Alberta Transportation

Product ID: 8165-4-2
Initiation Date: June 29, 2000
Revision Date: February 7, 2008

Product Evaluation

RE: Review of Cellular Concrete Grout

PRODUCT
Cematrix Cellular Concrete is a grout material supplied by Cematrix (Canada) Inc.

VENDOR CLAIMS AND INFORMATION

CLAIMS
The formulation design for Cematrix consists of cement, water, foaming agent and various admixtures, that when processed through proprietary equipment results in concrete like material providing numerous benefits including: (Product web link: http://www.cematrix.com/)

- light weight
- economical to transport
- requires no compaction
- ease of placement
- insulating qualities
- fire-proof
- durable
- freeze-thaw resistant
- environmentally friendly

HISTORY
Cellular Concrete was developed in Europe over 60 years ago. The two common processes are:

- The initial process involved a combination of materials, giving rise to an effervescing (bubbling) reaction. The resulting aerated mixture was autoclaved (cured under high temperature and pressure) then cut into building blocks.
- The other process involves the batch mixing of pre-prepared foam similar to shaving foam with a cement slurry.

POTENTIAL USAGE

- Trenching; appropriate for filling trenches, elimination of compaction and granular fill.
- Filling of abandoned culverts which prevents collapse of deteriorated culverts.
- Replacement for weak or unstable soils.
- Slope stabilization and run-off control.
- Floating platform over which roads, buildings and other installations can be constructed in locations where muskeg, unstable or weak soil conditions exist.

STANDARDS

ASTM C157	Standard Test Method for Length Change of Hardened Hydraulic Cement Mortar & Concrete
ASTM C476	Standard Specification for Grout for Masonry
ASTM C1019	Standard Test Method for Sampling and Testing Grout
ASTM C1090	Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout

Alberta Transportation

Product ID: 8165-4-2
Initiation Date: June 29, 2000
Revision Date: February 7, 2008

ALBERTA TRANSPORTATION COMMENTS

APPLICATION STANDARDS

- The Alberta Transportation Standards for Grouting Abandoned Culverts SpG034 and Specification 2.22, Section 2.22.2.2 Grout for Liners specify that material must be suitable for low pressure pumping and must have a minimum compressive strength of 500 kPa at 28 days.

RECOMMENDATIONS

Based on the information provided the Cematrix Cellular Concrete product will meet Alberta Transportation minimum specification requirements for grouting “non bridge size” abandoned culverts and culvert liners.

This product will be listed under the Proven Products category of the Alberta Infrastructure and Transportation Products List.

The manufacturer must provide adequate quality control procedures demonstrating compliance with minimum compressive strength requirements.

The use of this product for geotechnical applications may be considered by Alberta Transportation pending the receipt of supporting documentation of its use and appropriate testing results.

TRIAL PROJECTS

AT #6867/04 Douglas Dale Interchange, Calgary
AT #5892/03 Jct. Hwy 2 & Hwy 54 South near Innisfail
AT #6566/03 Hwy 36 near Two Hills

Joe Filice
cc Innovations Evaluation Group – Terry Willis
Abid Malik
Fred Cheng
Jim Wong
JF/nv