Section 07 42 00

Zahner Surfaces Pre-Finished Metal Sheets

**PART 1 GENERAL**

1. **SUMMARY**
	1. Section Includes: Pre-finished **[copper] [stainless steel] [carbon steel] [weathering steel]** **[zinc]** metal sheets that incorporate decorative **[mechanical] [patinated]** surface finishes.
	2. Related Sections:
		1. Division 1: Submittal Procedures
		2. Division 1: Quality Control
		3. Division 1: Closeout Submittals
		4. Division 5: Metal Fabrications
2. **REFERENCE STANDARDS** - Work shall comply with published recommendations of the following unless otherwise stated below:
	1. ZAHNER “Architectural Metals – A Guide to Selection, Specification and Performance”; John Wiley & Sons 1995: ISBN 0-471-04506-3.
	2. ZAHNER “Architectural Metal surfaces”; John Wiley and Sons 2005: ISBN 0-47126335-4.
	3. SMACNA “Architectural Sheet Metal Manual”.
	4. LEED – Leadership in Energy and Environmental Design.

**[Oscura Blackened Steel] [Spectura Steel]**

* 1. ASTM International
		1. ASTM A1008/A1008M: Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.

**[Star Blue Copper] [Dirty Penny Copper]**

* 1. ASTM International
		1. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.

**[Angle Hair Stainless Steel] [GB-60 Stainless Steel]**

* 1. ASTM International
		1. ASTM A240: Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, And Strip for Pressure Vessels And For General Applications.
		2. ASTM A480: Standard Specification for General Requirements for Flat Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.

**[Solanum Steel]**

* 1. ASTM International
		1. ASTM A606: Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot Rolled and Cold-Rolled, With Improved Atmospheric Corrosion Resistance.

**[Baroque Zinc] [Hunter Zinc] [Roano Zinc]**

* 1. ASTM International
		1. ASTM B69: Standard Specification for Rolled Zinc.
1. **SUBMITTALS**
	1. Product Data: Submit manufacturer's Product Datasheet and installation instructions for pre-finished decorative metal sheets, including material, finishes, available thickness, and dimensions.
	2. Shop drawings and any applicable engineering calculations to be provided by Third party fabricator
	3. Samples:
		1. Finish Selection Sample: If requested, provide up to 5 of each material finishes for Architect’s selection. Minimum Sample sizes: 8” x 10”.
	4. **[Optional Full or partial scale Mock-up Panel]: If requested, provide a complete project-specific mock-up panel to establish a quality standard for fabrication and installation. Subject to compliance with the requirement and approval, the mock-up Panel [may or may not] become part of the completed Work.**
	5. **Optional \_\_% attic stock of purchased material is recommended *(percentage to be filled out by specifier)***
		1. Technical Datasheet: Submit technical data. **[Project Specific engineering certification can be provided by the manufacturer at additional cost.]**
		2. Closeout Submittals:
			1. Warranty: Warranty documents specified herein.
			2. Operation and Maintenance Instructions: Submit manufacturer's recommended cleaning and care instructions to properly maintain and prolong the service life of the metal panels.
			3. Sustainable Design Submittals (LEED Reports):
				1. Submit documentation from manufacturer for amount of pre-consumer and post-consumer recycled content for products specified.
				2. Submit documentation providing location of manufacturing.
				3. Submit documentation certifying compliance with state water environmental standards.
2. **QUALITY ASSURANCE**
	1. Manufacturer Qualifications:
		1. Company specializing in manufacturing the quality products specified in this section with at least 15 years of documented experience and sufficient capacity to produce the required units within the Project Schedule.
		2. Manufacturing facility classified as a ‘zero-discharge’ waste water facility, or equivalent.
	2. Installer Qualifications:
		1. Company specializing in installing the work of this section with at least 5 years of documented experience with comparable size project.
		2. Familiar with the Products and the manufacturer’s installation methods.
	3. Source Limitation
		1. When possible, ensure all raw material came from the same producing mill, the same master slab, and the same chemical composition.
		2. All panels in this section shall be produced by the same manufacturer and finished by the same finish applicator to protect against variations.
3. **DELIVERY, STORAGE, AND HANDLING**
	* 1. Deliver and Receipt:
			1. Deliver products in manufacturer’s standard protective packaging.
			2. All crates and packaging should be inspected upon delivery for damage. Contact the manufacturer immediately at the time of receipt if any damage is identified. Photographs of any damaged product, including concealed damages, must be supplied to the manufacturer with any claims. Photos of damaged crates and packaging must also be provided to manufacturer. Freight damage must be filed with freight company within the freight carrier’s terms.
		2. Storage and Transportation:
			1. Keep packaging units dry while in secure and locked storage and transport.
			2. Keep panels dry prior to installation.
			3. Crated products that are stored under tarps should be frequently opened and ventilated to reduce humidity and condensation accumulation.
			4. Do not lay any protective mats or covers directly on top of panels.
			5. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.
			6. Crates and package: Do not stack crates unless otherwise approved and noted by manufacturer.
			7. Do not lay any exposed and finished face against another surface or another panel for any length of time. Water will accumulate between the surfaces and cause an accelerated oxidation on the patina.
		3. Handling and Installation:
			1. Keep products dry and out of direct sunlight until installation.
			2. Remove the protective film immediately after installation.
			3. Require all personnel to wear clean white cotton gloves when handling and installing architectural metal panels.
			4. Keep product free of oil, grease, mortar, paint, acid, bitumen, drilling dust, dirty water, and other impurities.
			5. Do not use adhesive tape on products in areas visible after installation.
			6. Do not scribe or mark on products.

Protection: The Contractor is responsible to use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades for the duration of the project.

Site Conditions: Adjoining substrate and structure for attachment to be complete. Installation subject to state of increment weather.

Replacements: In the event of damage, immediately make all repairs and replacements necessary at the sole cost of the responsible party.

1. **WARRANTY**
	1. Manufacturer’s Warranty: Manufacturer will warrant its products to be in good quality, free from defects, in conformance with the specification, and when installed in accordance with manufacturer’s published installation procedures. Any defaults or defects in material or workmanship resulting solely from the manufacturer shall constitute a warranty claim. Manufacturer’s warranty coverage and failure types includes, but not limited to, the following:
		1. 1-year limited warranty on deterioration of metal, metal finishes applied by manufacturer beyond normal weathering. Deterioration as perforation due to corrosion resulting from manufacturer’s defects, and loss of adhesion as a result from manufacturer’s finish application. Damage to or failure of the product caused by the improper handling or cleaning will not be covered. This warranty does not cover natural weathering and fading of the surface that will occur as the surface is exposed to ambient conditions. Nor does it cover minor oxidation or oxidation products that transfer to other surfaces.
	2. Warranty commences upon shipment of material by manufacturer.
	3. During the warranty period, and upon approval of the claim, the manufacturer will repair, or at its option, replace the products that are proven to be defective. The labor and all associated costs (i.e., scaffolding, lifts, etc.) to remove and reinstall repaired or replacement product is not included.
	4. Finish Applicator’s Warranty:
		1. Manufacturer applied finish. See 1.06 A 2. above.

**PART 2 PRODUCT**

1. **MANUFACTURERS**
	1. Basis of Design: A. Zahner Company.
		1. Product Website: <https://www.azahner.com/products/surfaces>
		2. Address: 1400 E. 9th Street, Kansas City, MO 64106
		3. Phone: +1 (816) 423-8354
	2. Request for Substitutions will be considered in accordance with provisions in **[Section 01 60 00]**
2. **PERFORMANCE CRITERIA**

**[Solanum Steel, Oscura Blackened Steel, Spectura Steel, Dirty Penny Copper, Star Blue Copper, Baroque Zinc, Hunter Zinc, Roano Zinc]**

* 1. The metal surface to be comprised of a patina constituted of an oxide layer that, in both chemistry and structure, replicates a naturally occurring, mature patina. Variations in the appearance of the patina, within individual sheets or between multiple sheets, are normal and expected. Metal patinas will continuously develop and evolve over time in response to ongoing reactions to atmospheric influences. The natural evolution or variation in appearance because of these reactions is a feature of the metal and does not constitute a defect.
1. **MATERIALS**

**[Solanum Steel]**

* 1. Weathering Steel
		1. Alloy: A588/A606-4.
		2. Finish: Zahner Solanum Steel **[1-sided] [2-sided]**
		3. Sheet Width: Maximum 60”
		4. Sheet Length: Maximum 144”
		5. Sheet Thickness: **[0.048” 0.060” 0 .075” 0.105” 0.120” 0.179”]**

**[Oscura Blackened Steel]**

* 1. Carbon Steel
		1. Alloy: 1008A
		2. Finish: Zahner Oscura Blackened Steel
		3. Sheet Width: Maximum 60”
		4. Sheet Length: Maximum 144”
		5. Sheet Thickness: **[0.036” 0.048” 0.060” 0 .075” 0.105” 0.120”]**

**[Spectura Steel]**

* 1. Carbon Steel
		1. Alloy: 1008A
		2. Finish: Zahner Spectura Steel
		3. Sheet Width: Maximum 60”
		4. Sheet Length: Maximum 144”
		5. Sheet Thickness: **[0.036” 0.048” 0.060” 0 .075” 0.105” 0.120”]**

**[Dirty Penny Copper]**

* 1. Copper
		1. Finish: Zahner Dirty Penny
		2. Sheet Width: Maximum 36”
		3. Sheet Length: Maximum 120”
		4. Sheet Thickness: **[20 oz (0.0270”) 24 oz (0.0323”) 32 oz (0.0431”) 48 oz (0.0646”)]**

**[Star Blue Copper]**

* 1. Copper
		1. Finish: Zahner Star Blue
		2. Sheet Width: Maximum 36”
		3. Sheet Length: Maximum 120”
		4. Sheet Thickness: **[20 oz (0.0270”) 24 oz (0.0323”) 32 oz (0.0431”) 48 oz (0.0646”)]**

**[Angel Hair Stainless Steel]**

* 1. Stainless Steel
		1. Alloy: **[Type 304] [Type 316L]**
		2. Finish: Zahner Angel Hair Stainless Steel **[1-sided] [2-sided]**
		3. Sheet Width: Maximum 60”
		4. Sheet Length: Maximum 144”
		5. Sheet Thickness: **[0.038” 0.050” 0.063” 0 .078” 0.109” 0.125”]**

**[GB-60 Stainless Steel]**

* 1. Stainless Steel
		1. Alloy: **[Type 304] [Type 316L]**
		2. Finish: Zahner GB-60 Stainless Steel **[1-sided] [2-sided]**
		3. Sheet Width: Maximum 60”
		4. Sheet Length: Maximum 144”
		5. Sheet Thickness: **[0.038” 0.050” 0.063” 0 .078” 0.109” 0.125” 0.188”]**

**[Baroque Zinc]**

* 1. Zinc
		1. Finish: Zahner Baroque Zinc
		2. Sheet Width: Maximum 44.8”
		3. Sheet Length: Maximum 120”
		4. Sheet Thickness: 0.032”

**[Hunter Zinc]**

* 1. Zinc
		1. Finish: Zahner Hunter Zinc
		2. Sheet Width: Maximum 44.8”
		3. Sheet Length: Maximum 120”
		4. Sheet Thickness: 0.032”

**[Roano Zinc]**

* 1. Zinc
		1. Finish: Zahner Roano Zinc
		2. Sheet Width: Maximum 44.8”
		3. Sheet Length: Maximum 120”
		4. Sheet Thickness: 0.032”
1. **OTHER MISCELLENOUS**

**PART 3 EXECUTION**

1. **Site condition verification**
	1. Verify substructure’s location and condition are suitable for installation of the decorative pre-finished metal sheets in accordance with the manufacturer’s specification.
	2. Correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.
2. **Fabrication**
	1. Fabricate in compliance with the drawing details and the SMACNA’s “Architectural Sheet Metal Manual”, which include design, dimensions, geometry, metal thickness and other characteristics. Fabricate sheet metal in the factory to the greatest extent possible.
	2. Allow sufficient room for expansion in the material to prevent buckling, damage, and deterioration of the Work.
	3. Use active punch die and/or integrated flattening tool in the fabrication process to protect panels from excessive oil-canning, buckling, or tool marks.
	4. Use an equipment with brush table to protect metal surfaces from excessive scratches.
	5. Third party fabricators must follow manufacturer’s published fabrication guidelines for cutting, drilling, punching, forming, welding, etc. for alloy and finish.
	6. Third party fabricator to have 10-year minimum experience in factory fabrication of architectural metal panels
	7. Third party fabricator shall be certified ISO-9001:2008
	8. Third party fabricator to fabricate panels in a controlled environment, form all components true to shape, accurate in size, square and free from distortion and defects.
	9. Third party fabricator shall perform field measurements in relationship to original plans prior to providing a bill of materials for purchase.
	10. Third party to cut panels to precise lengths per approved shop drawings as required by field conditions.
	11. Third party fabricator to protect panels during transport to eliminate finish damage
	12. All associated structural attachments to substructure, framing members, connections, movement joints, seismic, wind load calculations, etc., and all applicable engineering to be the responsibility of Third party fabricator.
3. **Site Preparation & Storage**
	1. Examine anchor connection points and ensure surface are clean and clear of all obstacle and debris.
	2. Ensure there is enough space and clearance in the work area to receive the pre-finished decorative metal sheets.
	3. Third party fabricator shall not deliver materials to site until suitable storage and protection are available.
	4. Third party must store material in a cool dry environment, whether warehoused or on site.
	5. Do not allow storage of other materials on panels, or allow staging of other work near stored or installed finished panels
4. **Installation**
	1. Comply with panel manufacturer's instructions for assembly, installation, and/or erection of pre-finished decorative metal sheets.
5. **Cleaning and Protection**
	1. Remove protective film from exposed surfaces of metal sheets promptly upon final installation and in accordance with manufacturer’s recommendations and with care to avoid damage to finish.
	2. Clean exposed surfaces of custom metal sheets promptly after completion of installation. Comply with manufacturer’s cleaning recommendations.
	3. Maintain installed pre-finished decorative metal sheets in a clean condition throughout construction and ensure that cleaning by other trades in proximity to the custom panels does not impart dust or debris on panels. Avoid spilling, dripping, or splattering of cleaning solutions onto custom finished panels.

**End of Section**