be in accordance with the Classification established for the new membrane/insulation roof covering assembly.

9. **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. thick layer or minimum two layers of 1.5-in. thick Mule-Hide "Poly ISO 1" or Mule-Hide "Poly ISO 1 HD Composite", or Hunter Panels "H-Shield-CG", "H-Shield HD Composite" or "H-Shield HD Composite CG".

Membrane: — Any Classified "PVC Membrane"

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

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

Incline: 2

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

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

Insulation: — Roxul "MonoBoard", "MonoBoard Plus", "MonoBoard Plus S", "TopRock DD", "TopRock DD Plus" or "TopRock DD Plus S", 3/4-in. minimum thickness.

Membrane: — Any UL Classified Mule-Hide "PVC KEE HP Fleece Back Membrane", , hot mopped.

Class A – Maintenance and Repair (continued)

11. **Deck:** NC

Incline: 1

Existing Roof System: — Any UL Classified, any thickness or combination, covered with Carlisle HP Recovery Board, 1/2-in. thick (minimum) wood fiberboard or gypsum board.

Base Sheet: — One or more layers "28 pound G2 Base Sheet", "Type IV Glass Ply Felt", "Type VI Glass Ply Felt", any combination, mechanically fastened or hot mopped.

Membrane: — Mule-Hide "PVC KEE HP Fleece Back Membrane", hot mopped or Mule-Hide "PVC KEE HP Fleece Back Membrane", or Mule-Hide "PVC Fleece Back Membrane" or, mechanically fastened.

12. **Deck:** NC

Incline: Unlimited

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

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", "DensDeck DuraGuard™ Roofboard".

Membrane: — Any UL Classified Mule-Hide "PVC KEE HP Fleece Back Membrane", adhered with "Hot Asphalt" or "Cold Process Adhesive".

13. **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 2.5-in. thick layer or minimum two layers of Mule-Hide "Poly ISO 1" or Mule-Hide "Poly ISO 1 HD Composite" or Hunter "H-Shield-CG", H-Shield HD Composite" or "H-Shield HD Composite CG" over a minimum 2.5-in. thick layer of any UL Classified insulation (except expanded or extruded polystyrene).

Membrane: — Any UL Classified "PVC Membrane"

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

MAINTENANCE AND REPAIR SYSTEMS

CLASS B

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.
2. **Deck:** C-15/32 **Incline:** 1/2
Existing Roof System: — Class B mineral or smooth surfaced built-up or modified roofing system, to retain the existing Classification, is covered with:
Slip Sheet: — One or more layers Atlas Roofing Corp. "FR-50" or Carlisle Syntec Inc. "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or "VersaShield FB-2S".
Membrane: — Any Classified "PVC Membrane" mechanically attached assembly.
3. **Deck:** C-15/32 **Incline:** 1
Existing Roof System: — Class A or B roofing system covered with:
Membrane: — Any UL Classified Mule-Hide "PVC KEE HP Fleece Back Membrane" or Mule-Hide "PVC Fleece Back Membrane"
4. **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. thick layer of Mule-Hide "Poly ISO 1" or Mule-Hide "Poly ISO 1 HD Composite", or Hunter Panels "H-Shield-CG", "H-Shield HD Composite" or "H-Shield HD Composite CG".
Membrane: — Any Classified "PVC Membrane" Note: The maximum incline shall be in accordance with the Class B Classification established for the membrane/insulation roof covering assembly, however the incline cannot exceed 1/2:12.

MAINTENANCE AND REPAIR SYSTEMS

CLASS B and C

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

Incline: 1/2

Existing Roof System: — Class B or C roofing system, to retain the existing Classification, is covered with:

Slip Sheet: — One or more plies Atlas Roofing Corp. "FR-50" or Carlisle Syntec Inc. "FR Base Sheet 2S" or GAF "VersaShield Underlayment" or "VersaShield FB-2S.

Membrane: — Any Classified "PVC Membrane" mechanically attached assembly.