SECTION 05 05 13

DECORATIVE METAL COATINGS

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\*\* NOTE TO SPECIFIER \*\* DLSS Manufacturing; decorative metal coatings.
This section is based on the products of DLSS Manufacturing, which is located at:
201 N. Cobb Ave.
Burlington, NC 27217
Tel: 919-619-7594
Email: [request info (erik.berg@dlssmfg.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=DLSS+Manufacturing&coid=50661&rep=&fax=&message=RE:%20Spec%20Question%20(05080dls):%20%20&mf=)
Web: <http://www.dlssmfg.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos50/arc50661.html) ] for additional information.
DLSS Manufacturing is a supplier of architectural sheet metal and engineered metal building components. Unlike painted metal finishes, patina naturally "heals" itself with exposure to the elements. Scratches and discoloration shall weather out naturally. Weathering is largely dependent on the dwell time of moisture on the surface of the metal. Ultimately the patina acts as a barrier to corrosion for generations.
DLSS guarantees that the surface shall not "check" or rinse off under normal natural weather conditions for a period of one year, after which the natural patina formation shall have taken over. Under normal conditions the surface aspect shall mature for the entire life of the copper.

1. GENERAL
	1. SECTION INCLUDES

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

* + 1. Permanent imaging thermally-embedded in flat surfaces and dimensional objects for the following applications:
			1. Exterior architectural surfaces.
			2. Interior architectural surfaces.
			3. Signage and streetscape components.
			4. Retail components.
			5. Exhibition components.
			6. Furniture.
			7. Other applications indicated on the Drawings.
	1. RELATED SECTIONS

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

* + 1. Section 09 90 00 - Painting and Coating.
	1. REFERENCES

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

* + 1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
	1. SYSTEM DESCRIPTION
		1. Process: The patina is a chemical conversion process whereby the surface of the copper sheet is enhanced and manipulated to produce a natural patina finish.
			1. Product substrate is commonly referred to as roofing copper. The sheet shall be certified to the ASTM B 370 specification which is 99% pure, CDA 110 and 1257 copper.
			2. Copper surfaces shall be degreased, descaled and cleaned bright, as any dirt, oil or grease on the surface shall interfere with the chemical action of the solution. This involves removal of any residual film from mill rolling operations, fingerprints and dirt deposited on the surface during handling.
			3. Solution preparation shall be combined in a corrosion resistant, plastic-lined container. Solution for application part A contains Hydrochloric Acid and Selenious Acid. Solution for application part B contains Cupric Sulfate and/or Cupric Nitrate.
			4. The solution shall be applied by spraying. Spraying shall be done rapidly, using a fine spray. Avoid large drops which can run together and cause streaks. Allow the solution to dry after the first spraying. Additional spraying and drying are repeated multiple times.
			5. Wear suitable protective clothing and equipment. The solution is both acid and toxic.
			6. Characteristics: The color does not show up immediately. When the process has been completed, the copper shall appear to be covered with a "glassy" coating somewhat resembling a dark coat of varnish. The development of color depends environmental and/or weather conditions.
			7. Apply clear sealer over completely dry patina finish. Ensure even coverage from the outer perimeter (edges) of the material towards the center and avoiding heavy applications.
	2. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: For fabrications, including details of construction and attachment to adjacent surfaces.
		4. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
		5. Sustainability Submittals: 1. Certificates for percentage of recyclable base materials, recyclable transfer film and water-based solutions. 2. Coating Process documentation of emitting zero or near zero volatile organic compounds (no VOC's).
	3. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 3 years experience manufacturing similar products. Manufacturer shall have capability to provide a "delegated design" responsibility including prototypes, value engineering and budget analysis.
		2. Quality Assurance Process: The following services shall be provided by the manufacturer to deliver the specified product for installation.
			1. Project Management: Management of the design facilitation, review, prototype and implementation process.
			2. Value Engineering: Reviewing possible cost saving approaches for single or multiple production pieces.
			3. Prototype Development: Creating a full design element or portion of the element that reflects the final production piece.
			4. Production/Fabrication: Creation of the final production piece. 5. Coating and Embedding: The patina coating and embedded decoration of the final production piece.
		3. Installer Qualifications: Minimum 2 year 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.
	1. PRE-INSTALLATION MEETINGS
		1. Convene minimum two weeks prior to starting work of this section.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
		2. Handling: Handle materials to avoid damage.
		3. Pre-weathered materials shall be kept dry prior to installation.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. SEQUENCING
		1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	5. WARRANTY
		1. Manufacturer's Warranty: Provide manufacturer's standard warranty for substrate material for up to 10 years depending on location, substrate and environment. Surface aspect shall conform to DLSS Manufacturing LLC limited statement of performance.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: DLSS Manufacturing, which is located at: 201 N. Cobb Ave.; Burlington, NC 27217; Tel: 919-619-7594; Email: [request info (erik.berg@dlssmfg.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=DLSS+Manufacturing&coid=50661&rep=&fax=&message=RE:%20Spec%20Question%20(05080dls):%20%20&mf=); Web: <http://www.dlssmfg.com>
		2. Web: http://www.dlssmfg.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 shall be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

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

* 1. APPLICATIONS/SCOPE
		1. Sign and Streetscapes: As detailed on the Drawings for the following applications.
			1. Identity.
			2. Wayfinding.
			3. Interpretive.
			4. Banners.
			5. Landmarks.
			6. Overhead.
		2. Exhibition: As detailed on the Drawings for the following applications.
			1. Museums.
			2. Tradeshows.
			3. Public spaces.
			4. Corporate.
			5. Visitor's centers.
			6. Institutional.
			7. Donor.
		3. Architectural Exteriors: As detailed on the Drawings for the following applications.
			1. Cladding.
			2. Copper Composite Panel.
			3. Curtain wall.
			4. Awnings.
			5. Shutters.
			6. Murals.
		4. Retail: As detailed on the Drawings for the following applications.
			1. Fixtures.
			2. Cabinets.
			3. Shelving.
			4. Wall Units.
			5. Lighting Fixtures.
			6. End Caps.
			7. Point of Purchase.
			8. Kiosks.
		5. Products and Furniture: As detailed on the Drawings for the following applications.
			1. Stools.
			2. Tables.
			3. Chairs.
			4. Tins.
			5. Lamps.
		6. Architectural Interiors: As detailed on the Drawings for the following applications.
			1. Walls.
			2. Floors.
			3. Wainscoting.
			4. Flooring.
			5. Bathroom partitions.
			6. Office partitions.

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

* 1. SURFACE TREATEMENTS - COPPER
		1. Copper - CAFE
			1. Copper is treated to achieve reddish, brown, blue, and sometimes purplish hues which mimic the first step of patina seen in metal aged 1 to 5 years.
		2. Copper - DARK VERDIGRIS
			1. Soft blue-green highlights begin to emerge from the bronze background emulating early term patina formation between 5 to 15 years.
		3. Copper - LIGHT VERDIGRIS
			1. Blue-green highlights blossom from the dark bronze background. Typical on copper during late term patina formation between 15 to 25 years.
		4. Copper - NEBULA
			1. Combines the cascading crystal formation seen in nature with the hand of the artist to produce stunning visual effects
		5. Copper - HISTORIC
			1. Fully developed copper patina as seen on exterior copper aged 30 or more years.
		6. Copper - CUSTOM COPPER
			1. A variety of other colors and textures can be produced to meet the exact specifications of any project.
	2. SURFACE TREATEMENTS - ZINC
		1. Zinc - SOAP STONE
			1. Zinc is treated so that gray and black textures begin to emerge creating a more interesting surface
		2. Zinc - LITHIC ZINC
			1. Natural zinc is treated to express almost iridescent red, brown, and even purplish hues in a range of textures.
	3. SURFACE TREATEMENTS - BRASS
		1. Brass - REDDENED BRASS
			1. Architectural grade brass sheets treated to achieve deep hues often associated with bronze statuary.
	4. SURFACE TREATEMENTS - STEEL
		1. Steel - WEATHERED STEEL
			1. Steel is treated to express the almost blueish reds of raw iron exposed to the elements, and is sealed to prevent further rusting and runoff.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces as directed thoroughly and prior to process. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. STORAGE
		1. Sheet stock crated composite material shall be stored in a dry condition.
		2. Formed panels shall be stored upright and covered to allow drying.
		3. Improperly stored material may form "blue rust". "Blue rust" can only be repaired by a properly trained technician.
	4. INSTALLATION
		1. Install in accordance with manufacturer's instructions and in proper relationship to adjacent surfaces.
		2. Installer shall where slip resistant gloves to avoid oil, dirt or grease transfer to finished product.
	5. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION