

Product Trial Charter

Durament Soil Stabilization

June 13, 2015

File #8255-23

Product Description

Durament Soil Stabilization is a proprietary water-soluble, neutral and non-toxic polymer additive for road construction. It is easy to use in combination with soil and normal Portland cement to create a solid and stable road base with in-situ material or sub base material. Durament composition includes; calcium chloride, hydrated acrylic copolymer latex and water.

Durament Soil Stabilization when thoroughly mixed and stabilized with a soil or road pavement material, cement and water produces an exothermic chemical reaction and forms a polymer which when compacted provides a very dense layer. Durament polymer creating additive is designed to work in conjunction with cement with a wide range of soil and sub-grade types to make a strong and flexible pavement for roads and to enhance quality and durability of the final pavement. Durament product is an additive to general purpose Portland cement and in-situ material to form a polymerized concrete slab.

Product Web Link: <http://durament.com/>

Durament Soil Stabilization is manufactured and distributed by Durament International Inc. located in Surrey, British Columbia. This product is listed on Alberta transportation's Products List in the category Stabilization (Soil)-Propriety.

Intended Outcomes

The vendor claims that constructing an unpaved road surface using the Durament product prevents dust, corrugation, pot holes, rutting, and other surface degradation issues caused by both heavy traffic and extreme weather. The use of this product also allows unpaved roads to be constructed out of in-situ soils (thereby reducing demands on road base aggregate resources, and greenhouse gases created trucking aggregate to site) as Durament is designed to be applied with general purpose Portland cement and incorporated into clay, silt, sand, gravel, and re-cycled road materials.

The vendor states that upon careful analysis of the geotechnical documents by our engineers on a project by project basis, a customized formula of Durament-to-cement assures success every time.

If the vendor claims are true, roads constructed using this soil stabilizer will reduce department highway maintenance costs and provide a better, safer roadway for Albertans.

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Trial Site Description

[describe the location (Highway, control section, kilometre marker, direction of travel), Region, department contact, vendor contact, relevant before photos] Still to be confirmed. Potential sites:

- Highway 861:02, N. of Castor, Alberta - Hanna district
- Highway 893:02, W. of Lloydminster, Alberta – Vermilion district

Installed on Hwy. 836:02 (8 km North of the Jct. of Hwy. 583 & Hwy. 836 on September 3, 2014. See attached site report.

Implementation Plan

[include any relevant installation instructions or potential issues, detail relevant specifications, include expected implementation date(s), consultant name and contract number (if applicable), planned installer contact information]

To be determined.

The gravel roads are in fairly good condition, however there are intermittent soft spots. The vendor will be responsible to provide material free of charge. Labor, equipment, signage requirement and traffic accommodation will be provided by the maintenance contractor.

We are proposing a trial length of 500 meters for each of the products participating in the trial. When the trial site has been finalized a site meeting will be set to assess the roadway, equipment required, amount of product required and determine the exact location for each trial. It is anticipated that the application of all the products be conducted at the same time to utilize the equipment necessary for the trials.

Participants of the trial are required to provide their construction methodologies prior to the site meeting. The vendors may wish to collect a soil sample on site to determine their product application rate.

The primary contact for Durament is:
Phil Naudi
President, Durament International Inc.
+1 778 891-4933
phil@durament.com
<http://durament.com>



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Evaluation Plan

It is recommended that the Durament Soil Stabilization product be evaluated over a 2 year period. Site visits will be conducted every 2-3 months by the local Maintenance Contract Inspectors. During the evaluation period, no additional maintenance to the road surface will be undertaken. This product will be considered successful if the following performance criteria are met:

- Road surface remains firm for the duration of the evaluation period. Hardness testing may be used to evaluate strength of the roadway.
- No significant softening/breaking up of the surface or rutting is observed, less than 2 problem areas observed per 100 metres.
- No significant dust creation is observed as compared to other similar roadways.

At the discretion of the Maintenance Contract Inspector, the outer 10% of the roadway surface may be ignored when making observations as the shoulders are more prone to softening.

It should be noted that this trial will be conducted as a part of a larger trial and the performance of this product will be compared to two other products (RoadCem Stabilization and Top Seal) applied on directly adjacent sections of the same highways.



Durament trial.doc

Product Evaluation Checklist

Product Name: Durament	Manufacturer: Durament International
Trial Location (Hwy:CS, km, direction of travel): Hwy. 836:06 – Km 8.8 to Km 9.1	

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Installed By: Carillion (through AT maintenance contract)	Installation Date: Sept. 3, 2014
Observed By: Frank Vidmar	Observation Date: Oct. 6, 2014

Did the product perform as expected, and meet or exceed department/industry specifications?

☐ Yes

☐ No

Not clearly obvious at this time

Was the trial installation of this product suitable to allow adequate evaluation of the product performance? Identify any extenuating circumstances that impacted the ability to give this product a fair trial.

☐ Yes

☐ No

Were any problems or potential issues with product performance observed? If yes, please describe.

☐ Yes

☐ No

Did the installer/contractor have any issues applying the product? If so, please describe.

☐ Yes

☐ No

Based on your observations, what are the most appropriate applications of this product?

Soil Stabilization

Would you recommend that this product be used again?

☐ Yes

☐ No

Too early to fully evaluate

Please attach any photos taken during the trial site visit, and submit the completed Product Evaluation Checklist to Joe Filice, Joe.Filice@gov.ab.ca.

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Product Evaluation
Checklist_Durament_

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April 2015 Assessment by Frank Vidmar



Product Evaluation
Checklist _Durament_

I met with the maintenance contractor and the MCI on site to discuss the effects of the trial section(s). Both are happy with the end product and it's performance since application. The portion of highway chosen for the test was gravel with very soft areas prone to severe rutting, especially after rains. Local traffic would most often use different routes and avoid the area until the road dried up and was graded. Since application of the product traffic is now using this highway under all types of weather. The road is getting a little rough as observed by all, but no worse than any other gravel road at this time. Since the road is basically cement it is very hard and will be a challenge to reshape if required. Still, the contractor believes it is 1,000 times better than before and is very happy with the performance. A local resident stopped and told us the same thing. Other residents and businesses in the area have also commented on how improved the road is.

The product was put down in three different segments, all with some variations in product and application. Two were looked at during this inspection and no differences were noted. Gaps of 30m were left untreated during application. These gaps are not noticeable at this time and it is my opinion that residual material has migrated and pretty much closed the gaps.

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Hwy. 836:06
April 21, 2015
Durament
Section 1
Right Shoulder

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