

Geogrid Calculation

Using High-tenacity PET Yarns And Specific Tensile Strength Of 109 KiloNewtons Per Meter (kN/m)

Such As A Fiber Type With High Tensile Strength of 82.5 CentiNewtons Per Tex (cN/tex)

| | | | |
|--|------------|------------|------------|
| Search for standard yarn types | 1100 dtex | 2200 dtex | 4400 dtex |
| Evaluation of the yarn tensile strength | 0.091 kN | 0.182 kN | 0,360 kN |
| Evaluation of number of threads | 1201 | 601 | 300 |
| +10% more threads for loss in production | 1321 | 661 | 330 |
| Specified mesh size | 20 × 20 mm | 20 × 20 mm | 20 × 20 mm |
| Pre-estimated width of the web size | 14 mm | 8 mm | 5 mm |
| Evaluation of number of meshes per meter | 30 | 36 | 40 |
| Evaluation of number of threads per mesh | 44 | 18 | 8 |
| Evaluation of the yarn diameter | 0.317 mm | 0.448 mm | 0,634 mm |
| Expected web size in warp direction | 13.95 mm | 8.06 mm | 5,07 mm |

With different patterns, the web size can be influenced:

| | | | |
|-------------------------------------|-------|-------|-------|
| Production in meters/min at 200 rpm | 0.151 | 0.302 | 0.606 |
| Production in meters/min at 300 rpm | 0.227 | 0.454 | 0.909 |
| Production in meters/min at 400 rpm | 0.303 | 0.605 | 1.212 |

With double pick inside the production, speed can be doubled (by half pick density)

Source: Lindauer Dornier GmbH