

UL FIRE RATINGS ON ROOFING SYSTEMS

ECOLOGY ROOF SYSTEMS CORP

SUITE 188

505 N TUSTIN AVE

SANTA ANA, CA 92705 USA

R13918

Type G1 reference includes "ERS 400" and "ERS 400-6"; Type G2 reference includes "ERS 401", "ERS 402" may be used in any system in addition to any other base/ply sheets already required. "ERS 403" Vented Base Sheet (Type G2) may be used in lieu of any Type G2 product on noncombustible deck systems.

Unless otherwise indicated, the specified insulations may be mechanically attached, adhered with hot mopping asphalt or "ERS-Insuladhesive".

Unless otherwise indicated, the term "Referenced Insulations" will include the following, any thickness: perlite, glass fiber, polyurethane, isocyanurate, phenolic combination isocyanurate/perlite or polyurethane/perlite insulation, hot mopped or nailed. Wood fiber insulation is a suitable substitute on noncombustible decks only.

Systems rated for NC decks may be used over C-15/32 roof decks if a min 1/4 in. G-P Gypsum Dens-Deck® or 1/2 in. gypsum board are first applied to the plywood deck.

COLD APPLICATION SYSTEMS

Class A

Base sheets and ply sheets may be adhered with hot asphalt (15-25 lb/sq) or "ERS-309", applied at 1 to 2 gal/sq. unless otherwise specified; adhesive may be applied by brush, roller, notched squeegee, or spray equipment.

"ERS-401" (33 lb) fiberglass base sheets are suitable alternates for the "ERS-400" (25 lb, Type G2) base sheets specified below.

"ERS-White Top (cold climate formula)" is a suitable alternate to "ERS-White Top" in any applicable Classification.

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

Insulation (Optional): — Perlite or glass fiber, any thickness.

Base Sheet: — One layer "ERS-400", 40 lb or inverted "ERS-400-6", 80 lb fiberglass capsheet, mechanically fastened or spot adhered with "ERS-309", 1 gal/sq or hot asphalt, 15 lb/sq.

Ply Sheet: — Two or more layers "ERS-400", adhered with "ERS-309", 2 gal/sq or hot asphalt, 25 lb/sq.

Protective Coating: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq, spray applied.

Reflective Coating: — "ERS-308", 1/2 gal/sq, "ERS-305", 1 gal/sq or "ERS-White Top", 1 gal/sq.

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

Base Sheet: — One layer "ERS-400", 40 lb. or inverted "ERS-400-6" fiberglass G3 mineral capsheet (72 lb), mechanically fastened or spot adhered with "ERS-309", 1 gal/sq or hot asphalt 15 lb/sq.

Ply Sheet: — Two or more layers polyester fabric adhered with "ERS-200N ", 3-4 gal/sq.

Protective Coating: — "ERS-200N ", 12 gal/sq reinforced with 3/4 in. chopped glass fiber, 4 lb/sq, spray applied.

Reflective Coating: — "ERS-308 ", 1/2 gal/sq or "ERS-White Top", 1 gal/sq.

3. Deck: NC Incline: 1/2

Insulation (Optional): — Perlite, glass fiber, polyurethane, isocyanurate, isocyanurate/perlite, polyurethane/perlite or wood fiber, any thickness.

Base Sheet: — One layer "ERS-400" or modified bitumen base sheet, mechanically fastened or spot adhered with "ERS-309 Adhesive (PBA®)", 1-1/2 to 2 gal/sq.

Ply Sheet (Optional): — One layer Type "ERS-400", adhered with "ERS-309", 1-1/2 to 2 gal/sq.

Membrane: — GAF "INTEC/FLEX FR 3" or "INTEC/FLEX FR-4.5", adhered with "ERS-309", 1-1/2 to 2 gal/sq.

4 . Deck: NC Incline: 1/2

Insulation (Optional): — Polyisocyanurate, 1-3 in. followed by wood fiber, hot mopped in place.

Base Sheet: — One layer "ERS-400", 25 lb, mechanically fastened or spot adhered with "ERS-309", 2-1/2 to 4 gal/sq.

Ply Sheet (Optional): — Two or more layers "ERS-400", 25 lb, adhered with "ERS-309", 1-1/2 to 4 gal/sq.

Surfacing: — No. 11 granules, 60 to 80 lb/sq, adhered into "ERS-309", 3-4 gal/sq or gravel, 300-400 lb/sq, adhered into "ERS-309", 3-6 gal/sq.

5. Deck: NC Incline: 1

Insulation (Optional): — Perlite, glass fiber, phenolic or wood fiber, 2 in. thick max, "ERS-309", 1 to 2 gal/sq or hot asphalt, 15-25 lb/sq.

Base Sheet: — One to three layers "ERS-400" (25 lb), adhered with "ERS-309", 1-1/2 to 2 gal/sq.

Protective Coating: — "ERS-200N" or "ERS-200F", 3/4 in. chopped fiberglass, 3 lb/sq.

Reflective Coating: — "ERS-305", 1 gal/sq, "ERS-308", 1/2 gal/sq or "ERS-White Top", 1 gal/sq.

6. Deck: C-15/32 Incline: 1/4

Insulation (Optional): — Glass fiber or perlite, any thickness.

Base/Ply Sheet: — Three or more layers "ERS-400", adhered with "ERS-309", 1-2 gal/sq (first layer may be nailed).

Surfacing: — One application "ERS-309", 4-5 gal/sq.

Surfacing: — Gravel.

7. Deck: NC Incline: 1/2

Insulation: — Glass fiber, perlite, wood fiber, any thickness, hot mopped in place.

Ply Sheet: — Three or more layers "ERS-400", hot mopped in place.

Surfacing: — "ERS-200F", 3 gal/sq.

8. Deck: C-15/32 Incline: 3

Insulation (Optional): — Perlite, wood fiber, glass fiber, isocyanurate, any thickness.

Rosin Paper (Optional): — One or more layers.

Base/Ply Sheet: — Three or more layers "ERS-400", 25 lb fiberglass base sheet adhered with "ERS-309 Adhesive", 2-1/2 to 3 gal/sq.

Surfacing: — "ERS-200F", 5 gal/sq with granules at 60 lb/sq or gravel.

9. Deck: C-15/32 Incline: 3

Insulation (Optional): — Perlite, wood fiber, glass fiber, isocyanurate, any thickness.

Rosin Paper (Optional): — One or more layers.

Base Sheet: — One layer Type G3 "ERS-400-6", 80 lb mineral surfaced cap sheet, inverted or "ERS-401", 33 lb fiberglass base sheet, mechanically fastened or adhered with "ERS-309 Adhesive", 2-1/2 to 3 gal/sq.

Ply Sheet: — Two or more layers "ERS-400", 25 lb fiberglass base sheet adhered with "ERS-309 Adhesive", 2-1/2 to 3 gal/sq.

Surfacing: — "ERS-200F" at 5 gal/sq with granules at 60 lb/sq or gravel.

10. Deck: C-15/32 Incline: 3

Insulation (Optional): — Perlite, wood fiber, glass fiber, isocyanurate, any thickness.

Rosin Paper (Optional): — One or more layers.

Base Sheet: — One layer "ERS-400-6", 80 lb mineral surfaced cap sheet, inverted or "ERS-401", 33 lb fiberglass base sheet, mechanically fastened or adhered with "ERS-309 Adhesive", 2-1/2 to 3 gal/sq or hot mopped.

Ply Sheet: — Two or more layers "ERS-400", 25 lb fiberglass base sheet adhered with "ERS-309 Adhesive", 2-1/2 to 3 gal/sq or hot mopped.

Coating: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq.

Surfacing: — "ERS-305", 1 gal/sq.

11. Deck: C-15/32 Incline: 3

Insulation (Optional): — Perlite, wood fiber, glass fiber, isocyanurate, any thickness.

Rosin Paper (Optional): — One or more layers.

Base/Ply Sheet: — Three or more layers "ERS-400", 25 lb fiberglass base sheet, adhered with "ERS-309 Adhesive", 2-1/2 to 3 gal/sq or hot mopped.

Coating: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq.

Surfacing: — "ERS-305", 1 gal/sq.

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

Insulation: — 2.7 in. isocyanurate, followed by 3/4 in. wood fiber, mechanically fastened.

Ply Sheet: — Three plies "ERS-400", mechanically fastened, spot attached or applied with "ERS-309", 2-1/2 to 4 gal/sq.

Surfacing: — No. 11 granules, 60 to 80 lb/sq adhered into "ERS-309", 3 to 4 gal/sq or gravel, 300 to 400 lb/sq into "ERS-309", 3 to 6 gal/sq.

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

Insulation: — 3 in. isocyanurate followed by 1/2 in. wood fiber mechanically fastened.

Ply Sheet: — Three plies "ERS-400", mechanically fastened, spot attached or applied with "ERS-309", 2-1/2 to 4 gal sq.

Coating: — "ERS-200N" at 9 gal/sq reinforced with 3/4 in. chopped glass fiber at 3 lb/sq.

Surfacing: — "ERS-305", 1 gal/sq or "ERS-White Top", 1 gal/sq.

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

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

Base Sheet: — Type G3, spot attached with "ERS-302" or mechanically attached.

Ply Sheet: — Two or more plies Type G2, adhered with "ERS-302", 2 gal/sq.

Surfacing: — Gravel, embedded in "ERS-302", 6 gal/sq.

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

Base Sheet: — Type G3, spot attached with "ERS-302" or mechanically attached.

Ply Sheet: — Two or more plies Type G2, adhered with "ERS-302", 2 gal/sq.

Base Coat: — "ERS-200N", 9 gal/sq. reinforced with 3/4 in. chopped glass fiber, 3 lbs./sq.

Surfacing: — "ERS-305", 1.5 gal/sq.

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

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

Base Sheet: — Type G3, spot attached with "ERS-302" or mechanically attached.

Ply Sheet: — Two or more plies Type G2, adhered with "ERS-302", 2 gal/sq.

Surfacing: — Gravel, embedded in "ERS-302", 6 gal/sq.

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

Base Sheet: — Type G3, spot attached with "ERS-302" or mechanically attached.

Ply Sheet: — Two or more plies Type G2, adhered with "ERS-302", 2 gal/sq.

Base Coat: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq.

Surfacing: — "ERS-305", 1.5 gal/sq.

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

Base Sheet: — Type G3, spot attached with "ERS-302" or mechanically attached.

Ply Sheet: — Two or more plies Type G2, adhered with "ERS-302", 2 gal/sq.

Base Coat: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq.

Surfacing: — "ERS-White Top", 1.5 gal/sq.

Class B

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

Base Sheet: — One layer "ERS-400" (25 lb), mechanically fastened or spot adhered with "ERS-309", 1 gal/sq.

Ply Sheet: — Two or more layers polyester fabric, adhered with "ERS-200N", 3-4 gal/sq.

Surfacing: — No. 11 granules, 60 lb/sq, adhered into "ERS-200N" or "ERS-309", 3-4 gal/sq.

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

Base Sheet: — One layer "ERS-400", 25 lb, mechanically fastened or spot adhered with "ERS-309", 1 gal/sq.

Ply Sheet: — Two or more layers polyester fabric, adhered with "ERS-200N", 4 gal/sq.

Protective Coating: — "ERS-200N", 4 gal/sq.

Reflective Coating: — Two coats "ERS-White Top", 1 gal/sq/coat.

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

Base Sheet: — One layer "ERS-400" (25 lb), mechanically fastened or spot adhered with "ERS-309", 1 gal/sq.

Ply Sheet: — Two or more layers "ERS-400" 25 lb, adhered with "ERS-309", 1-1/2 to 2 gal/sq.

Surfacing: — No. 11 granules, 60 lb/sq, adhered into "ERS-200N" or "ERS-309", 3-4 gal/sq.

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

Base Sheet: — One layer "ERS-400", 25 lb, mechanically fastened or spot adhered with "ERS-309", 1 gal/sq.

Ply Sheet: — Two or more layers Type G2, 25 lb, adhered with "ERS-309", 1-1/2 to 2 gal/sq.

Protective Coating: — "ERS-200N" or "ERS-200F", 4 gal/sq.

Reflective Coating: — Two coats "ERS-White Top", 1 gal/sq/coat.

SINGLE PLY MEMBRANE ROOFING SYSTEMS

Unless otherwise indicated, the roof insulation is mechanically fastened or adhered with hot roofing asphalt. The membrane is heat fused in place.

As an option, the base sheet, ply sheet and ERS501-505, ERS602 and ERS603 membrane may be adhered with "ERS 302", adhesive at 1-1/2 gal./sq.

"ERS-401" (33 lb) fiberglass base sheets are suitable alternates for the "ERS-400" (25 lb, Type G2) base sheets specified below.

Class A - Ballasted

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

Insulation: — One layer perlite or glass fiber, 3/4 to 1-1/2 in, Celotex "Hy-Tec," 3 in max.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6" or "ERS-900VB".

Membrane: — "ERS 501", "ERS 502", "ERS 602" or "ERS 603" (modified bitumen), torched or hot asphalt applied.

Surfacing: — Gravel laid loosely, 400 lbs/sq or in hot asphalt or Herry "No. 903" or "ERS 302" 4-6 gal/sq.

2. Deck: NC Incline: 1/2

Insulation (Optional): — Perlite, glass fiber, polyisocyanurate, phenolic, urethane, wood fiber board, urethane composite, polyisocyanurate composite, 3/4 to 3 in.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6" or "ERS 500-6P".

Membrane: — "ERS 501", "ERS 502", "ERS 602" or "ERS 603" (modified bitumen), torched or hot asphalt applied.

Surfacing: — Gravel laid loosely, 400 lbs/sq or in hot asphalt or Herry "No. 903" or "ERS 302" 4-6 gal/sq.

3. Deck: NC Incline: 2

Insulation: — Glass fiber, perlite, polystyrene or polyurethane, 4-1/2 in. max, laid loosely.

Membrane: — "Ecology ERS-8000-FB" or "Ecology ERS-8000-MF/R", laid loosely.

Surfacing: — Gravel at 1000 lb/sq, laid loosely.

4. Deck: NC Incline: 1

Insulation: — Dow Chemical "Styrofoam" polystyrene, Celotex "Thermax" polyurethane, glass fiber or perlite, 3/4 to 2 in., laid loosely.

Membrane: — "Ecology ERS-8000-FB" or "Ecology ERS-8000-MF/R", laid loosely.

Surfacing: — Gravel at 600 lb/sq, laid loosely or in hot asphalt or Herry "No. 903" or "ERS 302" 4-6 gal/sq.

5. Deck: NC

Incline: 2

Insulation: — 1 layer perlite, 3/4 in., laid loosely, followed by 1 layer Dow Chemical "U-Thane 210", 1 to 5 in., laid loosely.

Membrane: — "Ecology ERS-8000-FB" or "Ecology ERS-8000-MF/R", laid loosely.

Surfacing: — River bottom stone (3/4 to 1-1/2 in. diam) at 1000 lb/sq.

6. Deck: C-15/32

Incline: 1/2

Insulation: — Polystyrene, 1 to 3 in., laid loosely.

Slip Sheet: — Atlas Roofing "FR-50", laid loosely.

Membrane: — "Ecology ERS-8000-FB" or "Ecology ERS-8000-MF/R", laid loosely.

Surfacing: — Gravel at 1000 lb/sq.

7. Deck: NC

Incline: 1/2

Insulation: — Arco Chemical "Arcor SP", uniform thickness or tapered, 1.6 in. min, laid loosely or mechanically fastened.

Membrane: — "Ecology ERS-8000-FB" or "Ecology ERS-8000-MF/R", laid loosely.

Surfacing: — River bottom stone (3/4 to 1-1/2 in. diam) at 1000 lb/sq.

8. Deck: C-15/32

Incline: 1/2

Insulation: — Arco Chemical "Arcor MB" or "Arcor FM-1", uniform thickness or tapered, 1.6 in. min, mechanically fastened.

Membrane: — "Ecology ERS-8000-FB" or "Ecology ERS-8000-MF/R", laid loosely.

Surfacing: — River bottom stone (3/4 to 1-1/2 in. diam) at 1000 lb/sq.

9. Deck: C-15/32

Incline: 3

Insulation: — Polyisocyanurate, glass fiber/foam composite, phenolic, perlite/foam composite, perlite or glass fiber, 3/4 to 4 in., any combination, hot mopped or mechanically fastened to deck.

Ply or Base Sheet (Optional): — One or more layers Type G1 ply sheet, Type G2 base sheet, Type 15 felt or base sheet, hot mopped or mechanically fastened.

Membrane: — "ERS-900" (modified EIP coal tar), hot mopped in place.

Surfacing: — Gravel.

10. Deck: C-15/32

Incline: 3

Base Sheet: — One layer Type G2 base sheet, nailed in place.

Membrane: — "ERS-900" (modified EIP coal tar), hot mopped in place.

Surfacing: — Gravel.

11. **Deck:** NC **Incline:** 3

Ply Sheet: — One layer Type G1 or G2 glass fiber ply sheet, hot mopped in place.

Membrane: — "ERS-900" (modified EIP coal tar), hot mopped in place.

Surfacing: — Gravel.

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

Insulation: — One layer glass fiber/foam composite, phenolic, isocyanurate, perlite/foam composite, perlite, glass fiber or wood fiberboard, 3/4 to 4 in., any combination, hot mopped or mechanically attached.

Base or Ply Sheet (Optional): — One layer Type G1 ply sheet, Type G2 base sheet, Type 15 felt or base sheet, hot mopped or mechanically fastened.

Membrane: — "ERS-900" (modified EIP coal tar), hot mopped in place.

Surfacing: — Gravel.

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

Insulation (Optional): — One layer isocyanurate or glass fiber phenolic covered with one layer 1/2 in. wood fiberboard, perlite or fiberglass covered board; or one layer wood fiberboard, perlite, fiberglass, perlite/foam composite with perlite side up, any thickness, any combination, hot mopped or mechanically fastened in place.

Barrier Board: — Min 1/2 in. G-P Gypsum Dens-Deck® or gypsum board.

Base or Ply Sheet (Optional): — One layer Type G1, G2 or 15, hot mopped or mechanically fastened.

Membrane: — "ERS-900" (modified EIP coal tar), hot mopped in place.

Surfacing: — Gravel.

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

Barrier Board: — 1/4 in. (min) G-P Gypsum Dens-Deck® or 1/2 in. (min) gypsum board with all joints staggered 6 in. (min) from the plywood joints.

Membrane: — One or two layers "ERS-900" (modified EIP coal tar), hot mopped in place.

Class A - Fully Adhered

1. Deck: NC

Incline: No limitation

Insulation (Optional): — Polyisocyanurate, urethane, glass fiber, perlite, wood fiber, any combination in any thickness, mechanically fastened or adhered with hot roofing asphalt.

Base Sheet: — Type G2, mechanically fastened.

Membrane: — "ERS 601", heat fused or "ERS 501" (modified bitumen), adhered.

Surfacing: — "Tuff-Corp" field mixed insulating coating composed of 6-2/3 cu ft of perlite, 7 lb of "TC-500 Masterbatch", 94 lb Portland cement and 17 gal of water spray applied to min 1/2 in.

2. Deck: NC

Incline: 1/2

Insulation (Optional): — One layer perlite, wood fiber or glass fiber, 3/4 to 1-1/2 in.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6" or "ERS 500-6P".

Membrane: — "ERS 501", "ERS 502", "ERS 602" or "ERS 603" (modified bitumen), torched or hot asphalt applied.

Surfacing: — Cold coating, OCF "20F Asphalt Emulsion" at 2 gal/sq.

3. Deck: NC

Incline: 1/4

Insulation (Optional): — One layer perlite, wood fiber or glass fiber, 3/4 to 1-1/2 in.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6" or "ERS 500-6P".

Membrane: — "ERS 501", "ERS 502", "ERS 602" or "ERS 603" (modified bitumen), torched or hot asphalt applied.

Surfacing: — Asphalt Products "APOC 400 Sunbrite", at 2 gal/sq.

4. Deck: NC

Incline: 1

Insulation (Optional): — Perlite, wood fiberboard, glass fiber, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet: — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6".

Membrane: — "ERS 501", "ERS 504", "ERS 602" or "ERS 604" (modified bitumen).

5. **Deck:** NC

Incline: 1

Insulation (Optional): — Perlite, glass fiber, wood fiberboard, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500" or "ERS 500-4".

Ply Sheet: — "ERS 500-6", hot mopped.

Membrane: — "ERS 505" (modified bitumen), hot mopped.

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

Incline: 1/2

Insulation: — Perlite, 3/4 in. min; polyisocyanurate, polyisocyanurate composite, urethane, urethane composite or glass fiber, 1 in. min. All insulation joints offset from plywood joints by 6 in.

Base Sheet: — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6".

Membrane: — "ERS 501", "ERS 504", "ERS 602" or "ERS 604" (modified bitumen).

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

Incline: 1/2

Insulation: — Perlite, 3/4 in. min; polyisocyanurate, polyisocyanurate composite, urethane, urethane composite or glass fiber, 1 in. min.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500" or "ERS 500-4".

Ply Sheet: — "ERS 500-6".

Membrane: — "ERS 505" (modified bitumen).

8. **Deck:** NC

Incline: 1/4

Insulation (Optional): — One layer perlite, wood fiber or glass fiber, 3/4 to 1-1/2 in.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet "ERS 500", "ERS 500-4" or "ERS 500-6".

Membrane: — "ERS 603", torch or hot asphalt applied.

Surfacing: — Asphalt Products "APOC 400 Sunbrite", at 2 gal/sq.

9. **Deleted.**

10. **Deck:** NC

Incline: 1/2

Insulation: — Glass fiber or perlite, 3/4 in. min, or wood fiber, 1 in., hot mopped or mechanically fastened with metal insulation anchors.

Membrane: — "Ecology ERS-8000-FB", hot mopped.

11. **Deck:** NC **Incline:** 1
Insulation: — Glass fiber, perlite or wood fiber, 2 in. max, hot mopped or mechanically fastened with metal insulation anchors.
Membrane: — "Ecology ERS-8000-FB", hot mopped or fully adhered with "ERS-8002" at 60 sq ft/gal.
12. **Deck:** NC **Incline:** 1
Insulation: — Cellular concrete, gypsum concrete, vermiculite concrete, perlite concrete or structural concrete.
Membrane: — "Ecology ERS-8000-FB", hot mopped.
13. **Deck:** NC **Incline:** 1/2
Insulation: — Polystyrene any thickness, hot mopped or mechanically fastened.
Barrier Board: — 3/4 in. perlite or 1 in. wood fiberboard.
Membrane: — "Ecology ERS-8000-FB", fully adhered.
14. **Deck:** NC **Incline:** 1/2
Insulation: — Apache Building Products "Pyrox White Line", any thickness, hot mopped or mechanically fastened with metal insulation anchors.
Membrane: — "Ecology ERS-8000-FB", fully adhered with ERS-8002 at 60 sq ft/gal.
15. **Deck:** C-15/32 **Incline:** 1/2
Insulation (Optional): — Polyisocyanurate, any thickness.
Barrier Board: — 1/4 in. (min) G-P Gypsum Dens-Deck® with all joints staggered a min of 6 in. from plywood joints.
Membrane: — "Ecology ERS-8000-FB", fully adhered with "ERS-8002" at 60 sq ft/gal.
16. **Deck:** NC **Incline:** 1/2
Insulation: — Celotex "Thermax Hy-Tec" (Energy Lok), 2 in. max, hot mopped or mechanically fastened with metal insulation anchors.
Membrane: — "Ecology ERS-8000-FB", hot mopped or fully adhered with "ERS-8002" at 60 sq ft/gal.
17. **Deck:** NC **Incline:** 1/4
Insulation: — Celotex "Thermax Hy-Tec" (Energy Lok), any thickness, hot mopped or mechanically fastened with metal insulation anchors.
Membrane: — "Ecology ERS-8000-FB", fully adhered with "ERS-8002" at 60 sq ft/gal.

18. Deck: C-15/32 Incline: 3

Insulation: — Polyisocyanurate, glass fiber/foam composite, phenolic, perlite/foam composite, perlite or glass fiber, 3/4 to 4 in., any combination, hot mopped or mechanically fastened to deck.

Ply or Base Sheet (Optional): — One or more layers Type G1 ply sheet, Type G2 base sheet, Type 15 felt or base sheet, hot mopped or mechanically fastened.

Membrane: — "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place or "Hyload Sam", "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

Surfacing: — Gravel.

19. Deck: C-15/32 Incline: 3

Base Sheet: — One layer Type G2 base sheet, nailed in place.

Membrane: — "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place or "Hyload Sam", "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

Surfacing: — Gravel.

20. Deck: NC Incline: 3

Ply Sheet: — One layer Type G1 or G2 glass fiber ply sheet, hot mopped in place.

Membrane: — "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place or "Hyload Sam", "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

Surfacing: — Gravel.

21. Deck: NC Incline: 1/4

Insulation: — One layer glass fiber/foam composite, phenolic, isocyanurate, perlite/foam composite, perlite, glass fiber or wood fiberboard, 3/4 to 4 in., any combination, hot mopped or mechanically attached.

Base or Ply Sheet (Optional): — One layer Type G1 ply sheet, Type G2 base sheet, Type 15 felt or base sheet, hot mopped or mechanically fastened.

Membrane: — "ERS-910" or "ERS-920-90" self-adhering roofing membrane or "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place.

Surfacing (Optional): — Gravel.

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

Insulation: — One layer isocyanurate or glass fiber phenolic covered with one layer 1/2 in. wood fiberboard, perlite or fiberglass recover board; or one layer wood fiberboard, perlite, fiberglass, perlite/foam composite with perlite side up, 3/4 to 4 in., any combination, hot mopped or mechanically fastened in place.

Base or Ply Sheet: — One layer Type G1, G2 or 15, hot mopped or mechanically fastened.

Membrane: — "ERS-5000".

Surfacing (Optional): — Gravel.

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

Insulation (Optional): — One layer isocyanurate or glass fiber phenolic covered with one layer 1/2 in. wood fiberboard, perlite or fiberglass recover board; or one layer wood fiberboard, perlite, fiberglass, perlite/foam composite with perlite side up, any thickness, any combination, hot mopped or mechanically fastened in place.

Barrier Board: — Min 1/2 in. G-P Gypsum Dens-Deck® or gypsum board.

Base or Ply Sheet (Optional): — One layer Type G1, G2 or 15, hot mopped or mechanically fastened.

Membrane: — "ERS-5000", "ERS-920-75", "ERS-920-90", "ERS-900" or "ERS-905".

Surfacing (Optional): — Gravel.

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

Barrier Board: — 1/4 in. (min) G-P Gypsum Dens-Deck® or 1/2 in. (min) gypsum board with all joints staggered 6 in. (min) from the plywood joints.

Membrane: — "ERS-5000", "ERS-920-75" or "ERS-920-90".

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

Insulation: — Polyisocyanurate, wood fiber, fiberglass and perlite, any thickness, any combination.

Barrier Board: — "Hyland HyGlass Recover Board" (1/8 in. or 3/16 in.) or Hal Industries "PERMA BOARD", mechanically fastened.

Base Sheet: — "ERS-900 BS", self-adhered.

Membrane: — "ERS-920-75" or "ERS-920-90", self-adhered.

26. Deck: NC **Incline:** 1

Insulation: — Polyisocyanurate, any thickness.

Base Sheet: — "ERS-900 BS", self-adhered.

Membrane: — "ERS-920-75" or "ERS-920-90", self-adhered.

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

Barrier Board: — 1/4 in. (min) G-P Gypsum Dens-Deck®, mechanically fastened with all joints staggered 6 in. min from the plywood joints.

Insulation (Optional): — Polyisocyanurate, wood fiber, fiberglass and perlite, any thickness, any combination, covered with Hal Industries "PERMA-BOARD", mechanically fastened.

Base Sheet: — "ERS-900 BS", self-adhered.

Membrane: — "ERS-920-75" or "ER-920-90", self-adhered.

28. Deck: NC Incline: 2

Insulation: — Atlas Roofing "ACFoam III", any thickness.

Base Sheet: — "ERS-900 BS", self-adhered.

Membrane: — "ERS-920-75" or "ERS-920-90", self-adhered.

29. Deck: C-15/32 Incline: 2

Barrier Board: — 1/4 in. (min) G-P Gypsum Dens-Deck®, mechanically fastened with all joints staggered 6 in. min from the plywood joints.

Insulation: — Atlas Roofing "ACFoam III", any thickness.

Base Sheet: — "ERS-900 BS", self-adhered.

Membrane: — "ERS-920-75" or "ERS-920-90", self-adhered.

30. Deck: NC Incline: 1/4

Insulation (Optional): — Perlite, glass fiber or wood fiber, 1 in. thick max.

Base Sheet: — One layer "ERS-400", mechanically fastened or adhered with hot asphalt (25 lb/sq).

Membrane: — GAF "INTEC-4", "INTEC SP-4" or "INTEC GBSP-4" (modified bitumen), heat fused.

Surfacing: — One coat "ERS-305", 1 gal/sq.

31. Deck: NC Incline: 1/2

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

Base Sheet: — Type G2, mechanically fastened or hot mopped.

Membrane: — GS Roofing Products "Flintlastic GTA or STA", heat fused.

Surfacing: — "ERS-305", 1-1/2 gal/sq.

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

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

Base Sheet: — Type G2, mechanically fastened or hot mopped.

Membrane: — GS Roofing Products "Flintlastic GTA or STA" (modified bitumen), heat fused.

Surfacing: — "ERS-305", 1-1/2 gal/sq.

Class B - Fully Adhered

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

Insulation (Optional): — Perlite, glass fiber, polyisocyanurate, phenolic, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet: — One or more layers Type G1 or G2 glass fiber base sheet, hot mopped or mechanically fastened "ERS 500", "ERS 500-4", "ERS-500-6", "ERS 501" or "ERS 602".

Membrane: — "ERS 500", "ERS 500-4", "ERS 500-6", "ERS 501", "ERS 504", "ERS 602" or "ERS 604" (modified bitumen).

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

Insulation (Optional): — Perlite, glass fiber, polyisocyanurate, phenolic, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet "ERS 500" or "ERS 500-4".

Ply Sheet: — One to three layers Type G1 or G2 glass fiber ply sheet "ERS 500", "ERS 500-4" or "ERS 500-6".

Membrane: — "ERS 505" (modified bitumen).

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

Insulation (Optional): — One layer perlite or glass fiber, 3/4 in. thick min, mechanically fastened.

Ply or Base Sheet: — Two layers Type G2 , hot mopped or mechanically fastened.

Membrane: — "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place or "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

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

Insulation (Optional): — Perlite, glass fiber or wood fiber, 1 in. thick max.

Base Sheet: — One layer Type G2, mechanically fastened or adhered with hot asphalt (25 lb/sq).

Membrane: — GAF "INTEC-4", "INTEC SP-4" or "INTEC GBSP-4" (modified bitumen), heat fused.

Surfacing: — One coat "ERS-305", 1 gal/sq.

Class C - Fully Adhered

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

Ply Sheet: — One or two layers Type G1 or G2 glass fiber ply sheet, mechanically fastened.

Membrane: — One layer "ERS-910", "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

Class A - Mechanically Fastened

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

Insulation: — Celotex Corp. "Hy-Tec", Apache Building Products "Pyrox White Line" 1.2 in. thick min, fiberglass 7/16 in. min or perlite 3/4 in. min.

Membrane: — "Ecology ESR-8000-MF/R".

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

Barrier Board: — 5/8 in. gypsum board, mechanically fastened with 6 in. offset of the gypsum joints from the plywood joints.

Insulation: — (Optional) Celotex Corp. "Hy-Tec", Apache Building Products "Pyrox White Line" 1.2 in. thick min. fiberglass 7/16 in. min or perlite 3/4 in. min.

Membrane: — "Ecology ESR-8000-MF/R".

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

Insulation: — Celotex "Hy-Tec" 2 in. max.

Membrane: — "Ecology ESR-8000-MF/R".

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

Insulation: — Polystyrene, any thickness.

Barrier Board: — 3/4 in (min) perlite.

Membrane: — "Ecology ESR-8000-MF/R".

5. **Deck:** NC **Incline:** 1

Insulation: — Cellular concrete, gypsum concrete, vermiculite concrete, perlite concrete or structural concrete.

Membrane: — "Ecology ESR-8000-MF/R".

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

Barrier Board: — 5/8 in. gypsum board, mechanically fastened with 6 in. offset of the gypsum joints from the plywood joints.

Insulation: — Polystyrene, any thickness.

Barrier Board: — 3/4 in. perlite board.

Membrane: — "Ecology ERS-8000-MF/R".

7. Deck: C-15/32 Incline: 2

Insulation: — (Optional) Polyisocyanurate, any thickness.

Barrier Board: — 1/4 in. (min) G-P Gypsum Dens-Deck® with all joints staggered a min of 6 in. from the plywood joints.

Membrane: — "Ecology ERS-8000-MF/R".

Class B — Mechanically Fastened

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

Insulation: — Celotex "Hy-Tec" or "Energy-Lok" any thickness, joints in insulation offset 6 in. from joints in deck.

Membrane: — "Ecology ERS-8000-MF/R".

MAINTENANCE AND REPAIR SYSTEMS

Unless otherwise indicated, insulation is mechanically fastened. The base sheet may be mechanically fastened. The base sheet (unless mechanically fastened), ply sheet and membrane are hot asphalt applied or adhered with Henry "No. 903" or ERS 302, adhesive at 1-1/2 gal/sq.

Class A

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

Existing Roofing System: — Class A BUR with gravel or smooth surfaced-covered with:

Insulation: — One layer Johns Manville "Retrofit Board", (1/2 in.).

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4" or "ERS 500-6".

Membrane: — "ERS 501", "ERS 502", "ERS 602" or "ERS 603" (modified bitumen), torch or hot asphalt applied.

Surfacing: — Gravel-400 lbs/sq in hot asphalt or Herry "No. 903" or "ERS 302", 4-6 gal/sq.

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

Existing Roofing System: — Class A gravel or smooth surfaced-covered with:

Insulation: — One layer Johns Manville "Retrofit Board" (1/2 in.), perlite, 3/4 in. min, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite or glass fiber, 1 in. min. All insulation joints offset from plywood joints by 6 in.

Base Sheet: — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6", "ERS 501" or "ERS 602".

Membrane: — "ERS 504" or "ERS 604" (modified bitumen).

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

Existing Roofing System: — Class A gravel or smooth surfaced-covered with:

Insulation: — One layer John Manville "Retrofit Board" (1/2 in.), perlite, 3/4 in. min; polyisocyanurate, polyisocyanurate composite, urethane, urethane composite or glass fiber, 1 in. min. All insulation joints offset from plywood joints by 6 in.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500" or "ERS 500-4".

Ply Sheet: — "ERS 500-6".

Membrane: — "ERS-505" (modified bitumen).

4. Deck: NC Incline: 1/2

Existing Roofing System: — Class A, B or C BUR, gravel may be removed, covered with:

Insulation: — One layer isocyanurate, glass fiber/foam composite, perlite/foam composite, perlite, glass fiber phenolic or wood fiberboard, 3/4 to 4 in. hot mopped or mechanically fastened in place.

Ply or Base Sheet (Optional): — One layer Type G1 ply sheet, Type G2 base sheet, Type 15 felt or base sheet, hot mopped to insulation.

Membrane: — "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place or "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

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

Existing Roofing System: — Class A, B or C BUR, gravel may be removed, covered with:

Ply or Base Sheet: — Two or three layers Type G2, hot mopped or mechanically fastened.

Membrane: — "ERS-900" or "ERS-905" (modified EIP coal tar), hot mopped in place or "ERS-920-75" or "ERS-920-90" self-adhering roofing membrane.

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

Existing Roof System: — Class A gravel or smooth surfaced-covered with:

Base Sheet: — One layer "ERS-400" (25 lb), 40 lb or inverted "ERS-400-6" 80 lb fiberglass capsheet, mechanically fastened or spot adhered with "ERS-309", 1 gal/sq or hot asphalt, 15 lb/sq.

Ply Sheet: — Two or more layers "ERS-400", 25 lb min or any classified membrane adhered with "ERS-309", 1-1/2 to 2 gal/sq or hot asphalt, 25 lb/sq.

Protective Coating: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq, spray applied.

Reflective Coating: — "ERS-308", 1/2 gal/sq, "ERS-305", 1 gal/sq or "ERS-White Top", 1 gal/sq.

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

Existing Roof System: — Class A gravel or smooth surfaced-covered with:

Base Sheet: — One layer "ERS-400", 25 lb, 40 lb or inverted fiberglass "ERS-400-6" mineral cap sheet, mechanically fastened or spot adhered with ERS-309 , 1 gal/sq or hot asphalt at 15 lb/sq.

Ply Sheet: — Two or more layers (not UL Classified) polyester fabric adhered with "ERS-200N", 3-4 gal/sq.

Protective Coating: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber at 3 lb/sq, spray applied.

Coating: — "ERS-308", 1/2 gal/sq, "ERS-305", 1 gal/sq or "ERS-White Top", 1 gal/sq.

Class B

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

Existing Roofing System: — Class A or B gravel or smooth surfaced-covered with:

Insulation (Optional): — One layer Johns Manville "Retrofit Board" (1/2 in.), perlite, glass fiber, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet: — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6", "ERS 501" or "ERS 602".

Membrane: — "ERS 504" or "ERS 604" (modified bitumen).

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

Existing Roofing System: — Class A or B gravel or smooth surfaced-covered with:

Insulation (Optional): — One layer Johns Manville "Retrofit Board" (1/2 in.), perlite, glass fiber, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500" or "ERS 500-4".

Ply Sheet: — One to three layers Type G1 or G2 glass fiber ply sheet or "ERS 500", "ERS 500-4" or "ERS 500-6".

Membrane: — "ERS 505" (modified bitumen).

Class A, B or C

1. Deck: NC Incline: 1

Existing Roofing System: — Class A, B or C gravel or smooth surfaced-covered with:

Insulation (Optional): — One layer Johns Manville "Retrofit Board" (1/2 in.), perlite, glass fiber, wood fiber board, "Retrofit" board, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet: — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500", "ERS 500-4", "ERS 500-6", "ERS 501" or "ERS 602".

Membrane: — "ERS 504" or "ERS 604" (modified bitumen).

2. Deck: NC Incline: 1

Existing Roofing System: — Class A, B or C gravel or smooth surfaced-covered with:

Insulation (Optional): — One layer Johns Manville "Retrofit Board" (1/2 in.), perlite, glass fiber, wood fiber board, polyisocyanurate, polyisocyanurate composite, urethane, urethane composite, EPS/perlite, any thickness.

Base Sheet (Optional): — One or more layers Type G1 or G2 glass fiber base sheet or "ERS 500" or "ERS 500-4".

Ply Sheet: — "ERS 500-6".

Membrane: — "ERS 505" (modified bitumen).

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

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

Membrane: — "ER-910", "ERS-920-75", "ERS-920-90" or "ERS-5000" self-adhering roofing membrane.

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

Existing Roof System: — (Existing Classification to be maintained) Class A, B or C built-up roof system.

Protective Coating: — "ERS-200N", 9 gal/sq reinforced with 3/4 in. chopped glass fiber, 3 lb/sq.

Reflective Coating: — "ERS-305", 1 gal/sq.

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

Existing Roof System: — Class A, B or C, existing Classification to be maintained.

Ply Sheet: — One or more layers polyester fabric (not UL Classified), adhered with "ERS-200N", 3-4 gal/sq.

Protective Coating: — "ERS-200N", 3 to 6 gal/sq.

Surfacing: — "ERS-305", 1-1/2 gal/sq.