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Western COLLOID
FLUID APPLIED REINFORCED ROOFING

800-464-8292

"WESTERN COOL ROOF SYSTEMS"

Sustainable - Energy Efficient

FLUID APPLIED REINFORCED ROOF SYSTEM

SPECIFICATION NO. DDAA-2P-8xE

New Construction or Re-Roof - Insulation/DensDeck® Prime - Concrete
2 PLY POLYESTER REINFORCED – ACRYLIC SURFACE
All Acrylic

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. The latest publication of this specification shall be enforced. Refer to the latest publication of this specification via the manufacturer's web site or by contacting the manufacturer.

1.1.1 American Society for Testing and Materials Publication (ASTM)
1.1.2 Underwriters Laboratories Inc. (U.L.)
1.1.3 Factory Mutual (FM Global)
1.1.4 Western Colloid Details, Drawings and Notes
1.1.5 ENERGY STAR® guidelines for energy efficiency (Roof Coatings)
1.1.6 CRRC – Cool Roof Rating Council
1.1.7 California Building Standards Code - Title 24
1.1.8 LEED (USGBC)

1.2 QUALITY CONTROL

1.2.1 Pre-Roofing Conference: Prior to starting the application of the roofing system, there will be a pre-roofing conference with the owner's representative to assure a clear understanding of the specifications. The conference shall be attended by the Contractor(s) and the Membrane Manufacturer's representative.

1.2.2 Warranty: The contractor shall warrant for 2 years, from the date of completion, that the roofing system is free of defective materials and workmanship. Repairs that become necessary because of defective materials and/or workmanship while this roofing is under warranty shall be performed by the contractor. The contractor is responsible for inspection of the installed system 1 to 6 months prior to 2 years from the date of completion. Contractor shall report any deficiencies to the manufacturer and make any repairs necessary. Any additional warrantees shall be provided by the contractor to the owner.

1.2.3 Manufacturer shall certify that materials submitted have been used in like application and that they have been actively engaged in the manufacture of these materials for a minimum period of 20 years prior to submittals, as required. The manufacturer shall certify that the contractor is authorized and approved for the application of their materials.

1.3 SUBMITTALS:

1.3.1 Descriptive literature: Submit manufacturer's application instructions and technical data sheets or catalog cuts on materials.

1.4 DELIVERY, STORAGE AND HANDLING:

1.4.1 Storage: Prior to and during project, protect all materials from inclement weather conditions. Keep lids tightly closed on all containers when not in use. Locate materials temporarily stored on the roof in approved areas and distribute the load to stay within the live load limits of the roof construction.

1.4.2 Handling: Select and operate materials handling equipment so as not to damage existing construction and applied roofing. Handle roll materials in a manner to prevent damage to edges and ends.

1.5 ENVIRONMENTAL CONDITIONS: This Fluid Applied Reinforced Roof System is water based and should be applied when weather conditions permit proper application and drying. Application will not be permitted during inclement weather (wet, rain, snow, freeze). The temperature during application shall be a minimum of 55 degrees Fahrenheit (F) and rising. Do not attempt application when rain, inclement weather or temperatures below 40 degrees F are expected within 48 hours after application. The system should not be applied if there is ice or frost on the roof surface/deck. The preparation and repair portion of the system that does not include water based materials may be applied immediately prior to inclement weather if necessary.

1.6 PROTECTION OF PROPERTY:

1.6.1 Protective Coverings: Contractor shall take proper precautions to protect owners property against damage and overspray. The use of shield boards, maskings and protective coverings shall be used as necessary. Western Colloid Products is not responsible for damages caused by the overspray of any of its products.

SYSTEM COMPONENTS AND WEIGHTS

No.	Component	Amount	Dry Weight Lb.**
1	Base Coat ElastaHyde	3. Gallons	21.
2	Polyester Fabric	1 Ply	2.5
3	Interply Coat ElastaHyde	2. Gallons	14.
4	Polyester Fabric	1 Ply	2.5
5	Top Coat ElastaHyde	1.5 Gallons	10.5
6	Reflective Surface Coating - ElastaHyde White Acrylic	1.5 Gallons	10.5
	Total System Dry Weight		61.0
	Total System Dry Mils (approximate)	92	

** weight approximate

PART 2 - PRODUCTS

2.1 DESCRIPTION OF ROOF SYSTEM:

2.1.1 Sustainable, Energy Efficient: This specified assembly is a cold process method to install a new roofing membrane on new construction or as a re-roof over approved combustible or non-combustible decks. The system can be installed directly to concrete or over concrete and wood decks using insulation and/or DensDeck Prime®. The system may also be installed over existing membranes. The system is water based and environmentally friendly. It has very low odor. It is reinforced with tough, light weight polyester fabrics. The system is constructed of a high performance acrylic liquid reinforced with a tough polyester fabric and surfaced with a highly reflective elastomeric coating. This type of reflective surface has proven to significantly reduce temperatures and save energy on many types of commercial structures. The system is renewable.
This specified assembly meets the following criteria:

a. U.L. Class A
b. Factory Mutual Standard 4470 Class 1
c. Wind Uplift - DensDeck = 1-510 (FM) - Concrete = 1-990 (FM)
d. California Title 24
e. LEED (USGBC)
f. Energy Star

2.2 MATERIALS: Shall conform to the respective specifications and to the requirements herein.

2.2.1 Rigid polyisocyanurate insulation board with glass fiber felt facers, meeting ASTM C-1289 Type II, Class 1, Grade 2 (20 psi) or Grade III (25 psi).

2.2.2 DensDeck® Prime Roof Board Gypsum roof board with a primed fiberglass mat facer on one side, meeting ASTM C-1177

2.2.3 Attachment – INSTA STIK™ Quick Set Commercial Roofing Adhesive: A single-componant polyurethane board adhesive applied in ribbons or full applications. The minimum ambient and surface temperatures required is 33°F (0.56°C) and rising. Ideal application temperature is 75°F (23.9°C).

2.2.4 Polyester Fabric: Shall be Western Colloid's 2.75 ounce firm or 3.0 ounce soft, stitchbonded polyester fabric. To be used as a reinforcing fabric in asphalt emulsion, acrylic coating and flashing materials. Available in various widths.

2.2.5 Seamless Walkway Coating #850 SWS: A unique, water based coating designed to protect walking areas and paths on smooth roofing systems. It is formulated with extremely tough acrylic resins and binders, to form a long lasting walking surface on smooth and coated roofs. 850 SWS contains an aggregate to form a textured non-slip surface with very high abrasion resistance.

2.2.6 All Weather Elastic Cement #8000 : A solvent-based, white sealant. #8000 is designed for use on various roof membranes and surfaces, including asphalt BUR, modified bitumen, metal and single ply roofs. (Including EPDM, PVC, TPO and Hypalon). Used where wet conditions are present during repair and also to set metal flanges and sheets where water based sealant is not practical. #8000 may be used in place of #800 Elastic Cement when a more immediate resistance to water is required.

2.2.7 Elastic Cement #800: Elastomeric Flashing & Sealing Compound: A water base, highly concentrated acrylic resinous plastic emulsion with inert mineral pigments and fillers as manufactured by Western Colloid. For application to all exposed terminations, metal joints, drain sumps and any areas needing a tough, highly flexible sealing compound. Available in white or black.

2.2.8 ElastaHyde #720 ARC: Used as the base and finished coats of this all acrylic roof system. Meets and exceeds ASTM D6083-97a for 100% acrylic roof coating. A premium, elastomeric acrylic, white reflective coating. ElastaHyde is manufactured from premium resins, pigments and components producing an acrylic coating of the highest quality. ElastaHyde is a durable coating that will resist rigorous weather conditions while protecting roof surfaces and contributing to substantial energy savings. ElastaHyde #720 ARC meets the requirements of a "Cool Roof" and is listed by the "Cool Roof Rating Council" (CRRC). Western Colloid has determined that ElastaHyde #720 ARC meets the ENERGY STAR® guidelines for energy efficiency (white, Platinum Gray and California Tan only). Manufactured by Western Colloid. (ElastaHyde can be produced in colors) (ElastaHyde 790 may be used in place of ElastaHyde 720 when recommended by specifier.)

** Refer to current Technical bulletins for complete product data and proper application methods.
** Refer to SDS for proper handling procedures.

PART 3 - EXECUTION

3.1 PREPARATION: (prior to the application of the insulation and/or DensDeck® Prime)

3.1.1 The (wood) deck is to have all nails securely fastened and all joints of decking shall have gaps of no more than 1/4 in.. Repair or replace any areas where the wood deck has deteriorated.

The (concrete) deck shal be cured, smooth and uniform without any ridges or voids. The surface shall be clean and free from any dust and debris.

3.1.2 When existing roof is left in place; remove all loose gravel, dirt, dust and foreign debris by vacuum, sweeping or power blower. The entire roof surface shall be uniform without ridges or raised areas to facilitate the application of the unsulation and/or DensDeck® Prime.

3.1.3 When insulation is being installed; raise any curbs, flashings, vents, ect. to meet local or state code requirements.

3.2 APPLICATION - Insulation and/or DensDeck® Prime:

3.2.1 Insulation / Roof Board Installation. General Criteria;

1. Refer to individual Product Data Sheets (PDS) for Insulation, DensDeck® Prime and INSTA STIK™ for more specific instructions in handling their products.
2. Boards shall be installed according to local building code, insurance requirements and manufacture's instructions.
3. Boards shall be neatly cut to fit around penetrations and projections.
4. Install tapered insulation in accordance with insulation manfactures shop drawings.
5. When two or more layers of insulation and /or roof boards are used, stagger joints at least 12" in both directions between layers.

3.2.2 Attachment with Board Adhesive: Boards shall be adhered to the deck with approved adhesive according to the wind uplift rating requirements and associated ribbon spacing patterns. The maximium board size with board adhesives is 4 ft x 4 ft for insulation boards and 4 ft x 8 ft for roof boards.

3.2.3 DensDeck® Prime Joint Treatment: All joints, including terminations at penetrations, curbs and walls, on DensDeck® Prime shall be caulked and filled with #800 Elastic Cement or approved caulking. Gaps of ¼ inch or greater shall be three coursed using #800 Elastic Cement and 4 inch Polyester Fabric.

3.3 APPLICATION - Fluid Applied Reinforced Roofing Membrane

3.3.1 Base and Wall Flashings: Prior to the application of the membrane, install the base and wall flashings. First install the base flashing over the cant strip using one ply of 6" (or wider if needed) Polyester Fabric set into a full coat of 3 gallons per 100 sq.ft.(per ply) of ElastaHyde achieving full saturation and terminating at least 2" above the cant and extending onto the deck at least 2". Next install the wall flashing using one full ply of Polyester Fabric set into a full coat of 3 gallons per 100 sq.ft.(per ply) of ElastaHyde achieving full saturation. Polyester ply shall extend over cant onto deck and continue up wall to terminate as necessary, under counter flashing, reglet or wall cap flashing. Wall flashing shall extend out onto the deck at least 3" beyond the termination of the base flashing.

3.3.2 Edge Flashings: Install new gravel stops and metal edge where necessary. Use low or no rise metal edge manufactured or treated to accept a water based coating. Metal edge shall be nailed at 4" O.C.. Strip-in the metal with polyester fabric and #800 Elastic Cement making sure to cover all nails. Leave at least 2" of metal bare at edge to insure positive attachment and seal of polyester fabric in ElastaHyde to metal flange.

3.3.3 Vent and Pipe Flashings: If flange is removed and replaced or new flange is installed, set flange of metal "jack" in a bed of #8000 All Weather Elastic Cement and attach with nails. Strip-in the metal with polyester fabric and #800 Elastic Cement making sure to cover all nails. See section 3.2.7 for sealing of the cone and pipe after installation of the membrane. The new membrane shall terminate at base of the cone. **Do Not use #800 Elastic Cement to set the flange of a new flashing. Use only #8000 under the flange.**

3.3.4 Roof Drains: Prior to the application of the roofing membrane, remove clamping ring and clean as necessary. Clean all existing build-up of mastics and repair compounds from around the drain and sump. Three course using #800 Elastic Cement or #8000 All Weather Elastic Cement the entire drain sump area and extend into the drain bowl and extending a minimum of 18" from center of drain onto the deck (or as necessary to extend beyond drain sump). Allow to dry. Replace clamping ring. The roofing membrane system shall be

applied overlapping onto the reinforced Elastic Cement and cut around the clamping ring. The drain area will also receive an application of polyester reinforced ElastaHyde per section 3.3.8.

3.3.5 Misc. Flashings: Where sign anchors, equipment supports or other projections penetrate the roof membrane, seal with #800 Elastic Cement creating a "cone" shaped seal. Where large voids must be bridged use 1 ply of polyester fabric in the #800. Misc. flashings to be of #800 Elastic Cement and Polyester Fabric and to be constructed in a manner acceptable to the membrane manufacturer as necessary to meet the needs of each flashing detail.

Refer to Western Colloid detail drawings and notes for additional details and application information.

3.3.6 Membrane – Acrylic – First Ply: Over the properly prepared surface, apply a coat of ElastaHyde at a rate of 3 gallons per 100 sq.ft.. Immediately following and starting at the low edge of the roof, embed a 1/2 width of polyester felt continuing up the roof with full width sheets. Lightly broom each ply of polyester felt to achieve full saturation having no wrinkles or voids. Polyester shall terminate 2 inches above cant. Do not walk on polyester fabric during application causing displacement of the ElastaHyde. Allow to cure.

3.3.7 Membrane – Acrylic – Second Ply: Over the first ply, apply a coat of ElastaHyde at a rate of 2 gallons per 100 sq.ft.. Immediately following and starting at the low edge of the roof, embed a full width of polyester felt continuing up the roof with full width sheets. Lightly broom each ply of polyester felt to achieve full saturation having no wrinkles or voids. Polyester shall terminate 2 inches above cant. Do not walk on polyester fabric during application causing displacement of the ElastaHyde. Allow to cure.

3.3.8 Pipe Flashings & Penetrations – Surface Treatment: After the application of the membrane and before the reflective coating, apply #800 Elastic Cement and Polyester Fabric in a three course method to all pipe flashings, cones, exposed metal joints and flanges. Also apply #800 Elastic Cement to all corners at curbs and skylight flashings or any area that has been previously repaired with roofing mastic.

3.3.9 Drains & Special Areas of Ponding: Areas around drains and scuppers shall receive an extra ply of polyester fabric set in the ElastaHyde acrylic coating. In addition, valleys, waterways and any locations where water ponds for more than 48 hours shall receive an extra ply of polyester fabric set in the ElastaHyde acrylic coating. The extra ply is to extend 12 inches beyond the ponding area or as needed to extend beyond the drain sump. To this area set 1 ply of polyester into a 3 gallon per 100 sq. ft. application of ElastaHyde and broom lightly to achieve full saturation having no wrinkles or voids. This application shall be applied after the roof membrane and prior to the final coatings of ElastaHyde.

3.3.10 Reflective Coating - ElastaHyde: After the acrylic membrane has thoroughly dried apply reflective coating. Apply over the entire roof surface, a first coat of **ElastaHyde** elastomeric roof coating at a rate of 1½ gallons per 100 sq. ft. and allow to dry for 24 hours. Over the first coat apply a second (final) coat of **ElastaHyde** reflective surface coating at a rate of 1½ gallons per 100 sq. ft.. This shall be done in a "cross hatch" manner (each coat shall be at a right angle to the previous). Before application, mix well and strain if spray applying. Do not thin or dilute.

3.2.11 Seamless Walkway Coating: Where protection of surface coating and/or non slip surface is desired, apply #850 SWS Seamless Walkway Coating. Using short nap or smooth roller, apply to the properly prepared surface at the rate of 2 gallons per 100 sq. ft.. After first coat has dried (at least 24 hrs.) apply a second coat and the rate of 2 gallons per 100 sq. Ft.. It may be desirable to apply at a right angle to the first application to achieve a more desirable surface pattern. In all areas where increased resistance to puncture and membrane damage may be required such as roof doors and hatches and equipment service doors add an additional application of #850 SWS with a ply of polyester fabric. Apply the reinforcing layer of polyester fabric into a 2 gallon coat of #850 SWS and broom well to embed fabric. Allow to dry at least 24 hours. Apply the reinforced layer prior to the application of the 2 finished coats of #850 SWS described above.

3.3.12 Cleanup: Each day, remove from the job site, debris, scraps, containers and any rubbish resulting from the installation of the roofing system.