树脂选型指南 · Resin Selection Guide

FRP Grating Resin Selection Guide — Ortho / Iso / Vinyl Ester / Epoxy

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. Resin drives corrosion resistance, not the glass

E-glass rovings are the structural backbone; the resin matrix is what the chemical actually touches. Picking the right resin for the medium and concentration is the single most cost-effective design decision. The table below is indicative; for strong acids, solvents or high temperatures, request a written resistance confirmation before ordering.

2. Resin families we supply

Resin	Cost	Temperature limit	Best for	Not for
Orthophthalic (ortho)	Lowest	~60 °C wet	Fresh water, mild alkaline, general	Strong acid, solvents
Isophthalic (iso)	Mid	~80 °C wet	Wastewater, seawater, mild acid, moist atmosphere	Strong oxidisers, hot solvents
Vinyl ester (VE)	Higher	~100 °C wet	Strong acid, bleach, caustic, fume scrubbers	Some ketones, high aromatic solvents
Epoxy	Highest	~120 °C wet	Special structural, very aggressive chemical, high temp	Cost-sensitive walkways
Phenolic	High	~150 °C wet, fire-rated	Offshore, tunnel, public fire-rated areas	Continuous strong alkali

3. Medium-to-resin quick map

Medium (typical)	Concentration	Temperature	Recommended resin
Sodium hypochlorite (bleach)	<15 %	<40 °C	Vinyl ester
Sulfuric acid	<30 %	<40 °C	Vinyl ester
Sulfuric acid	30-60 %	<40 °C	Vinyl ester (written confirm)
Hydrochloric acid	<20 %	<40 °C	Isophthalic or vinyl ester
Sodium hydroxide (caustic)	<20 %	<40 °C	Isophthalic or vinyl ester
Seawater / brine	—	<60 °C	Isophthalic
Municipal / wastewater	—	<50 °C	Isophthalic
Mineral oil, hydraulic oil	—	<80 °C	Isophthalic
Food & beverage (dry / washdown)	—	<50 °C	Isophthalic (food-contact grade on request)

Phenolic and epoxy are quoted on request. Any medium not listed above must be confirmed in writing before order; we will not quote a resin grade without a written medium / concentration / temperature brief.

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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