

SECTION 07560
FLUID APPLIED ROOFING
(Commercial Standing Seam Metal Panels)

PART 1 DESCRIPTION

1.1 DESCRIPTION

This specification is only intended for the application of the PremiumCoat system over commercial standing seam metal panels. Panels are generally 2ft. wide by varying lengths.

1.2 DESCRIPTION OF FLUID APPLIED ROOFING SYSTEM

The fluid applied roofing system must consist of a reinforced elastomeric system specifically designed for use on a roof. The system must have been approved by FMRC (Factory Mutual Research Corporation) according to Standard 4470 for Class 1 Roof Constructions which includes - Spread of Flame Fire, Windstorm Pressure, Windstorm Pull, Hail Damage, Resistance to Foot Traffic, and Susceptibility to Leakage Classifications.

1.3 SECTION INCLUDES

1. Fluid applied flexible acrylic waterproofing system over existing metal roofing system. This work shall include the preparation of the roof deck, application of the roof system, flashing system, and clean up.

1.4 RELATED WORK

1. The contractor shall review all sections of these specifications to determine items of work that will interface with the application of this roofing system. Coordination and execution of related sections shall be the responsibility of the contractor.

1.5 REFERENCES

1. ASTM B117 - Test Method of Salt Spray (Fog) Testing.
2. ASTM G-29 - Test Methods for Algae Resistance.
3. ASTM E-108 - Test Method for Fire Test of Roof Coverings.
4. ASTM D-1653 - Water Vapor Transmission of Materials.
5. ASTM G26 - Practice for Operating Light- and Water-Exposure Apparatus (Xenon Arc Type) for Exposure of Nonmetallic Materials.

6. ASTM D-412 - Ultimate Tensile Strength at Break.
7. ASTM D-6083 - Standard Specification for Liquid Applied Acrylic Coatings used in roofing.
8. ASTM C1549 - Standard test method for determination of solar reflectance near ambient temperature using a portable solar reflectometer
9. ASTM C1371 - Standard test method for determination of emittance of materials near room temperature using portable emissometers
10. FM 4470 - Standard for Class 1 Spread of Flame Fire, Windstorm Pressure, Windstorm Pull, Hail Damage, Resistance to Foot Traffic, and Susceptibility to Leakage Classifications.

1.6 SUBMITTALS

1. Shop Drawings: Submit a scaled drawing showing the layout of joint reinforcing and all flashing details.
2. Product Data: Provide manufacturer's technical literature on products that make up the roofing system. This shall include, but is not limited to, coatings, reinforcing fabrics, flashing materials, roof drains, fasteners, etc...
3. Manufacturer's Installation Instructions: Submit all data sheets available from the manufacturer on the installation of the roofing system applicable to the work.
4. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.7 QUALIFICATIONS

1. Applicator Qualifications: The applicator of the roofing material specified herein shall be an approved applicator (designated by Hydro-Stop). Proof of this qualification shall be provided in written form from the manufacturer of the roofing system.

1.8 QUALITY CONTROL

1. Codes and Standards: The contractor shall make him / herself thoroughly familiar with all codes, regulations, and standards governing the specified work. Any contradiction between the manufacturer's requirements and these specifications shall be brought to the attention of the manufacturer and the specifier.
2. Deviations: There shall not be any deviations from these specifications unless the deviation is submitted in writing to the specifier. The request for deviation must have a letter from the roofing manufacturer's technical department approving the details of the deviation.

3. An Approved Applicator (as designated by Hydro-Stop) shall be on site during all applications of any Hydro-Stop products.
4. Manufacturer's Technical Representative: An employee of the roofing material manufacturer shall be on site at least once every 7-calendar days during the work specified herein. Upon request the technical representative shall provide a written inspection report, during each site visit and submit the reports to the owner/owner's representative. The manufacturer's representative must approve the application process at specific stages before the contractor may continue including: Pre-Bid Inspection, Start-Up Inspection, at the completion of the FoundationCoat & fabric components, and completed FinishCoat inspection.

1.9 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials to site in manufacturer's unopened and undamaged containers bearing the following information:
 1. Name of manufacturer.
 2. Name of contents and products code.
 3. Net volume of contents.
 4. Lot or batch number.
 5. VOC content
 6. Storage temperature limits.
 7. Shelf life expiration date.
 8. Mixing instructions and proportions of contents.
 9. Safety information and instructions.
2. Store and protect materials from damage and weather in accordance with manufacturer's instructions.
3. Store materials at temperatures between 50-90 degrees F (10.0-32.2 degrees Celsius). Keep out of direct sunlight.
4. Support stored material containers on pallets and cover with tarpaulin tied to bottom of pallets.

1.10 ENVIRONMENTAL REQUIREMENTS

1. Do not apply if ambient temperatures are expected to fall below 40 degrees F (4.5 degrees Celsius) or if rain is expected before the application has time to cure.

1.11 WARRANTY

1. Provide ten-year manufacturer's Labor and Material warranty.

PART 2 PRODUCTS

2.1 MANUFACTURER

- | | |
|---|--|
| 1. Hydro-Stop, a Quest Construction Products brand 1465 Pipefitter Street North Charleston, SC 29405 | Toll Free: (800) 739-5566 Phone: (843) 745-9600 Fax: (843) 745-9602 Web: www.hydro-stop.com |
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2.2 MEMBRANE COMPOUND MATERIAL

1. Waterproofing Material: PremiumCoat three-stage, fabric reinforced, flexible acrylic coating, fluid applied in successive stages to form one continuous, seamless, watertight membrane; 40 mil (.04 inches / 1.016 millimeters) minimum cured total system thickness; comprised of the following:

1. Foundation and Saturation Coats: PremiumCoat FoundationCoat (highly flexible water based 100% pure acrylic polymer resin coatings).
 2. Fabric: Hydro-Stop polyester, non-woven, stitch-bonded, and heat-set fabric.
 3. Finish Coat: PremiumCoat FinishCoat (ultraviolet light resistant, blend of highly flexible water based 100% pure acrylic polymer resin coating); color as selected from manufacturer's standard colors.
2. Reinforcing Fabric: This material shall be non-woven 100% polyester, stitch bonded, heat set fabric with the following characteristics:

| | | | |
|--------------------|--|------------|-----------------|
| Weight: | 3 oz / per square yard (106.31 grams / square meter) | | |
| Tensile Strength | Warp 74 lbs. | (33.60 kg) | per ASTM D 5034 |
| | Fill 45 lbs. | (20.43 kg) | |
| Elongation @ Break | Warp 21.3% | | per ASTM D 5034 |
| | Fill 51.3% | | |
| Ball Burst | 111 lbs. | (50.39 kg) | per ASTM D 3787 |
| Trapezoid | Warp 13.5 lbs. | (6.13 kg) | per ASTM D 117 |
| | Fill 24.2 lbs. | (10.99 kg) | |
| Thickness | .018 inches | (.457 mm) | per ASTM D-1777 |

3. Cured Membrane Characteristics:

| <u>PROPERTY</u> | <u>TEST</u> | <u>RESULT</u> |
|--------------------------|-------------|------------------------|
| Elongation | ASTM D638 | >300% elastomeric |
| Tensile Strength (cured) | ASTM D412 | >2000 PSI (13,789 kPA) |
| Density: | | 12.1 lb/gal |
| Volume Solids: | | > or = 53 % |

| | | |
|----------------------------------|------------|-------------------------------------|
| Weight Solids: | | > or = 66% |
| Algae Resistance | ASTM G29 | No Growth Supported |
| Moisture Vapor | ASTM E96 | 3 Perms |
| Weathering | ASTM G26 | No effect after 3,000 hours. |
| Salt Spray Test | ASTM B117 | No effect. |
| Fire Rating | ASTM E108 | Class A |
| VOC (calculated): | | < 72 g/L |
| Susceptibility to Leakage | FM 4470 | No signs of water leakage. |
| Windstorm Pressure | FM 4470 | Meets Class 1- 90 |
| Windstorm Pull | FM 4470 | Class 1-225 on Polyisocyanurate |
| “ | “ | Class 1-270 on Expanded Polystyrene |
| “ | “ | Class 1-375 on Lightweight Concrete |
| “ | “ | Class 1-735 on Structural Concrete |
| Severe Hail Test | FM 4470 | No separation or rupture 1-SH |
| Resistance to Foot Traffic | FM 4470 | No sign of tearing or cracking. |
| Liquid Applied Acrylic | | ASTM D6083 Approved |
| Solar Reflectance | ASTM C1549 | > or = 0.79 |
| Thermal Emittance | ASTM C1371 | > or = 0.90 |
| OTC (Ozone Transport Commission) | | Compliant |
| California Title 24 | | Compliant |
| CRRC (Cool Roof Rating Council) | | Approved |
| Energy Star (Dept. of Energy) | | Approved |

(White or Cotton Finish Coat Only)

2.3 ACCESSORIES

1. Cant Strips: Approved composition materials are EPS (Expanded Polystyrene), ISO (Polyisocyanurate), and wood (Non-Pressure Treated). Cant strips are to be installed at all internal corners, around curbs, and at all 90 degree angles specified by Hydro-Stop.
2. Hydro-Fiber: Bulking material used in conjunction with Foundation Coat or BarrierGuard slurry (as specified by Hydro-Stop Technical Representative) to fill cracks, voids, or low depressions on various substrates.
3. StableRust Primer: water based surfactant-free primer used in direct metal applications to stabilize and protect metal surfaces.

PART 3 EXECUTION

3.1 EXAMINATION

1. Verify substrate surfaces are durable, free of frozen matter, dampness, loose particles, cracks, pits, projections, or foreign matter detrimental to adhesion or application of waterproofing system.
2. Verify that substrate surfaces are smooth and not detrimental to full contact bond of waterproofing materials.
3. Verify items that penetrate surfaces to receive waterproofing are securely installed.
4. Verify that substrate areas are adequately supported and firmly fastened in place.
5. Verify that roofing panels have a minimum slope of .25 inch / foot (2.083cm/meter)
6. Verify that roof does not have ponding water areas.
7. Verify that all attached vertical walls are properly waterproofed.

3.2 PREPARATION

1. Protect adjacent surfaces not designated to receive waterproofing.
2. As a minimum, clean and prepare surfaces to receive waterproofing by removing all loose and flaking particles, grease and laitance with the use of a stiff bristle push broom and or washing. Care should be taken not to inject water into the substrate during washing. In some cases additional drying time may be required after the cleaning process. Please consult your Hydro-Stop Technical Sales Representative for additional advice on cleaning various roofing substrates.
3. Make all necessary repairs to existing substrate. Contact Hydro-Stop Technical Representative for assistance.
4. Do not apply waterproofing to surfaces unacceptable to manufacturer.

3.3 APPLICATION

1. Bare Metal or Clean Rusted Metal: Remove all scale and apply StableRust Primer at a rate of 200 ft²/ gal (4.755 m²/ liter) to all rusted areas. Allow to dry. Protect from weather until dry.
2. Foundation Coat & Fabric Components- Consist of one coat of FoundationCoat applied to the substrate, Hydro-Stop PremiumCoat Fabric (sizes vary) laid into the wet FoundationCoat, and finally a second coat of FoundationCoat saturating the fabric from above. Care should be given to ensure that adjacent runs of fabric are overlapped a minimum of 4 inches (10.16 cm). Foundation Coats are applied at a total rate of 40 ft²/gal (.951 m²/liter). FoundationCoat should only be applied with the use of approved roof brushes. Rolling, and spraying of the FoundationCoat are absolutely forbidden.

- A. Roof Penetrations- Using 12 inch (30.48 centimeters) fabric and the Foundation components (described above) seal items projecting through waterproofing material watertight. Waterproof up penetrations a minimum of 6" (15.24 centimeters)
 - B. Vertical Seams- In general Vertical seams do not need to be addressed with fabric.
 - C. Horizontal Laps- Using 12 inch (30.48 centimeters) fabric and the Foundation components (described above) seal all horizontal laps. Foundation Coat & Fabric components must be centered on the panel laps. Protect from weather until dry.
 - D. Exposed Mechanical Fasteners- Using either a Hydro-Cap or a 6 in. x 6 in. (15.24 x 15.24 centimeters) piece of fabric and the Foundation components (described above) seal all mechanical fasteners. Protect from weather until dry.
 - E. Parapet & Vertical Wall Junctions- Using 12 inch (30.48 centimeters) fabric and the Foundation components (described above), waterproof roof/wall junctions. Continue waterproofing up vertical surfaces and onto deck a minimum of 6 inches (15.24 centimeters) in each direction.
3. Finish Coat Component- Apply 2 coats of FinishCoat at a combined total rate of 70 ft²/gal (1.664 m²/liter) over entire roof area. Minimum milage requirements are 11.5 mils (.0115 inches / .292 millimeters) wet and 6.1 mils (.0061 inches / .155 millimeters) dry per coat. Allow to dry between coats. Total Finish Coat dry thickness should be a minimum of 12.2 mils (.0122 inches / .31 millimeters).
 4. Completed PremiumCoat System- System must be installed to a minimum 40 mil (.04 inches / 1.016 millimeters) total cured thickness over all seams, laps, fasteners, wall junctions, and penetrations. Non-fabric areas of the roof must have a minimum of 15 mils (.015 inches / .381 millimeters) total cured thickness.

3.4 PROTECTION OF FINISHED WORK

1. Monitor finished system for 7 day, sweeping off birdbaths to allow for full cure.

3.5 CLEANING

1. Immediately clean unscheduled surfaces receiving waterproofing in accordance with manufacturer's instructions.

END OF SECTION