SECTION 07 14 00
FLUID-APPLIED WATERPROOFING - CARLISLE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hot-applied rubberized asphalt fluid-applied waterproofing.

B. Polyurethane fluid-applied waterproofing.

C. Modified polymer elastomeric fluid-applied waterproofing.

D. Water-based asphalt emulsion fluid-applied waterproofing.

1.02 RELATED REQUIREMENTS

A. Section 22 10 06 - Plumbing Piping Specialties: Roof drain and plumbing vent flashing flanges.

B. Section _____: Foundation drainage.

1.03 ABBREVIATIONS

A. EPDM - Ethylene Propylene Diene Monomer.

B. SBS - Styrene-Butadiene-Styrene.

C. UV - Ultraviolet.

D. VOC - Volatile Organic Content.

1.04 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015 (Reapproved 2022).

B. ASTM C836/C836M - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course; 2018 (Reapproved 2022).

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

D. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).

E. ASTM D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact; 2020.

F. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

G. ASTM D2370 - Standard Test Method for Tensile Properties of Organic Coatings; 2016 (Reapproved 2021).

H. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers; 2022.

I. ASTM D6164/D6164M - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements; 2021.

J. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.

C. Shop Drawings: Indicate special joint or termination conditions and conditions of interface with other materials.

D. Certificate: Certify that products meet or exceed specified requirements.

E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and acceptable installation temperatures.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Testing firm's qualification statement.

I. Warranty:
   1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
   2. Submit installer's certification that installation complies with warranty conditions for the waterproofing membrane.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

C. Testing Firm Qualifications: Company specializing in performing work of the type specified and approved by manufacturer.

D. Single Source Responsibility for Vegetated Roof Assemblies Over Waterproofing: Provide and install products from single source.

1.07 MOCK-UPS

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Construct mock-up consisting of 100 sq ft of horizontal waterproofed panel to represent finished work including internal and external corners, drainage panel, base flashings, control joints, expansion joints, counterflashings, protective cover, and _____.

C. Locate where directed.

D. Mock-up may remain as part of work.

1.08 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until cured.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Contractor to correct defective work within a five-year period after Date of Substantial Completion; remove and replace materials concealing waterproofing at no cost to Owner.

C. Provide five year manufacturer warranty against failure of waterproofing to resist penetration of water, except where such failures are the result of structural failures of building.
   1. Hairline cracking of concrete due to temperature change or concrete shrinkage is not considered a structural failure.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Fluid-Applied Waterproofing:
   1. Carlisle Coatings & Waterproofing: www.carlisleccw.com/#sle.
   2. Substitutions: Not permitted.

2.02 PRODUCT TYPES

A. Hot-Applied Rubberized Asphalt Fluid-Applied Waterproofing:
   1. Location: _____.
   2. Horizontal Surfaces: Apply directly to concrete substrate.

3. Cover with reinforcing.

B. Polyurethane Fluid-Applied Waterproofing:
   1. Location: _____.
   2. Horizontal Surfaces: Apply directly to concrete substrate.
   3. Vertical Surfaces: Apply directly to concrete substrate.
   4. Cover with protection board.

C. Modified Polymer Elastomeric Fluid-Applied Waterproofing:
   1. Location: _____.
   2. Horizontal Surfaces: Apply directly to concrete substrate.
   3. Vertical Surfaces: Apply directly to concrete substrate.
   4. Cover with reinforcing.

D. Water-Based Asphalt Emulsion Fluid-Applied Waterproofing:
   1. Location: _____.
   2. Vertical Surfaces: Apply directly to concrete substrate.
   3. Cover with reinforcing fabric.

2.03 MATERIALS

A. Hot-Applied Rubberized Asphalt Fluid-Applied Waterproofing: Elasticized rubberized asphaltic compound, hot-applied and quick setting.
   1. Product:
      a. Carlisle Coatings & Waterproofing, Inc; CCW-500R.
      b. Substitutions: Not permitted.
   2. Suitable for installation over concrete substrates.
   3. Membrane Elongation: Greater than 1000 percent, measured in accordance with ASTM D412.
   4. Water Vapor Permeance: 1.3 perm, maximum, measured in accordance with ASTM E96/E96M.
   5. System Thickness: 215 mil, 0.215 inch, minimum.
   6. Reinforcing: 1.18 oz/sq yd spunbonded polyester fabric.
      a. Thickness: 7.1 mil, 0.0071 inch.
      b. Width: 36 inches.
      c. Product:
         1) Carlisle Coatings & Waterproofing, Inc; CCW-500 Reinforcing Fabric.
   7. Protective Mat: UV-resistant polypropylene needle-punched fabric, 65 mil, 0.065 inch thick, 6.0 oz/sq yd weight.
      a. Product:
         1) Carlisle Coatings & Waterproofing Inc; Sure-Seal HP Protective Mat.
   8. Protection Fabric: Nonwoven polypropylene fabric to protect sheet waterproofing for either horizontal (H) or vertical (V) applications.
      a. Thickness: 90 mil, 0.090 inch, minimum.
      b. Product:
         1) Carlisle Coatings & Waterproofing Inc; CCW 200V Protection Fabric.
         2) Carlisle Coatings & Waterproofing Inc; CCW 300HV Protection Fabric.
   9. Cap Sheet: Fire-resistant, SBS torch-applied cap sheet with nonwoven polyester mat and fiberglass strands to protect sheet waterproofing for either horizontal (H) or vertical (V) applications, complying with ASTM D6164/D6164M Type II, Grade G (Granule Surfaced).
      a. Thickness: 177 mil, 0.177 inch, minimum.
      b. Product:
         1) Carlisle Coatings & Waterproofing Inc; CCW 190FR.
   10. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic for either horizontal (H) or vertical (V) applications.
      a. Thickness: 90 mil, 0.090 inch, minimum.
      b. High-density, rigid, expanded polystyrene foam board.

c. Asphalt-impregnated organic mat with a fine mineral applied to surface to prevent sticking in roll.
d. Modified bitumen protection board with fiberglass mat consisting of SBS rubber and asphalt blend.
e. Product:
1) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-H.
2) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-HS.

11. Perimeter Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 1.0 inch thick.
a. Width: 6 inches, minimum.
b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN HC.

12. Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 0.4 inch thick; provide type recommended by sheet waterproofing manufacturer for application indicated.
a. Width: 4 feet, minimum.
b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 9000 - Horizontal.
2) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 9800.
3) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 9900 - Horizontal.

13. Adhesives, Sealants, Tapes, and Accessories: As indicated below or by waterproofing manufacturer in accordance with requirements.

B. Polyurethane Fluid-Applied Waterproofing: Fluid-applied, two-component, polyurethane waterproofing system.
1. Product:
a. Carlisle Coatings & Waterproofing, Inc; CCW-703-H Liquiseal (Self-Leveling, Horizontal).
b. Carlisle Coatings & Waterproofing, Inc; CCW-703-V Liquiseal (Vertical Grade).
c. Substitutions: Not permitted.
2. Cured Thickness: 50 mil, 0.050 inch, minimum.
3. Suitable for installation over concrete substrates.
4. Tensile Strength: 155 psi, minimum, measured in accordance with ASTM D412.
5. Elongation: 405 percent, minimum, measured in accordance with ASTM D412.
6. Durometer Hardness, Shore A: 15, minimum, in accordance with ASTM D2240.
7. Water Vapor Transmission: 0.1 perm, maximum, measured in accordance with ASTM E96/E96M using Procedure B, Water Method.
8. Low Temperature Brittleness: At minus 50 degrees F, 50 percent of tested specimens have separated into pieces, measured in accordance with ASTM D746.
9. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic for either horizontal (H) or vertical (V) applications.
a. Thickness: 90 mil, 0.090 inch, minimum.
b. High-density, rigid, expanded polystyrene foam board.
c. Asphalt-impregnated organic mat with a fine mineral applied to surface to prevent sticking in roll.
d. Modified bitumen protection board with fiberglass mat consisting of SBS rubber and asphalt blend.
e. Product:
1) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-V.
2) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-H.
3) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-HS.

10. Perimeter Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 1.0 inch thick.
a. Width: 6 inches, minimum.

b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN HC.

11. Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 0.4 inch thick; provide type recommended by sheet waterproofing manufacturer for application indicated.
a. Width: 24 inches, minimum.
b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 2000.
2) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 6200.
3) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 6200XL.
4) Carlisle Coatings & Waterproofing Inc; MiraDRAIN _____.

12. Adhesives, Sealants, Tapes, and Accessories: As indicated below or by waterproofing manufacturer in accordance with requirements.

C. Modified Polymer Elastomeric Fluid-Applied Waterproofing: Fluid-applied, single-component, moisture-reacted, elastomeric, modified polymer waterproof membrane complying with ASTM C836/C836M
1. Product:
a. Carlisle Coatings & Waterproofing Inc; MiraSEAL.
b. Substitutions: Not permitted.
2. Cured Thickness: 60 mil, 0.060 inch, minimum.
3. Suitable for installation over concrete substrates.
4. Tensile Strength: 95 psi, minimum, measured in accordance with ASTM D2370.
5. Ultimate Elongation: 350 percent, minimum, measured in accordance with ASTM D2370.
6. Hardness: 10, plus or minus 3, measured in accordance with ASTM C661 using Shore A durometer.
7. Water Vapor Transmission: 0.06 perm inch, maximum, measured in accordance with ASTM E96/E96M.
8. Reinforcing: 1.18 oz/sq yd spunbonded polyester fabric.
a. Thickness: 7.1 mil, 0.0071 inch.
b. Width: 36 inches.
c. Product:
1) Carlisle Coatings & Waterproofing, Inc; CCW-500 Reinforcing Fabric.
9. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic for either horizontal (H) or vertical (V) applications.
a. Thickness: 90 mil, 0.090 inch, minimum.
b. High-density, rigid, expanded polystyrene foam board.
c. Asphalt-impregnated organic mat with a fine mineral applied to surface to prevent sticking in roll.
d. Modified bitumen protection board with fiberglass mat consisting of SBS rubber and asphalt blend.
e. Product:
1) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-V.
2) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-H.
3) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-HS.
10. Perimeter Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 1.0 inch thick.
a. Width: 6 inches, minimum.
b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN HC.
11. Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 0.4 inch thick; provide type recommended by sheet waterproofing manufacturer for application indicated.
a. Width: 24 inches, minimum.

b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 2000.
2) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 6200.
3) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 6200XL.
4) Carlisle Coatings & Waterproofing Inc; MiraDRAIN _____.

12. Adhesives, Sealants, Tapes, and Accessories: As indicated below or by waterproofing manufacturer in accordance with requirements.

D. Water-Based Asphalt Emulsion Fluid-Applied Waterproofing: Modified with blend of synthetic polymers and special additives.
1. Product:
a. Carlisle Coatings & Waterproofing Inc; Barricoat-S (Spray-Grade).
b. Carlisle Coatings & Waterproofing Inc; Barricoat-R (Roller-Grade).
c. Substitutions: Not permitted.
2. Cured Thickness: 60 mil, 0.060 inch, minimum.
3. Suitable for installation over concrete substrates on below-grade foundation wall vertical assemblies.
4. VOC Content: Less than 9.3 oz/gal.
5. Water Vapor Permeance: 0.1 perm, maximum, measured in accordance with ASTM E96/E96M using Procedure B, Water Method.
6. Service Temperature: Range of minus 20 to 149 degrees F.
7. UV Exposure: 30 days, maximum.
8. Elongation: Greater than 500 percent, measured in accordance with ASTM D412.
9. Pull Adhesion: Greater than 16 psi on concrete, measured in accordance with ASTM D4541.
10. Reinforcing Fabric: Woven, synthetic polymer fabric for use in horizontal and detailing applications.
a. Width: 4 inches, nominal.
b. Weight: 3 oz/sq yd, minimum.
c. Product:
1) Carlisle Coatings & Waterproofing Inc; DCH Reinforcing Fabric.
11. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic.
a. Thickness: 90 mil, 0.090 inch, minimum.
b. High-density, rigid, expanded polystyrene foam board.
c. Asphalt-impregnated organic mat with a fine mineral applied to surface to prevent sticking in roll.
d. Modified bitumen protection board with fiberglass mat consisting of SBS rubber and asphalt blend.
e. Product:
1) Carlisle Coatings & Waterproofing Inc; CCW Protection Board-V.
12. Perimeter Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 1.0 inch thick.
a. Width: 6 inches, minimum.
b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN HC.
13. Drainage Composite: Nonwoven filter fabric bonded to individual dimples of molded polypropylene core to minimize fabric intrusion of flow channels, 0.4 inch thick; provide type recommended by sheet waterproofing manufacturer for application indicated.
a. Width: 24 inches, minimum.
b. Product:
1) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 2000.
2) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 6200.
3) Carlisle Coatings & Waterproofing Inc; MiraDRAIN 6200XL.

4) Carlisle Coatings & Waterproofing Inc; MiraDRAIN _____.

14. Adhesives, Sealants, Tapes, and Accessories: As indicated below or by waterproofing manufacturer in accordance with requirements.

2.04 ACCESSORIES

A. Seaming Materials: As recommended by waterproofing manufacturer.

B. Membrane Sealant: As recommended by waterproofing manufacturer.

C. Adhesives: As recommended by waterproofing manufacturer.

D. Thinner and Cleaner: As recommended by adhesive manufacturer, compatible with fluid-applied waterproofing.

E. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and waterproofing materials, as recommended by waterproofing manufacturer.

F. Backer Rods: Closed-cell polyethylene foam rod, as recommended by waterproofing manufacturer.

G. Curative Co-Spray: Aqueous solution used as curative co-spray for spray-applied waterproofing.
   1. Water Mix Ratio: 4:1 water to co-spray.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; Barricure.

H. Primer: Synthetic rubber solvent-based primer and surface cleaner.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; Sure-Seal HP-250 Primer.

I. Primer: Single-component, low VOC solvent-based bituminous primer; spray ready.
   1. Color: Brownish black.
   2. VOC: Less than 33.38 oz/gal.
   3. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW-550 Low VOC Primer.

J. Adhesive: Quick-drying, solvent-based, high-tack adhesive.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW-702.
      b. Carlisle Coatings & Waterproofing Inc; CCW-702LV.

K. Adhesive: High-tack, water-based contact adhesive.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW-702 WB.

L. Adhesive: Adheres sheet membrane to damp or partially cured concrete surfaces.
   1. Color: Green.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW-715.

M. Adhesive: Single-component, latex-based contact adhesive; roller or spray applied.
   1. Color: Blue.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW-AWP.

N. Adhesive: Multipurpose, low VOC aerosol contact adhesive; self-contained spray system that provides low-pressure web.
   1. Color: White.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; CAV-GRIP.

O. Aerosol Spray System: Required for dispensing CAV-GRIP contact adhesive.
   1. Product:

a. Carlisle Coatings & Waterproofing Inc; CCW Aerosol Spray System.

P. Liquid Mastic: Fast-drying elastomeric, single-component, cold-applied liquid mastic.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW LM-800XL.
      b. Carlisle Coatings & Waterproofing Inc; CCW LM-800XL-WG.

Q. Mastic: Single-component, low-viscosity, self-wetting, butyl blend mastic; used on masonry, metal, or glass substrate.
   1. Color: Gray.
   2. Service Temperature: Range of minus 40 to 200 degrees F.
   3. Product:
      a. Carlisle Coatings & Waterproofing Inc; Sure-Seal Water Cut-Off Mastic.

R. EPDM Flashing: Seamless nonreinforced EPDM flashing membrane, 60 mil, 0.060 inch thick.
   1. Width: 18 inches.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; Sure-Seal Clean-Cured EPDM Flashing.

S. Tie-Back Cover: Preformed, high-impact resistant, thermoplastic cover to protect waterproofing membrane at soil-retention tie-back system locations.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW Tie-Back Cover.

T. Pressure-Sensitive Splicing Tape: Synthetic rubber base with removable clear poly film on top surface.
   1. Width: 3 inches, minimum.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; Sure-Seal SecurTape.

U. Joint Sealant: Low-modulus, chemical-curing, multicomponent, nonsag, polyurethane sealant used for dynamically moving joints.
   1. Comply with ASTM C920 Type M, Grade NS, Class 25.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW-201.

V. Swellable Sealant: Elastic, solvent-free, one-component polyurethane sealant used as penetration waterstop and adhesive for waterstop strips.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; CCW MiraSTOP SS.

W. Lap Sealant: Heavy bodied trowel or gun-grade material with cured rubber consistency; used as sealant in mechanical terminations on vertical or horizontal surfaces.
   1. Color: Black.
   2. Product:
      a. Carlisle Coatings & Waterproofing Inc; Sure-Seal Lap Sealant.

X. Chemical Grout: One-component, solvent free, flexible polyurethane injection resin with catalyst; used for wet cracks and joints.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; MiraSTOP CG-F Resin.

Y. Injectable Waterstop: Conduit or channel used with chemical grouts to seal cold joints, construction joints, and penetrations; kit includes waterstop injection hose, fastening clips, connectors, and PVC tubing.
   1. Product:
      a. Carlisle Coatings & Waterproofing Inc; MiraSTOP IW.

Z. Bentonite Waterstop: Self-adhering, coiled waterstop strip of butyl rubber polymers and expandable bentonite clay waterproofing joint compound for use in nonmoving joints to create watertight concrete joints.

1. Size: 1 by 3/4 inch, nominal.
2. Product:
    a. Carlisle Coatings & Waterproofing Inc; MiraSTOP BW.

AA. Non-Bentonite Waterstop: Coiled waterstop strip of chloroprene rubber for use in nonmoving joints to create watertight concrete joints.
1. Size: 3/4 by 3/8 inch, nominal.
2. Product:
    a. Carlisle Coatings & Waterproofing Inc; MiraSTOP NBW.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting this work.

B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.

C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.

D. Verify that items penetrating surfaces to receive waterproofing are securely installed.

E. Where existing conditions are responsibility of another installer, notify Architect of unsatisfactory conditions.

F. Do not proceed with work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protect adjacent surfaces from damage not designated to receive waterproofing.

B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.

C. Do not apply waterproofing to surfaces unacceptable to waterproofing manufacturer.

D. Fill nonmoving joints and cracks with a filler compatible with waterproofing materials.

E. Seal moving cracks with sealant and nonrigid filler, using procedures recommended by sealant and waterproofing manufacturers.

F. Prepare building expansion joints at locations as indicated on drawings.

G. Install cant strips at inside corners.

3.03 INSTALLATION

A. Install fluid-applied waterproofing in accordance with manufacturers instructions and applicable requirements.

B. Apply primer or surface conditioner at a rate recommended by manufacturer; protect conditioner from rain or frost until dry.

C. At joints and cracks less than 1/2 inch in width including joints between horizontal and vertical surfaces, apply 12 inch wide strip of joint cover sheet.

D. At joints from 1/2 inch to 1 inch in width, loop joint cover sheet down into joint between 1-1/4 inch to 1-3/4 inch, and extend sheet at least 6 inches on either side of expansion joint.

E. Center joint cover sheet over joints, roll sheet into 1/8 inch thick coating of waterproofing material and apply second coat over sheet extending at least 6 inches beyond sheet edges.

F. Extend membrane over cants and up intersecting surfaces at membrane perimeter minimum 6 inches above horizontal surface for first ply and ____ inches at subsequent plies laid in shingle fashion.

G. Apply extra thickness of waterproofing material at corners, intersections, and angles.

H. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane.

I. Extend waterproofing material and flexible flashing into drain clamp flange, apply adequate coating of liquid membrane to ensure clamp ring seal, and coordinate with drain installation requirements specified in Section 22 10 06.

J. Seal membrane and flashings to adjoining surfaces.
   1. Install termination bar along edges.
   2. Install counterflashing over exposed edges.

3.04 INSTALLATION - DRAINAGE COMPOSITE AND PROTECTION BOARD

A. Immediately after cooling, dust membrane with tack-reducing surfacing at rate of approximately 10 lb per 100 sq ft.

B. After membrane has cooled, but before it becomes dusty, apply separation sheet and lap joints to ensure complete coverage.

C. Place drainage composite directly against membrane, butt joints, place to encourage drainage downward, and scribe and cut boards around projections, penetrations, and interruptions.

D. Place protection board directly against drainage composite; butt joints, and scribe and cut boards around projections, penetrations, and interruptions.

E. Install perimeter drainage composite directly over waterproofing; butt joints.

F. Install perimeter drainage composite over drainage composite; butt joints.

G. Adhere drainage composite to substrate with compatible adhesive.

H. Adhere protection board to substrate with compatible adhesive.

3.05 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing.

C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

D. Upon completion of horizontal membrane installation, dam installation area in preparation for flood testing.
   1. Flood to minimum depth of 1 inch with clean water, and after 48 hours inspect for leaks.
   2. If leaking is found, remove water, repair leaking areas with new waterproofing materials as directed by Architect; repeat flood test, and repair damage to building.
   3. When area is proven watertight, drain water and remove dam.

3.06 PROTECTION

A. Do not permit traffic over unprotected or uncovered membrane.

END OF SECTION 07 14 00