



Secugrid® Q1 (PP), Q6/R6 (PET)

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Technical Information

Product description:

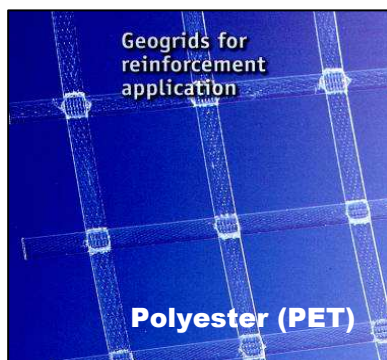
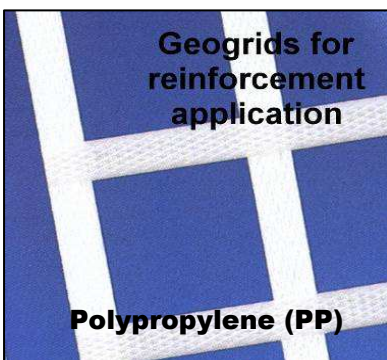
Laid geogrid made of stretched, monolithic polypropylene (PP) or polyester (PET) flat bars with welded junctions used for the reinforcement in many fields of civil engineering including landfill engineering, road construction and hydraulic engineering

Technical Data	Test Method (based on)	Unit	20/20 Q1	30/30 Q1	40/40 Q1	60/60 Q1	80/80 Q1	60/60 Q6	80/80 Q6	60/20 R6	80/20 R6	120/40 R6	200/40 R6
Raw materials			polypropylene/PP, white				polyester/PET, transparent						
Max. tensile strength	DIN EN ISO 10319	kN/m	≥ 20 / ≥ 20	≥ 30 / ≥ 30	≥ 40 / ≥ 40	≥ 60 / ≥ 60	≥ 80 / ≥ 80	≥ 60 / ≥ 60	≥ 80 / ≥ 80	60/20	80/20	120/40	200/40
Elongation at nominal strength, md/cmd*	DIN EN ISO 10319	%	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8	≤ 8 / ≤ 8
Tensile strength at 2% elongation, md/cmd*	DIN EN ISO 10319	kN/m	8 / 8	10 / 10	13 / 13	21 / 21	28 / 28	27 / 27	36 / 36	21 / -	28 / -	42 / -	70 / -
Tensile strength at 5% elongation, md/cmd*	DIN EN ISO 10319	kN/m	16 / 16	20 / 20	26 / 26	40 / 40	52 / 52	48 / 48	64 / 64	36 / -	48 / -	72 / -	120 / -
Mesh size, md x cmd*	DIN EN ISO 10319	mm x mm	approx. 32 x 32	approx. 32 x 32	approx. 32 x 32	approx. 29 x 28	approx. 31 x 30	approx. 32 x 31	approx. 31 x 30	approx. 72 x 32	approx. 71 x 30	approx. 71 x 27	approx. 71 x 25
UV-resistance (remaining tensile strength)	ENV 12224	%	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3
Weather resistance	FGSV	class	high	high	high	high	high	high	high	high	high	high	high
Production specific elongation		%	0	0	0	0	0	0	0	0	0	0	0
Roll dimensions, width x length		m x m	4.75 x 100	4.75 x 100	4.75 x 100	4.75 x 100	4.75 x 50	4.75 x 100	4.75 x 100	4.75 x 100	4.75 x 100	4.75 x 100	4.75 x 100

* md = machine direction, cmd = cross machine direction

Please contact our office for information regarding geogrids that are not covered in this chart.

The above technical values are average values over the roll width. These data are guiding values achieved in laboratories and independent testing institutes. Our products can be subject to change without prior notice.



Partial - factors for calculating the design strength of Secugrid® R6 and Q6 (raw material PET)

$$\text{design strength } T_{\text{design}} = \frac{T_{\text{characteristic}}}{\prod A_i} = \frac{T_{\text{characteristic}}}{A_1 \times A_2 \times A_3 \times A_4} \times \frac{1}{\gamma}$$

$T_{\text{characteristic}}$ = characteristic strength of the geogrid (short-term-value) [kN/m]

- A_1 = Partial factor for creep
- A_2 = Partial factor for installation damage
- A_3 = Partial factor for connections
- A_4 = Partial factor for environmental effects
- γ = depends on used standard and load condition

The direct friction factor (interaction soil/geogrid) depends on the used soil and Secugrid®-type. For sand and gravel material the sliding coefficient can be given to $f_{ds} = 0.9$. Project specific tests are recommended when cohesive materials are used.

partial factors for Secugrid® R6 and Q6 (PET) (in reference to MÜLLER-ROCHHOLZ, ①)							
A1 ②	A2 ③		A3 ④	A4 [-]			
	$d_{\text{max}} < 32 \text{ mm}$	$d_{\text{max}} < 63 \text{ mm}$		pH 2.0 - pH 4.0	pH 4.1 - pH 8.9	pH 9.0 - pH 12.5	
PET	1.54	1.02	1.1	1.0	1.1	1.0	1.25
PP	3.30*	1.02*	1.1*	1.0	1.0	1.0	1.0

* partial reduction factors according to current knowledge

- ① MÜLLER-ROCHHOLZ: Technical Report MRG 9-99, Reduction Factors for Secugrid® 200/60 R6 for the Railway Project DB-Schifferstadt, 21.09.99 (German report)
- ② creep-reduction-factor A_1 calculated with 95% confidence level, extrapolated to 120 years
- ③ for soils with $d_{\text{max}} > 32 \text{ mm}$ project specific tests are recommended; the given value for $32 \text{ mm} < d_{\text{max}} < 63 \text{ mm}$ can be used for preliminary design
- ④ no connections in stress - direction