



SAVE ON BUILDING
WITHOUT COMPROMISE



TECHNICAL DATA SHEET
INNOVATIVE WELD-FREE
THREE-DIMENSIONAL POLYMER CELL
GEOSTEP® TECHNICAL SPECIFICATION



AUTHORISED PARTNER



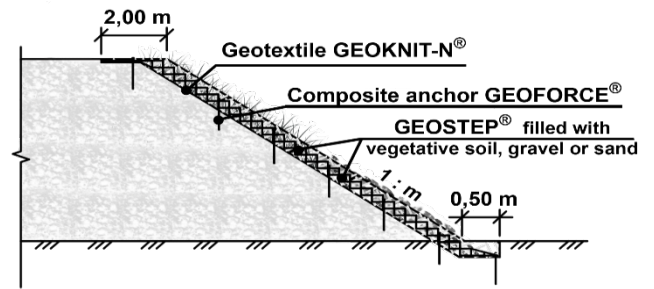


**GEOSTEP®
SPECIFICATIONS N° PR-INT-GSP-1**

GEOSTEP® is an innovative weld-free three-dimensional polymer cell, produced in accordance with the technical specification STO 17996082-005-2015.

GEOSTEP® is made of a polymer stripe with longitudinal and transverse cuts. All cuts are spaced from each other at the same distance and form parallel lines of equal length along or across the center line of the stripe. The cuts of neighboring stripes are located checkerwise, suitable for a cellular structure formation when stretched.

GEOSTEP® is used on construction sites, such as slopes, channels, water reservoirs, etc. In order to facilitate transportation and warehousing GEOSTEP® is delivered to the installation site in rolls.



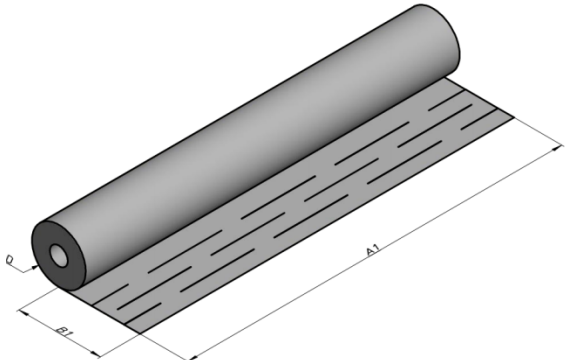
MATERIAL CHARACTERISTICS

Properties	Value	Test standard
Material composition	Polyethylene with density 0,935 – 0,965 g/cm ³	ASTM D 1505
Texturing	Texturing is performed over the entire area with rhomboidal indentations, surface density 15-32/cm ² , depth 0,01-0,7mm	Visual
Color	Black, sandy, green or other by using carbon or coloring	
Light stabilizer	Carbon black content up to 2% by weight or Hindered amine light stabilizer (HALS) up to 2% by weight of carrier with coloring	GOST 7885 ASTM D 1603

SYSTEM PHYSICAL PROPERTIES

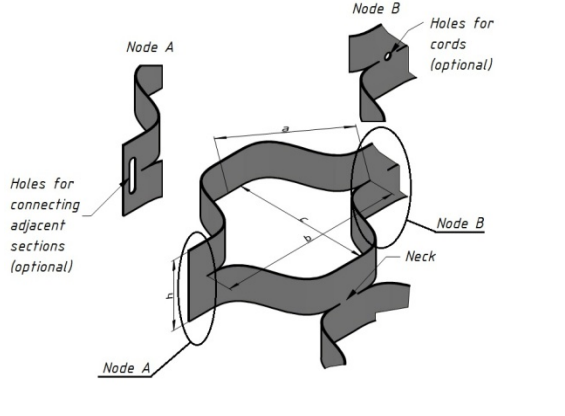
Properties	Value			Test standard
	Type A	Type C	Type E	
Cell wall height (h), mm, ±10%	75, 100, 150 (for roll width 3,20/ 2,90/ 2,30/ 1,60) 100, 200 (for roll width 1,30)			Using a caliper
Peak load under tension, kN/m, not less, non-perforated	14	18	22	ISO 10319
Elongation per unit length at maximum load, %, not more, non-perforated	35			ISO 10319
Neck peak load, kN/m, not less	10	18	25	PRESTORUS method

ROLL SIZE REQUIREMENTS

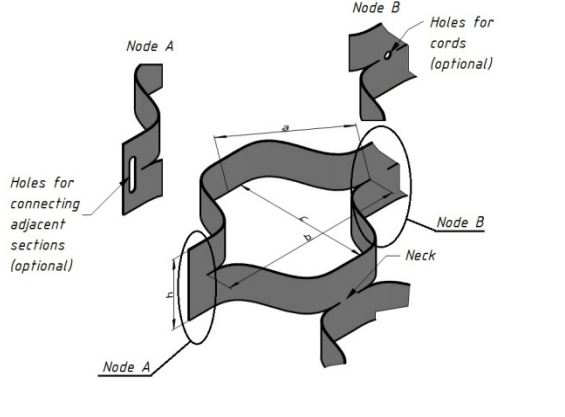
	Roll type	Width A1, m	Length B1, m ⁽¹⁾	Diameter D, mm, ± 10 %	Weight, kg, ± 5 %
	Standard	3,20	25	300	80
		2,90	25	300	75
		2,30	30	300	72
		1,60	30	375	60
		1,30	50	400	70

(1) It is possible to produce any roll length upon the request and by agreement with the manufacturer, but not more than 200m (680kg).

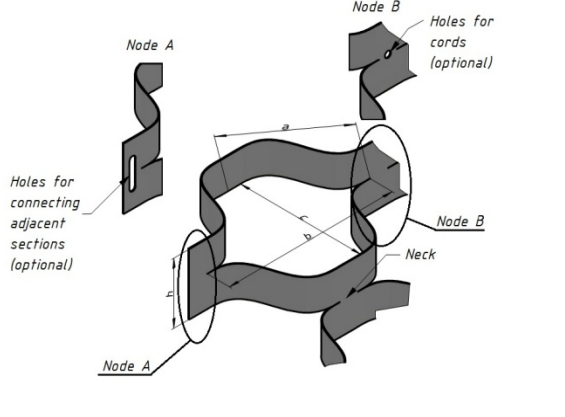
CELL SIZE REQUIREMENTS (±10%) – ROLL WIDTH 3,20 / 2,90 / 2,30

	Properties	Value					
	Cell wall height (h), mm	75, 100, 150					
	Cutting distance (2a), mm	330	344	356	445	660	712
	Cell size by diagonal (b) × Cell working length (c), mm	225 x 207	236 x 216	240 x 227	314 x 285	468 x 415	522 x 445

CELL SIZE REQUIREMENTS (±10%) – ROLL WIDTH 1,60

	Properties	Value					
	Cell wall height (h), mm	75, 100, 150					
	Cutting distance (2a), mm	445					
	Cell size by diagonal (b) × Cell working length (c), mm	314 x 285					

CELL SIZE REQUIREMENTS (±10%) – ROLL WIDTH 1,30

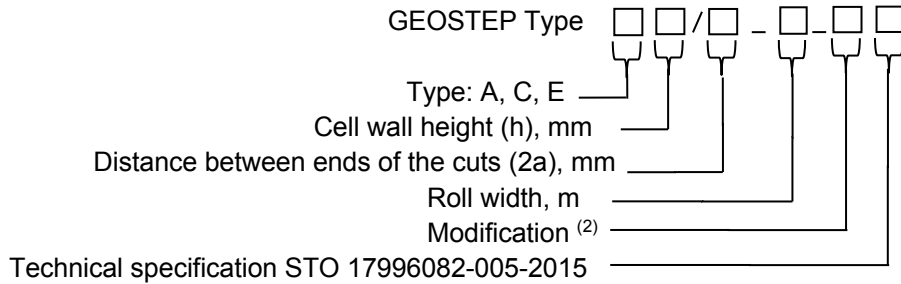
	Properties	Value					
	Cell wall height (h), mm	100, 200					
	Cutting distance (2a), mm	300					
	Cell size by diagonal (b) × Cell working length (c), mm	200 x 200					

SIZE REQUIREMENTS

Product	Cell height (h), mm	GEOSTEP® size, rolled up (A1xB1), m, ± 5 mm			Extension coefficient		GEOSTEP® size, expanded (AxB), m, ± 10 %		
		Width A ₁ , m	Length B ₁ , m	Square m ²	Width K ₁ , m	Length K ₂ , m	Width A, m	Length B, m	Square m ²
ROLL WIDTH – 3,20									
GEOSTEP Type A,C,E 75/330	75	3,20	25,00	80,00	0,78	2,48	2,50	62,08	155,20
GEOSTEP Type A,C,E 100/330	100					2,06		51,52	128,80
GEOSTEP Type A,C,E 150/330	150					1,51		37,76	94,40
GEOSTEP Type A,C,E 75/344	75					2,70		67,52	168,80
GEOSTEP Type A,C,E 100/344	100					2,14		53,44	133,60
GEOSTEP Type A,C,E 150/344	150					1,66		41,60	104,00
GEOSTEP Type A,C,E 75/356	75					2,84		71,04	177,60
GEOSTEP Type A,C,E 100/356	100					2,19		54,72	136,80
GEOSTEP Type A,C,E 150/356	150					1,68		41,92	104,80
GEOSTEP Type A,C,E 75/445	75					3,70		92,48	251,20
GEOSTEP Type A,C,E 100/445	100					2,87		71,68	179,20
GEOSTEP Type A,C,E 150/445	150					2,05		51,20	128,00
GEOSTEP Type A,C,E 75/660	75					5,56		138,88	347,20
GEOSTEP Type A,C,E 100/660	100					4,07		101,76	254,40
GEOSTEP Type A,C,E 150/660	150					2,91		72,64	181,60
GEOSTEP Type A,C,E 75/712	75					5,68		142,08	355,20
GEOSTEP Type A,C,E 100/712	100					4,61		115,2	288,00
GEOSTEP Type A,C,E 150/712	150					3,03		75,84	189,60
ROLL WIDTH – 2,90									
GEOSTEP Type A,C,E 75/330	75	2,90	25,00	72,50	0,78	2,49	2,26	62,23	140,65
GEOSTEP Type A,C,E 100/330	100					2,07		51,65	116,73
GEOSTEP Type A,C,E 150/330	150					1,51		37,85	85,55
GEOSTEP Type A,C,E 75/344	75					2,71		67,69	152,98
GEOSTEP Type A,C,E 100/344	100					2,14		53,58	121,08
GEOSTEP Type A,C,E 150/344	150					1,67		41,70	94,25
GEOSTEP Type A,C,E 75/356	75					2,85		71,22	160,95
GEOSTEP Type A,C,E 100/356	100					2,19		54,86	123,98
GEOSTEP Type A,C,E 150/356	150					1,68		42,03	94,98
GEOSTEP Type A,C,E 75/445	75					3,71		92,71	209,53
GEOSTEP Type A,C,E 100/445	100					2,87		71,86	162,40
GEOSTEP Type A,C,E 150/445	150					2,05		51,33	116,00
GEOSTEP Type A,C,E 75/660	75					5,57		139,23	314,65
GEOSTEP Type A,C,E 100/660	100					4,08		102,01	230,55
GEOSTEP Type A,C,E 150/660	150					2,91		72,82	164,58
GEOSTEP Type A,C,E 75/712	75					5,70		142,43	321,90
GEOSTEP Type A,C,E 100/712	100					4,62		115,49	261,00
GEOSTEP Type A,C,E 150/712	150					3,04		76,03	171,83

PRODUCT RECORDING

Clarification:



(2) Modification:

- perforation: without (X); with holes for ropes (R); with holes for FAST-LOCK (L);
- color performance: black (K), sandy (S), green (Gr) – it is possible to manufacture GEOSTEP of other colors upon request, types A and Type C are only made with black color or by agreement with the manufacturer.

Recording (standard roll): GEOSTEP Type A 100/660 3,2/25 XK STO 17996082-005-2015, where

- 100 is the height of the wall cell, mm;
- 660 is the distance between ends of the cuts, mm;
- 3,2 is the roll width, m;
- 25 is the roll length, m;
- X means without perforation;
- K means black color;
- manufactured in accordance with technical specification STO 17996082-005-2015.

Recording (non-standard roll, length to be agreed between the manufacturer and the customer):

GEOSTEP Type E 150/445 3,2/90 XSL STO 17996082-005-2015, where

- 150 is the height of the wall cell, mm;
- 445 is the distance between ends of the cuts, mm;
- 3,2 is the roll width, m;
- 90 is the roll length, m;
- X means without perforation;
- S means sand color;
- L means with holes for FAST-LOCK;
- manufactured in accordance with technical specification STO 17996082-005-2015.

CERTIFICATIONS and ACCREDITATIONS

- ISO 9001:2015
- CE mark
- Certificate of conformity of the factory production control ROSS RU.AG.H03757
- Expert opinion of the Federal Healthcare Budget Center for Hygiene and Epidemiology №787

ADDITIONAL INFORMATION ON REQUEST

- album of typical designs
- installation manuals
- design calculation
- product price according to the customer's project
- calculation of delivery
- product presentation and additional materials



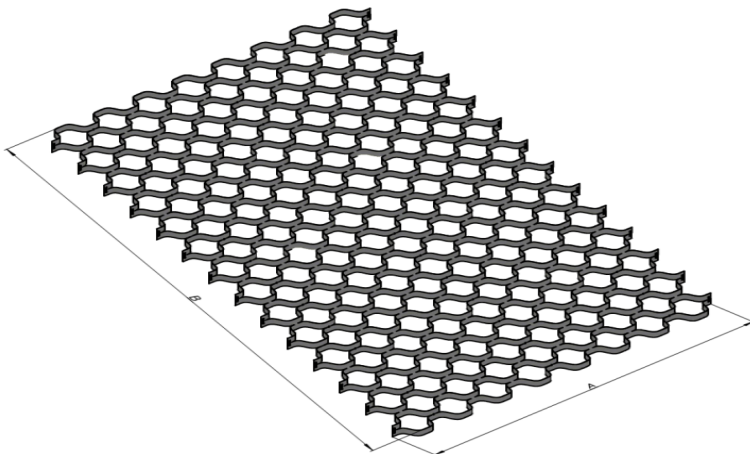
SCAN THIS CODE TO VISIT OUR **GEOSTEP** PAGE:



ROLL WIDTH – 2,30									
GEOSTEP Type A,C,E 75/330	75	2,30	30,00	69,00	0,78	2,49	1,79	74,78	133,86
GEOSTEP Type A,C,E 100/330	100					2,07		62,06	111,09
GEOSTEP Type A,C,E 150/330	150					1,52		45,49	81,42
GEOSTEP Type A,C,E 75/344	75					2,71		81,34	145,59
GEOSTEP Type A,C,E 100/344	100					2,15		64,37	115,23
GEOSTEP Type A,C,E 150/344	150					1,67		50,11	89,70
GEOSTEP Type A,C,E 75/356	75					2,85		85,58	153,18
GEOSTEP Type A,C,E 100/356	100					2,20		65,92	117,99
GEOSTEP Type A,C,E 150/356	150					1,68		50,50	90,39
GEOSTEP Type A,C,E 75/445	75					3,71		86,35	216,66
GEOSTEP Type A,C,E 100/445	100					2,88		61,68	154,56
GEOSTEP Type A,C,E 150/445	150					2,06		126,82	110,40
GEOSTEP Type A,C,E 75/660	75					5,58		167,30	299,46
GEOSTEP Type A,C,E 100/660	100					4,09		122,58	219,42
GEOSTEP Type A,C,E 150/660	150					2,92		87,50	156,63
GEOSTEP Type A,C,E 75/712	75					5,71		171,15	306,36
GEOSTEP Type A,C,E 100/712	100					4,63		138,77	248,40
GEOSTEP Type A,C,E 150/712	150					3,05		91,36	163,53

ROLL WIDTH – 1,60									
GEOSTEP Type A,C,E 75/445	75	1,60	30,00	48,00	0,78	3,71	1,25	111,30	139,13
GEOSTEP Type A,C,E 100/445	100					2,86		85,80	107,25
GEOSTEP Type A,C,E 150/445	150					2,05		61,50	76,88

ROLL WIDTH – 1,30									
GEOSTEP Type A,C,E 100/150	100	1,30	50,00	65,00	0,77	2,12	1,00	106,0	106,00
GEOSTEP Type A,C,E 200/150	200					1,41		70,5	70,5



Note: Geometric dimensions of GEOSTEP® for other winding lengths are determined based on the stretching ratios.

$$A = A_1 * K_1, (m)$$

$$B = B_1 * K_2, (m)$$

$$S = A * B, (m^2)$$

LOGISTICS INFORMATION (STANDARD SIZE)

1 40-ft. container can include up to 300 rolls, depending on the GEOSTEP® type, roll length, weight restrictions, etc., for reference only, loading capacity per each delivery upon request.



Weld-free Rolled Geocell GEOSTEP®

A COMPLETELY NEW SOLUTION FOR SLOPE REINFORCEMENT

produced in accordance with the technical specification STO 17996082-005-2015



GEOSTEP® is a weld-free three-dimensional polymer cell. It is made of a polymer stripe with longitudinal and transverse cuts ending with oblong holes. All cuts form parallel lines of equal length along or across the center line of the stripe. The cuts arranged in a line are equally spaced from each other. The cuts of neighbouring stripes are located checkerwise, suitable for a cellular structure formation when transversely stretched.

In order to facilitate transportation and warehousing **GEOSTEP®** is delivered to the installation site in rolls.

FUNCTIONS:

- soil stabilisation
- erosion control

APPLICATION:

- strengthening of slopes, embankments and ditches
- landscaping



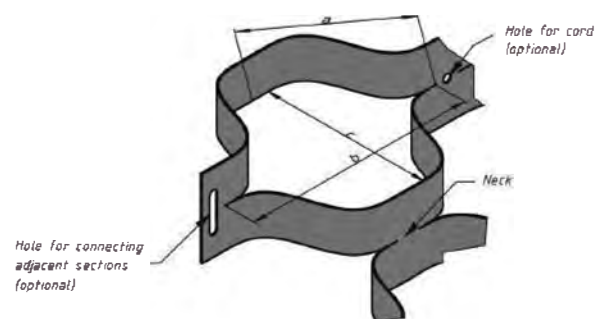
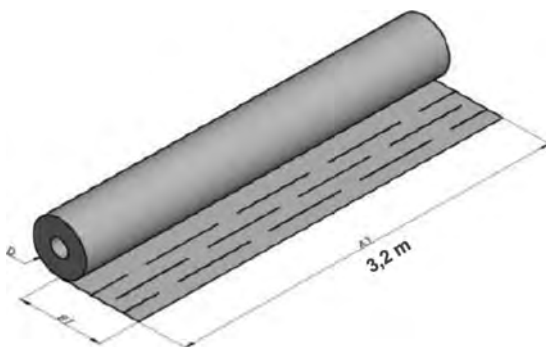
ECONOMIC BENEFITS:

- costs per m² reduced up to 30% if compared to traditional geocells
- increased up to 3,2m roll width allows to speed up installation works by 50%
- enlarged up to 650m² roll area allows to increase the capacity of the material loaded into freight transport by 150% and thus to reduce shipment costs by 60%



TECHNICAL AND FUNCTIONAL BENEFITS:

- large length of winding allows to strengthen slopes completely from the sole to the edge, ensuring monolithic reinforcement and absence of waste
- less infill material washout due to the fact that the walls of cells are located perpendicular to the horizon
- increased drainage properties
- resistance to aggressive environment and ultraviolet



Authorised Partner



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