



CSI SPECIFICATION
SECTION 099100

PAINTING

THE ULTIMATE COATINGS COMPANY

THERMO-SEAL® 1500

Hidden Notes to Specifier delineated in blue. Click upon paragraph command to see Hidden Notes.

PART 1 GENERAL¹

1.1 SECTION INCLUDES²

- A. Solar reflective fluid applied exterior wall paint.
- B. Solar reflective fluid applied exterior trim paint.

1.2 RELATED SECTIONS³

- A. Section 099653 – Elastomeric Coatings

1.3 REFERENCES⁴

- A. ASTM C 1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
- B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastics/ Elastomers-Tensile.
- C. ASTM D 522 - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
- D. ASTM D 2805 - Standard Test Method for Hiding Power of Paints by Reflectometry.
- E. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
- F. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Manufacturer's Technical Data Sheets on each product to be used, including:
 1. Application Guidelines (Preparation instructions and installation methods).
 2. Storage and handling requirements and recommendations.

1.5 QUALITY ASSURANCE⁵

- A. Manufacturer Qualifications: Manufacturer shall formulate and make final product for distribution. Private labeling from other sources is prohibited.
- B. Installer Qualifications: Installers shall be approved in writing by the manufacturer if warranty is to be required.
- C. Product Requirements:
 1. Product shall be certified 100 percent free of ethylene glycol.
 2. Product shall be formulated with no plasticizers.
 3. Product shall be formulated low VOC with no hazardous air pollutants.

 4. Product shall be California Title 24 compliant.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.⁶
- E. Finish areas designated by Architect.
 1. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 2. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging protected from freezing and direct sunlight until ready for installation.
- B. Use within product shelf life (approximately 12 months at 70 degrees Fahrenheit).

1.7 PROJECT CONDITIONS

- A. 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 absolute limits.
 1. Do not apply paints during temperatures above 90 degrees F. (32 degrees C.) ambient temperature.
 2. Do not apply paints onto surfaces over 85 degrees F. or below 50 degrees F. (10 degrees C.).
 3. Do not apply paint when temperatures of 50 degrees or less are expected by evening, or within 4 hours of expected temperature drop below 50 degrees F. (10 degrees C).
 4. Do not apply paint in overhead hot direct sun or where overhead direct sun is expected within 2 hours.
 5. Do not apply paint when rain or fog conditions are expected within 4 hours.
 6. Do not apply over sealers, primer, caulk or other repair materials that are not fully dried or cured.
 7. Do not apply if surface is wet or has salt residue from salt-water fog.
 8. Do not apply if heavy saltwater fog conditions or drizzle have occurred without rinsing sealed or painted surfaces between coats.

1.8 WARRANTY⁷

- A. Manufacturer/Contractor warrants material and installation for non-prorated, 10-year, "No-Peel" guarantee subject to Manufacturer confirmation. A 10-year warranty is available when applied by Approved Applicator contractor.
- B. A minimum of two coats over properly prepared substrate shall be provided to comply with performance and warranty provisions. Product shall not be applied in one heavy coat.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: The Ultimate Coatings Company LLC, which is located at: 2801-B Vassar Street; Reno, NV 89502; Tel: 1-800-226-9180
- B. Email: info@ultimatecoatings.net; Web: www.ultimatecoatings.net
- C. Substitutions: Not permitted.

2.2 CROSS-LINKING ACRYLIC IR REFLECTIVE THERMO-SEAL[®] PAINT PROPERTIES

- A. IR Reflective THERMO-SEAL Paint Product Characteristics:
 - 1. Solids by Volume: 41 percent plus or minus 2 percent.
 - 2. Solids by Weight: 53 percent plus or minus 2 percent.
 - 3. Weight per Gallon: 11.1 lb (5 kg).
 - 4. VOC: Less than 50 grams/liter (0.417 lb/ gal).
 - 5. Tints (pigments): Intrinsic, MMO infra-red.
 - 6. Primary Material: Dow acrylic.
- B. IR Reflective THERMO-SEAL Paint Product Properties:
 - 1. Thermal Emittance (ASTM C 1371): 87-93 percent.
 - 2. Solar Reflectance (ASTM E 1549): 40-91 percent.
 - 3. Solar Reflective Index (ASTM E 1980): 80-115.
 - 4. Water Vapor Transmission (ASTM E96): 15 perms.
 - 5. Water Resistance (ASTM D 358): Pass
 - 6. Wind-Driven Rain (TTC-555B): Pass
 - 7. Flexibility (ASTM D 522): Pass
 - 8. Alkali Resistance (ASTM D 3273): Pass
 - 9. Mildew Resistance: HIGH - Biocide Chemistry.
 - 10. Dirt Resistance: SUPERIOR - Semi-gloss 50 finish.
 - 11. Hiding Power (ASTM D 2805): 97.3 percent.
 - 12. Tensile Strength (ASTM D412): 500 psi (350,000 kgs/sq.m.).
 - 13. Hardness (Shore A): 92
 - 14. Note: Solar Reflective Values are directly color dependant.
- C. IR Reflective THERMO-SEAL Paint Product Performance:
 - 1. Solar Reflectivity: Reflects over 35 up to 50 percent in terracotta tints; 45-80 percent in tan/beige tint ranges, deep to light blues 35-60 percent; greys (various) 60-70 percent; to 80-90 percent in whites.
 - 2. Thermal Emissivity: Over 87 percent to 91.
 - 3. Cross-Linking Adhesion: Bonds into base paint or primer with bonding to underlying material.

4. Dirt Shedding: Harder surface resists dirt pick-up; dirt washes off.
5. Intrinsic Colors: Infrared pigment technology has very low VOCs, environmentally friendly, and high color stability.
6. Mildew Resistant: Biocide component reduces plant-life and molds from rooting.
7. Breathable: Permeance rating of 15.0 allows water vapor escape to outside.
8. Title 24 Compliant: Exceeds California's strict compliance regulations.
9. Low odor: Low VOCs (<50 g/L.) meets air quality standards for all regions.
10. Water clean-up: Low-toxic chemistry.
11. Durability: 10-15 years. Preparation, number of coats, color dependent.
Higher solids by volume (<41%)

2.3 ACRYLIC COATING ON VERTICAL STUCCO AND CONCRETE WALLS, STUCCO AND CONCRETE TRIMS, CEMENTATIOUS SIDING

- A. System:
 1. Acrylic Primer/Sealer: CLEAR MASONRY SEALER 990 as prime coat shall be applied to repaired and new surfaces. coverage over properly prepared surfaces shall be a minimum rate of 1 coat at 200-250 square ft per gallon (5 sq. m/l to 5.6 sq m /l).
 2. Epoxy Primer: 100% solids, water-based primer for concrete substrate if in need of consolidation manufactured by The Ultimate Coatings Company. Special Order item.
 3. Finish Paint: THERMO-SEAL[®] 1500 as manufactured by The Ultimate Coatings Company.
 4. Color: Match to architect's sample.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin coating installation until substrates have been properly prepared.
 1. Do not apply over failed finishes.
 2. Do not apply finish directly over chalky painted surfaces. Chalked paint shall be scrubbed and power-washed prior to sealing with CLEAR MASONRY SEALER 990.
 3. Do not use alkyd primer over concrete substrates to avoid saponification (soaping) caused failures.
 4. Do not apply over deteriorated T-111, plywood or veneers. T-111 substrates require, a manufacturer's representative to approve the substrates prior to application.
 5. Do not apply THERMO-SEAL over cedar wood shake, Cal-Shake brand or any Cemwood type, or synthetic roof shingles.
- B. Products used as a primer or basecoat shall be provided by or approved in advance and in writing by coating systems manufacturer.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. ¹⁰
- E. Remove mildew and power wash (with 2 days minimum drying time before top or prime coating). If cracks, holes or spalling are present, these shall be filled, matched to existing wall texture prior to spot priming. Spot priming to be done over repairs.
- F. Failed Prior Coatings:
 1. Failed prior coatings shall be removed where loose by high-pressure power washing with containment and/or water-based chemical stripper shall be used.

- G. Deteriorated Stucco or Concrete Substrates:
 1. Where repairs to surfaces are needed, clean and wash stucco or concrete surfaces prior to repairs. Patch all holes and significant blemishes.
 2. Repairs, original coatings and bared wall areas to then be primed in full CLEAR MASONRY SEALER 990 or BONDING PRIMER 390. By spray with and back-rolling. Fully bare, deteriorated, cracked or otherwise remediated stucco/concrete walls may be sealer in full with acrylic EPOXY BONDING SYSTEM.

- E. New Wall Stucco or Concrete Substrates:
 1. New concrete and stucco must sit at least 30 days after finished to allow pH to neutralize otherwise topcoats will blemish, show pigment burn, and/or prematurely fail.
 2. Bared cured wall areas to then be primed in full with CLEAR MASONRY SEALER 990 by sprayer with back-rolling. Care must be taken to fully seal substrates especially when deep profile, irregular surface and highly porous.

CAUTION: TEST A SMALL AREA in advance of finish coating if any question as to primer(s) and repair materials compatibility to produce strong bond before proceeding to finish coating. Test by applying duct tape to the primed surface, after it is completely dry and settled (6-8 hours). Then pull tape off of coated area. If a substantial amount of primer sticks to the tape, it means there is a bonding problem and another primer or epoxy primer system should be utilized.

Some concrete repair materials do not allow acrylic primers to bond. In such cases, EPOXY PRIMER shall be used (contact Manufacturer). For most repair patching situations, this means waiting a minimum of 72 hours after repairs are made before applying primers. When wall material system is new, refer to E.1. above.

Do Not Use Alkyd primers over concrete or stucco surfaces. Saponification problems (soaping) will occur over time. CLEAR MASONRY SEALER (Acrylic), Bonding Primer (acrylic), or EPOXY PRIMER (acrylic) should only be used on concrete/ stucco surfaces under THERMO-SEAL 1500.

3.2 WALL AND TRIM (STUCCO, CONCRETE, SIDING) PAINT INSTALLATION

- A. Install in accordance with manufacturer's instructions. ¹¹

- B. Finish Coating Application: ¹²
 1. Sprayer: Apply paint with airless sprayer with a steady horizontal pattern with 3 inches (76 mm) overlaps. Care shall be taken to ensure that the paint is not piled up on the wall surfaces and that excessive material is not permitted to sag down. Roller of ½" or ¾ inch nap shall be used in such cases to lay-off paint.
 2. Hand-Rolled: Apply coats with ¾" or 1" inch nap, 100 percent wool, or oremium wool blend, roller cover. Finish using down strokes on each pass, to ensure coating flows to uniform surface when dry.
 3. Back-Rolling: Provide back rolling of second coats per manufacturer instructions to achieve consistent final finish appearance and touch-up capability. ¹³

- C. Number of Coats: A minimum of two (2) coats shall be applied over existing painted surfaces. Sprayed on first coat followed by sprayed and back-rolled second coat is recommended. ¹⁴

- D. Minimum Film Thickness: A minimum film thickness of 6 to 8 wet mils (0.1524 mm to 0.2032 mm) per coat shall be achieved. ¹⁵

- E. PRIMED SURFACES: To be re-coated with correct primer if final finish paint coating is not

applied within 30 days of initial application.

3.3 PAINTED METAL WALL/TRIM SUBSTRATES PREPARATION

- A. **ADHESION:** Must be tested if factory painted glossy surface. Physical deglossing by mechanical and/or hand-sanding with 220-320 weight sanding paper to create proper adherable surface followed by degreasing cleaner and power-washing is recommend. If surface rust, chalky and/or bonding issues, fully prime with METAL PRIMER 490 manufactured by the Ultimate Coatings Company. Do not over-apply primer or paints onto metal substrates. To avoid sag and over-build, three lighter coats are recommended. Work shall be double-checked after a few minutes for sags. Low nap, non-shedding roller of 3/8" may be used, if necessary, to lay off sags.
- B. **PRIMED SURFACES:** To be re-coated with correct primer if final finish paint coating is not applied within 30 days of initial application.

3.4 PAINTED METAL WALL/TRIM SUBSTRATES INSTALLATION

- A. Same procededures as Siding at 3.3.

3.5 WOOD PANEL (PLYWOOD) and WOOD BOARD SIDING PREPARATION

- A. **WOOD SIDING PRIMING:** Bonding Primer 390 as manufactured by The Ultimate Coatings Company, or a premium, acrylic bonding primer equivalent.
- B. **PRIMED SURFACES:** To be re-coated with correct primer if final finish paint coating is not applied within 30 days of initial application.

3.6 WOOD PANEL (PLYWOOD) and WOOD BOARD SIDING INSTALLATION

- A. Same procededures as Siding at 3.3, but no heavier nap than 3/4 inch shall be used.

PART 4

4.1 MANSARD ROOF PREPARATION FOR PAINTING METAL/CEMENTITIOUS SIDING

- A. Prepare surfaces using the methods recommended by this manufacturer for achieving the best result for the wall substrate as per section 3.2 above.
- B. Remove mold, mildew and fungal materials from surfaces to be coated with biocide cleaner/sodium hypochlorite solution. Power-wash surface to neutralize and rinse surface of remaining residue.

4.2 MANSARD ROOF INSTALLATION FOR PAINTING METAL/CEMENTITIOUS SIDING

- A. Follow same methods as per section 3.3 above

4.3 PROTECTION

- A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION