



FRP Chemical Service Screening Guide

A disciplined path from exposure data to resin shortlist, evidence review and project approval

Document	Value
Document code	QY-FRP-CRG-01
Revision / date	Rev. 1.0 / 24 Jul 2026
Intended use	Early-stage RFQ screening for molded or pultruded FRP grating, stair treads and structural profiles
Status	Controlled customer reference; project data remains subject to approved submittals

Evidence boundary. This document is not a chemical-resistance certificate and does not assign a QY service rating without an exact resin system, laminate construction, exposure condition and supporting supplier or test evidence.

Use rule: Never release a quotation, fabrication drawing, installation instruction or compliance statement from this guide without a project-specific technical review.

Engineering clarity • RFQ completeness • traceable evidence



1. Decision path



Escalate when chemistry, concentration, temperature, cleaning cycle or load is uncertain.

Minimum exposure dataset

Input	Required project information	Why it matters
Chemical identity	Full name, CAS number, mixture/trade name and SDS	Similar names can represent different exposure risks.
Concentration	Normal, minimum and maximum concentration	Dilute and concentrated service can behave differently.
Temperature	Continuous, normal peak, upset peak and cleaning temperature	Temperature commonly changes the suitability boundary.
Contact mode	Immersion, splash, vapor, intermittent washdown or spill only	Continuous wetting is more severe than occasional contact.
Duration	Hours per event, cycles per day and design life	Cumulative exposure and cycling influence risk.
Mechanical duty	Span, load, impact, abrasion, cut edges and fasteners	Chemical and mechanical degradation can interact.
Hygiene/safety	Food contact, potable water, flame/smoke, slip and electrical requirements	May require independent certification or testing.

Screening gates

- Gate A — complete data: do not rate service from a chemical name alone.
- Gate B — resin traceability: record manufacturer, resin family, batch/lot and laminate build.
- Gate C — evidence match: evidence must match chemical, concentration, temperature and contact mode.
- Gate D — project approval: retain a signed selection record and approved product submittal.



2. Preliminary resin-family shortlist

Use the matrix only to decide what evidence to request. It is not a chemical rating table.

Exposure family	First screening route	Mandatory escalation triggers
Water, dilute neutral salts, outdoor moisture	General-purpose or corrosion-grade system may be considered.	Elevated temperature, immersion, potable/food contact, freeze-thaw or electrical duty.
Dilute acids	Corrosion-grade or vinyl ester candidate; request exact supplier data.	Oxidizing acids, mixed acids, concentration swings or elevated temperature.
Alkalis / caustics	Vinyl ester or specialist system candidate.	High concentration, hot cleaning, alternating acid/alkali or stress exposure.
Solvents / fuels / oils	Specialist review only; check swelling, softening and fire requirements.	Aromatics, ketones, chlorinated solvents, immersion or temperature cycling.
Oxidizers / disinfectants	Exact formulation review plus coupon or supplier confirmation.	Chlorine compounds, peroxide, ozone, high dose, UV and heat together.
Unknown mixtures / process liquor	SDS review, process-owner interview and coupon program.	Any missing constituent, proprietary additive or upset chemistry.

Never infer equivalence. A generic "vinyl ester" label does not prove that two resin formulations, laminate constructions or manufacturing processes have the same service envelope.

Compatibility decision codes

Code	Meaning	Release condition
P — Provisional	Potential candidate; evidence incomplete	RFQ only; no service claim
C — Conditional	Evidence supports stated limits with conditions	Limits printed on approved submittal
T — Test required	Coupon or representative laminate test needed	Acceptance criteria agreed before test
N — Not recommended	Evidence indicates unacceptable risk	Offer alternative material/system
U — Unknown	Insufficient data	Do not quote as technically approved



3. Evidence package and coupon plan

Evidence hierarchy

- Level 1: project-matched QY or supplier test report identifying resin, laminate, exposure and acceptance criteria.
- Level 2: supplier chemical data that matches the exact resin grade and service condition.
- Level 3: documented field history for a traceable product and comparable service.
- Level 4: public benchmark used only to design a test or request more evidence — never as a QY certificate.

Recommended coupon record

Record field	Minimum entry
Coupon ID	Unique ID linked to product batch and resin certificate
Conditioning	Chemical, concentration, temperature, duration, agitation and replenishment
Measurements	Mass, dimensions, hardness/appearance and agreed mechanical property
Acceptance	Numerical criteria agreed by purchaser/designer before exposure
Photos	Before/after with scale, date and coupon ID
Disposition	Approved limits, restrictions, retest or rejection
Authorization	Prepared, reviewed and customer/designer approval fields

Safety: Chemical handling, coupon preparation and disposal require the current SDS, trained personnel, compatible PPE, ventilation and site procedures. QY product selection does not replace process-safety review.



4. Chemical service RFQ worksheet

Field	Customer / project entry
Project / location	_____
Chemical / CAS / SDS revision	_____
Concentration range	_____
Continuous / peak temperature	_____
Contact mode and frequency	_____
Cleaning chemicals and cycle	_____
Span / load / deflection	_____
Abrasion / impact / UV	_____
Fire / smoke / slip / electrical	_____
Required design life	_____
Exact QY product / resin / batch	_____
Evidence attached	Supplier data / report / coupon / field history / none
Decision and limits	P / C / T / N / U: _____
Prepared / reviewed / approved	_____

Release checklist

- All exposure inputs complete and units consistent.
- Exact resin and laminate construction traceable.
- Mechanical design, slip, fire and electrical requirements reviewed separately.
- Supporting evidence attached; limitations printed on quotation and submittal.
- Customer/designer approval obtained before fabrication where service is critical.

Contact QY with the completed worksheet: sales@qymetaltech.com | qymetaltech.com/contact/