

WARRANTY SPECIFICATION



Acry-Tek 4200 / Metal System w/SPF Flashing

MASTER GUIDE SPECIFICATIONS

10 Year System Warranty

This MASTER GUIDE-SPEC is a brief outline of Coating & Foam Solutions, LLC. (CFS) roofing requirements and is intended for use as a submittal with a bid package. Specifiers and the Authorized Roofing Applicator must comply with the "Application" section of Technical Data Bulletins prior to design or bid. The "Products" and "Safety" sections included in the Technical Data Bulletins and MSDS contain information pertaining to the proper usage of products as well as applicable safety precautions. These sections must be thoroughly reviewed prior to the installation of this roofing system.

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PART I - GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, tools and equipment necessary for the installation of this CFS Roofing System including accessory items, subject to the general provisions of the contract.

1.02 RELATED SECTIONS

- A. See: Application for Warranty, Warranty Synopsis, Technical Data Sheets, & MSDS

1.03 DESCRIPTION OF WORK

- A. Entire roof system to be restored.
- B. Gutters to be rust-proofed and/or waterproofed (optional).
- C. Mechanical equipment, vents and ductwork to be rust-proofed and/or waterproofed (optional).
- D. Skylights may be sealed and/or waterproofed (optional).
- E. Adjoining walls and copings to be waterproofed (optional).

1.04 QUALITY ASSURANCE

- A. CFS Ten (10) Year Warranty covering labor and material shall be issued within thirty (30) days of successful independent roof inspection and final payment
- B. This roofing system must be installed by an Authorized Roofing Applicator in compliance with shop drawings as approved by CFS Technical Services. There must be no deviations without the PRIOR WRITTEN APPROVAL of CFS Technical Services. Upon completion of the installation, an inspection will be conducted by a independent inspector to ascertain that the roofing system has been installed according to CFS published Master Guide Specifications and details applicable at the time of bid.
- C. Provide written proof of required licenses and permits, submitted prior to job start-up.
- D. Provide copy of Approved CFS Request for Warranty Application, submitted by the Contractor.

1.05 SUBMITTALS

- A. Samples (optional): Provide two 1"x 2" samples with of system to be installed.
- B. Installation Procedures: Submit additional and specific procedures unique to the project by addendum.
- C. Product Data: Submit all product data with physical properties, requirements for preparation, limitations etc.

1.06 DELIVERY AND STORAGE

- A. Deliver roofing materials and accessories in manufacturer's original protective containers with labels intact and legible. Comply with manufacturer's published instructions for storage and handling.
- B. Store materials in dry protected areas and on clean raised platforms with securely anchored weather protective covering.
- C. Store flammable products away from spark or open flame.
- D. Store roofing materials at a minimum of 50°F prior to use or as otherwise recommended by the manufacturer. Protect materials from freezing. Protect materials from prolonged exposure to temperatures exceeding 95°F.
- E. Contaminated and Damaged Materials: Remove damaged or contaminated materials from site.

1.07 SITE CONDITIONS

- A. EXAMINATION OF EXISTING CONDITIONS: Contractor shall examine substrate for conditions that might detrimentally affect the application and shall report all unsatisfactory conditions to CFS and will not proceed until these conditions have been corrected.
- B. Commencing work implies acceptance of existing conditions as satisfactory to the outcome of this work.
- C. Air intake vents, blowers, air conditioning units and evaporative coolers shall be disconnected or otherwise modified to prevent fumes from entering into the building or from contaminating the roof surface with condensate water.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Proceed with roofing work only when weather conditions comply with CFS recommendations and other current published data and MSDS information. Do not exceed temperature limitations recommended by CFS.
- B. Owner may occupy the premises during the entire period of the roof retrofit. Cooperate with Owner's Representative during construction operations to minimize conflict, and to facilitate continued use of the facility.
- C. Coordinate scheduling with the Owner in order to relocate or protect vehicles, building occupants and building contents from damage during construction operations.

PART 2 - PRODUCTS

2.01 COATING SYSTEM COMPONENTS

- A. **Approved Manufacturers**
 1. Roof-Tek® Systems by Coating & Foam Solutions, LLC.
 2. Approved Equal
- B. **Approved Spray Polyurethane Foam (SPF) Roof-Tek® (2700 Series)**
 1. Roof-Tek® 2700 Series is a two component, ZERO-ODP (Ozone Depleting Potential), polyurethane spray foam system, formulated utilizing 245fa blowing agent technology.
 2. Performance Values: RT-2700 Series average values:

| PROPERTY | VALUE |
|-------------------------------|------------------------|
| Nominal Density | 2.7 lbs. /cu. ft. min. |
| Compressive Strength Parallel | 50 psi minimum |
| K-Factor Initial | 0.15 |
| R per inch Initial | 6.7 |
| Tensile Strength | 83 psi minimum |
| Closed Cell Content | 98% by volume min. |
| Viscosity A/B @ 77°F | 250/675 |
| Moisture Permeation Rate | 1.4 perm/inch |

- C. **Acrylic Coating: (Acry-Tek 4200)**
 1. Acry-Tek 4200 is a pure aliphatic water based formulation to provide a durable and elastic protective membrane over metal, masonry, and single ply. Acry-Tek 4200 provides the maximum UV and weathering stability in both hot and cold climates.

2. Performance Values: Acry-Tek 4200

| PHYSICAL PROPERTY | TYPICAL VALUE |
|----------------------|-------------------------------------|
| Tensile Strength | 250 ± 25 PSI after 1500 hrs |
| Elongation at Break | 300%± 25 (min.) after 1500 hrs |
| Solids by Volume | 60% ± 2% |
| Solids by Weight | 70% ± 2% |
| Hardness | 50 ± 5% Shore A |
| Weather Stability | Maintains Flexibility-20°F to 180°F |
| Reflectivity (White) | 80% |
| Emissivity (White) | .85 |
| Permeability | 3.0 perms at 20 mils |

2.02 ACCESSORY MATERIALS AVAILABLE

- A. **HP404:** Highly concentrated, low-sudsing biodegradable cleaner used to remove grease and grime.
- B. **Mas-Tek 6000M:** Mas-Tek 6000M maintenance-grade urethane-fibered mastic. Note: Add 6000 catalyst to assure complete cure in thick sections.
- C. **MF20/20:** Micro-fiber additive for coatings used to create easy-to-apply mastics with increased tensile strengths
- D. **Prime-Tek 11:** A two-component, water-based, multi-purpose, easy spreading epoxy primer.
- E. **Prime-Tek 600-C:** A translucent aliphatic acrylic primer that may be used as a primer/base coat over skylights.
- F. **Prime-Tek 7555:** This product is a low VOC rust converter primer.
- G. **Seal-Tek 800:** Prepackaged acrylic aliphatic mastic for use as a general flashing and joint filler. Seal-Tek 800 provides excellent filling and flexibility for joints and fasteners.
- H. **SF200:** Pre-cut, stitch-bonded polyester fabric that comes in varying widths for use in reinforcing horizontal laps with previous patching materials and certain other lap and flashing configurations.
- I. **Ure-Tek 6000:** A hydrocarbon extended, moisture-cured, urethane for use in below-grade, submersion conditions, and as a base or finish coat membrane. Also use on gutters and flashings.

PART 3 - EXECUTION

3.01 PREPARATION FOR COATING

- A. **Metal Roof Panels**
 1. Acceptable metal roofs for use with this restoration system must be a minimum 22 gauge steel or heavier.
 2. Replace deteriorated or structurally unsound decking.
 3. Excessive amounts of cold applied materials shall be removed.
 4. Sweep or blow dirt and dust from the roof surface and pressure wash with clear water.
 5. Loose coating, paint, rust and scale shall be removed using: wire brush and scraper, or water blasting. Remove loose rust by: water blasting at min 2,400psi; wire brushing; power or hand sanding.
 6. Remove dirt, grease and chalk with HP404 cleaner and high-pressure water-blaster. Rinse residue completely from roof with clean water.
 7. New galvanized panels weathered less than 6 months shall be cleaned with 5% hydrochloric or phosphoric acid washes to remove contamination.

8. After procedures “3”, “4”, “5” or “6” above, care should be taken to rinse thoroughly with clean water and flush all residues from roof surface. Allow roof to dry completely before proceeding with priming or coating.
9. Repair small holes using SF200 and Seal-Tek 800.
10. Install **NEW Polvurethane Sprav Foam** flashings and “crickets” where required. Ponding up slope of penetrations is not acceptable. After installing SPF Flashings & crickets, coat with Acry-Tek 4200 out onto the metal panels.
11. Prime rusted metal with Prime-Tek 7555 primer at a rate of 1 gallon per 250 sq.ft.

B. Structural Components

1. Inspect all flashings and terminations and repair to requirements for warranty issuance.
2. Replace defective vents, gutters, or skylights before application.

C. Horizontal Laps

1. Apply foot pressure to under lapping panel next to horizontal lap. If joint opens more than 1/16”, add fasteners.
2. Fill all horizontal laps with Seal-Tek 800. Apply with caulking-gun or spray pump and brush into joint.

Required - All Horizontal Laps:

3. Apply Acry-Tek 4200 @ 1 gps to horizontal lap area, imbed SF200 fabric into wet coating and apply another coat of Acry-Tek 4200 completely covering the fabric and out onto the metal panel.

D. Vertical Seams

1. If vertical seams are open more than 1/16”, add fasteners.
2. Fill all vertical seams with Seal-Tek 800. Apply with caulking-gun and brush into joint.

OR: Vertical Seam Option:

3. Apply Acry-Tek 4200 @ 1 gps to vertical seam area, imbed SF200 fabric into wet coating and apply another coat of Acry-Tek 4200 completely covering the fabric and out onto the metal panel.

E. Fasteners

1. Replace stripped or loose fasteners with oversized fasteners. Add additional fasteners to tighten loose panels or restore original design specifications.
2. Encapsulate ALL fasteners with Seal-Tek 800 and brush to smooth and level.

F. Gutters

1. Loose coating, paint, rust and scale shall be removed using: wire brush and scraper, or water blasting. Remove loose rust by: water-blasting at min 2,400psi; wire brushing; power or hand sanding.
2. Prime rust areas in the gutter with Prime-Tek 7555 rust-inhibiting primer at a minimum rate 250 sq.ft. per gallon and coat with Ure-Tek 6000.
3. Use 6000-M mastic for seam repair, or 3 course Ure-Tek 6000 and SF200 fabric for all seams.
4. Coat gutter with 2 coats of Ure-Tek 6000 @ 1 gps each.

G. Ridge Caps & Flashings

1. Encapsulate Ridge Caps and all flashings with SPF.
2. Apply Acry-Tek 4200 @ 1 gps to SPF ridge cap area completely covering the SPF and out onto the metal panel.

3.02 INSTALLATION OF SPRAY POLYURETHANE FOAM

- A. Install approved polyurethane foam to 1.25" thickness originally specified (1" minimum required) terminated neatly at designated places. Turn up at all vertical surfaces a minimum of 3" or 2½ times the minimum foam thickness.
- B. Foam applications of less than ½" thickness are not acceptable.
- C. Mask areas where coating is to be terminated to prevent surface contamination with foam over spray.
- D. Foam spray application shall be limited to that which can be completed to full foam thickness in one day. All exposed foam tie-in end laps and side laps must be primed at the end of each workday.
- E. The completed foam surface shall be smooth to orange peel texture; popcorn texture is not acceptable.
- F. The completed foam surface shall be free of pinholes and/or "glass windows" caused by improper equipment calibration or climatic conditions. The roof shall not have any soft or spongy areas or areas with hard or brittle strings of improperly proportioned material
- G. Eliminate areas of ponding using approved polyurethane foam to create positive drainage.
- H. Remove protective masking at terminations.
- I. Apply protective coating to foam surface on the same day as polyurethane foam is installed.
- J. If coating application is delayed beyond that time, consult CFS for primer recommendations.

3.03 COATING SYSTEM

A. General

1. Contractor is responsible for assuring that the substrate is acceptable for the application of all coatings.
2. Do not apply coating when moisture is present on the substrate or if rain is expected before coating will properly cure.
3. Wind barriers shall be used if wind conditions could affect the quality of the material being applied.
4. Coating must cover all surfaces completely. An extra pass of coating material may be required at all edges, penetrations, and vertical surfaces such as ribs.
5. **This is a Two (2) coat application of contrasting top coat / base coat colors.**
6. Base coat(s) and primer(s) shall be allowed to cure before proceeding with subsequent applications.
7. All coating and primers shall be coated within recommended time period. If application is delayed beyond that time, consult CFS for primer recommendations.
8. No traffic shall be permitted on the coated roof surface for a minimum of 3 days. Damage to the surface by other trades shall not be the responsibility of the roofing contractor.

B. Minimum Application Thickness Metal / SPF:

1. **Metal** coating minimum thickness shall be **24 Minimum TDM (Total Dry Mils)**, (In a 2 coat contrasting color application)
2. **Spray Foam** coating minimum thickness shall be **32 Minimum TDM (Total Dry Mils)**
3. Application rates must be checked periodically to assure proper coating thickness. This may be done with a wet film gauge or by checking coverage of a known quantity. (i.e. 5 gallons covers 333 sq.ft. (4'x83') or. 7 ½ gallons covered 500 sq.ft. (Both examples = 1 ½ gallons per square.)
4. **NOTE: The recommended gallons for minimum mil thickness is a guide line and should be verified by the contractor to ensure that the minimum mil thickness is applied to the roof surface.**
5. Each contractor should estimate coating requirements based on actual experience and needs to figure losses due to applicator experience, surface texture, wind, waste, and other factors increasing estimated gallons required.
6. The total dry mil thickness of all coatings, as well as the total dry mil thickness of the topcoat(s) shall meet the minimums required by CFS.

C. Spray Application of Coating

1. Apply base coating **of contrasting color to the top coat** one rib at a time in two passes from ridge to gutter. One pass in each direction, with each pass centered between ribs. Each pass shall overlap the previous pass at ribs to insure complete coverage. **Care should be taken to ensure proper coverage of vertical surfaces of ribs.**

D. Installation of Protective Base Coat SPF & Metal

1. Apply base coat(s) at an application rate designed to achieve the required (Total Dry Mil) for the project minimum thickness:
 - a) **12 TDM**(Total Dry Mils) on **Metal** to achieve the nominal film thickness required.
 - b) **16 TDM**(Total Dry Mils) on **SPF** to achieve the nominal film thickness required.
 - c) Double coat flashing and edge termination. Refer to "Application" section of Technical Data Bulletins for application instructions.

E. Inspection

1. A visual inspection of the basecoat surface should take place before application of the Topcoat to confirm an acceptable surface / substrate to accept the topcoat. Any deficiencies must be repaired prior to application of the topcoat.

F. Installation of Protective Top Coat SPF & Metal

1. Apply top coat at right angles to the previous coat at an application rate designed to achieve the required TDM (Total Dry Mil) for the project minimum thickness.
 - a) **12 TDM**(Total Dry Mils)on **Metal** to achieve the nominal film thickness required.
 - b) **16 TDM**(Total Dry Mils) on **SPF** to achieve the nominal film thickness required.

- c) The final color shall be from the CFS standard color chart. The top coat(s) shall completely cover the base or intermediate coat(s) including expansion joint covers, parapets and flashing.
- 2. Pay special attention to overspray, which can texture or discolor adjoining finished sections. Wind direction should conduct overspray away from finished roofing surfaces.
- 3. See Technical Data Sheets for application and equipment recommendations.

3.04 INSTALLATION OF WALKWAYS.

- A. In high-traffic areas and around mechanical equipment, walkways should be installed to protect the coating system from damage.

3.05. FIELD QUALITY CONTROL

- A. Maintain Job Progress Report / Daily Log of work completed as required to assure installation is in accordance with manufacturer requirements.
- B. Provide on-the-job inspections, technical assistance and material application guidance as may be necessary to complete the roofing material application in accordance with CFS warranty requirements.

3.06. JOB COMPLETION

- A. Inspect completed roofing system and correct all defects to meet the specification and/or warranty requirements.
 - 1. **Transparent or thin areas:** If areas appear to be undercoated, recoating may be needed to ensure final thickness to meet the CFS specifications.
 - 2. **Delamination:** Verify that all coated areas appear to be fully adhered to the substrate. A visual inspection looking for typical signs of poor adhesion such as flaking, blistering etc. should be made. Re-priming and/or recoating will be required if such areas are apparent.
 - 3. **Pin Holing:** Certain job or site conditions may result in pin holing or out gassing during curing or pin holes in the substrate. Again, a visual inspection looking for typical signs of out gassing such as excessive pockmarks, pinholes etc. should be done.

- 4. **Lifting:** This wrinkled appearance is caused when freezing of water-based coatings, off ratio or poorly mixed plural component coating, or solvent entrapment in solvent based coatings. The coating surface may exhibit extreme wrinkles, small blisters and may have loss of adhesion. These areas will not “self heal” and must be removed, power washed and new coating must be applied.
- 5. **Texture Finish:** Heavy patterns, blistering, “skinning,” etc. may appear in the final finish. These may be indicators that too thick a coat or a build-up has occurred or other application problems. Check with CFS for remedial advice.
- 6. **Wash-Off:** (when the acrylic coating is not allowed to cure thoroughly) Wash-off (chalk-like in appearance) may occur if rain or moisture comes in contact with water-based coatings during or prior to curing. If wash-off occurs, the affected area must be power washed to remove coating residue prior to reapplying the acrylic coating.
- 7. **Snow Flaking, Feathering, and Spider Webbing:** This is an **appearance** that the finished coating may exhibit when water-based coating is applied and the surface reaches freezing temperatures before the coating is fully cured. This normally occurs within a 24-hour period from the time of application. Generally these areas will “self heal” when exposed to heat and sunlight. In event that they would not self heal, the affected surface must be power washed, and new coating must be reapplied.
- B. An independent 3rd party inspector will inspect the completed roofing system and notify the Contractor of any defects in the application.
- C. Clean up all debris, excess materials, and equipment and remove from site.
- D. Restrict construction traffic and equipment movement on the completed roofing system to only essential personnel. Provide appropriate protection against traffic and construction activities on completed roofs. Damage to the roof by other trades shall not be the responsibility of the CFS Roofing Applicator.

**End of Section
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WARRANTY SPECIFICATION / NOTICE OF AWARD INFORMATION

Type of Warranty:

- A. Coating & Foam Solutions, LLC Ten (10) Year Warranty covering labor and material shall be issued within thirty (30) days of successful independent roof inspection and final payment.

Building Owner:

| | | |
|--|---|---|
| Substrate selected: | Metal. | |
| Application Method: | Spray. | |
| Basecoat selected: | Acry-Tek 4200 | 12 Minimum TDM (Total Dry Mils) Minimum. |
| Topcoat selected: | Acry-Tek 4200 | 12 Minimum TDM (Total Dry Mils) Minimum. |
| <hr/> | | |
| Spray foam selected: | 2.7# Density Foam - 1.25" New SPF Minimum Specified. | |
| <u>NEW FOAM</u> Base-coat selected: | Acry-Tek 4200 | 16 Mils TDM (Total Dry Mil) Minimum. |
| Topcoat selected: | Acry-Tek 4200 | 16 Mils TDM (Total Dry Mil) Minimum. |

**NOTE: Metal must have 24 Minimum DFT (Dry Film Thickness)
SPF must have 32 Minimum DFT (Dry Film Thickness)**

Specification Written on: March 26, 2013

| Coating & Foam Solutions, LLC. | Applicator |
|--|---------------------|
| By: _____ | By: _____ |
| Printed Name: _____ | Printed Name: _____ |
| Title: _____ | Title: _____ |
| Date Approved: _____ | Date Signed: _____ |
| Coating & Foam Solutions, LLC. 1100 Cottonwood Ave. Suite 300 Hartland, WI 53029 (888) 284-7488 | Company: _____ |
| | Address: _____ |
| | City, State: _____ |
| Warranty Project # _____ | Telephone: _____ |