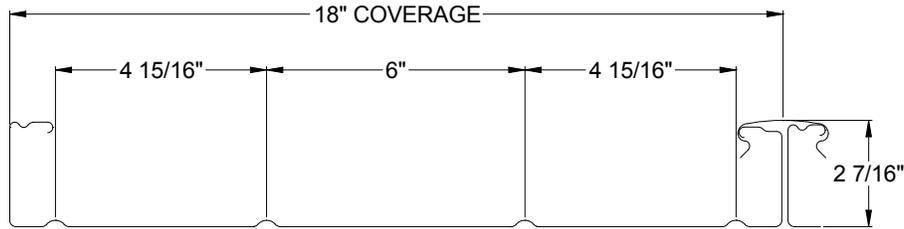


2 1/2" SSR

ARCHITECTURAL-COMMERCIAL ROOFING



Effective September 2007



| COMPONENT | MATERIAL | WT./SQ. PLAIN | WT./SQ. PAINTED | METAL SPECIFICATION | FINISH | | | |
|---|--|----------------------------|--|---|--|-----------------------|---|--|
| panel | ALUMINUM .032" .040" .050" | 63.6 lb. | 65.2 lb. | 3004-H36 alloy or equivalent (28 ksi yield strength) conforming to ASTM B 209 | plain: mill finish paint: two-coat 70% Kynar® 500/ Hylar® 5000; siliconized polyester; vinyl plastisol; 0.5 mil two-coat polyester backer | | | |
| | | 79.5 lb. | 80.9 lb. | | | | | |
| | | 99.3 lb. | 100.7 lb. | | | | | |
| | GALVANIZED STEEL 24 ga. 22 ga. 20 ga. 18 ga. | 162.0 lb. | 163.6 lb. | Grade 50 (50 ksi yield strength) structural steel with G90 coating, both conforming to ASTM A 653 | plain: regular spangle paint: two-coat 70% Kynar® 500/ Hylar® 5000; siliconized polyester; vinyl plastisol; 0.5 mil two-coat polyester backer | | | |
| | | 197.0 lb. | 198.6 lb. | | | | | |
| | | 232.0 lb. | 233.8 lb. | | | | | |
| | ALUMINUM-ZINC ALLOY COATED STEEL 24 ga. 22 ga. 20 ga. 18 ga. | 156.7 lb. | 158.5 lb. | Grade 50 (50 ksi yield strength) structural steel with AZ50 coating both conforming to ASTM A 792 | plain: regular spangle paint: two-coat 70% Kynar® 500/ Hylar® 5000; siliconized polyester; vinyl plastisol; 0.5 mil two-coat polyester backer | | | |
| | | 191.8 lb. | 193.7 lb. | | | | | |
| | | 227.0 lb. | 228.8 lb. | | | | | |
| cap-lock (weights are for four pieces, 16'-10" long each) ^c | ALUMINUM .032 | 10.0 lb. ^a | 10.4 lb. ^a | 3004-H36 alloy or equivalent (28 ksi yield strength) conforming to ASTM B 209 | plain: mill finish paint: two-coat 70% Kynar® 500/ Hylar® 5000; siliconized polyester; vinyl plastisol; 0.5 mil two-coat polyester backer | | | |
| | | GALVANIZED STEEL 24 ga. | 25.5 lb. ^b | | | 25.8 lb. ^b | Grade 50 (50 ksi yield strength) structural steel with G90 coating, both conforming to ASTM A 653 | plain: regular spangle paint: two-coat 70% Kynar® 500/ Hylar® 5000; siliconized polyester; vinyl plastisol; 0.5 mil two-coat polyester backer |
| | | | ALUMINUM-ZINC ALLOY COATED STEEL 24 ga. | | | 24.7 lb. ^b | | |

- a. Use this cap-lock for all aluminum panels.
- b. Use this cap-lock for 24 ga. and heavier panels.
- c. Quantity of cap-lock required per square of panel.

UL90 Uplift Rating: 0.032" aluminum or 24 ga. steel panels over 16 ga. steel purlins. Maximum clip and purlin spacing is 60" for steel panels and 48" for aluminum panels. Clips are attached to purlins with two #12-14 self-drilling screws per clip (UL Construction No. 190).

UL90 Uplift Rating: 0.032" aluminum or 24 ga. steel panels over 22 ga. steel deck with up to 4" of rigid insulation. Maximum clip spacing is 60" for steel panels and 48" for aluminum panels. Each clip must be supported by 6" x 6" x 24 ga. bearing plate. Clips are attached to deck with two #12-13 Dekfast screws per clip (UL Construction No. 190B).

GRAVITY LOAD TABLE (STEEL) (psf)

| Ga. | Spans | 2'-0" | 2'-6" | 3'-0" | 3'-6" | 4'-0" | 4'-6" | 5'-0" |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| 24 | 1 | 503 | 322 | 224 | 164 | 126 | 99 | 81 |
| | 2 | 499 | 319 | 222 | 163 | 125 | 99 | 80 |
| | 3 | 624 | 399 | 277 | 204 | 156 | 123 | 100 |
| 22 | 1 | 650 | 416 | 289 | 212 | 163 | 128 | 104 |
| | 2 | 623 | 399 | 277 | 203 | 156 | 123 | 100 |
| | 3 | 778 | 498 | 346 | 254 | 195 | 154 | 125 |
| 20 | 1 | 770 | 493 | 342 | 251 | 193 | 152 | 123 |
| | 2 | 746 | 478 | 332 | 244 | 187 | 147 | 119 |
| | 3 | 933 | 597 | 415 | 305 | 233 | 184 | 149 |
| 18 | 1 | 1000 | 640 | 444 | 327 | 250 | 198 | 160 |
| | 2 | 979 | 626 | 435 | 320 | 245 | 193 | 157 |
| | 3 | 1223 | 783 | 544 | 400 | 306 | 242 | 196 |

GRAVITY LOAD TABLE (ALUMINUM) (psf)

| Thick. | Spans | 2'-0" | 2'-6" | 3'-0" | 3'-6" | 4'-0" | 4'-6" | 5'-0" |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| .032" | 1 | 503 | 322 | 224 | 164 | 126 | 99 | 81 |
| | 2 | 192 | 123 | 85 | 63 | 48 | 38 | 31 |
| | 3 | 239 | 153 | 106 | 78 | 60 | 47 | 38 |
| .040" | 1 | 685 | 438 | 304 | 224 | 171 | 135 | 110 |
| | 2 | 285 | 182 | 127 | 93 | 71 | 56 | 46 |
| | 3 | 256 | 228 | 158 | 116 | 89 | 70 | 57 |
| .050" | 1 | 854 | 547 | 380 | 279 | 214 | 169 | 137 |
| | 2 | 392 | 251 | 174 | 128 | 98 | 77 | 63 |
| | 3 | 489 | 313 | 218 | 160 | 122 | 97 | 78 |

NOTES:

1. Allowable loads are based on 1986 AISI and 1986 Aluminum Association specifications.
2. Allowable loads are based on stress only.
3. No diaphragm action is provided by this system.
4. Clip spacing should account for clip and clip screw strength. See 2 1/2" SSR Manual for further information.

Oil canning is an inherent trait of light gauge metal products, particularly those with wide flat areas. Many of Fabral panels come standard with stiffening ribs, pencil beads, or shadow lines as these help minimize the appearance of oil-canning. However, due to the limitations of commercially available metals, some oil-canning should be anticipated. Oil-canning in any of Fabral's products will not be cause for rejection of material.

Jackson, GA (800) 884-4484
 Grapevine, TX (800) 477-9066
 Salem, OR (800) 477-8028
 Headquarters - Lancaster, PA (800) 477-274

2 1/2" SSR SPECIFICATIONS

| Part I | GENERAL | |
|----------------|---|------|
| 1.01 | WORK INCLUDED Furnish all material, labor, and equipment to complete installation of 2 1/2" SSR roofing/siding/fascia as manufactured by Fabral, Lancaster, PA. | |
| 1.02 | SYSTEM DESCRIPTION A. The metal roofing/siding/fascia system including required trim members shall meet the specified requirements for snow loads, wind loads, air infiltration, and water penetration. B. The panels shall have a 2 1/2" high finished joint, 18" o.c. including a factory-caulked, snap-on cap. Mechanical crimping or sealing of the standing seam joint or cap is prohibited. C. The anchorage system shall be concealed. The panel's clips shall permit the panel unlimited thermal expansion and contraction. D. Roof panels shall be a maximum possible length to minimize endlaps but shall be limited to 75'. E. Exposed fasteners are not permitted except at eaves, gables, valleys, and roof panel endlaps. F. The 2 1/2" SSR panel system shall carry a UL Wind Uplift Class 90 rating to insure structural integrity and possible reduction in insurance rates. | |
| 1.03 | QUALITY ASSURANCE A. Manufacturer Qualifications B. Minimum of 10 years experience in manufacturing of architectural metal roofing/siding/fascia systems. C. Installer Qualifications D. Minimum of 5 years experience in installation of metal roofing/siding/fascia of similar size and scope. E. Inspections 1. The substrate shall be inspected before panel installation to verify that it complies with shop drawings and specified tolerances. 2. The final inspection will be conducted to verify that the installation complies with the shop drawings. | |
| 1.04 | REFERENCES A. AAMA E 605-2 Finish Standards B. ASTM 84-70 Flame Spreading Rating C. ASTM E 283-73 Air Infiltration D. ASTM E 331-70 Water Penetration E. ASTM E 1680 Air Infiltration F. ASTM E 1646 Water Penetration G. SMACNA (Sheet Metal and Air Conditioning Contractors' National Association) Architectural Sheet Metal Manual Specifications. H. Underwriters Laboratories Construction No. 190 and 190B for Uplift Test 580 Class 90. I. 1973 ASHRAE Handbook of Fundamentals. | |
| 1.05 | SUBMITTALS A. Complete shop drawings, including roof plan and/or elevations and sections of each condition, shall be submitted for approval prior to fabrication. Such drawings shall also include material type, metal thickness, finish, and manufacturer's installation procedures. B. Submit a sample and selected finish and color for architect/owner approval. | 2.02 |
| 1.06 | DELIVERY, STORAGE, AND HANDLING A. Store the panels properly and adequately to protect them from damage on jobsite. B. Protect roofing from adverse job conditions (i.e., moisture) prior to installation. C. Protect roofing from other trades after installation. | |
| 1.07 | WARRANTY A. Paint finish shall have manufacturer's standard 20-year warranty. B. The installation contractor shall issue a separate two-year warranty against defects in installed materials and workmanship including a two-year weathertight warranty. Warranty shall begin from date of substantial completion and acceptance of the project. | 2.03 |
| Part II | PRODUCTS | |
| 2.01 | MATERIALS A. Panels 1. Panels shall be custom fabricated from: a. 24, 22, 20, or 18 ga., Grade 40 (40 ksi yield strength) structural steel with G90 (0.90 oz./ft ²) hot dipped galvanized coating, both conforming to ASTM A 653. b. 24, 22, 20, or 18 ga., Grade 40 (40 ksi yield strength) structural steel with AZ50 aluminum-zinc alloy coating, both conforming to ASTM A 792. c. 0.032, 0.040, or 0.050" 3004-H36 or equivalent (28 ksi yield strength) aluminum alloy conforming to ASTM B 209. 2. The webs of the 2 1/2" SSR panels shall be 18" o.c., 2 1/2" high. B. Back-up plates shall be die-punched from 18 ga. zinc-aluminum alloy coated steel and used to stiffen the panels at endlaps. The plates shall have two guide lances to align and hold the panels during installation. C. Caps shall be roll-formed to a width of 2 1/8" and a depth of 3/4". The top surface shall be curved to provide a spring-back action when installed. Caps shall be 24 gauge (G90 galvanized steel per ASTM A 653) (zinc-aluminum alloy coated steel per ASTM A 792) (0.032" thick embossed aluminum alloy 3004-H36 or equivalent per ASTM B 209). Caps shall be furnished with two beads of factory-applied caulk on the interior side. D. Clips shall be die punched and shall have both a purlin bearing flange and two (2) roof panel support flanges. The purlin bearing flange shall be prepunched for two (2) #12-14 self-drilling, self-tapping screws. Clips shall provide (1/4") (1 1/4") clearance between the purlin bearing flange and the roof panel support flanges. Clip material shall be 18 gauge zinc-aluminum alloy coated steel. E. Insulation shall be glass-fiber blanket with a density of (0.6) (0.75) pcf and a maximum thickness of 4". The insulation shall be faced on one side only with an approved vapor barrier having sealing tabs. Insulation shall be supplied in rolls of sufficient length to permit a taut application from ridge to eave. When installed, the assembled system shall provide a minimum "U" value of 0.09 with 4" of insulation and a "U" value of 0.08 with 4" of insulation and 1" thermal blocks. F. Thermal blocks shall be 1" thick by at least 3" wide by 17 15/16" long Styrofoam or approved equal applied over the blanket insulation at each purlin under each roof panel. | |
| | G. Closures 1. Rubber closures shall be pre-molded polyethylene to match the assembled panel system and in lengths as supplied by the panel manufacturer. 2. Metal closures shall be 26 or 24 gauge (G90 galvanized steel per ASTM A 653) (AZ50 zinc-aluminum alloy coated steel per ASTM A 792) or 0.032" (thick embossed aluminum alloy 3004-H36 or equivalent per ASTM B 209) to match the assembled panel system and in lengths as supplied by the panel manufacturer. H. Flashings shall be shop fabricated by the panel manufacturer from material that is the same thickness and finish as the panels to which they are attached. Where practical, flashings shall be furnished in maximum 10' lengths. Exposed flashings shall be lapped 6". I. Subgirts shall be used under all flashings that span from rib to rib of the 2 1/2" SSR panels. Subgirts shall be rollformed from 18 gage G90 galvanized steel and shall be hat-shaped sections 3/4" deep x 3" wide with 3/4" wide flanges. Subgirts shall be furnished in 20' lengths. J. Fasteners for the following locations shall be: 1. Clips to purlins: zinc plated (#12-14 x 1 1/2" self-drilling, self-tapping screws) (#14 HHB x 1" self-tapping screws). 2. Roof panels to eave support: (zinc plated) (305 stainless steel) (#12-14 x 1 1/2" or 2 1/2" self-drilling, self-tapping screws) (#14 HHB x 1" or 2" self-tapping screws). 3. Roof panel endlaps: (zinc plated) (305 stainless steel) #14 x 1 1/4" self-drilling, self-tapping screws. 4. Subgirts to roof panel ribs and flashings to subgirts: zinc plated (#12-14 x 1" self-drilling, self-tapping screws) (#14 HHA x 3/4" sheetmetal screws). 5. Flashings to roof panel ribs: (zinc plated) (305 stainless steel) (zinc-aluminum alloy plated) (#14 HHA x 3/4" sheet metal screws) (#14 MP x 1" self-drilling stitch screws). 6. All exposed fasteners shall have combination metal and neoprene washers. For pre-painted roof panels, all exposed fasteners shall be pre-painted to match the roof panel. 7. All fasteners shall be concealed except as shown on the drawings. K. Sealant tape used at roof panel endlaps shall be a butyl type roll as supplied by the manufacturer. L. Caulking shall be a polyurethane where it is exposed and there is no thermal movement. All caulking or sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces. M. Sealant tape shall be non-skinning, non-hardening gun grade butyl sealant or butyl sealant tape with a minimum thickness of 1/8" where thermal movement must be accommodated. All caulking or sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces. | |
| | 2.02 FABRICATION A. Maximum allowable fabrication tolerances shall be as follows: 1. Panel width: 18" ± 1/8" 2. Seam height: 2 1/2" ± 1/8" 3. Panel shearing length: ± 1/4" maximum. B. Accessories and trim components shall be factory fabricated or field formed in finish and metal thickness, same as the panels, except as otherwise noted on the drawings. | |
| | 2.03 FINISHES The paint finish shall be a factory applied (siliconized polyester) (Kynar® 500/Hylar® 5000*) (vinyl plastisol) coating, conforming to the following: A. Metal preparation: all metal surfaces shall be carefully prepared for painting on a continuous process coil coating line by alkali cleaning, hot water rinsing, application of chemical conversion coating, cold water rinsing, sealing with an acid rinse, and thorough drying. B. Prime coating: shall be a coat of epoxy paint, specifically formulated to interact with the topcoat and shall be applied to the prepared surface by rollcoating to a dry film thickness of 0.20 ± .05 mils. The prime coat shall be oven-cured prior to application of finish coat. C. Exterior finish coating: shall be a (siliconized polyester) (Kynar® 500/Hylar® 5000) (vinyl plastisol) finish coating applied over the primer by rollcoating to a dry film thickness of 0.80 ± 0.05 mils (3.80 ± 0.05 mils for vinyl plastisol) so that the total dry film thickness is 1.0 ± 0.10 mils (4.0 ± 0.10 mils). The finish coating shall be oven cured. D. Interior finish coating: a washcoat shall be applied on the reverse side over the primer by rollcoating to dry film thickness of 0.30 ± 0.05 mils for a total dry film thickness of 0.50 ± 0.10 mils. The washcoat shall be oven cured. E. Color: the color of the exterior finish shall be _____. F. Physical properties: the coating shall conform to the manufacturer's standards applying to its composition and shall reflect the following characteristics related to field performance when tested according to the following ASTM tests: (Copy from FABRAL Spec-Data for respective coating). | |
| | Part III EXECUTION 3.02 PREPARATION The Installer shall: A. Verify that substrate layout complies with shop drawing layout. B. Report any variations and potential problems to the corrected. C. Not start work until unsatisfactory conditions have been corrected. | |
| | 3.02 INSTALLATION A. The roofing system shall be installed plumb, straight, and true to adjacent work. B. Hold-down clips shall allow for thermal movement and shall be installed at each panel joint. Longitudinal spacing of hold-down clips shall be arranged to allow for a positive uniform load of _____ psf and a negative uniform load of _____ psf. Refer to load table and insert appropriate design load as required. C. No perforations shall be made in roofing by fasteners except as shown on the drawings. Kynar® 500 is a registered trademark of Elf Atochem North America, Inc. Hylar® 5000 is a registered trademark of Ausimont USA, Inc. | |