

BOARD OF
BUILDING AND SAFETY
COMMISSIONERS

MARSHA L. BROWN
PRESIDENT

VAN AMBATIELOS
VICE-PRESIDENT

VICTOR H. CUEVAS
HELENA JUBANY
ELENORE A. WILLIAMS

CITY OF LOS ANGELES
CALIFORNIA



ANTONIO R. VILLARAIGOSA
MAYOR

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ANDREW A. ADELMAN, P.E.
GENERAL MANAGER

RAYMOND CHAN
EXECUTIVE OFFICER

Epro Services, Inc.
P. O. Box 347
Derby, KS 67037

Attn: David M. Polk
(800) 882-1896

RESEARCH REPORT: RR 25478
(CSI #07120)

Expires: March 1, 2011
Issued Date: April 1, 2009
Code: 2008 LABC

GENERAL APPROVAL - Renewal - Ecoline-S/ Geo-Seal Core Spray Applied Membrane, Ecoline-R/ Geo-Seal Core Detail Liquid Applied Membrane, Ecoshield E-10 and Ecoshield-P/Geo-Seal Base Sheet Membrane for Below-Grade Waterproofing and Gas Barrier.

DETAILS

Ecoline-S/Geo-Seal Core is a low-viscosity, water-based, anionic bituminous/asphalt emulsion modified with a blend of synthetic polymerized rubbers and special additives.

Ecoline-R/Geo-Seal CoreDetail is a medium viscosity water based polymer-modified anionic bituminous/asphalt emulsion.

Ecoshield- E 10 sheet is a high strength geomembrane mache from a custom blend of polyolefin copolymers.

Ecoshield - P/Geo-Seal Base is a high strength geo-membrane made from reinforce the lamination a polypropylene film and fabric.

INSTALLATION

For Waterproofing Installations:

- a. Preparation:
 - All surfaces should be free of loose materials, and other contaminants.

RR 25478
Page 1 of 4

Epro Services, Inc.

RE: Ecoline-S/Geo-Seal Core, Ecoline-R/Geo-Seal Core Detail, Ecoshield E-10 and Ecoshield P/Geo-Seal Base Membrane for Below-Grade Waterproofing and Gas Barrier

- Any cracks, spall or metal protrusion areas should be repaired by brush or trowel application of Ecoline-T. Large cracks may also require a layer of polyester fabric being spanned over crack before Ecoline-T applied over it.

b. Application:

1. Ecoline S/Geo-Seal Core is to be sprayed applied with catalyst water by appropriate equipment fitted with specific nozzles which forms a monolithic water protection coating. Spray of a minimum 60-mil thickness Ecoline-S/Geo-Seal Core, each spray application produces an approximate 20 mil build on each pass of spray gun; or
2. Ecoline-R/Geo-Seal Core Detail is to be roller applied with multiple coats of 25-30 mils wet 20-24 mil dry. Millage required based upon specific waterproofing application specification, with minimal vertical is 60-mil dry and horizontal is 80-mil dry.

For Gas Barrier Installation:

- Base Barrier:
 - . Lay a minimum 10 mil thickness Ecoshield E-10 or Ecoshield-P/Geo-Seal Base in one direction with six inch overlaps.
 - . Treat both sides of overlap with Ecoline-R/Geo-Seal Core Detail and compress with a roller.
 - . Applied Ecoshield Tape along seam over lapping two inches on each side.
- Detailing:
 - . Treat all penetrations by applying a base coat of Ecoline-R in a 6" up on the substrate around the penetration and 6" up on the penetrating object. Embed the polyester fabric into the base coat and apply a second coat of Ecoline-R, ensuring the fabric is completely saturated and covered.
- Middle Barrier:
 - . Spray application of a minimum 60-mil thickness Ecoline-S from the lowest point on horizontal plane.
 - . Spray application pattern should be 4 ft. x 4 ft. passes to a 20-mil build each pass.
- Top Barrier:
 - . Lay Ecoshield E-10 or Ecoshield-P/Geo-Seal Base in opposite direction of the base installation.
 - . Treat overlaps in same fashion as base.
 - . Terminate to exterior perimeter substrate by turning a six-inch flap up and applying seam sealer to flap and substrate and then attaching a termination bar to the flap and substrate.

Epro Services, Inc.

RE: Ecoline-S/Geo-Seal Core, Ecoline-R/Geo-Seal Core Detail, Ecoshield E-10 and Ecoshield P/Geo-Seal Base Membrane for Below-Grade Waterproofing and Gas Barrier

This product is approved for below-grade waterproofing and gas barrier subject to the following conditions:

1. Ecoline-S/Geo-Seal Core or Ecoline-R/Geo-Seal Core Detail supplied in clearly marked containers bearing the brand name and product identification Ecoshield-E10 sheet are supplied in 12' x 120', 12' x 150' or 10' x 200' and Ecoshield-P/Geo-Seal Base is supplied in 10' x 200' rolls, bearing the brand name and product identification.
2. The manufacturer shall provide quality assurance of the materials supplied as to their formulation.
3. Application of the product shall be accomplished by an applicator approved by the manufacturer. A written statement by the manufacturer stating that the applicator is an approved applicator is required prior to use of the product.
4. All surfaces to receive membrane shall be free of laitance, sharp projections, oil, dirt or other contaminants. Prepare surfaces in accordance with the manufacturer's instructions.
5. Installation of the materials shall be in accordance with the manufacturer's instructions, a copy of which shall be kept at the job site.
6. Complete details for the membrane system are submitted for plan check and a building permit is obtained.
7. The following field tests in accordance with the Epro Field Installation and Repair Procedure are required: (A copy of the Installation and Repair Procedures is on file with Engineering Research Section.)
 - Perform Thickness Sample Test at every 500 square feet.
 - For gas barrier application, perform Smoke Test for the entire site at the interval not more than 50,000 sq. ft. each.
8. Protection for the membrane shall be provided in accordance with the written instructions by the engineer of the record.
9. Prior to placing the concrete slab over the membrane, the membrane installer shall certify the membrane to be installed and tested in accordance with the manufacturer's specifications and to be free of leaks.
10. The membrane is not to be placed under the building footings.
11. For gas membrane installation, continuous inspection by a registered deputy inspector certified by Epro Services, Inc., and registered in accordance with the requirements specified in Section 91.1704 of the Los Angeles Municipal Code for special inspections is required.

Epro Services, Inc.

RE: Ecoline-S/Geo-Seal Core, Ecoline-R/Geo-Seal Core Detail, Ecoshield E-10 and Ecoshield P/Geo-Seal Base Membrane for Below-Grade Waterproofing and Gas Barrier

DISCUSSION

The use of Epro Ecoline-S, Ecoline-R and Ecoshield-E 10, Ecoshield-P membrane gas barrier is based on the tests in accordance with the methane barrier test criteria.

The approval is based on tests.

This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revision to the report must be submitted to this Department for review with appropriate fee to continue the approval of the revised report.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this Approval have been met in the project in which it is to be used.

YEUAN CHOU, Chief
Engineering Research Section
201 N. Figueroa St., Room 880
Los Angeles, CA 90012
Phone - 213-202-9812
Fax - 213-202-9942

BG:elcm
RR25478/MSWord2003
R03/19/09
2H6/7104/7105/1403