Product ID: 8248-1-7
Initiation Date: January 4, 2019
Revision Date: November 09, 2023
Expiry Date: November-2024

Product Evaluation

RE: Review of Maccaferri Debris Flow Barrier System

PRODUCT

The Maccaferri Debris Flow Barrier System (DF Barrier System) is manufactured and distributed by Maccaferri Canada Ltd. located in Cambridge, Ontario. Product Web Link: https://www.maccaferri.com

VENDOR CLAIMS AND INFORMATION

CLAIMS

The Maccaferri Debris Flow Barriers can be installed on both open slopes and depressions with difficult morphology. Their geometric configuration reduces impact forces and consequently reduces the size of the foundations. The components are made to reduce the damages after impact, minimizing the maintenance operations. The post are free released by the mesh and their main function is holding the upper longitudinal cable. The posts can be left out if the barrier will be install in small size channel.

DESCRIPTION

DF Barriers are intended to stop soil-rock-water masses (debris flow) or soil masses (landslide) from sliding down slopes and within channels. The upslope bracing cables are equipped with brakes to reduce impact forces. If a post is damaged loads are transferred to adjacent areas to maintain barrier functionality. The main mesh is made up with interlocking steel rings. Special panels can be installed on the barrier sides to close in openings form by irregularities in channel bed geometry.

POTENTIAL USAGE

Constraining of solid material in intercepted debris flows and shallow landslides from reaching vulnerable infrastructure

STANDARDS

ASTM A123 “Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products”;
ASTM A635 “ Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Carbon, Hot-Rolled;
ASTM A641 “ Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire”;
ASTM A975 “Standard Specification for Double–Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic– Coated Steel Wire or Metallic-Coated Steel Wire With Poly (Vinyl Chloride) (PVC) Coating)”;

ALBERTA TRANSPORTATION COMMENTS

EXPERIENCE

Alberta Transportation has no experience with this product. Alberta Transportation has experience with rockfall mesh nets and rockfall barrier systems.

APPLICATION STANDARDS

Alberta Transportation does not have standard for debris flow, rock fall and avalanche protection. These types of applications are site specific and usually require a flexible design methodology that permits field alterations.

RECOMMENDATIONS

Maccaferri Debris Flow Barrier System be listed as a Potential Product under Alberta Transportation Product List, Rock/Debris Retaining System – Proprietary based on the information provided. Final acceptance as a proven product will be based on field performance.

RESTRICTIONS ON USE

Debris flow barrier systems should be designed by a qualified engineer registered with APEGA and should be designed for the specific debris flow / rockfall hazard and site conditions. Specific engineering experience with rockfall assessment, analysis, design and implementation is considered central to successful project outcomes. At locations where potential fish habitat may be disturbed, an assessment by a professional biologist should be done.

TRIALS

Rishi Adhikari

cc Innovations Evaluation Group

Roger Skirrow, Rocky Wang