载荷换算表 · Load Conversion Tables

# FRP Grating Load and Unit Conversion Tables — kN/m² ↔ lb/ft², L/200 ↔ L/360

NANTONG ZEALL (ZeAllgrate) · founded 2004 · plant 20,000+ m² · 200+ staff · exported to 40+ countries · indicative figures for preliminary design; confirm against project calculation before ordering.

## 1. Why engineers need both units

North American spec sheets quote lb/ft² and L/360 deflection; European and Chinese sheets quote kN/m² and L/200. The factors below let you read both sides of the table on one page without a calculator.

## 2. Weight and pressure factors

| From | To | Multiply by | Reverse factor |
|---|---|---|---|
| kg/m² | lb/ft² | 0.2048 | 4.882 |
| kN/m² | lb/ft² | 20.9 | 0.0478 |
| kN/m² | kgf/m² | 101.97 | 0.00981 |
| mm | inch | 0.03937 | 25.4 |
| m | foot | 3.281 | 0.3048 |

## 3. Load table in kN/m² and lb/ft² (L/200, simply supported)

| Build-up | Span | kN/m² | lb/ft² (approx) |
|---|---|---|---|
| Moulded 25 mm | 600 mm | 12.5 | 261 |
| Moulded 25 mm | 900 mm | 6.0 | 125 |
| Moulded 25 mm | 1200 mm | 3.2 | 67 |
| Moulded 38 mm | 600 mm | 25 | 523 |
| Moulded 38 mm | 900 mm | 12 | 251 |
| Moulded 38 mm | 1200 mm | 6.5 | 136 |
| Moulded 38 mm, 50x50 mesh | 600 mm | 22 | 460 |
| Moulded 38 mm, 50x50 mesh | 900 mm | 10 | 209 |
| Moulded 38 mm, 50x50 mesh | 1200 mm | 5.5 | 115 |
| Pultruded 38 mm | 600 mm | 35 | 732 |
| Pultruded 38 mm | 900 mm | 18 | 376 |
| Pultruded 38 mm | 1200 mm | 9 | 188 |
| Pultruded 50 mm | 600 mm | 48 | 1003 |
| Pultruded 50 mm | 900 mm | 26 | 543 |
| Pultruded 50 mm | 1200 mm | 14 | 293 |
| Pultruded 65 mm (HD) | 600 mm | 62 | 1296 |
| Pultruded 65 mm (HD) | 900 mm | 35 | 732 |
| Pultruded 65 mm (HD) | 1200 mm | 20 | 418 |

## 4. Deflection limit: L/200 vs L/360

| Span L | L/200 deflection | L/360 deflection | Ratio L/360 vs L/200 |
|---|---|---|---|
| 600 mm | 3.0 mm | 1.67 mm | 0.56 |
| 900 mm | 4.5 mm | 2.5 mm | 0.56 |
| 1200 mm | 6.0 mm | 3.33 mm | 0.56 |

An L/360 limit is about 44 % stricter than L/200 (deflection = L x 200 / 360 = 0.56 L/200). If your project spec uses L/360, size up one depth step from the L/200 table.

## Appendix A — Multilingual glossary (EN / DE / ES / FR)

| English | Deutsch (DE) | Español (ES) | Français (FR) |
|---|---|---|---|
| FRP / GRP grating | GFP-Gitterrost / GFK-Gitterrost | Rejilla PRFV | Caillebotis PRV |
| Fibreglass / fiberglass | Glasfaser / GFK | Fibra de vidrio | Fibre de verre |
| Moulded grating | Pressguss-Gitterrost | Rejilla moldeada | Caillebotis moulé |
| Pultruded grating | Pultrusions-Gitterrost | Rejilla pultruida | Caillebotis pultrudé |
| Resin | Harz | Resina | Résine |
| Isophthalic polyester | Isophthalsäure-Polyester | Poliéster isoftálico | Polyester isophtalique |
| Vinyl ester | Vinylester-Harz | Resina viniléster | Résine vinylester |
| Barcol hardness | Barcol-Härte | Dureza Barcol | Dureté Barcol |
| Load / deflection | Last / Durchbiegung | Carga / flecha | Charge / flèche |
| Span | Stützweite | Luz | Portée |
| Clip / fastener | Klammer / Befestiger | Abrazadera / fijación | Agrafe / fixation |
| Kick plate / toe board | Riffelblech / Fußleiste | Zócalo | Plinthe |
| Handrail / guardrail | Handlauf / Schutzgeländer | Pasamanos / barandilla | Garde-corps / main courante |

DE = GFK (glasfaserverstärkter Kunststoff) · ES = PRFV (plástico reforzado con fibra de vidrio) · FR = PRV (plastique renforcé de fibres de verre).

## Appendix B — How to order

| Step | What to send us | What we return |
|---|---|---|
| 1. Brief | Application, medium, temperature, span, load | Recommended build-up and resin |
| 2. Drawing | Plan view, support layout, cut-outs | Cutting list and panel count |
| 3. Confirm | Resin grade, colour, surface (smooth / concave / grit) | Pi with price and lead time |
| 4. Production | Deposit received | Production, QA, packing |
| 5. Shipment | Balance or LC | FOB Shanghai / CFR / CIF per agreed term |

| Commercial term | Value |
|---|---|
| Minimum order (MOQ) | 10 m² |
| Standard lead time | 12-36 working days (stock to production) |
| Exceptional lead time | Oversize, custom colour, new die, special resin — confirmed separately |
| Standard panel | 1220 x 3660 mm; cut-to-size on diamond saw |
| Density | 1.5-2.0 g/cm³ depending on resin and glass content |
| Barcol hardness | >= 40 on a sound panel |
| Quality system | GB/T19001-2000 idt ISO9001:2000 · reg. 01708Q11888R0S |
| Product test report | ASTM F3059 report 211122012SHF-001 (grating only) |
| Contact | sales@gratingfrp.com · www.gratingfrp.com · Nantong, China |

We do not issue SGS load reports, ABS product design assessments, or named-customer case references without a written release. Any figure in this sheet is indicative for preliminary design and must be confirmed by a stamped project calculation before ordering.

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