

1.07 WARRANTY

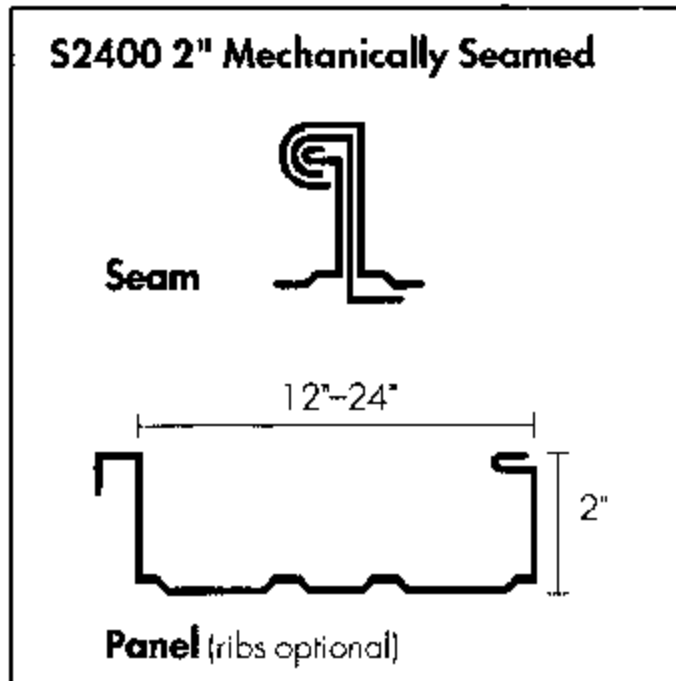
- A. Manufacturer shall warrant the metal roof against rupture or perforation or from structurally failing due to normal atmospheric conditions for a period of twenty (20) years. In addition, Manufacturer shall provide a 30-year finish warranty against peeling and blistering, chalk, and fade (color change).
- B. Installer shall provide a written warranty for two (2) years from the date of final completion and acceptance, guaranteeing materials and workmanship for watertightness, weathertightness, and against all leaks. During the initial two (2) year period, the Installer shall assure weathertightness and watertightness of the roof, without any cost to the building owner.

PART II - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

ENGLERT, INC.
 1200 Amboy Avenue
 Perth Amboy, New Jersey 08861
 Tel: (732) 826-8614
 Fax: (732) 826-8865

SERIES 2400
2" High Structural/Architectural
Mechanically Locked Standing Seam



NOTE TO SPECIFIER: Englert Series 2400 Panel System serves the structural needs of roofing/fascia, mansard, and siding systems.

The Series 2400 Panel System, also available at 1-1/2" may be specified for application over solid deck, 1/2" plywood or 22 gauge metal deck with 2 layers of 15# felt or 1 layer of 30# felt. Minimum slope 3"/12" and Series 2400 2" may be specified for application over open 16 gauge purlins at 4'-0" oc. Minimum slope 1"/12" up to 75' panel lengths. Specify as required.

A. Panel System should be the Englert Series 2400, 1-1/2" seam x 16" or 20" wide panel or 2" seam x 18" wide panel Structural Standing Seam System, (with pencil ribs and 2 mechanically seamed styles available). mechanical seaming available in 90 degrees and 180 degrees. The panels shall have baked on finish as specified in Section 2.05 hereunder, in Manufacturer's standard colors. Manufacturer shall offer at least a minimum of 23 standard colors to choose from.

B. **Substrate:**

- 24 Gauge baked on finish over Galvalume ASTM A-792-83, AZ55, 40 KSI yield point, 52 KSI tensile strength
- * 22 Gauge baked on finish over Galvalume per ASTM A-792-83, AZ55, 40 KSI yield point, 52 KSI tensile strength.
- * .032" or .040" Aluminum Alloy 3105-H14 approved equal.

NOTE TO SPECIFIER: *22 gauge steel, and .032" and .040" aluminum are available subject to minimum order requirements. *Call Englert for details.*

C. **Performance:**

1. Panel shall meet the requirements of Underwriter's Laboratories, Inc. for Class 90 wind uplift resistance.
2. ASTM E-283-84 Air Infiltration: Maximum of 0.003 CFM./Ft² at 10 psf pressure differential on 180 degrees seamed profile and 0.006 CFM./Ft² at 20 psf pressure differential.
3. ASTM E-331-84 Water Penetration: No evidence of uncontrolled leakage on 180 degrees seamed panel at 20 psf pressure differential.
4. Panel shall display a flame spread classification of a (Class 1) when tested in accordance with ASTM E-84-87.

NOTE TO SPECIFIER: Series 2400 Panels 2" x 18" wide in 24 gauge Galvalume meet the Underwriters Laboratories, Inc. 580 classification for 90 lb. per square foot uplift test when installed over purlins at 4'0" oc with special clips.

IF METAL SOFFIT IS REQUIRED, SPECIFY AS FOLLOWS:

2.03 SOFFIT PANEL SYSTEMS

A. Soffit Panels: Series 2400 Panel System is not recommended for use as a soffit system.

2.04 FABRICATION

- A. Panel Construction: Panels shall be uniformly dimensioned, rollformed to exact lengths to avoid trimming. The panel system shall be anchored as recommended by the Manufacturer. All fasteners shall be concealed. Panels shall be continuous from ridge to eaves with no end laps. There shall be no face penetration of panels, except as approved by the architect for securing panels to facilitate directional expansion/contraction.
- B. Flashing and Trim: All exposed standard or special flashing/trim and such other brakeformed in the same gauge, color, and finish to match roofing panels, furnished with protective strippable film to be removed upon installation.
- C. Accessories such as clips, closures, fasteners, etc., shall be as recommended by the Manufacturer.

2.05 PERMACOLOR 2000 FINISH - (30-Year Warranty)

- A. Englert's PermaColor 2000 standard 30-year color coatings comprises of a .8 to .9 mil full strength 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer of .2 to .3 mil on the finish side, with primer and a wash coat on the reverse, on steel with just a wash coat on aluminum. Face film thickness 1.0 mil \pm .2 mil.

2.05.1 FILM THICKNESS

Topside Finish: Primer shall be .2-.3 mil. Kynar 500 top coat shall be .8 - .9 mil. Reverse side finish shall be .2 - .3 mil primer with a wash coat. Total dry film thickness for the coating system shall be 1.00 mil nominal. All measurements per NCCA Technical Bulletin II-4 or ASTM D1005-84.

2.05.2 SPECULAR GLOSS

As determined per ASTM D523-85 at a glossmeter angle of 60 degrees. 35% \pm 5 specular reflectance.

2.05.3 HUMIDITY RESISTANCE

No blistering, cracking, peeling, loss of gloss or softening of the finish after 3000 hours aluminum 1000 hours coated steel, of exposure at 100% humidity at 95 degrees F, per Federal Test Method Standard 141, Method 6201 or ASTM D2247-87.

2.05.4 SALT SPRAY RESISTANCE

Samples diagonally scored and subjected to 5% - at 95 degrees F, neutral salt spray per ASTM B117-85, then taped with Scotch #610 cellophane tape: 3000 hours aluminum/1000 hours coated steel, no blistering and no loss of adhesion greater than 1/8 from score line. (Samples taped one hour after removal from test cabinet.)

2.05.5 CHEMICAL RESISTANCE

No effect after 24 hour exposure of a 10% solution of hydrochloric acid, and 18-hour exposure to 20% sulfuric acid, per ASTM D1308-85, including exposure to 10% muriatic acid and nitric acid fumes.

2.05.6 CHALKING RESISTANCE

No chalking greater than #8 rating, per ASTM D659-86 test procedure after a 3000-hour weatherometer test.

2.05.7 COLOR CHANGE

Finish coat color change shall not exceed 5 NBS units per ASTM D-822-86, ASTM G-23-88 and ASTM D2244-85 (South Florida 10-years) test procedure after 3000-hour weatherometer test.

2.05.8 ABRASION RESISTANCE

Shall pass 60 liters/mil., minimum of falling sand per ASTM D968-81. Method A.

2.06.1 PERMAMETALLIC 2000 FINISH - (20 Year Warranty)

- A. Metallic Copper (non-aging) comprises of a .8 to .9 mil metallic fluorocarbon full strength 70% Kynar 500 finish coating over a layer of .3 to .5 mil full strength 70% Kynar 500 base coat. the reverse side is treated with a primer and wash coat. Face film thickness: 1.2 mil \pm .2 mil.
- B. Preweathered Galvalume coating comprises of a .8 to .9 mil full strength, 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer of .2 to .3 mil on the finish side, with primer and a wash coat on the reverse, on steel; with just a wash coat on aluminum. Face film thickness: 1.0 mil \pm .2 mil.

2.07.1 MILL FINISH GALVALUME (Bare)

- A. A coating of aluminum zinc alloy applied by a continuous hot dipping process, offering greater corrosion resistance, high temperature oxidation resistance, and heat reflectivity. Mill finish Galvalume carries a 20-year warranty.

PART III - EXECUTION

3.01 INSPECTION

- A. Verify substrate is uniform, even and symmetrical by running a string test. Inspect to assure that all purlins or sub-structure/framing members are flat and insulation is embedded symmetrically so when the metal panels are applied, they will not appear wavy or distorted.
- B. Provide a written report of discrepancies or variations in the substrate to the Architect.
- C. Do not begin installation until unsatisfactory conditions are corrected.
- D. Do not proceed with installation until adjoining areas scheduled for stucco treatment have been stuccoed and washed down. Do not wash down acid residues from stucco directly over the metal panels.
- E. Commencement of installation shall signify acceptance of the substrate and adjacent conditions as being proper and acceptable for treatment of roofing.
- F. After beginning installation, submit approximately 500 square feet of product in place for Architect's approval, before proceeding with substantial work.

3.02 INSTALLATION

- A. The metal panel system shall be installed plumb, level, and straight over a layer of 30 lb. felt, (dry) with a minimum 6" for horizontal lap and 12" for end lap.
- B. The (standing; batten) seam shall be equidistant and shall align for corners, hips, valleys, mullions, and columns in accordance with architectural design parameters as shown on the drawings.
- C. Installation shall be made in accordance with Manufacturer's recommended procedures and layout drawings. Manufacturer's construction Details Handbook, SMACNA Architectural Sheet Metal manual, NRCA Roofing and Waterproofing Manual and Handbook of Roofing Knowledge shall be used as guides and details whenever applicable.
- D. No face penetrations or perforation shall be made in metal panels by fasteners without architect's specific approval. All panels shall be continuous from ridge to eaves with no horizontal end laps.
- E. End lap all flashing and trim at least 3". All gutters must be mitered, soldered and caulked with a lining of Ice and Watershield applied at the laps to make it watertight. All butt joints must be caulked. Soldered areas shall be counter-flashed or painted to match. All valleys shall be treated with a layer of Ice and Watershield spread out at least 24" each side from the center of the valley, on both sides, before applying valley flashing. End lap at least 6" at joints.
- F. Exercise proper care during installation to avoid damage or scratching of the panels. Avoid walking over the metal roof after installation is completed.

3.03 CLEANING AND PROTECTION

- A. Peel of any strippable film on flashing as they are installed.
- B. Complete all items on punch list.
- C. Touch up all minor scratches and spots.
- D. Remove all debris resulting from work under this Section.

