ARTICULATED CONCRETE BLOCK MATS

DATA SPECIFICATION SHEET

CATEGORY:	CONCRETE PRECAST MATS
APPLICATION:	EROSION PREVENTION
SIZE:	1200mm x 2400mm x 120mm

PRODUCT OVERVIEW

An articulated concrete block mat or precast mat, is a concrete block revetment mat system designed to control various types of erosion due to water, wind and vehicular traffic.

Precast concrete mats are engineered structures made of reinforced concrete, designed to serve various functional and protective purposes. The mats are prefrabricated in controlled environments and transported to site for easy installation. They are versatile, durable and efficient solutions for applications in construction, environmental protection and infrastructure projects.

PRODUCT FEATURES

- Durability: high resistance to weather, heavy loads and wear over time
- Efficiency: Reduces construction time with pre-made units
- Cost Effective
- Versatile
- Integrates with natural surroundings
- Promotes habitat restoration

PRODUCT CHARACTERISTICS

Each mat is typically 2400x1200mm, made from 18 individual 50 MPA concrete blocks interlocked by stainless-steel cables or polypropylene rope, which connect through each block in both directions.

There is a 15mm spacing (at base) between blocks to provide an opening.

The finished blocks are manufactured with concrete conforming to the cement requirements of AS 3600 and to the aggregate requirements of AS 2758.

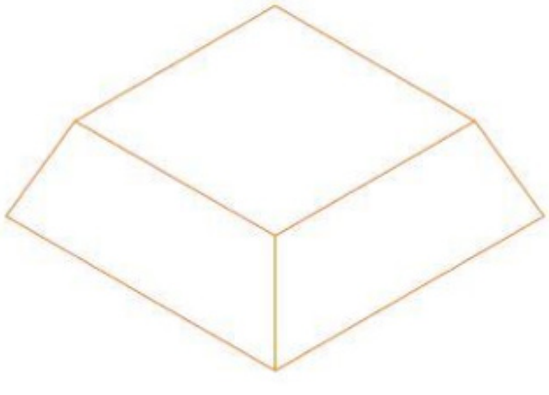
Blocks have a minimum weight of 34kg per block and placed no further than 15mm apart.

Material weight per square meter is approximately 214kg.

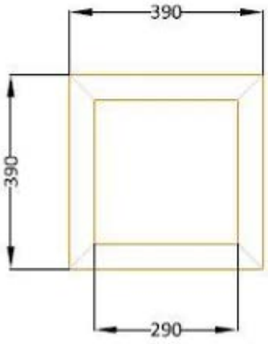
Each block has a 120mm high profile, 290x290mm on the top face and 390x390mm at the bottom face.

Stainless steel cable clamps may be used to connect adjoining concrete mats.
The standard placement of clamps shall be placed on 800 mm centres connecting adjoining mats together. Clamps are recommended in applications where water flow exceeds 2.0 m per second

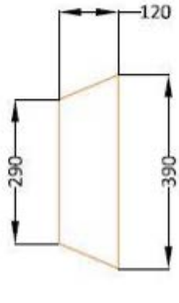
Cables and Rope shall be integral (poured into) to the concrete block and shall traverse through each block in both longitudinal and lateral directions, providing a flexible interlocked system.



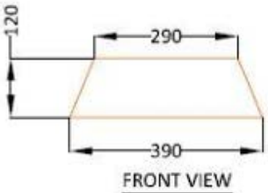
ISOMETRIC VIEW



PLAN VIEW

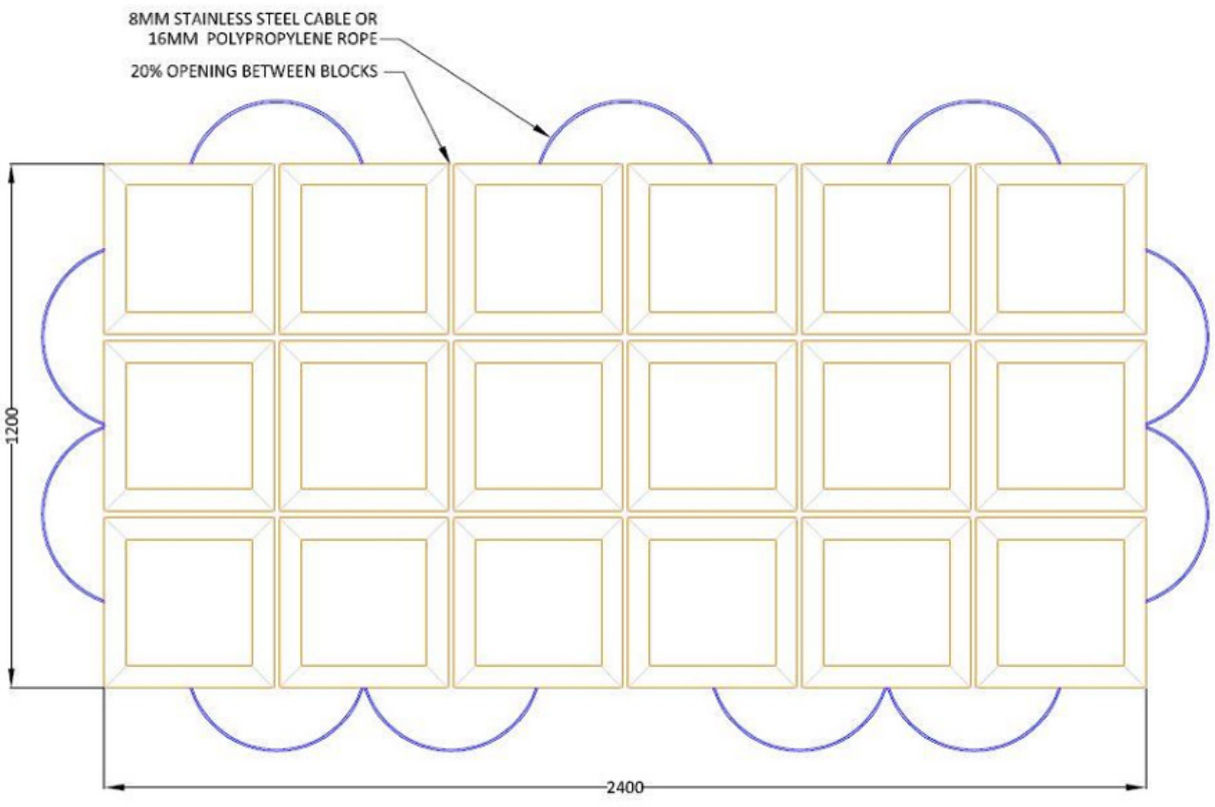


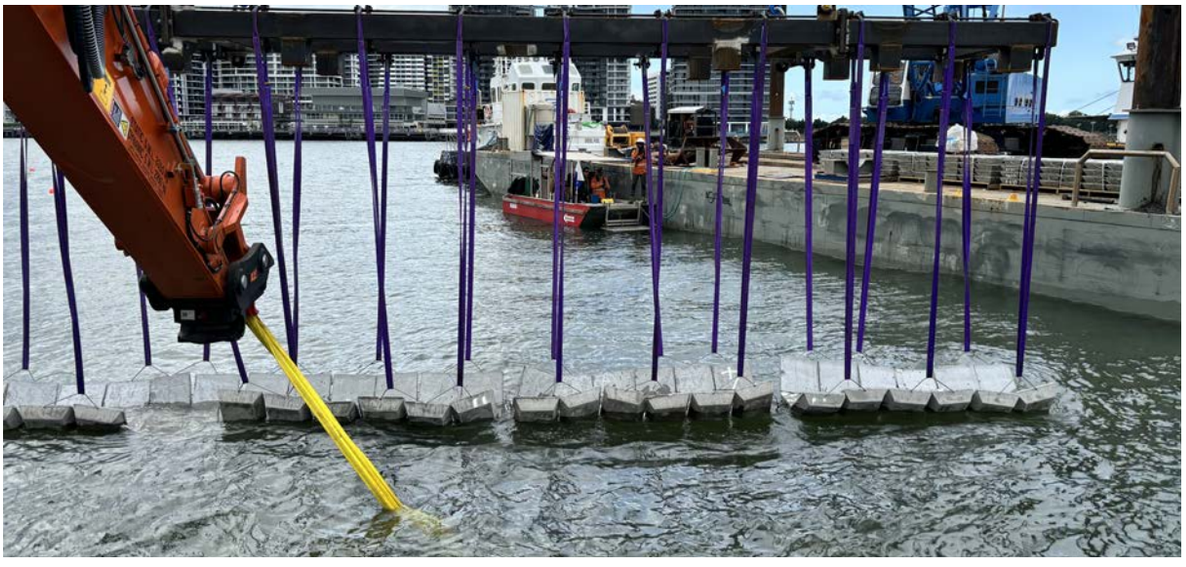
SIDE VIEW



FRONT VIEW

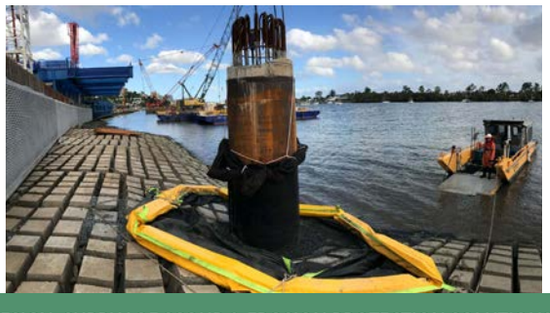
PRODUCT CHARACTERISTICS





KEY FEATURES & BENEFITS

- Can be installed on boat ramps, revetments, pipelines for pipe protection, culverts, inlets, outlets, driveways, causeway crossings, drain swails, spillway overflows, livestock trough yards, embankments, parking pavement, bridge abutments
- Used as solution to control erosion
- Precast mats offers permanent, hard armoured protection, with a natural vegetated appearance
- The mats can be mowed over or left to grow wild
- Cost-effective solution
- Easy maintenance
- Fast and simple installation
- Blends in with the natural surroundings
- Improves safety - safe to walk or drive across
- Environmentaly friendly - wildlife can walk across
- Highly resistant to weather conditions
- Reduces contruction cost - low material cost, less labour and efficient installation
- Versatile - flexible mats conform to existing ground contours, minimizimg site preperation
- Mats can be removed and reused on future sites



APPLICATIONS

- Bridge Abutments and Revetments
- Pipes for Pipeline Protection
- Culverts
- inlets & Outlets
- Driveways, Causeway Crossings, Parking pavements
- Spillway Overflows
- Livestock Trough Yards
- Embankments
- Boat Ramps

CONCRETE

Each mat is typically 2400x1200mm, made from 18 individual 50 MPA concrete blocks

The finished blocks are manufactured with concrete conforming to the cement requirements of AS 3600 and to the aggregate requirements of AS 2758

Concrete Block Product Specifications	
Dimensions	1200mm x 2400mm x 120mm
Weight	214kg p/m² or 616kgs per mat
Each block size	Top face: 290x290mm, Bottom face: 390x390mm, Height 120mm
Blocks per mat	18 Blocks per mat
Spacing between blocks	115mm (at top) and 15mm (at base)

ANCHOR POINTS

Anchoring is to be designed by an engineer for the water flow rates, soil and site conditions.

Individual mats can be placed next to each other and joined together using stainless steel zip ties/or cable clamps.

Mats are tethered together using the external rope or cable loops.

Anchoring the mats down will require an engineer's design. This is to be completed by an engineer who is familiar with the design parameters of the project. Eg soil condition, hydraulic flow rates and loads

Cable Block Mats are designed to take certain velocities in certain slope and bedding situations

INSTALLATION METHODOLOGY

Prior to installing prepare the subgrade as detailed in the plans that have been designed by an engineer for the project.

All subgrade surfaces to be smooth and free of all rocks, stones, sticks, roots, and other protrusions or debris of any kind that would result in an individual block being raised more than 20mm above the adjoining blocks.

Specified geotextile to be placed according to engineers' recommendations. There shall not be any dragging, tearing or damaging of the geotextile. The mats shall be laid on the geotextile in such a manner to produce a smooth plane surface. Intimate contact with the subsurface is critical to the systems performance in the field.

Finish and level the top layer of soil/rock as per project engineer design.

Install mats to the line and grade shown on the plans and per the engineers' requirements.

When vegetation is required, distribute the seed on top of the Geofabric cloth. Cover with topsoil and water.

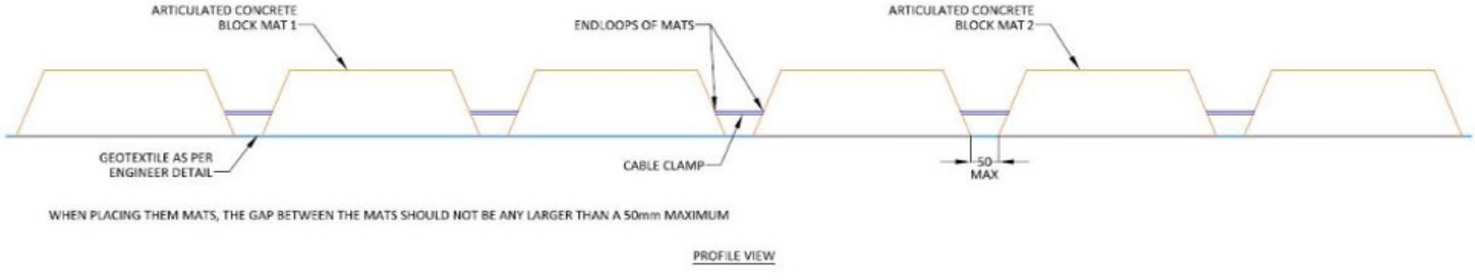
The engineer or authorised representative will provide technical assistance during preparation and installation of the concrete block mats as needed.

Provide a minimum 450mm deep concrete mat embedment toe trench at all edges exposed to concentrated flows.

Recess exterior edges subject to sheet flow a minimum of 150mm.

Provide fastening or anchoring as recommended by the engineer for the site conditions.

Concrete Mats are not to be driven on until 28 days from manufacturing date on label of each mat.



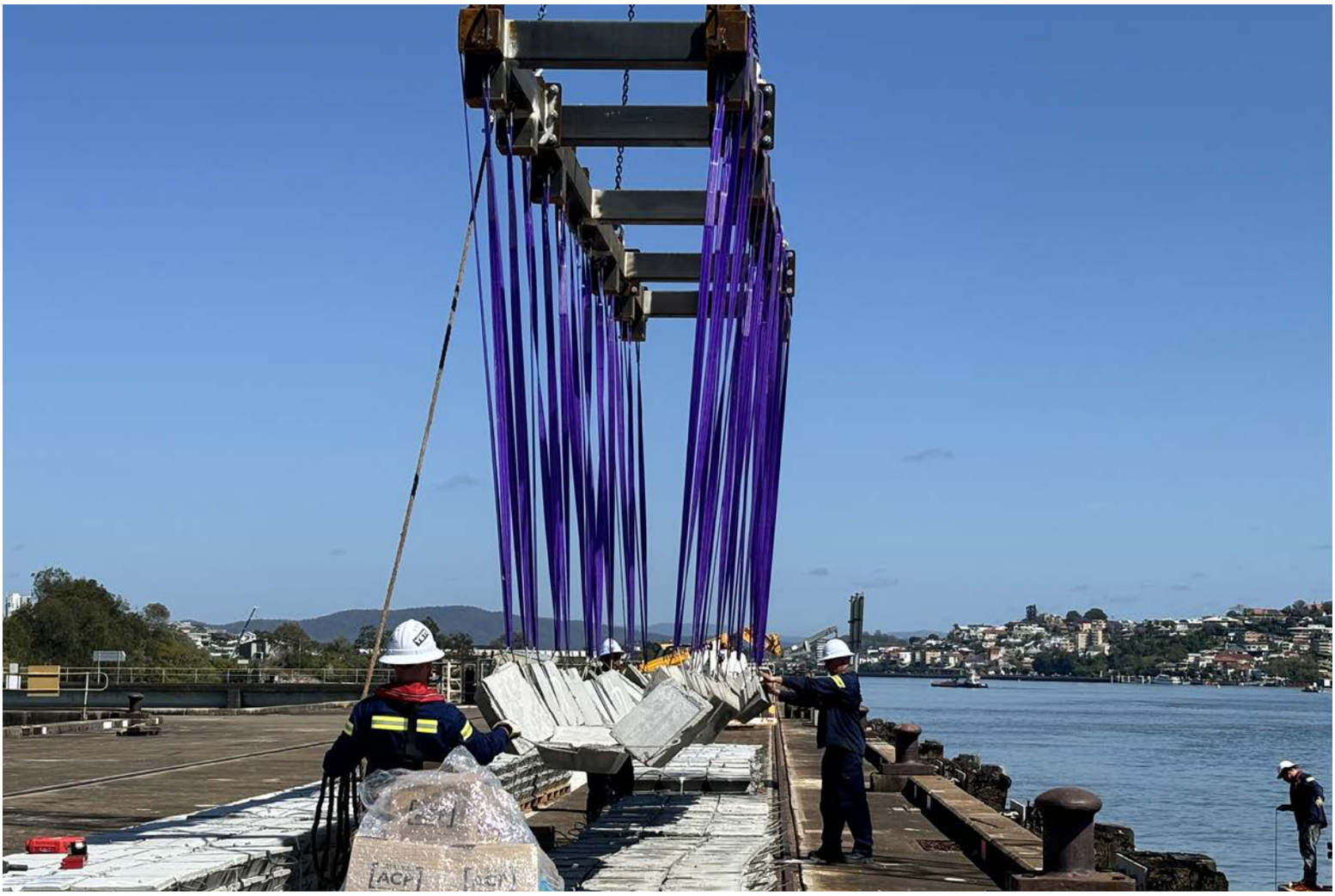
TRANSPORT & STORAGE

Articulated Concrete Cable Block Mats can be stacked (up to 4 layers) on a pallet for transportation.

Pallets should not be stacked more than 2 high on top of each other.

Upon delivery, mats may be left exposed for up to 90 days.

If exposure will exceed 90 days, cover or tarp the mats to minimise UV exposure.



MANUFACTURING MATERIAL

Manufacturing Materials		
Concrete Block	**Interconnecting material**	**Breaking Strain (Approx)**
50 Mpa, wet-cast portland cement	8mm 316 Stainless Steel Cable	3900kg
50 Mpa, wet-cast portland cement	16mm Polypropylene Rope	

CONCRETE MATERIAL

Concrete strength	
Age	Strength required
7 Days	38Mpa
14 Days	50Mpa
28 Days	61Mpa

INTERCONNECTING SPECIFICATIONS

Interconnecting Specifications		
Dimensions	8mm Stainless Steel Cable	Polypropylene Rope
Spec	Ultra high quality ProRig AISI 316 marine grade stainless steel wire rope 7×19 strand is a flexible stainless steel wire rope with a braided surface and bright finish Reliable breaking strains and corrosion resistance	16mm Polypropylene Rope
Breaking strength	37.41Kn	3500kg
Tensile Strength	1812 N/mm²	
Detail	Wire rope has braided surface amd bright finish, corrosion resistant	Abrasion and shock load resistant, high strength to weight ratio, UV resistant with excellent weathering properties, not affected by water and does not absorb water, rope allows greater articulation of concrete block

OUR CLIENTS

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