

Product Evaluation

RE: Review of DuraFrostwick System

PRODUCT

DuraFrostwick System is distributed by Diamond J Industries Ltd of Rocky Mountain House, Alberta.

VENDOR CLAIMS AND INFORMATION

CLAIMS:

DuraFrostwick System has the potential to remedy difficulties pertaining to subsurface soil shifting and de-stabilization in northern climates. Product web link:

http://www.diamondj.ca/fw_pg2.htm

DESCRIPTION:

Extreme seasonal temperature variations of northern climates disturb surface soils for a variety of construction projects. The phenomena that result in seasonal freeze thaw cycles, are frost boils, frost heaving and permafrost thawing. It affects north gas field developments, pipeline transport and roadway construction. The DuraFrostwick System utilizes a thoroughly proven insulation product in a unique combination with geosynthetic fabrics, creating a comprehensive thermal and moisture barrier. DuraFrostwick incorporates a top and bottom layer of Nilex geosynthetic fabric to PlastiSpan 30 extruded polystyrene insulation foam boards. The polystyrene rigid board sheet incorporates a 75mm four sided extruded (notched) side edge that permit the sheets to be installed in a side by side overlapping (interlock) engagement. The foam acts as insulation with its excellent properties such as compression strength, high thermal resistance, low moisture permeability and long term durability. Foam blocks are lap-joined. The top fabric acts as a wicking media and the bottom fabric as a drainage channel for moisture.

POTENTIAL USAGE:

The product can be used as insulation for highways.

STANDARDS:

Specifications for the PlastiSpan 30 extruded polystyrene insulation foam board and the Nilex woven geotextile 9852 are provided. A PlastiSpan 30 brochure and spec. on the foam is on file.

The flexural property of the DuraFrostwick System (bare foam and foam board lined with geotextiles) was tested by Alberta Research Council. Test method used was ASTM C-203 "Breaking Load and Flexural Properties of Block-Type Thermal Insulation". The test report is on file.

ALBERTA TRANSPORTATION COMMENTS

EXPERIENCE:

Alberta Transportation has insulated two highway sites with DuraFrostwick foam boards and preliminary indications are that the product is performing well. No problems or maintenance issues have been reported.

APPLICATION STANDARDS:

Alberta Transportation does not have a standard for this product.

RECOMMENDATIONS:

The DuraFrostwick System be listed as a Proven Product under Alberta Transportation Product List, Frost Barriers – Pavement Insulation Foam - Proprietary based on the information provided.

TRIAL PROJECTS

Hwy 857 - 2007

Hwy 28 – Near Ashmont, October 2010

Fred Cheng

cc New Product Evaluation Standing Committee – Terry Willis
Roger Skirrow

April 17, 2014 – revisions (name change from Frostwick to DuraFrostwick)

April 30, 2014 – update to experience and foam board name

Cc Innovations Evaluation Group:
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