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 (Re-review Date: August 2035)		
EnviroBerm (Re-review Date: August 2035)		
GeoRidge (Re-review Date: August 2035)		
GeoRidge Bio (Re-review Date: August 2035)		
Enviro-Ridge (Re-review Date: August 2035)		
Enviro Berm II (Re-review Date: August 2035)		

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** (Re-review Date: August 2035)	BMP-Standard Straw Wattle (Made in Alberta) (Expiry Date: November 2026)	
Curlex Sediment Log **REPORT** (Re-review Date: August 2035)		
Sediment STOP **REPORT** (Re-review Date: August 2035)		
Bio 3 Fiber Roll (Re-review Date: August 2035)		
Bio 4 Fiber Roll (Re-review Date: August 2035)		
BMP-Biodegradable Straw Wattle (Made in Alberta) (Re-review Date: August 2035)		
BMP-Rapid Degradable Straw Wattle (Made in Alberta) (Re-review Date: August 2035)		

SILT FENCE

Geotextile Fence Barrier shall comprise a low fence made from geotextile material and placed 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 (Re-review Date: August 2035)		
Layfield Wire Back Silt Fence (SF135) (Re-review Date: August 2035)		
Layfield Silt Fence (SF135) (Re-review Date: August 2035)		
AGES Premium Silt Fence and Premium Page Wire Backed Silt Fence (Re-review Date: August 2035)		
Armtec Silt Fence (2130) (Re-review Date: August 2035)		
Biodegradable Silt Fences		
	Biodegradable Silt Fence (Expiry Date: February 2027)	

CELLULAR CONFINEMENT SYSTEM

Cellular confinement systems are 3-dimensional plastic mating 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** (Re-review Date: August 2035)		
Geoweb (Re-review Date: August 2035)		
Tough Cell (Re-review Date: August 2035)		

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 (Re-review Date: August 2035)	GBN Gabion Mattresses and Baskets (Expiry Date: Nov. 2027)	Reno mattress (Expiry Date: Feb. 2027)
Modular Gabions & Mats (Re-review Date: August 2035)	Polimac Coated (DT) Gabion (Expiry Date: Nov. 2027)	Reno mattress Plus (Expiry Date: Feb. 2027)

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 environmentally 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	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 (Re-review Date: August 2035)	BMP BSNAE Biodegradable Single Net Aspen Excelsior (Expiry Date: November 2026)	AEC Curlex I CL (Expiry Date: April 2026)
North American Green: S150BN (Re-review Date: August 2035)		AEC Curlex I FibreNet (Expiry Date: April 2026)
North American Green SC150BN (Re-review Date: August 2035)		AEC Premier Straw Single Net / FibreNet (Expiry Date: April 2026)
BMP-BDNS Biodegradable Straw 100% (Double Jute Netting) (Re-review Date: August 2035)		BMP SDNS 100% Straw (Expiry Date: March 2028)

Type B:		
North American Green: S150 (Re-review Date: August 2035)		AEC Curlex III FibreNet (Expiry Date: April 2026)
Propex: Landlok S2, **REPORT** (Re-review Date: August 2035)		
ErosionControlBlankets.com S32 (Re-review Date: August 2035)		
AEC Premier Straw Double Net (Re-review Date: August 2035)		
Type C:		
ErosionControlBlankets.com: C32 (Re-review Date: August 2035)	BMP BDNAE Biodegradable Double Net Aspen Excelsior (Expiry Date: November 2026)	
North American Green: C125, SC150 (Re-review Date: August 2035)		
Eastcoast ECSC-2 (Re-review Date: August 2035)		
Belton Industries: DeKowe 700 coir (Re-review Date: August 2035)		
Propex: Landlok C2, Landlok CS2 (Re-review Date: August 2035)		
ErosionControlBlankets.com SC32 (Re-review Date: August 2035)		
Eastcoast ECC-2 (Re-review Date: August 2035)		
AEC Premier Coconut (Re-review Date: August 2035)		
AEC Premier Straw/Coconut (Re-review Date: August 2035)		
AEC Curlex II (Re-review Date: August 2035)		
BMP-BDNC Biodegradable Double Net Coconut (Re-review Date: August 2035)		

BMP-BDNSC Biodegradable Double Net Straw – Coconut Mix (Re-review Date: August 2035)		
BMP-SDNC Standard Double Net Coconut (Re-review Date: August 2035)		
BMP-SDNSC Standard Double Net Straw Coconut Mix (Re-review Date: August 2035)		

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).

	Performance Properties for TRM	
Material	**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:		
Maccaferri MacMat N10 **REPORT** (Re-review Date: August 2035)		AEC Recyclex TRM – V (Expiry Date: April 2026)

TRM Type B:		
Greenfix America CFG2000 (Re-review Date: August 2035)		
North American Green: SC250, P300 (Re-review Date: August 2035)		
Propex: Landlok 450 (Re-review Date: August 2035)		
Eastcoast ECP2 10oz. Polypropylene (Re-review Date: August 2035)		
TRM Type C:		
North American Green: C350 (Re-review Date: August 2035)		
Tenax Multimat 100 : (Re-review Date: August 2035)		
North American Green: P550 (Re-review Date: August 2035)		
ErosionControlBlanket.com P42 (Re-review Date: August 2035)		
Landlok Pyramat TRM (Re-review Date: August 2035)		
Propex: Landlok 300 (Re-review Date: August 2035)		
North American Green C125BN (Re-review Date: August 2035)		
Curlex Enforcer (Re-review Date: August 2035)		
Futerra R45 High Performance (Re-review Date: August 2035)		
PS42 TRM (Re-review Date: August 2035)		
Macmat R6 TRM (Re-review Date: August 2035)		
Macmat R8 TRM (Re-review Date: August 2035)		

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 (Re-review Date: August 2035)		

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 (Re-review Date: August 2035)		Profile HE Blend (Expiry Date: Nov. 2027)
Earth Guard Fiber Matrix (Re-review Date: August 2035)		Plantae ReNew Topsoil Armour (Expiry Date: Nov. 2028)
EcoAnchor (Re-review Date: August 2035)		Plantae ReCover Base Plus (Expiry Date: Nov. 2028)
EcoMatrix (Re-review Date: August 2035)		Plantae ReCover Bonded Fibre Matrix (BFM) (Expiry Date: Nov. 2028)
Flexterra FGM (Re-review Date: August 2035)		Plantae ReCover Base (Expiry Date: Nov. 2028)
Proganics Biotic Soil Media (Re-review Date: August 2035)		
Rainier Fiber Plus Tacifier (Re-review Date: August 2035)		
Verdyol Biotic Earth Black HGM (Re-review Date: August 2035)		

ARTICULATING CONCRETE BLOCKS

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
Cable Concrete (Re-review Date: August 2035)		
Armorflex (Re-review Date: August 2035)		

MISCELLANEOUS EROSION AND SEDIMENT CONTROL

PROPRIETARY

PROVEN PRODUCTS	TRIAL PRODUCTS	POTENTIAL PRODUCTS
A-Jacks (Re-review Date: August 2035)	Hydrotex Enviromat FX (Expiry Date: Oct. 2026)	Filter Unit Ecogreen 2T & 4T (Expiry Date: June 2027)
Propex ArmorMax Report (May 2012) (Re-review Date: August 2035)		Cable Concrete CC10 (Expiry Date: Jan. 2026)
ScourSheild (Re-review Date: August 2035)		Cable Concrete CC40A (Expiry Date: Jan. 2026)
ScourStop (Re-review Date: August 2035)		Reinforced Concrete Roll (RCR) (Expiry Date: Feb. 2029)
ShoreMax (Re-review Date: August 2035)		
Concrete Cloth (Re-review Date: August 2035)		
Flexamat (Re-review Date: August 2035)		