



GAIL FARBER, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
<http://dpw.lacounty.gov>

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: **EP-5**

August 18, 2015

Mr. David Polk, President
EPRO Services, Incorporated
P.O. Box 347
Derby, KS 67037

Dear Mr. Polk:

EPRO APPLICATION AS A VAPOR INTRUSION BARRIER

This is in reference to your request dated April 29, 2015, for the approval of EPRO Services, Inc. System III MB moisture/gas barrier for use as a methane gas protection barrier in projects under this Department's purview.

This Department has previously reviewed and approved GEO-SEAL/EPRO Services products (Ecoline-S, Ecoshield-P and Ecoshield-PP) as a methane gas protection barrier under a request submitted by Land Science Technologies, Inc. on January 12, 2012 (see attached letter). The product consists of a spray-applied core layer of Ecoline-S (80 dry mils minimum) sandwiched between two high density polyethylene materials called "Geo-Seal base" (Ecoshield-P) and "Geo-Seal bond" (Ecoshield-PP), which are thermally bonded to a 3-ounce non-woven geotextile. Additionally Ecoshield-P and Ecoshield-PP can be substituted with Ecoshield-E. The product is hereby approved for use as a methane gas protection barrier in projects under this Departments' purview. All conditions of approval and specifications remain the same for EPRO and Geo-Seal products.

Mr. David Polk
August 18, 2015
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If you have any questions regarding this matter, please contact Mr. Wu Tan of our Environmental Programs Division at (626) 458-2193, Monday through Thursday, 7 a.m. to 5:30 p.m.

Very truly yours,

GAIL FARBER
Director of Public Works

A handwritten signature in black ink, appearing to read "Martins Aiyetiwa". The signature is fluid and cursive, with the first name being the most prominent.

MARTINS AIYETIWA
Senior Civil Engineer
Environmental Programs Division

WT:jl
P:\Secfinal\EP-5\EPRO Approval

Attach.



GAIL FARBER, Director

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ALHAMBRA, CALIFORNIA 91802-1460

January 12, 2012

IN REPLY PLEASE
REFER TO FILE: EP-5

Mr. Peter Grant
Land Science Technologies
1011 Calle Sombra, Suite 110
San Clemente, CA 92673-4204

Dear Mr. Grant:

GEO-SEAL APPLICATION AS A VAPOR INTRUSION BARRIER

This is in reference to your request dated April 7, 2011, for the approval of the Geo-Seal vapor intrusion barrier system for use as a methane gas protection barrier in projects (i.e. multi-residential, commercial, and industrial building) under this Department's purview.

This Department will approve the use of the Geo-Seal product (80 dry mils) as a methane gas protection barrier on a trial basis for development projects under this Department's purview. The product consists of a spray-applied "Geo-Seal" core layer of 80 dry mils (minimum) sandwiched between two high-density polyethylene materials (5 mils each) called "Geo-Seal base" and "Geo-Seal bond" which are thermally bonded to a 3-ounce non-woven geotextile.

This conditional approval is contingent upon Land Science Technologies agreeing to perform the following:

- 1) Monitor and provide a summary of historical monitoring data (for a minimum of four years) showing the history of the performance and durability of the Geo-Seal product for methane barrier in passive gas control systems. This will be accomplished by monitoring the membrane performance via probes inserted above and below the membrane per recommendations provided by this Department during the plan check process. Based on the data submitted, this Department will reevaluate the applicability of this conditional approval and may terminate or approve this product. This Department reserves the discretion to terminate the approval of this product at any time based on any additional information

Mr. Peter Grant
January 12, 2012
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received in relation to the performance of this product.

- 2) In the event that a failure is detected, Land Science Technologies will investigate the cause of the failure and provide a recommendation to the appropriate contractor for remediation. The failure will be documented and reported to this Department immediately during this conditional approval period, including reasons for the leak and/or failure and a description of the remediation method.
- 3) Land Science Technologies will monitor and immediately report any failure of the Geo-Seal product due to conditions including but not limited to any differential settlement, axial loads, exposure to natural elements, and the effect of aging under buried conditions.

In order to ensure quality assurance/quality control, the enclosed "Specifications for the Use of Geo-Seal as Methane Gas Protection Barrier in Projects Under the Jurisdiction of the County of Los Angeles," will be required for each project using Geo-Seal as a methane gas protection barrier.

If you have any questions, please contact Mr. Wu Tan of this office at (626) 458-2193, Monday through Thursday, 7 a.m. to 5:30 p.m.

Very truly yours,

GAIL FARBER
Director of Public Works



EMIKO THOMPSON
Senior Civil Engineer
Environmental Programs Division

NR:dy
P:\Sec\Geo-Seal Approval

Enc.

**SPECIFICATIONS FOR THE USE OF GEO-SEAL PRODUCT AS METHANE GAS
PROTECTION BARRIER IN PROJECTS UNDER THE JURISDICTION OF THE
COUNTY OF LOS ANGELES**

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At a minimum, all development projects where Geo-Seal application is proposed shall be subject to the following installation guidelines:

1. The product consist of a spray-applied "Geo-Seal" core layer of minimum 80 dry mils sandwiched between two (5 mils each) high-density polyethylene materials called "Geo-Seal base" and "Geo-Seal bond" which are thermally bonded to a 3-ounce non-woven geotextile.
2. The chloroprene modified asphaltic emulsion and catalyst (Geo-Seal) shall be supplied in clearly marked containers bearing the brand name and product identification. Both components shall be supplied by the same source manufacturer.
3. Geo-Seal core must be spray-applied onto "Geo-Seal base" which are thermally bonded to a 3-ounce non-woven geotextile to a minimum thickness of 80 dry mils in accordance with the manufacturer's specifications. Thereafter, a "Geo-Seal bond" and 3-ounce non-woven which has been bonded thermally is placed on top to form a complete Geo-Seal membrane product.
4. The membrane must completely encapsulate the foundation, footings, and exterior walls located below grade unless agreed by Public Works, Environmental Programs Division (EPD).
5. The membrane must be sprayed by a manufacturer-approved applicator/contractor. A written statement or a certificate issued by the manufacturer stating that the applicator is an approved applicator is required prior to use of the product.
6. The following field tests must be performed in accordance with the Geo-Seal Field installation and Repair Procedure specified by the manufacturer:
 - a. Thickness Sample Test at every 500 square feet
 - b. Smoke Test at every 10,000 square feet and at any isolated areas
 - c. Smoke Test for each single-family dwelling

**SPECIFICATIONS FOR THE USE OF GEO-SEAL PRODUCT AS METHANE GAS
PROTECTION BARRIER IN PROJECTS UNDER THE JURISDICTION OF THE
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7. All surfaces where the membrane is to be applied must be free of laitance, sharp projections, oil, dirt, or other contaminants. All such surfaces must be prepared in accordance with the manufacturer's instructions.
8. 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.
9. Under the concrete slab, the membrane must be overlaid with a minimum of two inches of clean sand or other similar material as approved by this office.
10. A copy of the inspection log for the project must be submitted with the as-built plans to Public Works, Building and Safety Division and EPD, including signature by a manufacturer-approved inspector.
11. A note must be added to all plans indicating that the consulting engineer must supervise the barrier's installation. Additionally, in the as-built plans, the consulting engineer must indicate with proper wet-ink signature and stamp that Geo-Seal was installed under his/her supervision.
12. The manufacturer's specifications and quality assurance/quality control recommendations must be included as General Notes in all design/construction plans proposing Geo-Seal as a methane gas barrier.

The plans must be prepared and submitted in accordance with the requirements of Public Works, EPD.