

EROSION AND SEDIMENT CONTROL SYSTEMS

DITCH BLOCKS/BARRIERS

Any product that meets the requirements of the [Alberta Transportation Erosion and Sediment Control Manual \(2010\)](#) and Alberta Transportation Specifications qualifies under this section.

SYNTHETIC PERMEABLE BARRIERS

Permeable barriers are made of UV stabilized high density polyethylene, firmly anchored to the ground, and capable of reducing runoff for storm channels and highway ditches. Typical dimensions are, height=250 mm, length=1000 mm.

For high flow conditions, erosion control matting must be used in conjunction with the barriers to reduce runoff and erosion.

Any product that meets the requirements of the Alberta Transportation Erosion and Sediment Control Manual (2010), Best Management Practices, BMP #10 qualifies under this section.

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
BMP Spring Berm		
EnviroBerm		
GeoRidge		
GeoRidge Bio		
Enviro-Ridge		
Enviro Berm II		

STRAW ROLL (FIBRE ROLL)

Straw roll consists of bundled straw (or natural fibre) wrapped in photo-degradable open-weave plastic netting staked into the soil along contours as a grade break to reduce erosion potential.

Any product that meets the requirements of Alberta Transportation Erosion and Sediment Control Manual (2010), Best Management Practices, BMP #38 qualifies under this section.

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Stenlog REPORT		
Curlex Sediment Log REPORT		
Sediment STOP REPORT		
Bio 3 Fiber Roll		

Bio 4 Fiber Roll		
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SILT FENCE

Geotextile Fence Barrier shall comprise a low fence made from geotextile material and place at locations to retain silt and preventing silt contamination during construction. Minimum height of silt fence shall be 750 mm. Minimum embedment depth of the fabric shall be 150 mm.

Any product that meets the requirements of the Alberta Transportation Erosion and Sediment Control Manual (2010), Best Management Practices, BMP #1, qualifies under this section.

Material: Woven or non-woven geotextile

Property	Test Method	Geotextile Requirements
Maximum post spacing (m)	ASTM D 4632	2
Elongation	ASTM D 4632	<50%
Grab Strength (N)	ASTM D 4632	
Machine direction		550
X-Machine direction		450
Permittivity (sec ⁻¹)	ASTM D 4491	0.05
Apparent Opening Size (mm)	ASTM D 4751	0.60 max. avg. roll value
Ultraviolet stability (% retained strength)	ASTM D 4355	70% after 500 hrs. of exposure

Note: All numeric values represent MARV (Minimum Average Roll Value) in the weaker principal direction.

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Nilex Amoco 2130		
Layfield Wire Back Silt Fence (SF135)		Geotex 2130 (Expiry Date: Jan. 2021)
Layfield Silt Fence (SF135)		
AGES Premium Silt Fence and Premium Page Wire Backed Silt Fence		
Armtec Silt Fence (2130)		
Biodegradable Silt Fences		
		Biodegradable Silt Fence (Expiry Date: Dec. 2021)

CELLULAR CONFINEMENT SYSTEM

Cellular confinement systems are 3-dimensional plastic matting with open cells that are filled with topsoil or aggregates. As a matting unit placed on channels or slopes, the structure is used to stabilize the slopes, and at the same time permit surface drainage. Shall be constructed of high

density polyethylene (HDPE) that has been welded together to form a series of honeycomb cells. It is usually supplied in collapsed form. It comes in various cell depths and cell sizes, perforated or unperforated.

Any product that meets the requirements of the Design Guidelines for Alberta Transportation Erosion and Sediment Control Manual (2010), Best Management Practices, BMP #15 qualifies under this section.

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Geocell/Geo Cell/Envirogrid REPORT		
Geoweb		
Neoweb		

GABIONS AND MATS

Gabions and Mats are made of hexagonal double twisted wire mesh, filled with stone. They are divided into cells with diaphragms, whose function is to reinforce the structures.

Standards for the gabion materials and rocks can be found in Alberta Transportation Standard Specifications for Highway Construction (2019) Section 6.10, Gabions and Gabion Mattresses, and Alberta Transportation Erosion and Sediment Control Manual (2010), Best Management Practices BMP #2.

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Maccaferri Gabions & Mats		
Modular Gabions & Mats		

ROLLED EROSION CONTROL PRODUCTS (RECP)

Rolled Erosion Control mats or blankets are made from straw or hay, coconut fibers, wood excelsior, jute, polypropylene or nylon fibers. They are used to reduce erosion and create conditions to assist the establishment of vegetation. Any product that meets the performance properties below and requirements of Alberta Transportation Erosion and Sediment Control Manual (2010), Best Management Practices BMP #13 qualifies under this section.

TEMPORARY RECPS - EROSION CONTROL BLANKETS (ECB) AND OPEN WEAVE TEXTILES (OWT)

Erosion Control Blankets are temporary degradable RECPS composed of processed degradable natural and/or polymer fibres mechanically bound together by a single or between two degrading, synthetic or natural fibre netting(s). For environmental friendly applications, some nettings may contain 100% biodegradable natural organic fibres.

Open Weave Textile is a temporary degradable RECP composed of processed natural or polymer yarns woven into a matrix, used to provide erosion control and facilitate vegetation establishment.

Material	Performance Properties for Slopes	Performance Properties for Channels
	Cover Factor, C ^{1,2}	Permissible Shear Stress ^{3,4} (N/m ²)
Type A: (<12 months Functional Longevity) Single-net Erosion Control Blankets and Open Weave Textiles	≤ 0.15 @ 3:1 (h:v) and flatter	72
Type B: (<12 months Functional Longevity) Double-net Erosion Control Blankets and Open Weave Textiles	≤ 0.20 @ 2:1 (h:v) and flatter	84
Type C: (>12 months Functional Longevity) Erosion Control Blankets and Open Weave Textiles	≤ 0.25 @ 1:1 (h:v) and flatter	96

¹ C-factor calculated as ratio of soil loss from RECP protected slope to ration of soil loss from unprotected (control) plot in large-scale testing. These performance test values should be supported by periodic bench testing under similar test conditions using ECTC Test Method #2.

² Acceptable large-scale testing protocol may include ASTM D6459 or other independent testing deemed acceptable by the department engineer.

³ Minimum shear stress RECP (unvegetated) can sustain without physical damage or excess erosion [>12.7 mm soil loss] during a 30-minute flow event in large-scale testing. These performance test values should be supported by periodic bench scale testing under similar test conditions using ECTC Test Method #2.

⁴ Acceptable large-scale testing protocol may include ASTM D6460 or other independent testing deemed acceptable by the department engineer.

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Type A:		
North American Green: S75		
North American Green S150BN		Landlok S1 (Expiry Date: Jan. 2021)
North American Green C SC150BN		
Type B:		
North American Green: S150		ESC-2 (Expiry Date: Feb. 2024)
Propex: Landlok S2 , REPORT		

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
ErosionControlBlankets.com S32		
AEC Premier Straw Double Net		

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Type C:		
ErosionControlBlankets.com: C32		
North American Green: C125, SC150		
Eastcoast ECSC-2		
Belton Industries: DeKowe 700 coir		
Propex: Landlok C2 , Landlok CS2		
ErosionControlBlankets.com SC32		
Eastcoast ECC-2		
AEC Premier Coconut		
AEC Premier Straw/Coconut		
AEC Curlex II		

PERMANENT RECPS - TURF REINFORCEMENT MATS (TRM)

TRMs are long-term, non-degradable rolled erosion control products composed of UV stabilized, non-degradable, synthetic fibres, filaments, nettings and/or mesh processed into 3-dimensional reinforcement matrices designed for permanent and critical hydraulic applications where design discharges exert velocities and shear stresses that exceed the limits of mature, natural vegetation. Turf reinforcement mats provide sufficient thickness, strength and void space to permit soil filling and/or retention and the development of vegetation within the matrix. Some trm included in this category, may contain organic materials and may be termed as composite turf reinforcement mats (c-trm).

Material	Performance Properties for TRM	
	Permissible Shear Stress ^{3, 4, 5}	Minimum Tensile Strength
	(N/m ²)	(kN/m)
Turf Reinforcement Mats ^{1,2}		
TRM Type A	288	1.82
TRM Type B	384	2.19
TRM Type C	480	2.55

¹ For TRMs containing degradable components, all property values must be obtained on the non-degradable portion of the matting alone.

² Minimum thickness of TRM is 6.35 mm.

³ Shear stress that fully vegetated TRM can sustain without physical damage or excess erosion [>12.7 mm soil loss] during a 30-minute flow event in large-scale testing.

⁴ Acceptable large-scale testing protocol may include ASTM D6460 or other independent testing deemed acceptable by the engineer.

⁵ Field conditions with high loading and/or high survivability requirements may warrant the use of a TRM with a tensile strength of 44 kN/m or greater.

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
TRM Type A:		
Propex: Landlok 450		PC42 TRM (Expiry Date: Jan. 2021)
Maccaferri MacMat N10 REPORT		
TRM Type B:		
Greenfix America CFG2000		ECP2 10 Oz. TRM (Expiry Date: Feb. 2024)
North American Green: SC250 , P300		
Eastcoast ECP2 10oz. Polypropylene		
TRM Type C:		
North American Green: C350		Futerra 7020 (Expiry Date: Feb. 2021)
Tenax Multimat 100 :		Macmat R6 TRM (Expiry Date: July 2022)
North American Green: P550		Macmat R8 TRM (Expiry Date: July 2022)
ErosionControlBlanket.com P42		TriNet Recyclex TRM (Expiry Date: April 2023)
Landlok Pyramat TRM		TriNet Straw Coconut TRM (Expiry Date: May 2023)
Propex: Landlok 300		TriNet Curlex TRM (Expiry Date: May 2023)
North American Green C125BN		TriNet Coconut TRM (Expiry Date: May 2023)

PRODUCTS LIST

Curlex Enforcer		
Futerra R45 High Performance		
PS42 TRM		

SEDIMENT CONTROL

Sedimentation is the deposition of soil particles previously held in suspension by flowing water. Sedimentation is promoted before surface sediment laden water flow leaves a construction site.

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS

POLYACRYLAMIDE (PAM)

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Water Lynx and Soil Lynx		
		Clearflow Treated Floc Curtain (Expiry Date: September 2020)
		Clearflow Treated Geo-Jute (Expiry Date: September 2020)

MISCELLANEOUS EROSION AND SEDIMENT CONTROL

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
A-Jacks		Prairie Mat (Expiry Date: Jan. 2021)
Propex ArmorMax Report (May 2012)		
ScourSheild		
ScourStop		
ShoreMax		
Concrete Cloth		
Flexamat		

HYDRAULIC EROSION CONTROL PRODUCT (HECP)

A HECP is a manufactured, temporary, degradable, pre-packaged fibrous material that is mixed with water and hydraulically applied as a slurry designed to reduce soil erosion and assist in the establishment and growth of vegetation. The HECP will achieve maximum performance after a sufficient curing period, which will vary based upon site specific conditions. The HECP forms a protective layer which controls erosion and allows for enhanced seed germination and accelerated plant growth.

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Cocoflex ET – FGM	EcoAnchor (Expiry Date: Sept. 2020)	Rainier Supreme (Expiry Date: Sept. 2021)
Flexterra FGM		Profile Wood with Tack (Formerly Known as Terra-Wood with Tacking Agent 3 – Hydraulic Mulch) (Expiry Date: Feb. 2022)
Earth Guard Fiber Matrix		Profile Wood Fiber (Formerly Known as Terra-Wood HM) (Expiry Date: Feb. 2022)
Nilex MulchMax 200		EcoFibre-Wood Hydraulic Mulch (Expiry Date: Feb. 2022)
Nilex MulchMax ULTRA		EcoFibre Plus Tackifier Hydraulic Mulch (Expiry Date: Feb. 2022)
EcoMatrix		
Proganics Biotic Soil Media		HydroStraw Cellulose Fibre Plus (Expiry Date: Feb. 2022)
Verdyol Biotic Earth Black HGM		HydroStraw Fibre RX (Expiry Date: Feb. 2022)
Rainier Fiber Plus Tacifier		HydroStraw Straw Lock (Expiry Date: Feb. 2022)
		HydroStraw All In One Bounded Fibre Matrix (Expiry Date: Feb. 2022)
		HydroStraw Bounded Fibre Matrix (Expiry Date: Feb. 2022)
		HydroStraw Guar Plus (Expiry Date: Feb. 2022)
		HydroStraw Original Formulation (Expiry Date: Feb. 2022)

ARTICULATING CONCRETE BLOCKS

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Cable Concrete		
Armorflex		