

TEXT APPENDIX 1

**Technical specification of Geocellular system with rhomboid cell shape and cell height $h = 10\text{cm}$
 $26.4 \times 22.2 \text{ cm}$**

Geocells are a system made up of structured strips of high density polyethylene (HDPE) connected to each other by welding. In the stretched state, the geocell acquires a rhomboid shape, which should be filled with a suitable material - sand, gravel, concrete or humus.

Geocells are produced in sections with sizes depending on the size of the holes and their application. The connection of the individual sections to each other is carried out by means of cable connections, and their stretching is done by means of steel anchors with thickness and length, depending mainly on the type of the base, the size of the geocells and their application. In sloping sections, the geocellular system must be perforated in order to drain infiltration water.

The geocellular system must meet the following characteristics:

Cell shape - rhomboid

Cell height - $100 \text{ mm} \pm 5 \text{ mm}$

Area of one cell - 293.1 cm^2

Cell size - $264 \text{ mm} \times 222 \text{ mm}$

Tape thickness - 1.3 mm , according to ASTM D 5199

Cover area of one section - 23.5 m^2

The sections are perforated with holes with a diameter of 20 mm .

Welding bearing capacity of the perforated product:

Shear capacity when shear Method A- $20.5 \text{ kN} / \text{m}$, according to EN ISO 13426-1:

Load capacity of the seam when peeling off Method B- $11.5 \text{ kN} / \text{m}$, according to EN ISO 13426-1:

Load-bearing capacity of the welding during separation Method C- $22.2 \text{ kN} / \text{m}$, according to EN ISO 13426-1:

Welding capacity - A sample 100 mm wide must support 72.5 kg load for a minimum of 30 days in a room with a temperature of $23^\circ \text{C} \pm 2^\circ \text{C}$

Tensile strength of perforated strip $\geq 16.5 \text{ kN} / \text{m}$, according to ISO 10319, adapted for geocells.

Load capacity of welding between two adjacent sections $\geq 17.4 \text{ kN} / \text{m}$ according to ISO 10319, adapted for geocells Type of material - high density polyethylene (HDPE)

Material type - high density polyethylene (HDPE)

The whole specification for the geocellular system has a tolerance of $\pm 10\%$.

