

# Armormax® 75

## Surficial Slope Stability



The **ARMORMAX® 75** for **Slope Stability** is an Engineered Earth Armoring Solution™ used for surficial slope stability in vegetated and unvegetated applications. It is composed of two components:

- PYRAMAT® 75 High Performance Turf Reinforcement Mat (HPTRM)
- Type B2 Engineered Earth Anchors

ARMORMAX® 75 is available in green or tan to provide for an aesthetically pleasing solution with proven performance. The anchor component is specifically designed and tested for compatibility and performance with PYRAMAT® 75 HPTRM to provide a system solution. KEYMAY offers several anchor options to provide the ARMORMAX® 75 system designed for specific challenges and needs. The expected design life of ARMORMAX® 75 is up to 75 years because of its superior UV resistance, resistance to corrosion, strength, and durability in the most demanding environments.



### PYRAMAT® 75

The PYRAMAT® 75 HPTRM component of ARMORMAX® 75 has been tested and conforms to the property values listed below<sup>1</sup> while manufactured at a KEYMAY facility having achieved ISO 9001:2008 certification. KEYMAY also performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

### TYPE B2 ANCHOR

The Type B2 Anchor model is used for surficial slope stability applications and has a working load of up to 1,500 lbs. The Type B2 Anchor consists of a zinc-aluminum alloy anchor head, zinc-aluminum coated carbon steel cable, an aluminum ferrule, a zinc-aluminum alloy load-locking mechanism with a ceramic roller, and a zinc plated steel load bearing plate coated with plastisol. The bullet nose design of the anchor head allows the anchor to penetrate PYRAMAT® 75 HPTRM resulting in minimal installation damage. The Type B2 Anchor is also designed with a recessed cavity so the top of the cable can be cut below the surface being protected.

## PYRAMAT® 75 HPTRM PROPERTIES

PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured		100%	
PHYSICAL			
Thickness <sup>2</sup>	ASTM D-6525	0.40 in	10.2 mm
Light Penetration (% Passing) <sup>3</sup>	ASTM D-6567	10%	10%
Colour	Visual	Green or Tan	
MECHANICAL			
Tensile Strength <sup>2</sup>	ASTM D-6818	4,000 x 3,000 lbs/ft	58.4 x 43.8 kN/m
Elongation <sup>2</sup>	ASTM D-6818	40 x 35%	40 x 35%
Resiliency <sup>2</sup>	ASTM D-6524	80%	80%
Flexibility <sup>2</sup>	ASTM D-6575	0.534 in-lb	616,154 mg-cm
ENDURANCE			
UV Resistance % Retained at 3,000 hrs <sup>4</sup>	ASTM D-4355	90%	90%
UV Resistance % Retained at 6,000 hrs <sup>4</sup>	ASTM D-4355	90%	90%
PERFORMANCE			
Velocity (Vegetated) <sup>4,5</sup>	Large Scale	25 ft/sec	7.6 m/sec
Shear Stress (Vegetated) <sup>4,5</sup>	Large Scale	16 lb/ft <sup>2</sup>	766 Pa
Manning's n (Vegetated) <sup>4,6</sup>	Calculated	0.028	0.028
Seedling Emergence <sup>4</sup>	ASTM D-7322	296%	296%
ROLL SIZES		8.5 ft x 120 ft 15.0 ft x 120 ft	2.6 m x 36.6 m 4.6 m x 36.6 m

## NOTES

- The property values listed above are effective 02/08/2017 and are subject to change without notice.
- Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
- Maximum Average Roll Value (MaxARV), calculated as the typical plus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any sample taken during quality assurance testing will meet to the value reported.
- Typical Value.
- Maximum permissible velocity and shear stress has been obtained through vegetated testing programs featuring specific soil types, vegetation classes, flow conditions, and failure criteria. These conditions may not be relevant to every project nor are they replicated by other manufacturers. Please contact KEYMAY for further information.
- Calculated as typical values from large-scale flexible channel lining test programs with a flow depth of 6 to 12 inches.

## TYPE B2 ANCHOR PROPERTIES

## PHYSICAL

Anchor Head Length	5.0 in
Anchor Head Width	1.6 in
Anchor Head Bearing Area	6.0 in <sup>2</sup>
Anchor Head Weight	0.4 lbs

## ENDURANCE/COMPONENT MATERIALS

Anchor Head	Zinc-aluminum alloy
Cable Tendon	Zinc-aluminum carbon steel
Load Bearing Plate	Zinc Plated Steel Coated with Plastisol
Load-Lock Mechanism	Zinc-aluminum alloy w/ ceramic roller
Crimped Frule	Aluminum

## PERFORMANCE

Load Range (Cohesive through Non-Cohesive Soils)	Up to 1,500 lbs
Embedment Depth	6 to 12 ft

## MECHANICAL

Ultimate Strength	2,600 lbs
Working Load	1,500 lbs

## NOTES

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3. Maximum Average Roll Value (MaxARV), calculated as the typical plus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any sample taken during quality assurance testing will meet to the value reported.
4. Typical Value.
5. Maximum permissible velocity and shear stress has been obtained through vegetated testing programs featuring specific soil types, vegetation classes, flow conditions, and failure criteria. These conditions may not be relevant to every project nor are they replicated by other manufacturers. Please contact KEYMAY for further information.
6. Calculated as typical values from large-scale flexible channel lining test programs with a flow depth of 6 to 12 inches.

# Armormax® 75

## Erosion Control

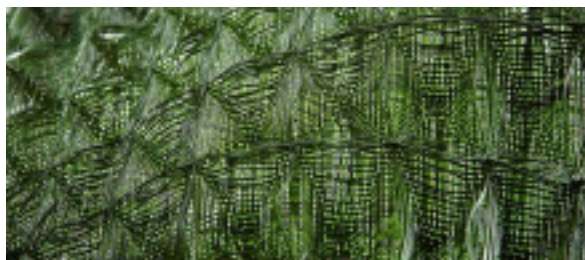


KEYMAY

The **ARMORMAX® 75** for **Erosion Control** is an Engineered Earth Armoring Solution™ used for permanent erosion protection in vegetated and unvegetated applications. It is composed of two components:

- PYRAMAT® 75 High Performance Turf Reinforcement Mat (HPTRM)
- Type B1 Engineered Earth Anchors

ARMORMAX® 75 is available in green or tan to provide for an aesthetically pleasing solution with proven performance. The anchor component is specifically designed and tested for compatibility and performance with PYRAMAT® 75 HPTRM to provide a system solution. KEYMAY offers several anchor options to provide the ARMORMAX® 75 system designed for specific challenges and needs. The expected design life of ARMORMAX® 75 is up to 75 years because of its superior UV resistance, resistance to corrosion, strength, and durability in the most demanding environments.



### PYRAMAT® 75

The PYRAMAT® 75 HPTRM component of ARMORMAX® 75 values listed below<sup>1</sup> while manufactured at a KEYMAY facility having achieved ISO 9001:2008 certification. KEYMAY also performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

### TYPE B1 ANCHOR

The Type B1 Anchor model is used for permanent erosion protection applications and has a working load of up to 800 lbs. The Type B1 Anchor consists a zinc-aluminum alloy anchor head, zinc-aluminum coated carbon steel cable, a zinc-aluminum alloy load-locking mechanism with a ceramic roller, and two aluminum ferrules. The bullet nose design of the anchor head allows the anchor to penetrate PYRAMAT® 75 HPTRM resulting in minimal installation damage. The Type B1 Anchor is also designed with a recessed cavity so the top of the cable can be cut below the surface being protected.

## PYRAMAT® 75 HPTRM PROPERTIES

PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured		100%	
PHYSICAL			
Thickness <sup>2</sup>	ASTM D-6525	0.40 in	10.2 mm
Light Penetration (% Passing) <sup>3</sup>	ASTM D-6567	10%	10%
Colour	Visual	Green or Tan	
MECHANICAL			
Tensile Strength <sup>2</sup>	ASTM D-6818	4,000 x 3,000 lbs/ft	58.4 x 43.8 kN/m
Elongation <sup>2</sup>	ASTM D-6818	40 x 35%	40 x 35%
Resiliency <sup>2</sup>	ASTM D-6524	80%	80%
Flexibility <sup>2</sup>	ASTM D-6575	0.534 in-lb	616,154 mg-cm
ENDURANCE			
UV Resistance % Retained at 3,000 hrs <sup>4</sup>	ASTM D-4355	90%	90%
UV Resistance % Retained at 6,000 hrs <sup>4</sup>	ASTM D-4355	90%	90%
PERFORMANCE			
Velocity (Vegetated) <sup>4, 5</sup>	Large Scale	25 ft/sec	7.6 m/sec
Shear Stress (Vegetated) <sup>4, 5</sup>	Large Scale	16 lb/ft <sup>2</sup>	766 Pa
Manning's n (Vegetated) <sup>4, 6</sup>	Calculated	0.028	0.028
Seedling Emergence <sup>4</sup>	ASTM D-7322	296%	296%
ROLL SIZES		8.5 ft x 120 ft 15.0 ft x 120 ft	2.6 m x 36.6 m 4.6 m x 36.6 m

## NOTES

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- Typical Value.
- Maximum permissible velocity and shear stress has been obtained through vegetated testing programs featuring specific soil types, vegetation classes, flow conditions, and failure criteria. These conditions may not be relevant to every project nor are they replicated by other manufacturers. Please contact KEYMAY for further information.
- Calculated as typical values from large-scale flexible channel lining test programs with a flow depth of 6 to 12 inches.

## TYPE B1 ANCHOR PROPERTIES

### PHYSICAL

Anchor Head Length	3.4 in
Anchor Head Width	1.0 in
Anchor Head Bearing Area	2.5 in <sup>2</sup>
Anchor Head Weight	0.1 lbs

### ENDURANCE/COMPONENT MATERIALS

Anchor Head	Zinc-aluminum alloy
Cable Tendon	Zinc-aluminum carbon steel
Load Bearing Plate	Zinc-aluminum alloy
Load-Lock Mechanism	Zinc-aluminum alloy with ceramic roller
Crimped Frule	Aluminum

### PERFORMANCE

Load Range (Cohesive through Non-Cohesive Soils)	Up to 500 lbs
Embedment Depth	Up to 5 ft

### MECHANICAL

Ultimate Strength	1,100 lbs
Working Load	800 lbs

## NOTES

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