

WATERPROOFING PREVIOUSLY COATED PRE-ENGINEERED METAL BUILDING ROOFS, WITH RUST INHIBITIVE, WATERPROOF ACRYLIC SYSTEM SPECIFICATION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes surface preparation and coating of the following:
Metal roofs, rooftop structures, domes, gutters, water tables etc. made of previously coated copper, galvanized sheet metal, stainless AND also coating of new metal repairs or additions to the project
The work shall consist of the surface cleaning, priming and painting of steel structures.

1.02 SUBMITTALS

- A. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference the specific coating, finish system, and application.
- B. Manufacturer's Information: Provide manufacturer's technical information, including product data and instructions for handling, storing, and applying each coating material proposed for use.
- C. Certification: Provide information that the manufacturer's products supplied for this project comply with specified VOC product content and local regulations controlling use of volatile organic compounds.
- D. Samples for Initial Selection: Provided the Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.
- E. Samples for Verification: Provide stepped Samples, defining each separate coat. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture is achieved. Provide a list of materials and applications for each coat of each sample. Label each sample for location and application.
- F. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.04 QUALITY ASSURANCE

- A. The Contractor shall give the Engineer a minimum of three days advance notice of the start of any field surface preparation work or coating application work.
- B. Training: The contractor must be trained by the RD-Elastometal system coating supplier, RD Coatings USA, Stratford, CT. A company representative of the Contractor (Officer or Superintendent), all foremen and applicators (painters) must attend a training session given by RD Coatings USA at the site. There is no fee or charge for the certification instruction for the first training session or subsequent normal periodic site visits. The training requirement can be waved at the discretion of the Manufacturer if the contractor is experienced in the application of these types of acrylic coatings.
- C. Equipment: All equipment for application of the coating and the completion of the work shall be furnished by the Contractor in first-class condition and shall comply with recommendations of the coating manufacturer. The painter must use hoses for the airless spray equipment that are dedicated to spraying water-based paint.

1.05 SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. The Contractor shall purchase coatings from the accepted manufacturer. The manufacturer shall assign a local representative to periodically view the application of the product. The manufacturer or local representative shall make a final walk through. Observation of the product application with the A/E and Applicator.

1.06 SAFETY AND HEALTH REQUIREMENTS

- A. In accordance with requirements of OSHA Safety and Health Standards for Construction (29 CFR 1926) and the applicable requirements of regulatory agencies having jurisdiction, as well as manufacturer's printed instructions, technical bulletins, manuals, and material safety data sheets, the Contractor shall provide and require use of personal protective and safety equipment for persons working in or about the project site.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name and Product MSDS sheets
 - 2. Product description (generic classification or binder type)
 - 3. Manufacturer's stock number
 - 4. Contents by volumes
 - 5. Thinning instructions
 - 6. Application instructions
 - 7. Color name and number
 - 8. VOC content
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 50° F (7°C). Maintain containers used in storage in a clean condition, free of foreign materials and residue. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.08 PROJECT CONDITIONS

- A. Apply water-based coatings only when the surface temperature is 45°F minimum during application and for at least 48 hrs. after application.
- B. Do not apply water-based coatings in snow, rain, fog, or mist; or at temperatures less than 5°F (3°C) above the dew point; or to damp or wet surfaces.
- C. Coating may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.09 EXTRA MATERIALS

- A. Furnish extra coating materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.

- B. Quantity: Furnish the Owner with extra paint materials in the quantities indicated below:

Note to Specifier: Include quantities as required by the Owner, if any such as:

- 1. RD-Elastometal or RD-Monograff HP, 1 Pail in final colored applied.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. All coating materials shall be equal to those manufactured by RD Coatings, Assesse, Belgium and distributed locally by RD Coatings USA, Stratford, CT. Most RD Coatings are stocked in the facility in Stratford, CT.

- B. Spot primer, full primer and first and second coat: Rust-preventing acrylic polymer coating shall be RD-Elastometal as manufactured by RD Coatings. Finish shall be either RD-Monoguard or RD-Monograff HP depending on gloss and color requirements and shall be as manufactured by RD Coatings. If surface is to be walked on regularly, RD-Monograff HP shall be the finish. The coating shall be a one part, acrylic, water borne, rust-preventing, self-priming coating which can be applied either by brush, roller or airless spray equipment. The coating shall be dry fall. The coating shall form a seamless rubber anti-rust and waterproof membrane. The coating shall not break down from exposure to ultra-violet radiation. Volatile organic compounds shall be 0% per gallon. A one-millimeter thickness of the coating applied on an elastic rubber plate or band shall stand an extension of 200% without showing cracks or tears. RD-Elastometal is 67% solids by weight; 57% solids by volume.
- C. Reinforcing mesh such as RD-Woven Fleece or RD-Octagonal Fleece as necessary for all Surfaces.
- D. Caulk such as or RD-Acryl W or RD-Acrykit/IlbruckCaulk for joints or cracks as necessary.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

- A. General: Surfaces to be coated shall be cleaned as required by the coating manufacturer to properly receive prime and finish coats. No surface preparation method shall be used unless acceptable to the coating manufacturer and the Engineer.
- B. Pressure Washing, previously painted metal: Pressure wash at 4000 psi to remove all accumulated dirt, chalk, contamination and loosely adhered existing paint and all loose rust from exposed steel. All paint that remains after pressure washing can be overcoated. The pressure washer shall be fitted with a 0-degree spinner tip and the metal surfaces cleaned at a distance of 6" to 8" from the surface of the steel and the pressure washer held at a perpendicular angle to the surface being washed.
Note: 4000 psi with a 0 degrees spinner tip is the default prep. For surfaces that cannot tolerate this force, other preparation methods including lower pressures, the use of hand and power tools etc., can be submitted to the Engineer for approval. The result of the removal process shall be as described above
- C. Power Tool Cleaning: If there is any exposed steel, all areas of exposed layered rusted metal or coating shall be power tool cleaned in accordance with SSPC-SP-3, or in difficult and otherwise inaccessible areas by hand tool cleaning in accordance with SSPC-SP-2. For all metals, remove any lifted paint left from the pressure washing so the edges of all existing paint are tight. The results of cleaning by this method shall be a clean smooth surface of tightly adhering coating and bare copper with a "tight patina" at a minimum. If any steel is discovered It shall be clean, dry and at most have tight rust. The purpose of the power tool cleaning is to augment the pressure washing to remove items not removed by the power washing.
- D. After power tool cleaning, rinse the surfaces with 1500 psi water to remove any dust on the surface. If water is not practical, use solvents such as alcohol to remove dust. After the metal has completely dried, coating work can proceed.

3.02 MATERIALS PREPARATION

- A. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
- B. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
- C. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
- D. The only thinner approved by paint manufacturer is water and only within recommended limits.

3.03 COATING APPLICATION

- A. Minimum surface and atmospheric conditions:
1. All surfaces must be completely dry. If the surfaces have picked up atmospheric pollutants, dust or airborne contaminants since the surfaces were previously pressure washed, it may be necessary to rinse the surface again prior to coating application.
 2. Temperature must be 45° F. and rising during application and the temperature must remain above 45° F for 16 hours. If the relative humidity is above 85% and there is no air movement, consult the Manufacturer's representative before proceeding with any coating application.
- B. Coatings shall be applied without runs, sags, thin spots, or unacceptable marks. Coatings shall be applied at the rate specified by the coating manufacturer to achieve the minimum dry mil thickness required. Additional coats shall be applied, if necessary, to obtain thickness specified.
- C. Coatings can be applied with spraying equipment where practical, only on the surfaces designated by the coating manufacturer. If spraying is not permissible and coating must be applied by brush and roller, then sufficient coats must be applied to achieve the specified dry film thickness. If the material has thickened or must be diluted for application by spray gun, each coat shall be built up to the same film thickness achieved with undiluted brushed-on material. Where thinning is necessary, only the products of the particular manufacturer furnishing the coatings shall be used; and all such thinning shall be done in strict accordance with the manufacturer's instructions, as well as with the full knowledge of the Engineer.
- D. Inspection between coats: Coatings Manufacturers Representative shall be available to periodically view the work, especially at beginning on project. The Contractor shall follow a system of tinting successive coats or using different colors so that no two coats on a given surface are exactly the same color. Magnetic dry film thickness gages (if there is metal) and wet film thickness gages will be utilized for quality control.
- E. Special areas: Special attention shall be given to ensure that edges, corners, crevices, welds and fasteners receive a film thickness equivalent to that of the adjacent coated surfaces.
- F. Coating Sequence for Previously painted Sheet metal roofs: The following coating sequence must be followed in the application of the coating specified.
1. Apply RD- Elastometal as a spot primer, by brush and roller to; all areas of bare metal (weathered, rusty, galvanized, etc.), all areas that will be meshed, such as at standing seams, and rusted steel, cast iron vent pipes (if any exists) and to all joints, fasteners, etc. Color as selected by Manufacturer, applied 10-12 mils wet (5-6 mils DFT).

Primer Note: New galvanized sheet metal patches or stainless or other new non-ferrous metal will require a prime coat of RD-Monoguard at 1-2 mils dft, after prep

Note to Specifier: Drawings and spec should indicate if project is to have full mesh reinforcement at all location or in spots only. If there is full mesh prime the entire roof in item 1 above. Choice of primer/primers will be based on surface conditions including existing intact roof membrane and types of exposed metals

2. After the spot primer has dried (1-6 hrs.), cut and lay RD-Woven Fleece or RD-Octagonal Fleece reinforcing mesh on all surfaces where mesh is required. Apply a uniform first coat of RD-Elastometal by brush and roller, forcing the RD-Elastometal through the mesh to embed and encapsulate the mesh, applied 18 – 20 mils wet (10-12 mils DFT). Prior to applying mesh use RD Acryl W or MSP caulk to make transition at inside corners and joints as necessary.

Note: Often application of mesh can occur concurrently with spot priming because both woven and octagonal mesh are open weave and RD-Elastometal flows through the mesh readily and attaches to the substrate. After installation, mesh shall be fully saturated and covered with RD-Elastometal with no misses, skips or pinholes.

3. After RD-Elastometal has dried in areas that are meshed, (2-6 hrs.), apply a uniform full coat of RD-Elastometal by airless spray or brush and roller to all surfaces (entire roof) to finish encapsulating the mesh and leave a pinhole free surface, applied 18-20 mils wet (10-12 mils DFT).
4. Apply 1 coat RD-Monoguard or RD-Monograff at 5-6 mils wet (2-3 mils dft) as finish in color and gloss approved by the Architect/Engineer.

Note to Specifier: This is the basic system for using Elastometal to protect, beautify and waterproof metal roofs on pre-engineered metal buildings. Job conditions such as quality of existing paint systems, time of year, Color, gloss, abrasion resistance, degree of cleanability, Etc. will influence number of coats and finish.

BASIC SYSTEM OPTION SUMMARY:

1. Spot work to include spot priming all existing bare, metals, and spot priming all new metal repairs with RD-Elastometal or RD-Monoguard, applying RD-Acryl W or MSP caulk at joints and transitions and applying mesh along with RD-Elastometal as necessary at repair spots, such as ribs and new patches, where waterproofing is required. (Areas to be meshed shall be indicated on the drawings)
 - a. Apply 1 coat RD-Elastometal by spray over all surfaces
 - b. Apply 1 coat RD-Monoguard or RD-Monograff spray as finish in selected color

ALTERNATE SYSTEMS TO CONSIDER ARE:

1. **MAXIMUM WATERPROOFING FOR ROOF IN POOR CONDITION:**
Apply additional coat of RD-Elastometal by spray at 8-10 mils dft, prior to applying RD-Monoguard finish as shown in basic system above.
 2. **MINIMUM SYSTEM (FOR RUST INHIBITION AND AESTHETICS) ON ROOF WITH LITTLE TO NO WATER ENTRY PROBLEMS:**
After preparation as detailed in Section, 3.01 Surface Preparation, above, perform the following:
 - a. Apply 1 coat of RD-Monoguard by spray on all surfaces at 4-5 mils wet (2-3 mils dft)
 - b. Apply 2 coats RD-Elastometal and mesh at new metal repaired areas
 - c. Apply 1 finish coat of RD-Monoguard by spray on all surfaces at 4-5 mils wet (2-3 mils dft)
- G. If coating cannot be applied by spray, then use brush and roller as necessary to achieve the specified dry film thickness.
- H. Completed Work: Match approved samples for color and coverage. Remove, refinish, or repaint work not complying with requirements.

3.05 QUALITY WORKMANSHIP

- A. The Contractor shall be responsible for the cleanliness of his coating operations and shall use covers and masking tape to protect the new and existing material not intended to be coated whenever such covering is necessary, or if so, requested by the Owner. Any coatings identified for removal shall be carefully removed without damage to any finished coatings or surface. If damage does occur, the entire surface, adjacent to and including the damaged area, shall be recoated without visible lapmarks and without additional cost to the Owner.
- B. Coatings found defective shall be removed and recoated as required by the Engineer. Before final acceptance of the Work, damaged surfaces shall be cleaned and recoated as directed by the Engineer.

3.06 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.07 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by the Engineer.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

Specifier Notes: This product selection guide is written according to the Construction Specifications Institute (CSI) Format, including *Master Format*, *Section Format* and *Page Format*, contained in the *CSI Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

Specifier Notes: This section covers **RD-E Deck** high-performance coating systems for commercial facilities.

This specification is only a guide listing various coating system options for various environments and should not be used as a final specification. Additional coating systems not listed in this specification are available, and may be more appropriate for your coating application. To finalize this specification, please contact www.rdcoatingsusa.com

Many coatings contain organic solvents. Consult RD Coatings USA for compliance to local VOC regulations.

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