

FLUID-APPLIED MULTILAYER MEMBRANE SYSTEM SPECIFICATIONS
FOR MASONRY EXTERIOR WALLS

Part 1 –GENERAL

1.01 RELATED SECTIONS 1 DOCUMENTS

Fluid-Applied Detail Drawings, site specific drawings and General Provisions of the contract, including General, Supplementary and Special Conditions found herein apply to all the work addressed in this section.

1.02 SYSTEM DESCRIPTION

Extent of Fluid-Applied System work is indicated on the project drawings and is further defined by provisions of this section which includes exterior masonry walls, and any accessories integrally related to wall installation. Areas to be coated include existing exterior masonry walls. Final determination of the fitness of the Fluid-Applied System, or its components, for any given coating work may not be made by any representative of Manufacturer, other than a member of Manufacturer's Technical Department.

1.03 PERFORMANCE REQUIREMENTS

Exterior masonry wall coating operations shall prevent the intrusion of moisture into the building by flashing all wall penetrations and encapsulating all exposed wall areas of the structure.

1.04 SUBMITTALS

- A. Product Data: Provide data describing physical and performance characteristics and limitation including coating thickness for primer and finished surfacing, reinforcing repairs, etc.
- B. Shop Drawings: Provide complete system drawings, including fully dimensioned construction details, terminations for flashing treatment, etc.
- C. Samples: 1. Submit color chart of all finished coatings to be used.
2. Submit sample illustrating selected profile, surface texture and color.
- D. Installers Certificate: Certifying that the products and systems have been installed according to manufacturer's installation instructions and applicable codes and ordinances.
- E. Manufacturer's Installation Instructions: Include installation sequence, special instructions and Material Safety Data Sheets.
- F. Manufacturer's Certificates: The following certificate, statement, and notice must be submitted with bid package.
 - 1. Copy of Manufacturer's ISO 9001/2000 Registration Certificate.
 - 2. Manufacturer's statement indicating that products meet or exceed all specified requirements and that systems have been designed according to applicable codes and ordinances.
 - 3. Manufacturer's Notice of Intent to Warranty Project.
- G. Maintenance Data: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- H. Substitute Products: Specifications and testing documentation for any products designated as an "approved equal" must be submitted not less than ten days prior to bid opening in order to be approved.
- I. Contract Closeout Submittals:
 - 1. Project Records Documents
 - 2. Contractors two-year Labor and Material Warranty
 - 3. Manufacturer's Ten Year Warranty (submit copy of applicable warranty)
 - 4. Submit all warranties from both the factory and local company representing and installing the products

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide primary products, including Fluid-Applied Membrane Finish Coat, Fluid Applied Waterproof Membrane, Reinforcing Fabric, Corrosion Primer, etc., by a single Manufacturer, which has produced this type of product successfully for not less than fifteen (15) years. Provide secondary products only as approved by Manufacturer for use with the specified Fluid- Applied Wall System.
- B. Multi-Layer Materials: All multi-layer materials shall be color coded for on-site inspection and quality control.
- C. Applicator Qualifications: A single Applicator or Firm shall perform all work addressed in this section, shall be certified by Manufacturer for installation of the Fluid-Applied Wall System and shall meet all federal state, and local requirements.
- D. Contractor Requirement: Contractor shall use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specific requirements and methods needed for proper performance of the work in this section.
- E. Owner Testing: The right is reserved by the owner to invoke the following testing procedures at any time during the period of field coating:
 - 1. The owner, at his expense, may engage the services of an independent testing laboratory to sample materials being used . Samples of materials delivered to the project site shall be taken, identified and sealed, and certified in presence of contractor
 - 2. Testing laboratory may perform whatever tests are applicable to products that have been requested to be tested by the owner.

1.06 FIELD QUALITY CONTROL

- A. If any reduction of the coating's viscosity is necessary, it shall be done in accordance with the manufacturer's directions.
- B. The coating may not be adulterated by the addition of any substance without the manufacturer's written consent.
- C. Measure coating film thickness in accordance with SSPC PA2. Retain records of testing for 12 months. For non metallic surfaces measure thickness with a Tooke guage or other approved measuring device in accordance with gauge manufacturer's instructions.
- D. Record batch numbers and retain samples of each batch for 12 months.
- E. Record material quantities used. Retain records for 12 months.
- F. A field quality control inspection shall be completed to owner for approval signature at regular intervals.
- G. Exercise due care to prevent the contamination of nearby surfaces. Identify surfaces not to be coated and protect those surfaces by covering, masking or other means.

1.07 REGULATORY REQUIREMENTS

- A. Coatings Regulations: All coatings must conform to all state and local regulations including VOC rules at the time of application. The contractor that performs this work shall be fully responsible for having his equipment comply with current regulations and to have available all Material Safety Data Sheets that pertain to the products being used.
- B. Reference Specifications: Any materials or operation specified by reference and published specifications of a manufacture, The American Society for Testing Materials, Steel Structures Painting Council(SSPC)-"Steel Structures Painting Manual" (Vols I and II), and National Bureau of Standards-"Organic B557", and other published standards shall comply with the requirements of the current specification or the standard listed. In case of a conflict between the reference specification and these project specifications, these project specifications shall govern.
- C. Flame Spread Evaluation: Provide Fluid-Applied Wall System and component materials which have been evaluated by laboratories for flame-spread, and are listed in recognized ASTM literature for Class A construction over existing metal or other non-combustible materials. (Flame-spread must pass ASTM #E-108 and/ or meet UL standard UL 790)

1.08 INSURANCE CERTIFICATES

Assist owner in preparation and submittal of wall installation acceptance certification as may be necessary in connection with extended coverage insurance on wall and associated work.

1.09 PRE-INSTALLATION MEETING

Approximately two (2) weeks prior to scheduled commencement of installation and associated work, conduct meeting at the project site with Installer, Architect/Owner, Manufacturer's Representative and any other persons directly concerned with the performance of the work. The Installer shall record conference discussions to include any decisions and any agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to work, including but not necessarily limited to the following:

- A. Tour representative areas of wall substrates to inspect and discuss conditions of substrate, penetrations and other preparatory work to be performed.
- B. Review Fluid-Applied Wall System requirements (Fluid-Applied Specifications, Detail Drawings and other contract documents).
- C. Review required submittals, both completed and yet to be completed.
- D. Review and finalize construction schedule related to project work, and verify availability of materials, Installer's personnel, equipment and facilities needed to consistently make progress and avoid delays.
- E. Review required inspection(s), testing, certifying and material usage accounting procedures.
- F. Review weather and forecasted weather conditions, as well as, procedures for coping with unfavorable conditions.

1.10 SEQUENCING AND SCHEDULING:

- A. Coordinate work under provisions of applicable section.
- B. Coordinate work with other trades and work to insure sufficient materials and man-power are available.

1.11 DELIVERY, STORAGE AND PROTECTION

- A. Store and handle Fluid-Applied Materials in a manner which shall ensure there is no possibility of contamination. Store in a dry, well-ventilated, weather-tight place at temperatures between 40°F and 110°F until product is ready to be applied. Do not stack material pallets. Please note that all fluid applied materials are packaged in plastic containers.
- B. Fluid applied materials shall be kept from freezing and direct sunlight.
- C. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact. Include test report data.
- D. Store products in weather protected environment clear of ground moisture.
- E. Do not store more materials in open areas than can be installed within two days unless special permission is given.
- F. During long term storage, containers should be turned upside down or shaken every 3 months.

1.12 ENVIRONMENTAL CONDITIONS

Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with Manufacturer recommendations and warranty requirements as follows:

- A. Do not begin work if rain is expected or if temperatures are expected to fall below 40°F during the following 48 hours.
- B. Upper temperature restriction (both air and substrate) for application of Fluid-Applied products is 140°F. If substrate temperatures exceed 140°F, products should be applied during cooler periods of the day. *No moisture can be present when applying Fluid-Applied products.*

- D. Taking into consideration the UV curing properties of the Fluid-Applied Membrane and Flashing Grade, allow for sufficient daylight hours necessary for curing of materials. Allow 2 to 3 hours for full sun. Do not apply more than two coats of material in one day.
- E. Do not apply coatings or repair materials during inclement weather.
- F. Exterior coating shall not be undertaken if the meteorological forecast indicates any probability of precipitation within two hours of application or if the forecast indicates a probability that the surface temperature will drop below freezing within 48 hours of application.
- G. When the environmental conditions are highly caustic (i.e. acid rain or high concentration of aggressive chemicals in the air), two coats of metal primer with a minimum total dry film thickness of 4 mils is required on all metal surfaces.
- H. During progress of work, remove from project site discarded materials, rubbish, cans and rags resulting from work.

***CAUTION.** Other weather and environmental conditions to consider are mist, dew, condensation and relative humidity. These factors can lengthen product drying times. If various products are exposed to rain before they are completely dry, product may 'wash-off'.*

1.13 SUBSTRATE CONDITIONS

If any questions arise regarding the compatibility of Fluid-Applied products with an existing substrate, Installer shall prepare test patches to check adhesion. Always contact Manufacturer's representative concerning questionable substrates, required additional information and recommended test patch materials.

1.14 SURFACE PREPARATION

- A. Surfaces shall be prepared, clean, and dry at the time the coatings are applied.
- B. Unsound existing coatings shall be removed. Sound, adherent existing coatings shall be tested for compatibility by application and testing of a trial patch.

1.15 WARRANTY

Provide Manufacturer System Warranty per the requirement of the Building Owner and/or Project Architect. In order to obtain any Manufacturer System Warranty, the following conditions apply:

- A. Provide two year warranty from installer covering faulty workmanship and/or deviation from approved details or specifications.
- B. Provide ten year Manufacturer's Product Warranty on coatings. Optional System Warranty shall provide for full repair and/or replacement of any and all coatings found to be defective.
- C. Determination of the appropriateness of the Fluid-Applied System for any given project must be obtained from Manufacturer's Technical Department prior to offering any Manufacturer System Warranty. Manufacturer will refuse to offer a warranty on any Fluid- Applied System being installed over an unfit, unsound or inappropriate substrate.
- D. Projects requiring a Manufacture's System Warranty may only be performed by a Manufacture's Certified Applicator.
- E. In order for a project to qualify for a Manufacture's System Warranty, the system must be applied to the full project area. A System Warranty will only be issued on a partial area of any project with the written pre-approval of the Manufacture's Warranty department.
- F. Immediately after contract award, Installer shall submit the appropriate section of the System Warranty Form to the Manufacturer's Warranty Department. Installer shall provide a copy of the project drawing, plus photographs which include descriptions of the project and all unusual flashing details, with the form. Before, during, and after photos shall be submitted with a fully completed project profile to Manufacturer at the end of the project prior to warranty issuance.

- G. Installer shall provide Manufacturer's Warranty Department at least two (2) weeks notice for scheduling of on-site technical support / inspections.
- H. Fluid-Applied Membrane must be spray-applied. Any installation where Fluid-Applied Membrane will be applied by another method must be pre-approved in writing by the Manufacturer's Warranty Dept. Note: *Applications other than spray-applied will require additional coats to meet the application specification milage requirements.*
- I. Completed Project Profile forms must be returned by the contractor upon project completion to the Manufacturer's Warranty Department with appropriate Installer's signature to initiate issuance of warranty.
- J. The manufacturer will provide a warranty maintenance inspection program to be determined by the type of warranty issued. A Manufacturer's representative will inspect project after completion and contractor shall provide warranty inspections throughout the duration of the warranty period.
- K. Warranty period shall not be pro-rated or for a term of less than ten years.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Insulating Coatings Corporation (ASTEC Fluid-Applied Coating System) Tel (352-344-8741)
- B. Or Approved Equal

2.02 COATING MATERIALS: EXTERIOR WALLS (or approved equal)

- 1. ASTEC #4000 Surface Conditioner
- 2. ASTEC B-16-71 Metal Primer
- 3. ASTEC CMCE Masonry Primer
- 4. ASTEC 2001 Caulk
- 5. ASTEC Crack Patch
- 6. ASTEC WPM #9 Brush & Roll Grade Waterproof Membrane
- 7. ASTEC “Pol-E-Force” Reinforcement Cloth
- 8. Polyurethane Filler Foam
- 9. ASTEC #900 Ceramic Finish Coat

- A. Primer/Conditioner: ASTEC 4000 Surface Conditioner (or approved equal)

White, water-based adhesion promoting primer designed to enhance the adhesion of the Fluid-Applied System to pre-painted or coated walls, and/or chalking or oxidized surfaces including those containing fluoropolymers or siliconized polyesters. Due to the wide variety of pre-applied finishes, suitability of Pre-Finished Primer must be tested on an individual basis. Do not apply in temperatures under 40°F or when freezing may occur within 48 hours of application.

Application Rate:	200-300 sf/per cut gallon
Application Method:	brush, roll or spray
Application Temperature (air, surface):	40F and rising
Drying Time (75°F, 50% RH):	1-2 hours touch dry, 48 hours full dry, 21 days full cure
Total Solids:	(by weight): 58%, (by volume): 54%
Dry Film Thickness:	1-2 mils
Specific Gravity / Weight per Gallon:	9.5 lbs.
Pigments:	Clear
Flash Point:	Non-flammable

B. Rust Inhibitor: ASTEC B-16-71 Metal Primer (or approved equal)

Light gray-pigmented, water-based rust inhibitor to be applied over any rusted areas. Do not apply in temperatures under 40°F or when freezing may occur within 48 hours.

Application Rate:	Min. 300 sf/gallon per coat, 148 sf/gallon combined two coats
Application Method:	Brush, roll or spray, require two coat application
Application Temperature (air, surface):	40F and rising
Drying Time (75F, 50% RH):	2-8 hours dry to touch, 24 hours full dry
Total Solids (by weight):	43% (by volume): 37%
Specific Gravity / Weight per Gallon:	10.8 lbs.
Dry Film Thickness:	2-4 mils
Flash Point:	200F
V.O.C.:	Compliant

C. Masonry Primer: ASTEC CMCE (or approved equal)

A concentrated, clear terpolymer formulated to penetrate and prime masonry or masonry surfaces. It is designed to encapsulate and “lock down” loose particles and any cementitious dusting prior to application of coating products.

Application Rate:	400 sf/cut gallon
Application Method:	Brush, roll or spray
Application Temperature (air, surface):	40F and rising
Drying Time (75F, 50% RH):	1 hour dry to touch, 48 hours full dry, 21 days full cure
Total Solids (by weight):	55% (by volume): 51%
Specific Gravity / Weight per Gallon:	9.5 lbs.
Dry Film Thickness:	1 mil
Flash Point:	Non-Flammable

D. Caulk ASTEC #2001 Acrylic Latex Caulk (or approved equal)

A white modified acrylic industrial grade caulk with the consistency of a smooth paste that exceeds ASTM C-834 specifications. Applied as specified, is intended for sealing out moisture and filling cracks and voids to provide a contiguous surface substrate for subsequent coatings.

Application Rate:	500 lin ft/gallon @ ¼ in. bead
Application Method:	Caulk gun or trowel
Drying Time:	75F, 20 minutes tack free, 4-6 hours full dry
Total Solids:	(by weight): 82.5% (by volume): 71%
Weight per Gallon:	13.5 lbs.
V.O.C.:	Compliant
Flash Point:	Non-flammable

E. Crack Patch: ASTEC Crack Patch Sealant (or approved equal)

An elastomeric compound formulated to patch and seal hairline or large cracks. It will adhere to masonry, brick, metal, glass, wood, plastic, wallboard, non-ferrous and primed ferrous metals.

Weight/gal	9.65 lbs.
Solid Contents	73%(by weight) 62% (by volume)
Coverage Rate	495 sf/per gal
Elongation	600% break
Tensile Strength	250 PSI
Moisture Vapor Perm	10.1 perms
Solvent Type	Water
Flash Point	Non-Flammable
Specific Gravity	1.16
Average Dry Time	2 hours touch dry 48 hours full dry 21 days full cure
@ 75°F	

F. Flashing Grade (Brush & Roll Formula) ASTEC WPM #9 Waterproof Membrane (or approved equal)

A fluid applied membrane which dries without tackiness yet is flexible providing a monolithic surface that will not permit passage of water. Applied as specified, it is intended for use on walls, over seams, joints, and flashing repairs.

Application Rate:	Minimum 100 sf/gallon
Application Method:	Brush or roll, required two coats
Application Temperature (air, surface):	40F and rising
Drying Time (75°F, 50% RH):	1-2 hours touch dry, 48 hours full dry, 21 days full cure
Total Solids:	(by weight): 60%, (by volume): 51%
Specific Gravity / Weight per Gallon:	11.1 lbs.
Dry Film Thickness:	10 mils per coat
Flash Point:	Non-flammable
Elongation Break:	683%
Tensile Strength:	792 PSI

G. Reinforcing Fabric ASTEC Pol-E-Force Polyester Cloth (or approved equal)

Non-woven, spun-bonded polyester fabric that must be used in conjunction with waterproof membrane at all seams, penetrations, joints or changes in elevation. Use of Reinforcing Fabric is mandatory on all expansion joints, wall penetrations, and flashings.

Reinforcing Fabric Roll Sizes:

(2"x100'),(4"x100')
(4"x360'),(6"x360')

H. Single Component Polyurethane Filler Foam

A one component polyurethane filler foam for sealing open voids from air and moisture intrusion. Can be used to seal large open voids to areas as small as 1/8".

Recommended product: Hilti brand CF 128 Polyurethane Filler Foam

Flash Point: Non-flammable

I. Fluid-Applied Finish Coat: ASTEC #900 Ceramic Acrylic Finish Coat (or approved equal)

A ceramic insulating coating that is a fluid-applied acrylic material incorporating heat reflectivity and dissipating ceramic particles in an extremely durable and flexible adhesive coating that dries to a linen like texture.

Application Rate:	110-145 sf/gallon
Dry Film Thickness:	6-8 mils
Application Method:	Brush, roll or spray
Application Temperature (air, surface)	40F and rising
Drying Time (75°F, 50% RH):	1-2 hours touch dry, 48 hours full dry, 21 days full cure
Total Solids:	(by weight): 59%, (by volume): 55%
Weight per Gallon:	10.2 lbs.
Prime Pigment:	Titanium
Flash Point:	Non-flammable
Fungal Resistance:	Highest rating

Warranty Program ASTEC #900 Finish Coat:

Dry Film Requirements:

10 Year Limited Product Warranty: 6 to 8 mils dry film thickness (finish coat only)

10 Year System Warranty:* 14-16 mils dry film thickness (finish coat plus waterproofing)

*Warranty Fee and Inspection/Maintenance Program Required

J. Airless Sprayer & Accessories:

As recommended by Manufacturer's Technical Department for application of sprayable Fluid-Applied Ceramic products.

Maintain 3000 PSI @ 2 gals/minute

728 Spray Tip, 14 Inch Fan, .028 tip opening, (change tip every 250 gal. sprayed)

K. Pressure Cleaning Equipment:

A minimum 3000 PSI @ 3 gals/minute.

2.03

Products: Test, Properties & Approvals

Standard	Physical Property	Results
Fluid Applied Waterproof Membrane ASTEC WPM #9 (or approved equal)		
ASTM D-2370	Tensile Strength	792 PSI
ASTM D-412	Elongation at break	683%
ASTM DCD-890	Peel Adhesion	4.0 cp dry
75F, 50%	Relative Humidity	2.0 cp wet
ASTM E 96-A	Water Vapor	0.61 Permeance
ASTM B-117	Salt Spray	No rust, no change
Fluid Applied Finish Coat ASTEC #900 (or approved equal)		
ASTM 1549	Solar Reflectance	86.5%
Emissivity	Heat Flux	90.0%
ASTM E-108	Flame Spread	Class A non combustible deck
ASTM 653	2000 Hour Accelerated Weathering	Passed, no cracking
ASTM D-522	Conical Mandrel Bend	No cracking
ASTM D-2794	Impact Resistance	No rupture
ASTM D-3359-92a	Adhesion	No peeling
ASTM 1308-87	Chemical Resistance	No change
ASTM G-26-92	Exposure Weatherometer	Passed
ANSI/NSF 61	Potable Water	Passed
ASTM D-2370-82	Tensile Strength	110%
ASTM D-2697	Volume Nonvolatile Matter	53.37%
UL 790	Flame Test	Class A non combustible deck
ASTM B-117	Salt Fog Chamber	7 Passed
FMRC	Hail Damage Class 1-SH	No cracking, splitting, rupture, separation or delamination
FMRC	Susceptibility to Leakage Test	No leakage

PART 3 – EXECUTION

- 3.01
1. PREPARATION OF SUBSTRATE
 - A. Examine Substrates to receive new coating. Do not proceed with installation of the Fluid-Applied System until unsatisfactory conditions have been corrected in a manner acceptable to the Manufacturer.
 - B. Verify that surfaces and site conditions are ready to receive work.
 - C. Verify the surface is clean and smooth.
 - D. Verify that the surfaces are dry.
 - E. Verify that existing structure and surfaces are sufficiently sound to receive project application specified.
 - F. Take site dimensions affecting Work of this Section.
 - G. Report any discrepancies to the Owner or his representative in writing.
 - H. Beginning of installation means installer accepts existing surfaces.
 - I. A sample area from the masonry walls will be mutually agreed upon by all parties; owner, Manufacturer, Contractor and Consultant. These areas will be treated with specified materials and allowed to cure so as to allow check for adhesion, drying rates, finished thickness and the like. No work is to proceed prior to acceptable test results.
 2. THOROUGH CLEANING / REMOVAL OF EXISTING PAINTS AND COATINGS: Masonry substrate must be hydro-washed with water. A minimum working pressure of 3000 psi shall be used to remove all dirt, dust, previous paints, or coatings which are delaminating and waste products (oil, oil-based cements, solvents, grease, animal fats, etc.). All existing silicone-based sealants must be completely removed from prior to application of Fluid-Applied products.
 3. TREATMENT OF MOLD AND MILDEW: Pressure clean with a minimum 3000 PSI to remove all mold and mildew. Treat any mold or mildew areas with a bleach solution (1 part bleach and 3 parts water), let stand for 15 minutes and rinse.
 4. TREATMENT OF RUST AREAS: All rust areas must be treated with Rust Inhibitor to prevent further deterioration of the existing metal. Prior to Rust Inhibitor application, remove all loose, flaking or powdery rust by wire brushing if it has not been removed during the pressure washing. All rust shall be completely covered by the Rust Inhibitor in a two coat application. A third coat of Rust Inhibitor is required for heavily rusted areas. Since Rust Primer is designed to convert and inhibit rust, only rusted areas need be addressed with the product.
 5. METAL PRIMER: Apply two coats of ASTEC B-16-71 (or approved equal) (dry to touch between coats) as a spot primer to all corroded areas and fasteners to provide a minimum DFT of 4 mils.
 6. Previously Painted Galvanized Steel
 - A. All surfaces shall be clean, free of grease, oil and other contaminants.
 - B. Loose, peeling, chalky and defective existing coatings shall be removed by scraping, sanding, wire brushing or high pressure water blasting.
 - C. White rust (zinc salts) on galvanized surfaces shall be abraded or power washed to remove all deposits.
 - D. Patches of red rust areas shall be abraded clean and spot primed with two coats of ASTEC B-16-71 (or approved equal) for a total of 4 mils DFT.
 7. Ungalvanized Steel
 - A. Solvent and detergent cleaning shall be used initially to remove oil, grease and dirt in accordance with SSPC-SPI.
 - B. Corrosion products (white rust) shall be removed by lightly rubbing with an abrasive plastic pad.
 - C. New bright galvanized surfaces are to be roughened to a dull grey appearance by light abrasion.
 - D. Fasteners shall be primed with two coats of ASTEC B-16-71 (or approved equal).

8. Aluminum

- A. Surfaces shall be clean, free of grease, oil and other contaminants in accordance with SSPC-SP1 "Solvent Cleaning".
- B. Loose, peeling, chalky and defective existing coating shall be removed by scraping, sanding or high pressure water blasting.
- C. Surfaces shall be clean and dry at the time coating is applied.

3.02 APPLICATION AND INSPECTION INFORMATION

- A. Preliminary Work / Flashing Details: Preliminary work consists of substrate preparation (addressed earlier in this specification) and all flashing details. After completion of substrate preparation, all penetrations must be flashed with either 4" or 6" Reinforcing Fabric and ASTEC WPM #9 Brush & Roll (or approved equal) in accordance with Fluid-Applied Detail Drawings. Brush and roll grade must be feathered at the edges so that water can easily flow over the various flashing details. Additional flashing requirements are as follows (see also current Detail Drawings):
- B. Inspect Preliminary Work / Flashing Details for problem areas (e.g., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Pipe boots shall be flashed using Flashing Grade and Reinforcing Fabric as described above.
- C. Inform Project Architect and Manufacturer's Warranty Department when all preliminary work and flashing details will be complete and the Installer is ready to proceed with application of Fluid-Applied Roofing Membrane. Allow a minimum of two (2) weeks for the interim inspection to be made by the Manufacturer's Technical Department. Any final installation prior to this interim inspection is subject to rejection by the Project Architect and/or the Manufacturer's Technical Department.
- D. Coating Application(s) Warranty Requirements
 - 1. 10 Year Manufacturer's Turn Key Warranty (optional)
 - a. Prime new masonry surfaces with ASTEC CMCE Masonry Primer at a rate of 400 sq/ft per cut gallon to the entire surface.
 - b. Prime older or pre-painted surfaces with ASTEC #4000 Surface Conditioner at a rate of 200-300 sq/ft per cut gallon.
 - b. Apply WPM #9 Base Coat Waterproof Membrane over entire wall surface at a rate of 100 sq/ft per gallon at a minimum 8 mils DFT.
 - c. Apply ASTEC #900 Ceramic Finish Coat to the entire wall surface at a rate of 110-145 sq/ft per gallon or minimum 6-8 mils resulting in a finish system of no less than 14-16 mils. Unsatisfactory areas must be repaired.
 - 2. 10 Yr. Manufacturer's Product Warranty
 - a. Prime new masonry surfaces with ASTEC CMCE Masonry Primer at a rate of 400 sq/ft per cut gallon to the entire surface.
 - b. Prime older or pre-painted surfaces with ASTEC #4000 Surface Conditioner at a rate of 200-300 sq/ft per cut gallon.

- c. Apply ASTEC #900 Ceramic Finish Coat to the entire wall surface at a rate of 110-145 sq/ft per gallon resulting in a finish no less than 6-8 mils. Unsatisfactory areas must be repaired.

E. Exterior Wall Details:

This specification provides for a flexible Fluid-Applied Ceramic Coating System for exterior vertical masonry surfaces such as fascias, mansards, and walls. This system is tough, flexible and is unaffected by heat, cold or rapid changes in temperature. This ceramic coating system will effectively cover the profiles of textured substrates and repair areas.

1. Substrate Preparation

- a. Remove all loose debris and pressure wash entire surface with high pressure spray (min 3000 psi) to achieve a clean surface free of dirt, oil and residuals of any other contaminants.
- b. Any additional chipping, flaking or peeling paint shall be made sound by additional scraping and sanding as necessary.
- c. Cracks exceeding 1/16" wide shall be saw cut or routed. Caulk all routed cracks with 100% acrylic caulk or equal.
- d. Any surface showing the presence of mildew shall be neutralized prior to coating with a light bleach solution and rinsed thoroughly.
- e. All large breakout or deviations shall be removed and rebuilt with new cementitious material as approved by consulting engineer.
- f. Trenching 4"-6" at the base of the masonry wall below grade shall be required prior to coating application.
- g. Masonry shall be a smooth and contiguous surface free of voids or sharp projections.

2. Application:

- a. Apply ASTEC CMCE Masonry Primer (or approved equal.) to new masonry surfaces.
- b. Apply ASTEC B16-71 Metal Primer (or approved equal) to all rust areas.
- c. Apply ASTEC #4000 Surface Conditioner (or approved equal) to previously painted or coated surfaces that remain chalky after proper cleaning.
- d. Apply ASTEC WPM #9 Waterproof Membrane (or approved equal) to the entire surface. When applied as specified, it is intended for use on walls, seams, joints, and flashing repairs. Back roll waterproof base coat to eliminate pin holing. This product is intended as a base coat to be covered with a finish coat. Waterproof base coat application is mandatory on masonry projects requiring a Manufacturer's System Warranty or projects exceeding two stories in height.
- e. Apply two coats of ASTEC #900 Ceramic Coating (or approved equal) a fluid applied finish coat of 100% acrylic, 93% reflectivity or greater, 90% emmissivity.

- F. Inform Project Architect and Manufacturer's Warranty Department when final spray application will be complete. All warranted installations of the Fluid-Applied Wall System must be inspected upon completion by a representative from Manufacturer's Technical Department. Installer shall repair all defective work found during the final inspection. Installer shall repair all damages to walls which has occurred subsequent to installation and prior to final inspection.

3.04 OTHER ITEMS

- A. Installer shall take photographs of representative project including detail work, and submit a copy to the architect, and Manufacturer's Representative if required at the following intervals (minimum):
 - 1. Before work commences.
 - 2. After wall has been thoroughly cleaned and prepared for application of Fluid-Applied Roofing System products.
 - 3. After all flashing and detail work has been performed.
 - 4. After spray application of fluid-Applied Membrane.
- B. Installer shall provide the following support for on-site inspections by a representative from Manufacturer's Representative. (list is not comprehensive):
 - 1. Representative from Installer's company who has authority to make binding decisions
 - 2. Required means to access all areas of the project.(e.g., various ladders)
 - 3. Previous photographs of the project including test patch results, as applicable
 - 4. Fluid-Applied products and application equipment required to repair surface areas where destructive tests are to be performed by the Manufacturer's Representative.
 - 5. Mil Reading report to be furnished to architect and Manufacturer's Representative, if required.
- C. Special care must be taken to avoid shading when spraying dark Fluid-Applied Roofing Membrane colors. When applying a dark Fluid-Applied Membrane color, Installer must apply a mist coat in white to cool surface and be very careful to always spray wet material on to wet material so that spray lines do not appear. Manufacturer highly recommends installation of any dark-colored finish coat by spraying two lighter coats (instead of one heavy coat) using a smaller orifice spray tip
- D. Installer shall take special care when moving spray hoses and other equipment as to not damage other equipment in the project area. Also, all spray equipment shall remain on the ground for the duration of the job. If there will be an extended period of time (6 months or greater) between application of base and finish coats, recommend use of white for the base coat (versus gray). Also, base coat must be thoroughly cleaned before application of the finish coat.

3.05 LIMITATIONS:

- A. Coating application shall not commence during inclement weather, when precipitation appears imminent, or when freezing may occur within 48 hours. Coating shall not be applied to wet, dirty or structurally unsound surfaces.
- B. When applying ceramic coatings to thin substrates, it is always necessary to have at least a minimum amount of conductive insulation in order to prevent condensation. This minimum amount will vary from area to area and application to application. When applying over hot surfaces, apply a thin coat to pre-cool surface before heavier applications.
- C. Drying Times: Listed drying times for various Fluid-Applied products are directly affected and influenced by environmental conditions and thickness of application. Additional drying time must be allowed when experiencing high relative humidity, low temperatures and/or very thick product application to prevent improper curing and/or product "wash-off". (refer to manufacturer's specifications)

3.06 CLEANING

- A. Remove visible marking from finished areas and surfaces leaving all exposed surfaces smooth and free of imperfections.
- B. In areas where finished surfaces are soiled by any other source caused by Work of this Section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or disfigured finishes caused by Work of this Section.

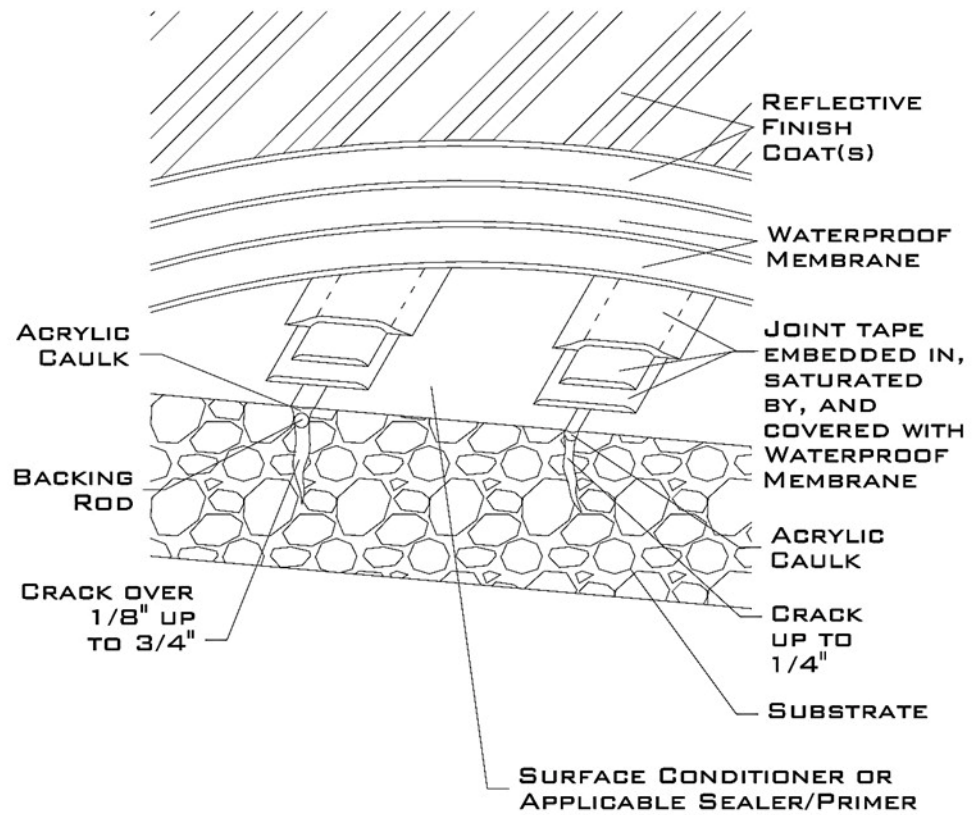
- D. Upon completion of an area, it shall be left in a clean and orderly condition and all coating spatters, contaminated rags and debris removed.
- E. Upon completion of the job, all surplus materials, scaffolds, etc. that relate to the job shall be removed from the site. Clean all window glass free of excess coating and spatters and remove coating that has been misplaced on other surfaces.

3.07 MANUFACTURER'S FIELD SERVICES

- A. Request site attendance of roofing materials manufacturers during installation of the work.
- B. Finished project shall be inspected by manufacturer's technical representative. All issues or corrective actions shall be performed. Provide owner with 10 year warranty and periodic on site inspections through out the warranty period.

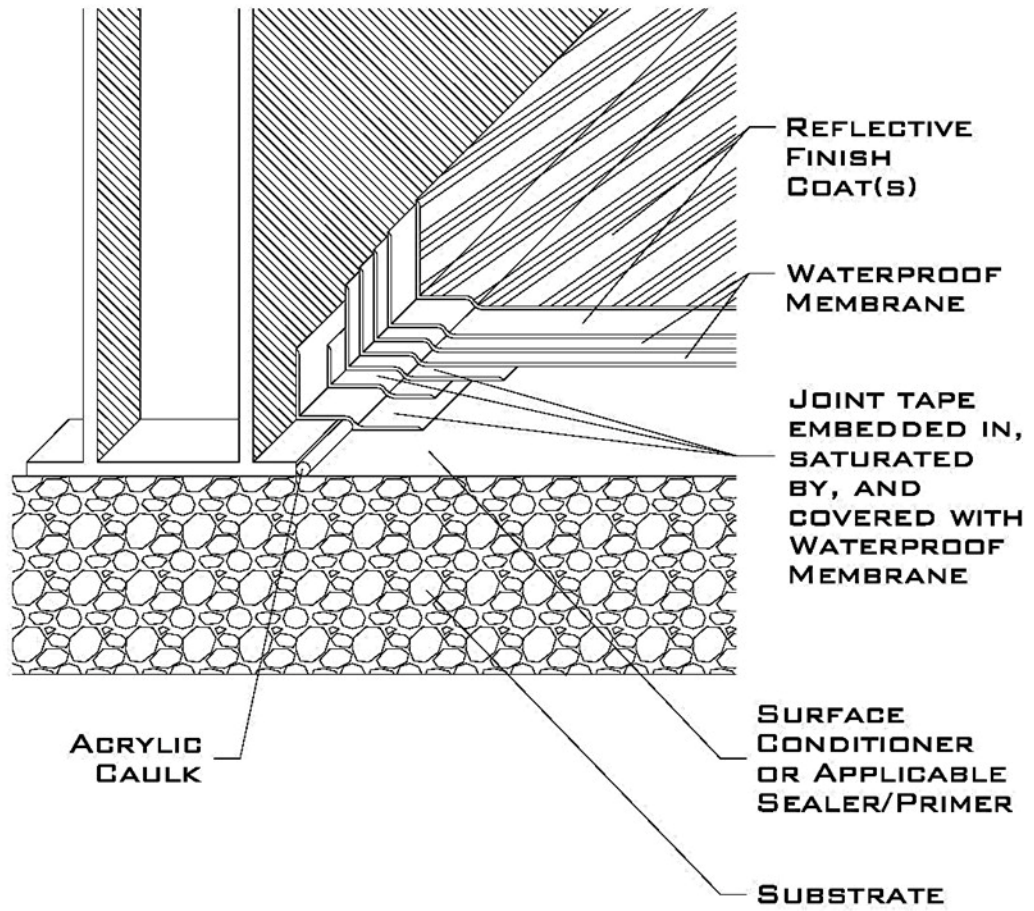
3.08 ARCHITECTURAL DRAWINGS

A. SPLITS AND CRACKS DETAIL



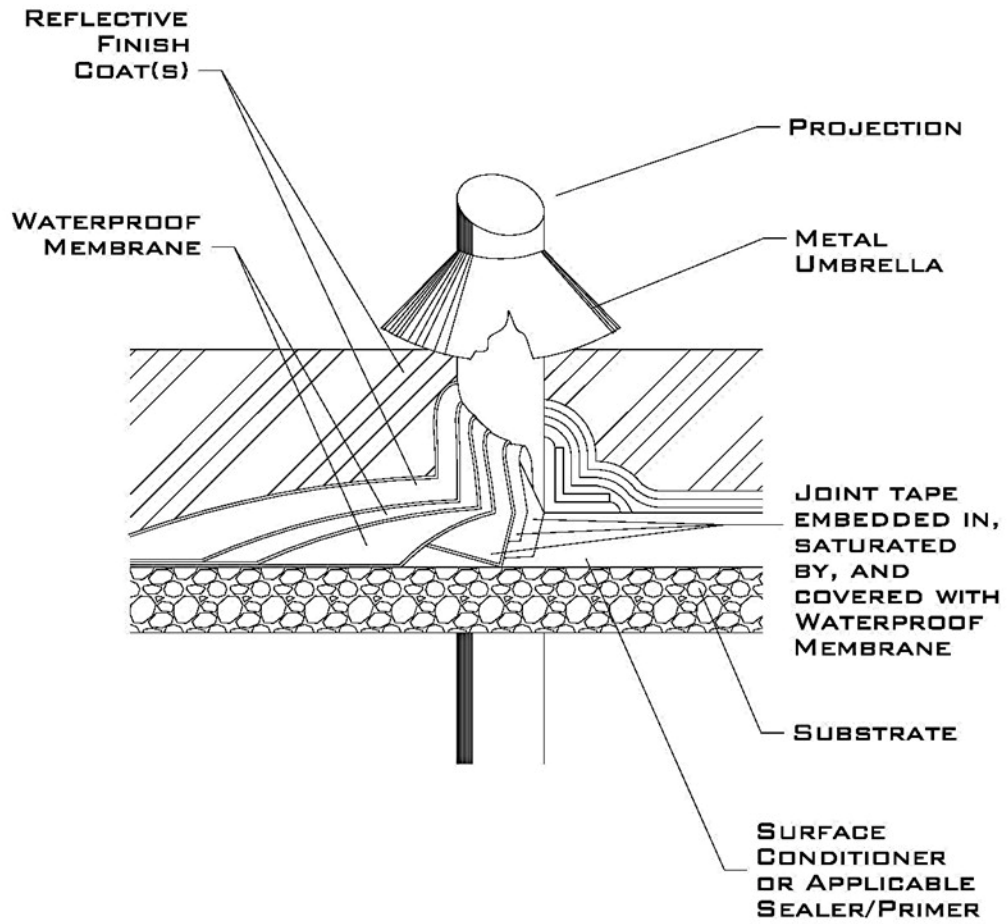
CRACK OR SPLIT DETAIL

B. I BEAM AND STANCHION DETAIL



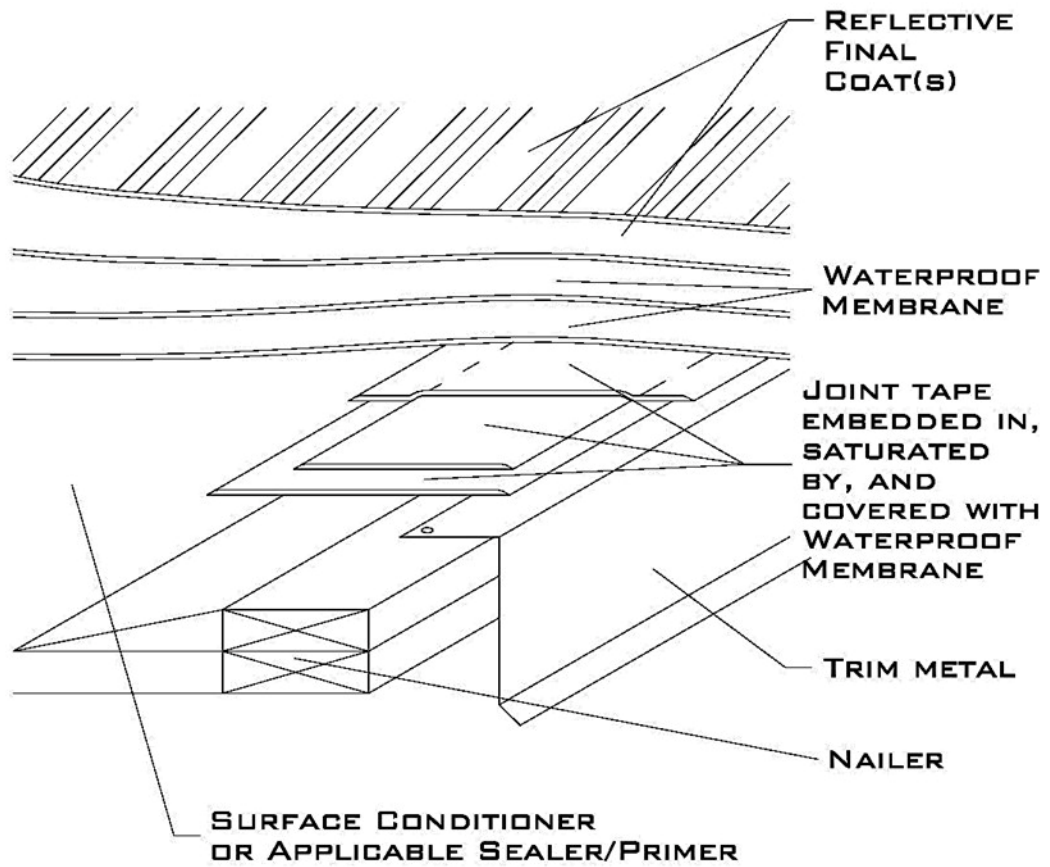
I BEAM OR STANCHION DETAIL

C. PIPE OR PENETRATION DETAIL



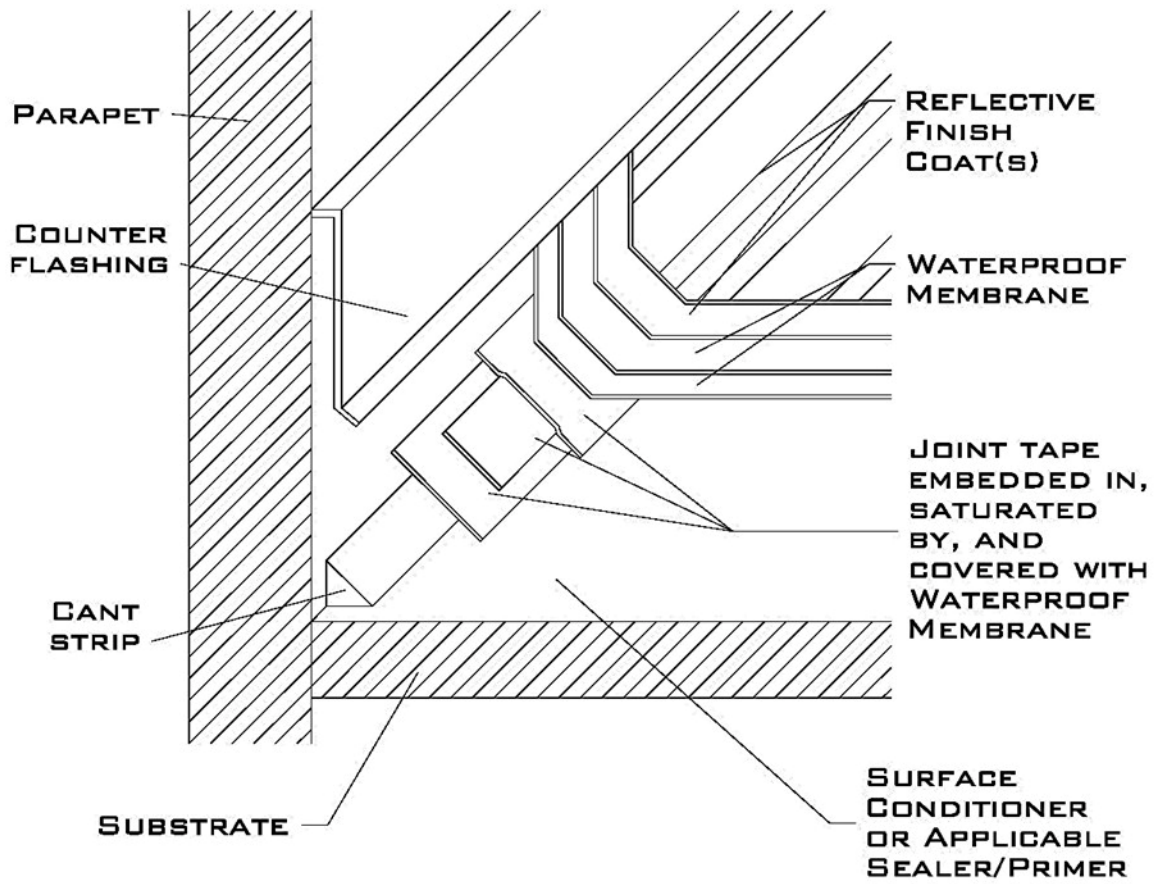
PIPE OR PROJECTION DETAIL

D. ROOF EDGE TRIM METAL DETAIL



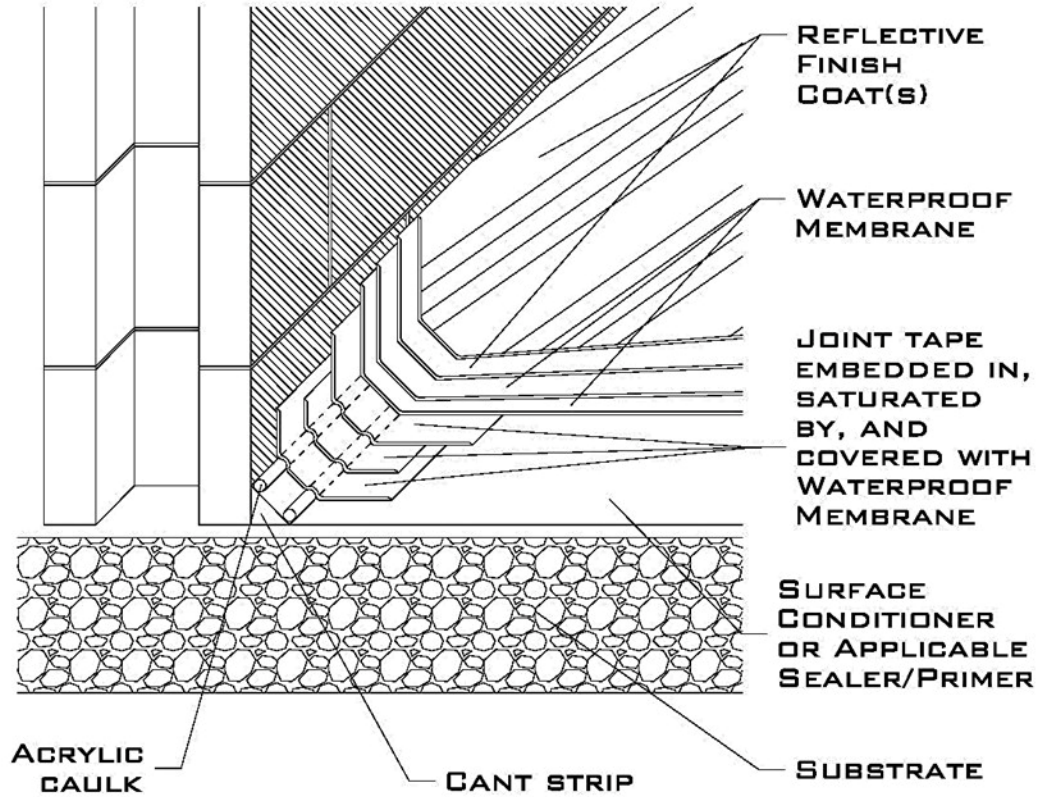
ROOF EDGE TRIM METAL DETAIL

E. PARAPET FLASHING DETAIL



PARAPET FLASHING DETAIL

F. WALL BEARING on ROOF FLASHING DETAIL



WALL BEARING ON ROOF FLASHING DETAIL