

MASTERSPEC
DAMPPROOFING (ECODAMP)

SECTION 07161 – FLUID-APPLIED POLYMERIZED DAMPPROOFING (below-grade)

PART 1 – GENERAL

1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1. SUMMARY

- A. This Section includes the following:

- 1. Surface preparation and substrate treatment.
- 2. Dampproofing membrane.
- 3. Sheet flashing and accessories.

- A. Related Sections: The following Sections contain requirements that relate to this Section:

- 1. Division 3 Section "Cast-in-Place Concrete" for concrete placement, curing, and finishing.
- 2. Division 5 Section "Expansion Joint Cover Assemblies" for expansion joint cover-assemblies and installation.
- 3. Division 7 Section "Joint Sealant" for joint sealant materials and installation.

1. PERFORMANCE REQUIREMENTS

- A. General: Provide a dampproofing system that prevents the passage of moisture in the absence of hydrostatic pressure and complies with physical requirements as demonstrated by testing performed by an independent testing agency of manufacturer's current dampproofing formulations and system design.

1. SUBMITTALS

- A. Submit Product Data for each type of dampproofing specified, including manufacturer's printed instructions for evaluating, preparing, and treating the substrate, technical data, and tested physical and performance properties.
- B. Project Data - Submit Shop Drawings showing locations and extent of dampproofing, including details for substrate joints and cracks, sheet flashing, penetrations, and other termination conditions.
- C. Samples – Submit representative samples of the following for approval:
 - 1. Dampproof membrane material.
 - 2. Protection Course Material as required.
 - 3. Geo-textiles and detailing sheet as required.
- A. Installer Certificates – Submit certificates signed by manufacturer certifying that Installers comply with requirements under the "Quality Assurance" Article.

1. QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who is certified in writing and approved by dampproofing manufacturer EPRO Services, Inc. for the installation of ECODAMP material.
- B. Manufacturer Qualification: Obtain dampproofing materials and system components from a single manufacturer Epro Services, Inc.
- C. Field Sample: Apply dampproofing system field sample to 100 sq./ft. (9.3 sq./m.) of deck or wall to demonstrate surface preparation, joint and crack treatment, thickness, texture, and standard of workmanship.
 - 1. Notify Architect one week in advance of the dates and times when field sample will be prepared.
 - 2. If Architect determines that field sample, does not meet requirements; reapply dampproofing material until field sample is approved.
 - 3. Retain and maintain approved field sample during construction in an undisturbed condition as a standard for judging the completed dampproofing material. An undamaged field sample may become part of the completed Work.
- A. Pre-installation Conference: A pre-installation conference shall be held prior to application of the dampproofing system to assure proper substrate and installation conditions, to include contractor, applicator, architect/engineer and special inspector (if any).

1. DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site as specified by manufacturer labeled with manufacturer's name, product brand name and type, date of manufacture, shelf life, and directions for storing and mixing with other components.
- B. Store materials as specified by the dampproofing manufacturer in a clean, dry, protected location and within the temperature range required by dampproofing manufacturer. Protect stored materials from direct sunlight.
- C. Remove and replace material that cannot be applied within its stated shelf life.

1. PROJECT CONDITIONS

- A. Protect all adjacent areas not to be dampproofed. Where necessary, apply masking to prevent staining of surfaces to remain exposed wherever membrane abuts to other finish surfaces.
- B. Perform work only when existing and forecasted weather conditions are within manufacturer's recommendations for the material and application method used.
- C. Minimum clearance of 24 inches is required for application of product. For areas with less than 24-inch clearance, the product may be applied by hand.
- D. Ambient temperature shall be within manufacturer's specifications. (Greater than +20°F/-7°C.)
- E. All plumbing, electrical, mechanical and structural items to be under or passing through the dampproofing membrane shall be positively secured in their proper positions and appropriately protected prior to membrane application.
- F. Dampproofing membrane shall be installed before placement of reinforcing steel. When not possible, all exposed reinforcing steel shall be masked by General Contractor prior to membrane application.

1. WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents, and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty signed by dampproofing manufacturer and Installer, agreeing to repair or replace dampproofing that does not meet requirements or that does not remain moisture resistant within the specified warranty period. Warranty does not include failure of dampproofing material due to

failure of substrate prepared and treated according to requirements or formation of new joints and cracks in the substrate.

1. Warranty Period: 1 year after date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. ECODAMP; EPRO Services, L.C., Wichita, KS, 800-882-1896

1. Spray-Applied ECODAMP.
2. Protection ECOSHIELD-E10 if required.

2.2 DAMPPROOFING MATERIALS

- A. Fluid applied dampproofing system – ECODAMP: a single-course, high-build, polymer modified asphalt emulsion. Waterborne and spray applied at ambient temperatures. A nominal thickness of 20 dry mils (15 mil minimum), unless specified otherwise. Non-toxic and odorless. Manufactured by EPRO Services, L.C.
- B. Fluid applied dampproofing physical properties.

ECODAMP – TYPICAL CURED PROPERTIES (MEMBRANE ONLY)

Elongation	ASTM D 412-98a	5500%
Tensile Strength	ASTM D 412-98a	9 psi
Hydrostatic Water Pressure	ASTM D 751-00	10 psi
Water Degradation	ASTM D 2939-94	No Effect
Adhesion	ASTM C 836	11 lb/inch
Perm Rating	ASTM E-96	.1049 gr./hr./sq. ft.
Low Temp. Flexibility	ASTM C 836-00	No Cracking at -6.7°C
Shrinkage	ASTM C 836-00	0.03%
Chemical or Environmental Resistance:		
Hydrochloric & Sulfuric		13%
Acetic		30%

2.3 AUXILIARY MATERIALS

- A. Sheet Flashing: 60-mil reinforced modified asphalt sheet good with double-sided adhesive.
- B. Reinforcing Strip: Manufacturer's recommended polypropylene and polyester fabric.

C. Joint Detailing Sealant Mastic: ECOLINE-T, a high viscosity polymer modified water based asphalt material.

1. Back Rod: Closed-cell polyethylene foam.

2.4 PROTECTION COURSE

A. Protection Course Usage

1. On vertical surfaces, use ECOSHIELD-E10 protection course or other protection as approved by the manufacturer.
2. On horizontal surfaces, use ECOSHIELD-E15; 30# roofing cap sheet; or other protection as approved by the manufacturer.

A. ECOSHIELD physical properties.

		8-mil	10-mil	15-mil
Puncture Resistance	ASTM D 1709	475 g.	1593 g.	1898 g.
Tensile Strength	ASTM E 154	24.59 lbs. MD	34.6 lbs. MD	39.7 lbs. MD
Tear Resistance	ASTM E 96	N/A	5.98 lbs.	8.74 lbs.
Low Temperature Impact	ASTM D 1790	Resistant to -105 C	Resistant to -105 C	Resistant to -105 C
Water Vapor Trans. Rate	ASTM E 96	.00711 g./ft./hr.	.00621 g./ft./hr.	.00585 g./ft./hr.
Perm Rating	ASTM E 96	0.0143	0.0133	0.0123
Chemical or Environmental Resistance	ASTM	Excellent	Excellent	Excellent
Methane Gas Modified	ASTM D 1434	0	0	0

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions under which dampproofing materials will be applied, with Installer present, for compliance with requirements. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

- A. Clean and prepare substrate according to manufacturer's recommendations. Provide clean, dust-free, and dry substrate for dampproofing application.
- B. Mask off adjoining surfaces not receiving dampproofing to prevent spillage or over-spray affecting other construction.
- C. Close off deck drains and other deck penetrations to prevent spillage and migration of dampproofing fluids.

- D. Remove grease, oil, form release agents, paints, and other penetrating contaminants from concrete.
- E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, grout joints, tie holes, and other voids with ECOLINE-T, hydraulic cement, or rapid-set grout.

3.3 PREPARATIONS AND TREATMENT AT TERMINATIONS AND PENETRATIONS

- A. Prepare vertical and horizontal surfaces at terminations, at penetrations through substrate, and at expansion joints, drains, and sleeves according to ASTM C 898 and manufacturer's recommendations.
- B. Apply two coats of ECOLINE-T (30 mil each) and embed a joint reinforcing strip in preparation coat and apply a second coat over embedded joint reinforcing strip ensuring its complete saturation and covering.
 - 1. Terminations should be treated 6 inches up vertical and 6 inches on horizontal.
 - 2. Penetrations should be treated in a 6-inch radius around penetration and 3 inches onto penetrating object.

3.4 PREPARATIONS AND TREATMENT OF JOINTS AND CRACKS

- A. Prepare, treat, rout, and fill joints and cracks in substrate according to ASTM C 898 and dampproofing manufacturer's recommendations. Remove dust and dirt from joints and cracks complying with ASTM D 4258 prior to coating surfaces.
- B. Vertical - Apply two coats of ECOLINE-T mastic, 6 inches on each side of joint and embed a joint reinforcing strip in preparation coat and apply a second coat over embedded joint reinforcing strip ensuring to complete saturation and covering.
- C. Horizontal - Install sheet flashing over reinforced ECOLINE-T joint to deck and wall substrates where indicated or required according to dampproofing manufacturer's recommendations.

3.5 DAMPPROOFING APPLICATION

- A. Set up spray equipment according to manufacturer's instructions.
- B. Mix materials according to manufacturer's instructions.
- C. Start installing dampproofing material in presence of manufacturer's technical representative.
- D. Apply dampproofing material, according to manufacturer's recommendations, by spray.

- E. Apply one spray coat of ECODAMP to obtain a seamless membrane free of entrapped gases, with an average dry film thickness of 20 mils (.5 mm) and a minimum dry film thickness of 15 mils (.375 mm) at any point.
- F. Apply dampproofing material to prepared wall terminations and vertical surfaces to heights indicated according to manufacturer's recommendations and details.
- G. Verify film thickness of dampproofing membrane every 100 sq./ft. (9.3 sq./m.).

3.6 PROTECTION COURSE INSTALLATION

- A. Install ECOSHIELD-E10 protection course with overlapped seams over nominally cured membrane no later than recommended by manufacturer and before starting subsequent construction operations.
- B. Secure ECOSHIELD-E10 protection course seams with ECOSHIELD Tape and attach to adhesive strips (sheet flashing that does not penetrate dampproofing membrane) as recommended by manufacturer.

3.8 FIELD QUALITY CONTROL

- A. Membrane may be checked for coverage with a lightly oiled, needle nose depth gauge, taking four (4) readings over a one square inch area, every 500 square feet. Record the minimum reading. Mark the test area for repair.
- B. Test areas are to be patched over with ECODAMP to a 20- mil minimum dry thickness, extending a minimum of one-inch (1") beyond the test perimeter.

3.9 CURING, PROTECTING, AND CLEANING

- A. Cure dampproofing membrane according to manufacturer's recommendations, taking care to prevent contamination and damage during application stages and curing.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.