SECTION 07 63 00

SHEET METAL ROOFING SPECIALTIES

Display hidden notes to specifier. (Don't know how? [Click Here](https://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* Architectural Metal Specialties Inc.; metal roofing components.
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This section is based on the products of Architectural Metal Specialties Inc., which is located at:
4333 Lynwood Ct.
Douglasville, GA 30134
Toll Free Tel: 800-943-9771
Tel: 770-920-1931
Fax: 770-920-6838
Email: [request info (phorsley@amissupply.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Architectural+Metal+Specialties+Inc.&coid=30595&rep=&fax=770-920-6838&message=RE:%20Spec%20Question%20(07630ams):%20%20&mf=)
Web: <https://www.amsisupply.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos30/arc30595.html) ] for additional information.
AMSI Supply is a privately owned manufacturing and distribution company based in Douglasville, Georgia. Since 1993 we have been manufacturing providing standing metal roof clips to the metal roofing manufacturing and installation industry, as well as distributing a wide range of hand tools, our own line of screws, metal roofing panels and flashings and more. We are dedicated to providing everything for the metal roofer.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Metal roofing systems.
		2. Clamps and brackets.
		3. Fasteners.
		4. Sealants.
		5. Accessories.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 05 41 00 - Structural Metal Stud Framing.
		2. Section 06 10 00 - Rough Carpentry.
		3. Section 07 26 00 - Vapor Retarders.
		4. Division 07 - Adjacent Roofing Systems.
		5. Section 07 62 00 - Sheet Metal Flashing and Trim.
		6. Section 07 91 26 - Joint Fillers.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards Institute (ANSI):
			1. ANSI A10.14 - Requirements for Safety Belts, Harnesses, Lanyards, Lifelines, and Droplines for Construction and Industrial Use.
			2. ANSI Z359.1 - Safety Requirements for Full Body Harnesses.
		2. ASTM International:
			1. ASTM A653 - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
			2. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.
			3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
			4. ASTM C1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
			5. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs.
			6. ASTM D395 - Standard Test Methods for Rubber Property - Compression Set.
			7. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
			8. ASTM D573 - Standard Test Method for Rubber - Deterioration in an Air Oven.
			9. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
			10. ASTM D1171 - Standard Test Method for Rubber Deterioration - Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens).
			11. ASTM D1418 - Standard Practice for Rubber and Rubber Latices - Nomenclature.
			12. ASTM D2137 - Standard Test Method for Rubber Property - Brittleness Point of Flexible Polymers and Coated Fabrics.
			13. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
		3. Copper Development Association (CDA):
			1. Copper in Architecture Handbook.
		4. Miami-Dade County Approvals:
			1. Miami-Dade Notice of Acceptance (NOA) Number: 13-1126.10.
			2. Florida Building Code Certificate of Approval Number: FL16832.
		5. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
			1. Architectural Sheet Metal Manual.
		6. Underwriters Laboratories (UL):
			1. UL94 - Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
			2. UL 2703
	1. PERFORMANCE REQUIREMENTS
		1. General: Provide metal roof panels, cleats, clips, anchors and fasteners, flashing, drainage components and accessories as indicated and as required for a weathertight installation.
		2. Fabricate and install roofing capable of resisting forces required by the local building code.
		3. Thermal Movements: Allow for thermal movements resulting from a maximum change (range) of 120 degrees F ambient temperature and 180 degrees F material surface temperature.
		4. Sheet metal roofing system as installed shall not allow water infiltration into the building interior or exterior wall or roof assemblies.
		5. Sustainable Design Requirements:
			1. Solar Reflectance Index (SRI): Not less than 29 when calculated to ASTM E1980.
	2. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's current data sheets on each product to be installed, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Sustainable Design Submittals:
			1. Product test reports indicating Solar Reflectance Index (SRI).
			2. Manufacturer's product data and costs for metals having recycled content.
		4. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected. Specify colors at the end of Part 2.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
		2. Verification Samples:
			1. Sheet Metal Roofing: Minimum 12 inches long by full width including finished seams, fasteners, cleats, closures, and other accessories.
			2. Finishes: minimum size 6 x 6 inches for each finish specified.
			3. Accessories: Full-size sample.
		3. Qualifications: For installer and manufacturer.
		4. Close Out Submittals:
			1. Maintenance Data.
			2. Warranty.
	1. QUALITY ASSURANCE
		1. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer.
		2. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
		3. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar products.
		4. Installer Qualifications: Minimum 2 years experience installing similar products.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship is approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
		2. Pre-Installation Meeting: Convene at the Project site minimum two weeks prior to starting work of this section. Review methods and procedures related to roofing system installation, insurance, and warranty requirements.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver and store products in manufacturer's unopened packaging identified with the manufacturer and brand name until ready for installation.
		2. Unload, store, and handle to prevent twisting, bending, abrasion, scratching and denting. Do not allow standing moisture on panels, elevate one side for moisture to drain off.
		3. Handle materials to avoid damage.
	2. PROJECT CONDITIONS
		1. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
		2. Do not proceed with installation of sealants unless sealant manufacturer's requirements can be met including extreme temperature conditions that would cause joint openings to be minimum or maximum widths, or if heavy wind loads are forecast.
	3. WARRANTY

\*\* NOTE TO SPECIFIER \*\* Coating warranty varies for Regal Red, Copper, Champagne and Pre-Weathered Galvalume. Metallics are warranted for crack, chip, and peel only.

* + 1. Manufacturer's Warranty: Except where longer warranty periods are specified, provide manufacturer's standard warranty document executed by authorized company official covering finish, including color, fade, chalking and film integrity.
			1. Warranty Period, Typical Coatings: 20 years.
			2. Warranty Period, Metallic Coatings: 20 years, crack, chip, and peel only.
		2. Installers Warranty: Provide in form acceptable to the Owner in which Installer agrees to repair or replace components that fail in structure, weather-tightness, materials or workmanship within the specified warranty period.
			1. Warranty Period: 5 years.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Architectural Metal Specialties Inc., which is located at: 4333 Lynwood Ct.; Douglasville, GA 30134; Toll Free Tel: 800-943-9771; Tel: 770-920-1931; Fax: 770-920-6838; Email: [request info (phorsley@amissupply.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Architectural+Metal+Specialties+Inc.&coid=30595&rep=&fax=770-920-6838&message=RE:%20Spec%20Question%20(07630ams):%20%20&mf=); Web: <https://www.amsisupply.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. MATERIALS
		1. Substrate: Of sufficient structural integrity and density to meet fastener pull out requirements of the local building authority.
		2. Metals:
			1. Aluminum Sheet: ASTM B 209 up to 0.050 inch thickness.
			2. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653, up to 18 ga. thickness.
			3. Stainless Steel: up to 18 ga. thickness.
			4. Copper: ASTM B370, cold-rolled copper sheet, H00 temper, up to 30 oz. thickness.
			5. Zinc: up to 30 oz.
			6. Customer provided metals.
		3. EPDM: Ethylene Propylene Diene Monomer (EPDM) synthetic rubber, ASTM D1418 class M and to meet or exceed the following:
			1. ASTM D395.
			2. ASTM D412.
			3. ASTM D573.
			4. ASTM D624.
			5. ASTM D1171.
			6. ASTM D2137.
			7. UL94.
	2. METAL ROOFING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* This panel is economically priced but has limited test data available and should only be used where performance criteria is limited. Delete if not required.

* + 1. Standing Seam Panels - AMS-200: 2 inch mechanically seamed roof panels designed for a wide variety of applications in the commercial, institutional and military construction markets.
			1. Material: \_\_\_\_\_\_
			2. Profile: \_\_\_\_\_\_

\*\* NOTE TO SPECIFIER \*\* Tite-Loc Plus: This panel has been extensively tested and is appropriate for use anywhere a high performance roof panel system is required. Delete if not required.

* + 1. Tite-Loc Plus Roof Panel: Manufactured under license from Petersen Aluminum (Pac-Clad), our Tite-Loc Plus roof panel is Miami-Dade County and Florida Building Code approved.
			1. Material: \_\_\_\_\_\_
			2. Profile: \_\_\_\_\_\_

\*\* NOTE TO SPECIFIER \*\* We manufacture the widest variety of standing seam metal roof panel clips available anywhere. Delete if not required.

* + 1. Panel Clips: Manufactured to fit virtually any roof panel from snaplock to mechanically seamed panels.
	1. CLAMPS AND BRACKETS
		1. Clamps and Brackets:

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Product: S-5! Seam Clamps as supplied by Architectural Metal Specialties Inc. (AMSI).
				1. Clamps attach to the panel seam by the tightening of two "bullet-nosed" stainless steel setscrews against the seam material with an industrial grade screwgun.
				2. The round point setscrews compress the seam material against the opposite wall of the clamp to "dimple" the seam material, but not penetrate the material.
				3. Threaded holes in the clamp enable the easy attachment of various ancillary items to the clamps. Stainless steel hardware provided by the manufacturer.
				4. Select size and profile to correspond with roofing system.

\*\* NOTE TO SPECIFIER \*\* Combining photovoltaic arrays with standing seam metal roofing is growing. A 30-year power source on a 40-year roof, along with zero-penetration technology, creates the most sustainable roof system available with alternative energy power generation, without compromising the roof manufacturer's warranty. Delete if not required.

* + - 1. S-5! Solar Mounting Kit (S-5-PV): Combines photovoltaic arrays with standing seam metal roof without jeopardizing roof material and weather-tightness warranty. Kit consists of the following components:
				1. Aluminum PV Grab: Holds modules firmly in place.
				2. Type 304 Stainless Steel Flange Nut.
				3. Friction reducing coated Type 304 stainless steel PV stud with anti-gall coating.
				4. Wire management retainer clips, 4 on each side of the disc to guide wiring.
				5. Embossed panel (module) guide, to maintain alignment of modules.
				6. UL and Intertek Listed.

Wind dynamics shall be reviewed by a qualified licensed professional.

\*\* NOTE TO SPECIFIER \*\* In order to meet the UL requirements, the S-5-PV Kit had to be submitted for tests, being evaluated under the severest of conditions to confirm that the product would withstand the elements. Delete if not required.

* + 1. S-5-PV Kit: The first solar module mounting solution to be listed to the new UL 2703 for bonding and mounting while maintaining electrical conductivity

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. EdgeGrab: Uses the same S-5-PV Kit base assembly as the universal PV grab and will work on most exposed-fastened and corrugated metal roofs for Solar Array End Conditions.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. FASTENERS
		1. Wood Screws:
			1. ASO Wood Screws Panhead screws of zinc.
			2. Wafer-head screws of zinc with asymmetrical thread.
		2. Sheet Metal Screws:
			1. Meet or exceed ASTM C1513 and ASTM C954.
		3. Self-Drilling Screws:
			1. Self-Drilling Screws for the Metal Roofer
			2. Galvanized, Stainless Steel and Corrosion Resistant
			3. Panhead, Hex Head, Waferhead and Hasket head
		4. Quick Drive Screws:
			1. Self-Drilling Screws for the Metal Roofer
			2. Galvanized, Stainless Steel and Corrosion Resistant
			3. Panhead, Hex Head, Waferhead and gasket head
		5. Pop Rivets:
			1. Stainless Steel and Copper Pop Rivets
			2. Unpainted and Pre-painted

\*\* NOTE TO SPECIFIER \*\* Select sealant types based on manufacturer's recommendations and typical details. Delete sealant types not required.

* 1. SEALANTS
		1. Acrylic Tape Sealant: AST Hi-Acrylic by Emseal, self-adhering tape seal manufactured of resilient, open-cell polyurethane foam impregnated with a water-based, acrylic-modified asphalt emulsion.
			1. Compression: Provide the following:
				1. Zero compression (fully expanded): No seal.
				2. 18% Compression: Seal for heat, cold, dust, and acoustics.
				3. 66% Compression: Seal for heat, cold, dust, acoustics, and air.
				4. 75% Compression: Seal for heat, cold, dust, acoustics, air, and vapor.
				5. 80% Compression: Seal for heat, cold, dust, acoustics, air, vapor, and water.
			2. Applications include join details in metal roofing system, expansion / compression joints subject to movement from thermal expansion and contraction, and as a gasket in mechanically fastened, non-moving applications such as lap seams.
			3. Suitable for use against metal, plastic, wood, concrete, and other common metal building materials.
			4. Product will not dry out or become hard or brittle.
			5. UV stable.
			6. Highly resistant to insects and vermin.
			7. Will not extrude from joints, no shrinkage or blowout to closed-cell breakage.
		2. Butyl Tape Sealant: Butyl Tape by GSSI Sealants, elastomeric butyl rubber tape extruded on a silicon release paper designed for sealing a variety of construction joints.
			1. UV resistant.
			2. Designed to withstand extreme temperatures while retaining cold weather formability and elasticity.
		3. Clear Sealants:
			1. SCS1000 by GE (SCS-1000): Contractor grade clear silicone adhesive sealant with excellent adhesion, weatherability and elasticity.
			2. HV Clear Sealant by Ruscoe (CLR-HV): High viscosity urethane sealant for vertical and angular sealant applications, lap joints, zee closures, and sloped areas. Can be applied at temperatures as low as 32 degrees F.
			3. SB-190 by Everseal (SB-190): Hard-setting, one-part paintable synthetic rubber sealant with cured tensile strength of up to 2,000 pounds. No recommended for soft or expanding joints.
		4. Tri-Polymer Sealant: 2300 by Geocel, single component, high-performance elastomeric sealant with the following properties:
			1. Will not crack.
			2. Asphalt compatible.
			3. Exceptional elongation and flexibility.
			4. Excellent adhesion to all building surfaces even when damp.
			5. Superior ultraviolet resistance.
			6. Resealable, may be applied over itself.
			7. Paintable.
			8. No dirt pickup.
			9. Tools and cleans easily.
			10. Mildew proof.
			11. Meets all state and federal VOC regulations.

\*\* NOTE TO SPECIFIER \*\* Select color. Delete colors not required.

* + - 1. Provide in the following colors for metal roofing applications:
				1. Sandstone (66123).
				2. Sierra Tan (66124).
				3. Royal Blue (66125).
				4. Slate Blue (66126).
				5. Mansard Brown (66127).
				6. Hartford Green (66128).
				7. Patina Green (66129).
				8. Hunter Green (66130).
				9. Slate Gray (66131).
				10. Charcoal Gray (66132).
				11. Light Gray (66133).
				12. Burgundy (66134).
				13. Bright Red (66135).
				14. Colonial Red (66136).
				15. Bone White (66137).
				16. Metallic Copper (66138).
				17. Match adjacent in color selected by the Architect.
		1. Weather Sealant: Titebond Sealant by WeatherMaster, superior polymer formula to provide weather-tight seal against water, wind, dust, and dirt. Exceptional adhesion to Kynar coated metal materials, aluminum, steel, galvanized bonderized surfaces, plastics, glass, wood, masonry, PVC and other common building materials.
			1. Workable down to 0 degrees F.
			2. Permanently flexible, will not crack.
			3. 98% solids for minimal shrinking.
			4. Joint movement capability of 50%.
			5. Paintable with water-based latex one hour after application (translucent is not paintable).

\*\* NOTE TO SPECIFIER \*\* Select color. Delete colors not required.

* + - 1. Provide in the following color:
				1. Regal White (61011).
				2. Bone White (61021).
				3. Stone White (61031).
				4. Translucent (61111).
				5. Matte Black (61121).
				6. Mansard Brown (61141).
				7. Dark Bronze (61341).
				8. Medium Bronze (61351).
				9. Burgundy (61431).
				10. Colonial Red (61441).
				11. Terra Cotta (61451).
				12. Banner Red (61461).
				13. Almond (61591).
				14. Sandstone (61601).
				15. Surrey Beige (61611).
				16. Sierra Tan (61621).
				17. Hartford Green (61781).
				18. Patina Green (61801)
				19. Classic Green (61821)
				20. Slate Blue (62201).
				21. Regal Blue (62211).
				22. Slate Gray (62451).
				23. Charcoal Gray (62451).
				24. Pewter (62461).
				25. Bright Silver (62611).
				26. Bright Copper (62621).
				27. Match adjacent in color selected by the Architect.
		1. Metal Roof Sealant by NovaFlex: Neutral cure silicone with the following properties:
			1. VOC Compliant in all 50 states.
			2. Permanently flexible.
			3. Low odor and solvent free.
			4. Tack free in 10 minutes, completely cured within 2 days.
			5. Invisible to UV light.
			6. Will not shrink or crack.
			7. Excellent adhesion to most substrates.
			8. Waterproof.

\*\* NOTE TO SPECIFIER \*\* Select color. Delete colors not required.

* + - 1. Provide in the following color:
				1. White (MR100).
				2. Almond (MR3461).
				3. Dark Bronze (MR120).
				4. Black (MR110).
				5. Sierra Tan (MR3333).
				6. Hartford Green (MR168).
				7. Medium Bronze (MR134).
				8. Light Gray (MR115).
				9. Hemlock Green (MR3702).
				10. Sandstone (MR191).
				11. Colonial Red / Barn Red (MR182).
				12. Brown (MR137).
				13. Evergreen / Forest Green (MR169).
				14. Antique White (MR105).
				15. Translucent (MR150).
				16. Charcoal Gray (MR126).
				17. Gutter Gray (MR3514).
				18. Regal Red (MR196).
				19. Regal Blue (MR171).
				20. Electric Blue (MR195).
				21. Match adjacent in color selected by the Architect.
		1. NP1 Sealant by Sonneborn: One-component, high-performance, non-priming, gun-grade, elastomeric polyurethane sealant that requires no mixing and typically no priming to bond to concrete, masonry, and metals.

\*\* NOTE TO SPECIFIER \*\* Select color. Delete colors not required.

* + - 1. Provide in the following color:
				1. White (NP1-10-WT).
				2. Off-White (NP1-10-OWT).
				3. Limestone (NP1-10-LS).
				4. Tan (NP1-10-TN).
				5. Stone (NP1-10-ST).
				6. Aluminum Gray (NP1-10-AUG).
				7. Redwood Tan (NP1-10-RTN).
				8. Hunter Green (NP1-10-HGN).
				9. Medium Bronze (NP1-10-MBZ).
				10. Special Bronze (NP1-10-SBZ).
				11. Black (NP1-10-BK).
				12. Match adjacent in color selected by the Architect.
		1. Tape and Foam Sealants:
			1. Memory Foam
			2. Die Cut Foam Closure Strips.

\*\* NOTE TO SPECIFIER \*\* Review accessories below with the Drawings and manufacturer's recommendations. Delete items not required.

* 1. ACCESSORlES
		1. Underlayment: Self-adhering, high-temperature sheet minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
		2. Pipe Boots:
			1. Dektite Pipe Boots (DF100 Series): Pleated EPDM cone with corrosion resistant aluminum base, conforms to any panel profile, configuration, or roof pitch.
				1. Fits pipe sizes from 1/4 inch to 24 inch diameter.
				2. Suitable for hot or cold vent pipes withstanding surface temperatures of -58 to 239 degrees F and up to 302 F intermittently.
				3. Ozone and UV light resistant.
				4. Color: Black or Gray as selected by the Architect.
			2. MasterFlash Pipe Boots (MFR-EPD Series): Pleated EPDM cone with corrosion resistant aluminum base, conforms to any panel profile, configuration, or roof pitch.
				1. Fits pipe sizes from 4-1/2 inches to 34 inch diameter.
				2. Suitable for hot or cold vent pipes withstanding surface temperatures of -65 to 275 degrees F.
				3. Ozone and UV light resistant.
			3. High Temperature Pipe Boots (DF 200 Series): One-piece silicone construction by Dektite.
				1. Working temperature range: -40 to 350 degrees F.
				2. Color: Orange-red.
			4. Retro-Fit Pipe Boots (RF800 Series): Slotted EPDM construction by Dektite including molded joiner for installation on permanent roof mounted fixtures where typical pipe boots will not fit.
				1. Fits pipes from 3/4 inch to 10 inch diameter pipes.
				2. Color: Gray.
			5. Colored Pipe Boots (MFC-EPD Series): EPDM pipe boots by MasterFlash.
				1. Fits pipe sizes from 2-1/4 inch to 34 inch diameter.
				2. 20 year warranty.
				3. Provide in the following color as selected by the Architect:

White (WT).

Gray (GA).

Black (BA).

Light Blue (LB).

Dark Blue (DB).

Light Green (LG).

Dark Green (DG).

Terra Cotta (TC).

Brite Red (BR).

Brown (BN).

* + 1. 35-year ICC Listed Pipe Flashing (ICC-SQ Series):
			1. MasterFlash pipe boots with advanced ozone and UV resistance.
			2. 35 year warranty.
			3. Fits pipes from 2-1/4 inch to 34 inch diameter pipes.
			4. Color: Black.
		2. Extreme Angle Pipe Flashing (EA100 Series):
			1. Designed specifically for applications with 35 to 65 degree angle roof pitch, featuring a built-in 40 degree (10:12) angle.
			2. Soft aluminum base conforms to most roof panels.
			3. Standard: Black EPDM.
			4. High Temperature: Orange Silicone.
		3. EPDM Flashings (DS Series):
			1. Dekstrip expandable edge flashings for large, curved or awkward profiles and penetrations.
			2. Concertina edges stretch up to 25 percent, allowing the flashing to form and seal to various shapes.
			3. Two or more overlapping pieces can be heat sealed together.
			4. Continuous service temperature of -58 to 239 degrees F.
			5. Available 7 to 18 inches wide for flashing dissimilar metals, dissimilar roof profiles, large round pipes, and expansion joints.
		4. Metal Pipe Flashings:
			1. Imported from Germany.
			2. Fits 5 inch and smaller vent pipes
			3. Provide in Copper or Zinc as selected by the Architect.
		5. Copper Gutters:
			1. Half Round Gutters: European Style.
			2. 16oz and 20oz Copper as selected by the Architect.
			3. Size as shown on the Drawings.

\*\* NOTE TO SPECIFIER \*\* AMSI is proud to offer a great selection of standard conductor heads for roof drainage systems. Select style, metal. Custom sizes available. Delete if not required.

* + 1. Conductor Heads:
			1. Style A: Provide in .032" Aluminum.
			2. Style A: Provide in 24ga Galvanized Steel.
			3. Style A: Provide in 16oz soldered or riveted Copper.
			4. Style A Standard Size: 12-7/8 inch W x 13-3/4 inch H x 8-1/2 inch D.
			5. Style B: Provide in .032" Aluminum.
			6. Style B: Provide in 16oz soldered or riveted Copper.
			7. Style B Standard Size: 14-1/2 inch W, 10 inch box, 12-1/2 inch H x 9 inch D.
			8. Style C: Provide in .032" Aluminum.
			9. Style C: Provide in 24ga Galvanized Steel.
			10. Style C: Provide in 16oz soldered or riveted Copper.
			11. Style C Standard Size: 14-1/2 inch W, 9-3/4 inch box, 15-1/4 inch H x 9 inch D.
			12. Style D: Provide in .032" Aluminum.
			13. Style D: Provide in 24ga Galvanized Steel.
			14. Style D: Provide in 16oz soldered or riveted Copper.
			15. Style D Standard Size: 14-1/2 inch W, 10.5 inch box, 16-1/4 inch H x 9.5 inch D.
			16. Style E: Provide in .032" Aluminum.
			17. Style E: Provide in 24ga Galvanized Steel.
			18. Style E: Provide in 16oz soldered or riveted Copper.
			19. Style E Standard Size: 14-1/2 inch W, 12.5 inch box, 15 inch H x 8.5 inch D.
		2. Snow Retention:
			1. S-5! ColorGard Snow Retention System:
				1. Utilizes the Patented S-5 Clamp precision-machined from aircraft quality, high-tensile aluminum
				2. Uses Your Own Metal to Match the Roof Color Perfectly
				3. Warranted for the life of the roof.
				4. Perfect color-match.
				5. Easy to install.
				6. Maintains clean colorful appearance of the roof.
				7. Designed and engineered on a site-specific basis.
				8. All related hardware is non-ferrous stainless steel.
				9. Attaches to metal roof without piercing the panel.
			2. Sno-Gem Snow Guards:
				1. Crystal like snow guard suspend the field of snow and ice while they gradually meld under the suns rays.
				2. UV Stabilized Polycarbonate Construction
				3. Color matched to existing roof is injected through the material (not painted on).
				4. Adhesive or mechanically attached to primed surfaces with a bead of SB-190 Sealant.
		3. Snow Diverter:
			1. Snow Diverter by LM Curbs: Designed to mitigate the changes of sliding snow on roof causing damage to vent pipes, flue stacks, satellite dishes or other roof mounted items.
			2. Constructed of 0.125 inch type 3003 mill finish aluminum, fully welded at the seam.
			3. Color: Unpainted or color matched to the roof.
		4. Sno Barricade:
			1. Clamp-on snow guard system with gem clip.
			2. Designed for new or existing standing seam metal roof systems.
			3. Inside the gem clamp is an compression button crimper to grip tight without penetrating the standing seam.
			4. Gem clamp and barricade plate are available in any standard or custom pre-finished color with no raw edges or unfinished surfaces.
		5. Safety Equipment:
			1. Safety Harnesses:
				1. Tuff-Belt, roofers kit in a bucket or bag including:

Single D-ring harness.

Manual rope grab with shock pack.

50 foot poly-synthetic rope.

Galvanized steel roof anchor.

* + - * 1. Single D-ring Safety Harness (H-TB201A):

Lightweight general purpose safety harness with a single D-ring at the back.

Includes chest-strap retainer, 3 point adjustment, and lanyard latch ring.

Universal fits medium to large size.

Meets or exceeds ANSI Z359.1.

* + - * 1. Three D-ring Positional Harness (H-TB205B):

3-Drop forged D-rings for fall arrest, positioning, and suspension featuring light weight design for general construction and aerial equipment usage.

Equipped with adjustable chest and leg strap.

Angled positioning, D-rings provide even support.

Fits 36 to 48 inch waist.

Meets or exceeds ANSI Z359.1.

* + - * 1. Lanyards:

L-613-16: 6 foot stretch lanyard with built-in shock pack and 2 snap hooks.

L-613-02B: 6 foot nylon web lanyard with built-in shock pack and 2 snap hooks.

* + - * 1. Rope Grabs:

Optimus Rope Grab (FP-7103G-L): Manual rope grab with 2-1/4 inch hole / eye size. For use with 5/8 inch rope. Latch opens 1 inch. Meets ANSI Z359.1.

Terra-Max Rope Grab (FP-7202G-L): Self-trailing rope grab with 2-1/4 inch hole / eye size. For use with 1/2 inch to 5/8 inch ropes. Latch opens to 2 inches. Meets ANSI Z359.1.

* + - * 1. Life-Line Ropes:

50 foot (L-505) or 100 foot (L-100) 5/8 inch poly synthetic safety rope.

1-1/8 inch nylon eye on one end.

Rated to 8,0000 pounds tensile strength.

Maximum capacity 310 pounds.

Maximum fall arrest force 1,8000 pounds.

Meets ANSI A10.14 and ANSI Z359.1.

* + - * 1. Roof Anchor (RF-1036):

Galvanized steel reusable roof anchor with 3 inch swiveling hook.

Meets ANSI Z359.1

\*\* NOTE TO SPECIFIER \*\* Select based on roofing design. Delete if not required.

* + - * 1. ABS-Lock Falz IV Anchorage System:

Applications: Standing and round seam roofs.

Anchorage connector for round-edge standing and angle seam roofs.

Seam panels must be double locked (180 degree seam).

Licensed as a single anchorage connector or as an end or corner post in a lifeline system.

Certified to ANSI Z359.1.

Fits panel widths of 11.81 to 26.95 inches.

Maximum capacity 5,000 pounds.

Not for use with snaplock panels.

* + - * 1. ABS-Lock Falz V Anchorage System:

Applications: Standing and round seam roofs.

Anchorage connector for round-edge standing and angle seam roofs.

Seam panels must be mechanically seamed.

Certified to ANSI Z359.1.

Maximum capacity 5,000 pounds.

Not for use with snaplock panels.

* + - * 1. ABS-Lock X-F1 Anchorage System:

Applications: Wood substrate through truss.

Anchorage connector designed for installation at the roof peak.

Requires fastening through to the truss.

Minimum truss dimension of 2-3/8 x 4-3/4 inch.

Certified to ANSI Z359.1.

Maximum capacity 5,000 pounds.

* + - 1. Head and Eye Protection:
				1. Wrap Around Safety Glasses:

Saturn Clear Lens Safety Glasses (G-1720C).

Aztec Tinted Safety Glasses (G-2510S).

Allure Tinted Lens Safety Glasses (G-SB2410E).

* + - * 1. Hardhats:

4 point hard hat with ratcheting adjuster complies with ANSI Z89.1 standards for Class C, E, G, Type 1 hard hats.

Available Yellow (HH-32ABS-Y) or White (HH-32ABS-W).

\*\* NOTE TO SPECIFIER \*\* Select 10 or 16 unit. Delete if not required.

* + - 1. First Aid Kits:
				1. First Aid Kits by Radnor: Fast access and clear identification of supplies, including instructions, meets Federal ANSI and FDA specifications.
				2. 10 unit Kit (FA-238U) includes plastic case with gasket for a watertight seal.
				3. 16 unit Kit (FA-239U) includes metal case.
	1. FABRICATI0N
		1. General:
			1. Fabricate sheet metal roofing with true and accurate lines and corners aligned to the building structure as shown on the Drawings.
			2. Form exposed faces flat and free from buckles, waves and tool marks.
			3. Provide uniform seams with concealed fastener and minimal exposed sealants.
			4. Fabricate with adequate provision for expansion, supports, and anchorage.
		2. Programmable Fabrication: Utilize Jorns CNC folder to provide the following:
			1. Custom Profiles: As shown on the Drawings.
			2. Classic OG cornice profiles.
			3. Half round gutters.
			4. Quarter round gutters.
			5. Curved flashings.
	2. FINISHES

\*\* NOTE TO SPECIFIER \*\* Refer to manufacturer's color chart and warranty remarks above. Select finish for the project, delete finishes not required.

* + 1. Factory Finish: 24 ga KYNAR. Provide the following:
			1. Color: Terra Cotta.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.35.
				4. Emissivity: 0.86.
				5. 3 Year Solar Reflectance: 0.35.
				6. Solar Reflectance Index (SRI): 37.
			2. Color: Aged Copper.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.47.
				4. Emissivity: 0.85.
				5. 3 Year Solar Reflectance: 0.46.
				6. Solar Reflectance Index (SRI): 53.
			3. Color: Solar White.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.68.
				4. Emissivity: 0.85.
				5. 3 Year Solar Reflectance: 0.66.
				6. Solar Reflectance Index (SRI): 82.
			4. Color: Sandstone.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.54.
				4. Emissivity: 0.86.
				5. 3 Year Solar Reflectance: 0.53.
				6. Solar Reflectance Index (SRI): 63.
			5. Color: Sierra Tan.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.35.
				4. Emissivity: 0.86.
				5. 3 Year Solar Reflectance: 0.34.
				6. Solar Reflectance Index (SRI): 37.
			6. Color: Colonial Red.
				1. LEED-NC v2.2 Approved.
				2. Initial Solar Reflectance (ISR): 0.30.
				3. Emissivity: 0.85.
				4. Solar Reflectance Index (SRI): 30.
			7. Color: Patina Green.
				1. Energy Star Approved.
				2. Initial Solar Reflectance (ISR): 0.28.
				3. Emissivity: 0.87.
				4. 3 Year Solar Reflectance: 0.28.
				5. Solar Reflectance Index (SRI): 28.
			8. Color: Regal White.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.68.
				4. Emissivity: 0.80.
				5. 3 Year Solar Reflectance: 0.67.
				6. Solar Reflectance Index (SRI): 81.
			9. Color: Ash Gray.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.39.
				4. Emissivity: 0.84.
				5. 3 Year Solar Reflectance: 0.39.
				6. Solar Reflectance Index (SRI): 41.
			10. Color: Medium Bronze.
				1. LEED-NC v2.2 Approved.
				2. Initial Solar Reflectance (ISR): 0.30.
				3. Emissivity: 0.87.
				4. Solar Reflectance Index (SRI): 31.
			11. Color: Regal Red.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.42.
				4. Emissivity: 0.83.
				5. 3 Year Solar Reflectance: 0.41.
				6. Solar Reflectance Index (SRI): 45.
			12. Color: Hemlock Green.
				1. LEED-NC v2.2 Approved.
				2. Initial Solar Reflectance (ISR): 0.29.
				3. Emissivity: 0.86.
				4. Solar Reflectance Index (SRI): 29.
			13. Color: Stone White.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.60.
				4. Emissivity: 0.86.
				5. 3 Year Solar Reflectance: 0.56.
				6. Solar Reflectance Index (SRI): 71.
			14. Color: Slate Gray.
				1. LEED-NC v2.2 Approved.
				2. Initial Solar Reflectance (ISR): 0.33.
				3. Emissivity: 0.84.
				4. Solar Reflectance Index (SRI): 33.
			15. Color: Mansard Brown.
				1. Initial Solar Reflectance (ISR): 0.27.
				2. Emissivity: 0.86.
				3. Solar Reflectance Index (SRI): 26.
			16. Color: Burgandy.
				1. Energy Star Approved.
				2. Initial Solar Reflectance (ISR): 0.25.
				3. Emissivity: 0.85.
				4. 3 Year Solar Reflectance: 0.23.
				5. Solar Reflectance Index (SRI): 23.
			17. Color: Hartford Green.
				1. Initial Solar Reflectance (ISR): 0.26.
				2. Emissivity: 0.85.
				3. Solar Reflectance Index (SRI): 24.
			18. Color: Slate Blue.
				1. Initial Solar Reflectance (ISR): 0.29.
				2. Emissivity: 0.85.
				3. Solar Reflectance Index (SRI): 28.
			19. Color: Charcoal Gray.
				1. Initial Solar Reflectance (ISR): 0.29.
				2. Emissivity: 0.84.
				3. Solar Reflectance Index (SRI): 28.
			20. Color: Dark Bronze.
				1. Initial Solar Reflectance (ISR): 0.26.
				2. Emissivity: 0.84.
				3. Solar Reflectance Index (SRI): 24.
			21. Color: Matte Black.
				1. Initial Solar Reflectance (ISR): 0.29.
				2. Emissivity: 0.83.
				3. Solar Reflectance Index (SRI): 27.
			22. Color: Evergreen.
				1. Initial Solar Reflectance (ISR): 0.27.
				2. Emissivity: 0.86.
				3. Solar Reflectance Index (SRI): 26.
			23. Color: Regal Blue.
				1. Initial Solar Reflectance (ISR): 0.26.
				2. Emissivity: 0.85.
				3. Solar Reflectance Index (SRI): 24.
			24. Color: Teal.
				1. Initial Solar Reflectance (ISR): 0.325.
				2. Emissivity: 0.86.
				3. Solar Reflectance Index (SRI): 34.
			25. Metallic Color: Silver.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.60.
				4. Emissivity: 0.79.
				5. 3 Year Solar Reflectance: 0.60.
				6. Solar Reflectance Index (SRI): 69.
			26. Metallic Color: Copper.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.49.
				4. Emissivity: 0.86.
				5. 3 Year Solar Reflectance: 0.47.
				6. Solar Reflectance Index (SRI): 56.
			27. Metallic Color: Champagne.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.37.
				4. Emissivity: 0.80.
				5. 3 Year Solar Reflectance: 0.35.
				6. Solar Reflectance Index (SRI): 37.
			28. Metallic Color: Pre-Weathered Galvalume
				1. Initial Solar Reflectance (ISR): 0.30.
				2. Emissivity: 0.79.
				3. Solar Reflectance Index (SRI): 27.
			29. Metallic Color: Acrylic Coated Galvalume.
				1. LEED-NC v2.2 Approved.
				2. Energy Star Approved.
				3. Initial Solar Reflectance (ISR): 0.67.
				4. Emissivity: 0.14.
				5. 3 Year Solar Reflectance: 0.55.
				6. Solar Reflectance Index (SRI): 56.
		2. Touchup Paint: Provide Drexmet Kynar Paint Pen with air dry Kynar flouropolymer paint system to quickly and easily touch up scratches on metal panels with no waste, spillage, brushes, or cleanup.

\*\* NOTE TO SPECIFIER \*\* Select color. Delete colors not required.

* + - 1. Provide in the following color:
				1. Aged Copper (DM-PP-AC).
				2. Dove Gray (DM-PP-DG).
				3. Burgundy (DM-PP-B).
				4. Colonial Red (DM-PP-CR).
				5. Dark Bronze (DM-PP-DB).
				6. Forest Green (DM-PP-FG).
				7. Hemlock Green (DM-PP-HG).
				8. Matte Black (DM-PP-MBK).
				9. Mansard Brown (DM-PP-MBN).
				10. Patina Green (DM-PP-PG).
				11. Deep Blue Sea (DM-PP-DBS).
				12. Brilliance Red (DM-PP-BR).
				13. Regal White (DM-PP-RW).
				14. Medium Bronze (DM-PP-MBZ).
				15. Slate Gray (DM-PP-SG).
				16. Slate Blue (DM-PP-SLB).
				17. Sandstone (DM-PP-SS).
				18. Sierra Tan (DM-PP-ST).
				19. Bone White (DM-PP-BW).
				20. Teal Blue (DM-PP-TB).
				21. Terra Cotta (DM-PP-TC).
				22. Hartford Green (DM-PP-HFG).
1. EXECUTION
	1. EXAMINATION
		1. Verify that substrates are acceptable for roofing installation in accordance with manufacturer's instruction
		2. Do not begin installation until substrates have been properly prepared.
		3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
		2. Install with lines and corners true and accurate in alignment and location. Coordinate metal roofing with other work, including but not limited to drainage, flashing and trim, substrates, parapets, copings, walls, and other adjoining work.
		3. Install to provide a permanent weather-tight, secure, and non-corrosive installation.
			1. Install panel supports according to manufacturer's instructions.
			2. Install self-adhering sheet underlayment in accordance with the underlayment manufacturer's written instructions, apply primer if required. Roll laps with roller.
			3. Install flashings as required to complete metal roof panel system.
			4. Conceal fasteners and expansion joints, locate to minimize the possibility of leakage.
		4. Pipe flashing installation:
			1. Cut flashing at appropriate dimensions and factory markings.
			2. Slide flashing down over the pipe.
			3. Apply sealant on the underside of the flexible aluminum base.
			4. Press flashing base into the contours of the panel.
			5. Fasten to the roof panel surface using EPDM washers and self-drilling fasteners.
			6. Seal around the base with additional sealant.
		5. Separate between dissimilar metals using EPDM flashing in the area of potential contact.
		6. Clean metal surfaces of traces of flux and neutralize as recommended by the metal alloy manufacturer. Clean surfaces of substances that will cause deterioration of the metal finish.
	4. FIELD QUALITY CONTROL
		1. Post Installation Testing: Owner reserves right to perform post installation testing of installed sheet metal roofing
		2. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.
	5. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION