



PTT GEOSTRAPS

PRODUCT BROCHURE

Geostraps

High-Performance Soil Reinforcement Straps for MSE & Retaining Wall Systems

Product Overview

PTT Geostraps from Prime Terratech are advanced **polymer-encased polyester soil reinforcement** straps engineered for long-term durability and exceptional pullout performance in **Mechanically Stabilized Earth (MSE) Walls**, retaining structures, and reinforced soil applications.

Each geostrap consists of **high-tenacity polyester filament yarn tendons**—the primary load-bearing elements—encased in a **protective linear low-density polyethylene (LLDPE) sheath**. This structure combines strength, flexibility, and superior resistance to environmental exposure, making PTT Geostraps one of the most reliable reinforcement systems in modern infrastructure.

The yarn tendons are designed with **high tensile strength, low creep, and high molecular weight (>25,000 g/mol)** for superior long-term stability. The outer sheath provides protection against UV radiation, chemical degradation, installation damage, and environmental factors.





Key Features of PTT Geostraps :

- Constructed using closely packed, tensioned bundles of high-tenacity polyester yarns.
- Provides high tensile strength and modulus.
- Low creep ensures long-term performance under sustained loads.

Protective LLDPE Sheath :

- Custom-formulated polyethylene coating.
- Resistant to UV exposure, chemicals, and biological degradation.
- Ensures excellent frictional interaction with fill material for maximum pullout resistance.

Exceptional Durability :

- Tested for **120-year design** life as indicated in the specification table .
- Withstands physical, chemical, and biological conditions typically present in reinforced soil systems.

Optimized Mechanical Performance :

- Wide range of tensile capacities from **30 kN to 100 kN**.
- Controlled elongation at break (12%) ensures stability and safety.
- High dimensional stability for installation across varying site conditions.

Applications :

- Mechanically Stabilized Earth (MSE) walls.
- Reinforced soil retaining walls.
- Approach ramps for bridges & flyovers.
- Highway & embankment reinforcement.
- Vertical & near-vertical wall systems.
- Reinforced soil slopes.
- Welded wire mesh & precast panel facings.

The images clearly show geostraps being used with **precast panels, incremental panel facia, and welded wire mesh cages**, demonstrating the versatility of the system.

PTT Geostrap Tensile Grades & Colour Coding

As per the **colour coding chart**, each geostrap capacity is factory colour-marked for easy on-site identification:

PTT Geostrap Color Pattern		
30 kN		WHITE
40 kN		RED
50 kN		BROWN
60 kN		GREEN
75 kN		ORANGE
85 kN		BLUE
100 kN		YELLOW

Technical Specifications

Ultimate Tensile Strength (kN)

30, >40, >50, >60, >75, >85, >100

Elongation at Break

12%

Reduction Factors :

- **Durability (RFd):** 1.21.
- **Installation Damage (RFid):** 1.05.
- **Creep (RFcr):** 1.43.
- **Combined Reduction Factor:** 1.817.



Long-Term Design Strength (LTDS) :

- 30 kN grade - 41.27 kN.
- 40 kN grade - 55.04 kN.
- 50 kN grade - 68.80 kN.
- 60 kN grade - 82.56 kN.
- 75 kN grade - 103.20 kN.
- 85 kN grade - 116.96 kN.
- 100 kN grade - 137.58 kN.

Geostrap Dimensions :

- Width: 85 mm (30–60 kN), 90 mm (75–100 kN).
- Thickness: 1.9–2.2 mm.
- Roll Length: 100 m.

Environmental Conditions :

- pH resistance: **4.0 to 9.0.**
- Coefficient of interaction (ci): 0.80–0.93.

Benefits of Choosing PTT Geostraps :

- **Superior reinforcement performance** for high-load retaining structures.
- **Long service life (120 years)** as documented in technical data.
- **Exceptional safety margins** due to strict reduction factors.
- **Compatibility with multiple wall facings** including precast, wire mesh, and block systems.
- **Easy installation** due to smooth, flexible polyethylene-sheathed design.
- **Proven performance** in diverse soil conditions.



PTT Geostap Technical Datasheet

PTT Geostraps from Prime Terratech are advanced **polymer-encased polyester soil reinforcement** straps engineered for long-term durability and exceptional pullout performance in **Mechanically Stabilized Earth (MSE) Walls**, retaining structures, and reinforced soil applications.

PTT Geostap rolls are of 100 mt length as per the site requirement.

Product	Unit	PTT 30	PTT 40	PTT 50	PTT 60	PTT 75	PTT 85	PTT 100
Ultimate Tensile Strength	kN	>30	>40	>50	>60	>75	>85	>100
Elongation at Break	%	12	12	12	12	12	12	12
Reduction Factor		1.817	1.817	1.817	1.817	1.817	1.817	1.817
Design Life		120	120	120	120	120	120	120
Long Term Design Strength	kN	41.27	55.04	68.80	82.56	103.20	116.96	137.58
Width	mm	85	85	85	85	90	90	90
Roll Length	M	100	100	100	100	100	100	100

Reduction factors of Geostraps

Geostap	30	40	50	60	75	85	100
Durability reduction Factor (RF _d)	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Installation Damage Reduction (RF _{id})	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Creep Reduction Factor (RF _{cr})	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Coverage Ratio (RC)	0.21	0.21	0.21	0.21	0.22	0.22	0.22
Coefficient of Interaction (c _i)	0.80 to 0.93						
Environmental Degradation, PH range 4.0 to 9.0	1.21						

Grade	30	40	50	60	75	85	100
Geostap Width (mm)	85±3	85±3	85±3	85±3	90±3	90±3	90±3
Geostap Thickness (mm)	1.90	1.90	2.00	2.00	2.10	2.10	2.20

Note :

The technical information presented here represents typical properties tested under controlled conditions. Variations may occur due to installation conditions or project-specific factors. Prime Terratech recommends that engineers and contractors conduct independent evaluation to confirm suitability for intended use. Specifications may change without prior notice.



About Prime Terratech

Prime Terratech is an ISO 9001:2015 certified manufacturer of high-quality geosynthetic and geomembrane solutions for environmental, civil, and industrial engineering projects. With state-of-the-art production facilities in Ahmedabad, India, we combine innovation, quality control, and sustainability to deliver long-lasting geotechnical solutions trusted nationwide.



MANAGEMENT SYSTEM
CERTIFICATE



www.primeterratech.com

This is to certify that

PRIME TERRATECH INDUSTRIES PRIVATE LIMITED

BO/11, PALLADIUM, MR. OREO'D WOOD, CORPORATE RD, VRAJ PINK,
AHMEDABAD - 38001, GUJARAT, INDIA

has been assessed by IAF, and found to comply with the requirements of

ISO 9001 : 2015
Quality Management Systems

For the following activities:

MANUFACTURING AND EXPORTING OF BUILDING MATERIALS, PLASTIC FLEXIBLE PACKAGING,
JUNO BAGS, PP BAGS, CONTAINER LINERS, FOOD GRADE LINER BAGS, PLASTIC GEOTEXTILES,
PRODUCTS, GREEN HOUSE FILMS, ACRYLIC, THERMO GLASS, WINDOW FILMINGS, SPC FLOORING
AND HOME DECOR, REPEL SHEETS, DEEP POND LINERS, ROOT BARRIERS AND HONEY - BEE SHEETS

Certificate Number: 12029630/19
Date of certification: 07/06/2023
3rd Surveillance on or before: 06/06/2026
First Surveilance on or before: 06/06/2027
Certificate Valid Until: 06/06/2028



CHAS CERTIFICATE CAPI 118072

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ISO 45001 : 2018
Occupational Health and Safety Management Systems

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