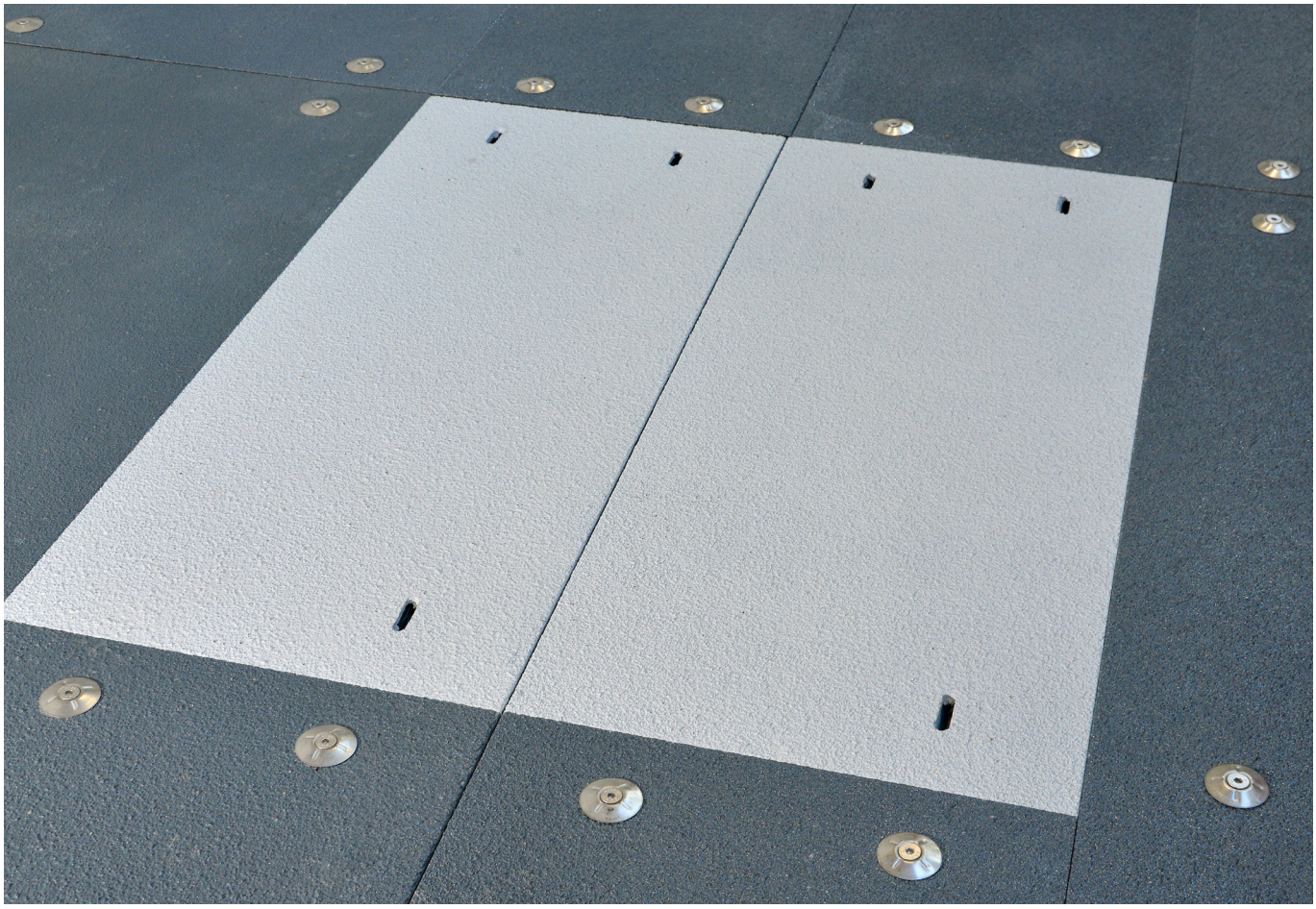
Chemical Resistance Sheet

Isophthalic Polyester Resin System

Glass Reinforced Polymer (GRP) Composites are produced from glass fibres laminated together using a thermosetting resin system. Once the glass fibre is woven together, different resins may be added to give the product increased strength, as well as allow it to be moulded into various shapes. The resin system binds the composite together, transfers mechanical loads through the fibres to the rest of the structure and helps protect from impact, abrasion, corrosion, other environmental factors.

Which Dura Composites Products Are Relevant?

The chemical resistance data shown on the following page details the performance of the Isophthalic Polyester Resin used as standard in our **Dura Platform, Dura Profile, Dura Handrail, Dura Slab Stair Tread 65** and **Dura Slab 50 ranges**.



What is Isophthalic Polyester Resin?

Isophthalic Polyester Resin is widely used in instances where high corrosion resistance and specific physical properties such as higher molecular weight are required.

It`s important to check that the resin system of your chosen grating is suitable for the intended application and the desired performance requirements. Your Dura Composites representative can help confirm suitability prior to purchase and installation, which will avoid any potential future issues and/or product failure.

Other resin systems available from Dura Composites include Orthophthalic Polyester (used in our grating) and a Phenolic resin which is available in selected products where structural integrity post-fire is required.

Please note these options are subject to extended lead times and are not available for all products. Although care has been taken to ensure, to the best of our knowledge, that all data and information contained in this document is accurate at the time of publication, Dura Composites assumes no responsibility for any errors in or misrepresentation of such data and/or information or any loss or damage arising from or related to its use.

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Isophthalic Resin Chemical Resistance Table

We are committed to ensuring that all users of our products are as informed as possible on suitability of different resin systems for their project. It is highly recommended that you conduct tests in your own working conditions before using the product. Material samples are freely available on request. The following table provides reference information regarding the performance of the Isophthalic Resin under specific chemical environments and temperatures.

Chemicals	Percentage of Mass concentration	Recommended Service Temperature in °C (FL-P22 – ISO RESIN)
Acetic Acid	100% or saturated solution	Not Recommended
Acetic Acid (Acetic Acid)	<5	65
Acetic Acid (Acetic Acid)	5	35
Acetic Acid (Acetic Acid)	10	35
Acetic Acid (Acetic Acid)	15	35
Acetic Acid (Acetic Acid)	25	35
Acetic Acid (Acetic Acid)	40	35
Acetic Acid (Acetic Acid)	50	30
Acridine Yellow	2	50
Alum	100% or saturated solution	75
Ammonium	28	40
Ammonium Carbonate	100% or saturated solution	Not Recommended
Ammonium Hydroxide	10	40
Ammonium Salt	100% or saturated solution	70
Amyl Acetate	100% or saturated solution	25
Animal Fat	100% or saturated solution	110
Antimony Compounds	100% or saturated solution	70
Aviation Fuel Avtag	100% or saturated solution	55
Aviation Fuel Avtur	100% or saturated solution	60
Baking Soda	100% or saturated solution	60
Barium Carbonate	100% or saturated solution	60
Barium Hydroxide	≤10	Not Recommended
Barium Hydroxide	100% or saturated solution	Not Recommended
Barium Salt	100% or saturated solution	75
Benzene	100	20
Benzoic Acid	50	Not Recommended
Benzoic Acid	10	100
Benzoic Acid	100% or saturated solution	Not Recommended
Benzyl Ammonium Phosphate	100% or saturated solution	60
Bismuth Salt	100% or saturated solution	70
Bivalent Iron	100% or saturated solution	75
Borax (Sodium Tetraborate)	100% or saturated solution	70
Boric Acid	100% or saturated solution	70
Bromine Liquid	100% or saturated solution	Not Recommended
Bromine Water	100% or saturated solution	30
Butanol	100% or saturated solution	30
Butyl Acetate	100	25
Calcium Hydroxide	100% or saturated solution	40
Calcium Oxide	100% or saturated solution	35
Calcium Salt	100% or saturated solution	75
Carbon Dioxide	100% or saturated solution	Not Recommended
Carbon Monoxide Gas	100% or saturated solution	120
Carbon Tetrachloride	100	40
Carbonate	100% or saturated solution	60

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Chemicals	Percentage of Mass concentration	Recommended Service Temperature in °C (FL-P22 – ISO RESIN)
Castor Oil	100	110
Chloride Ethanol	100% or saturated solution	Not Recommended
Chlorine	50	100
Chlorine Silicate	40	30
Chloroacetic Acid	50	25
Chloroacetic Acid	25	60
Chlorobenzene	100% or saturated solution	25
Chromic Acid	5	45
Chromic Acid	10	40
Chromic Acid	50	Not Recommended
Chromic Acid	80	Not Recommended
Chromium Salt	30	70
Citric Acid	100	70
Co2 Gas	100% or saturated solution	120
Co2 Gas	10	55
Cobalt Salt	100% or saturated solution	75
Cottonseed Oil	100	110
Developer	100% or saturated solution	65
Dibutyl	100% or saturated solution	30
Diesel	100% or saturated solution	120
Diethanolamine	100	50
Dry Chlorine	100	30
Ester Base Oil	100% or saturated solution	110
Ether	100	Not Recommended
Ethyl Oleate	100% or saturated solution	60
Ethylene Glycol	100	100
Ethylene Glycol	100% or saturated solution	100
Fatty Acid Esters	100	85
Fatty Acid Esters	100% or saturated solution	85
Fluorine	100% or saturated solution	50
Formaldehyde	40	35
Formic Acid	10	30
Formic Acid	100	Not Recommended
Formic Acid	75	25
Formic Acid	10	30
Furfural	≤5	Not Recommended
Furfural	20	Not Recommended
Furfural	100	Not Recommended
Gasoline	100	60
Gelatin	100% or saturated solution	70
Glycerin	100	100
Hexane	100% or saturated solution	60
Hydrobromic Acid	50	45
Hydrochloric Acid	1	70
Hydrochloric Acid	5	70
Hydrochloric Acid	10	70
Hydrochloric Acid	Fuming	45
Hydrofluoric Acid	35	40
Hydrogen Chloride Gas	100% or saturated solution	100

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Chemicals	Percentage of Mass concentration	Recommended Service Temperature in °C (FL-P22 – ISO RESIN)
Hydrogen Peroxide	<30	30
Hydrogen Sulfide Gas	100% or saturated solution	60
Hydroquinone	100% or saturated solution	100
Hypochlorous Acid	10	45
Hypochlorous Acid	20	45
Hypochlorous Acid	50	45
Isooctane	100% or saturated solution	60
Isopropyl Alcohol	100	30
Kerosene	100	60
Lactic Acid	10	80
Lactic Acid	80	80
Lanolin	100% or saturated solution	100
Linseed Oil	100% or saturated solution	110
Lubricating Oil	100% or saturated solution	110
Magnesium Salt	100% or saturated solution	75
Maleic Acid	100% or saturated solution	60
Mercury	100	100
Mercury Salt	100% or saturated solution	75
Methanol	100% or saturated solution	30
Naphthalene	100% or saturated solution	70
N-Butyl Acetate	100	25
Nickel Plating Solution	100% or saturated solution	50
Nickel Salt	100% or saturated solution	75
Nitric Acid	2	40
Nitric Acid	5	40
Nitric Acid	10	35
Nitric Acid	15	Not Recommended
Nitric Acid	20	Not Recommended
Nitric Acid	25	Not Recommended
Nitric Acid	30	Not Recommended
Nitric Acid	35	Not Recommended
Nitric Acid	40	Not Recommended
Nitric Acid	50	Not Recommended
Nitric Acid	60	Not Recommended
Nitric Acid	Fuming	Not Recommended
Oil Solvent	100% or saturated solution	60
Oleic Acid	100	85
Olive Oil	100	110
Potash	100% or saturated solution	75
Oxalic Acid	20	60
Oxalic Acid	100% or saturated solution	60
Paraffin	100	110
Petroleum Ether	100% or saturated solution	50
Phosphate	50	50
Phosphate Dense	100% or saturated solution	45
Phthalate Allyl Acetate	100	110
Phthalate Allyl Acetate	100% or saturated solution	110
Phthalic Acid Dibutyl	100	110
Phthalic Acid Dibutyl	100% or saturated solution	110

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Chemicals	Percentage of Mass concentration	Recommended Service Temperature in °C (FL-P22 – ISO RESIN)
Phthalic Anhydride	100% or saturated solution	60
Plating Solution (Copper)	100% or saturated solution	50
Plating Solution (Lead)	100% or saturated solution	30
Plating Solution (White Metal)	100% or saturated solution	30
Potassium Carbonate	10	25
Potassium Carbonate	25	25
Potassium Hydroxide	10	20
Potassium Hydroxide	25	Not Recommended
Potassium Hydroxide	50	Not Recommended
Potassium Permanganate	100% or saturated solution	25
Propyl Alcohol	100% or saturated solution	30
Propylene Glycol	100	100
Propylene Glycol	100% or saturated solution	100
Salt (Sodium Chloride)	100% or saturated solution	75
Silicone Oil Or Silicone	100	110
Silver Halide	100% or saturated solution	75
Silver Nitrate	100% or saturated solution	40
Soap	100% or saturated solution	75
Sodium Carbonate	25	Not Recommended
Sodium Hydroxide	10	25
Sodium Hydroxide	25	25
Sodium Hydroxide	50	Not Recommended
Sodium Hypochlorite	≤20	60
Sodium Metasilicate	25	45
Sodium Metasilicate	5	60
Sodium Sulfide	100% or saturated solution	70
Sodium Thiosulfate (Sodium Hyposulphite)	100% or saturated solution	65
Starch	50	75
Starch	10	30
Stearic Acid	100	85
Stearic Acid	100% or saturated solution	85
Styrene	100% or saturated solution	30
Sulfonic Acid	100% or saturated solution	60
Sulfuric Acid	1	65
Sulfuric Acid	5	65
Sulfuric Acid	10	45
Sulfuric Acid	25	45
Sulfuric Acid	50	40
Sulfuric Acid	60	40
Sulfuric Acid	70	40
Sulfuric Acid	75	Not Recommended
Sulfuric Acid	80	Not Recommended
Sulfuric Acid	93	Not Recommended
Sulfuric Acid	Fuming	Not Recommended
Surfactant Non-Ionic	100% or saturated solution	70
Surfactant Cationoid	100% or saturated solution	50
Surfactant Anionic	100% or saturated solution	70
Tin Salt (Stannous Chloride)	100% or saturated solution	75

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Chemicals	Percentage of Mass concentration	Recommended Service Temperature in °C (FL-P22 – ISO RESIN)
Toluene	100	40
Transformer Oil	100	110
Trichloroacetic Acid	50	Not Recommended
Trichloroacetic Acid	10	40
Triethanolamine	100	55
Trivalent Iron	100% or saturated solution	75
Turpentine Oil	100% or saturated solution	55
Urine	100% or saturated solution	65
Vinyl Chloride	100	Not Recommended
Seawater	100% or saturated solution	70
Fresh Water	100% or saturated solution	75
Zinc Salt	100% or saturated solution	75

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