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# PRODUCT SPECIFICATION SHEET

## COSHH

### Anti-Slip®

VERSION OF: 04/08/2006

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PRODUCT OVERVIEW
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Anti-Slip® is an extremely tough and durable surface and is designed to eliminate slip hazards in industrial, commercial and public access areas.

Anti-Slip® is produced in the following custom made forms: ladder rung covers, stair nosings, stair treads, cleats, landing covers, low profile sheet and standard sheet.

Anti-Slip® is manufactured from three key components: a GRP substrate (flat, profiled or hand laid-up), isophthalic polyester resins and silicon carbide grit. It is this coating process that lends the product its high resistance to impact, abrasion, most common solvents, chemicals, acids and hydrocarbons.

Available in yellow or black as standard colours or any other BS or RAL matched colours are available on request. The type of grit may also be chosen, with the standard grades being pedestrian, industrial or offshore.

Typical applications would include the following:

- Stairs
- Landings
- Platforms
- Loading ramps
- Walkways
- Access ramps
- Duckboards
- Scissor lifts
- Fire escapes

## GRP SUBSTRATE

Produced by a manufacturer accredited to standard BS EN ISO 9002 1994.

### Chemical Resistance Data

Chemical Solution	Level of Resistance to Vapours
<b>Weak Acids</b>	
10% Citric Acid	L – C*
10% Acetic Acid	L – C*
<b>Strong Acids</b>	
10% Sulphuric Acid	L – NR*
10% Hydrochloric Acid	NR
10% Nitric Acid	NR
<b>Caustic Alkali</b>	
10% Sodium Hydroxide	NR
10% Potassium Hydroxide	NR
<b>Hydrocarbons</b>	
Benzene	NR
Petroleum	L
<b>Solvents</b>	
Acetone	NR
Ethyl Acetate	NR
Water	C
<b>Chlorinated Solvents</b>	
Methylene Chloride	NR
Chloroform	NR
<b>Salts</b>	
10% Sodium Chloride	C
Saturated Sodium Carbonate	C
<b>Alcohols</b>	
Methanol	NR
10% Phenol	NR
Key: C - Continuous Exposure L - Limited Exposure NR - Not Recommended * - Exposure is time dependant	

Physical Properties

<b>Manufactured Tolerances</b>	<b>Profiled Sheet</b>	<b>Flat Sheet</b>
Length	-0mm + 0.8% of the stated length	+/- 1% of the stated length
Width	+/- 0.8% of the stated length	+/- 2mm
Squareness	When a rectangular frame is placed at the end of the sheet, the variation from corner to corner shall not exceed 1mm in 100mm	
<b>Fire Performance</b>	Class 3. Also available to 0/1 of BS476 Part 6/7	
<b>Operating Temperatures</b>	-20°C to +55°C	
<b>Barcol Hardness</b>	40 min	
<b>Effects of Sunlight</b>	The product is UV stabilised	
<b>Nominal Panel Weight (kg/m<sup>2</sup>)</b>	<b>Low Profile Sheet</b>	<b>Standard Sheet</b>
	1.53	4.50
<b>Nominal Thickness (mm)</b>	0.8 max	2.5 min
<b>% Glass Content</b>	30	35

**POLYESTER RESINS**

Produced by a manufacturer accredited to standards BSI FM 21566 & BS EN ISO 9002 1994.

Isophthalic polyester resin is used for its superior chemical resistance properties. As the resin provides the final protective coating its quality is paramount importance.

<b>Resin Type</b>	Un-saturated isophthalic polyester
<b>Monomer Content</b>	43%
<b>Viscosity at 25°C</b>	4.5dPas
<b>Gel Time</b>	12 mins
<b>Heat Deflection Temp</b>	90°C
<b>Flexural Strength</b>	100MPa
<b>Tensile Strength</b>	65Mpa
<b>Elongation</b>	1.3%
<b>Barcol Hardness</b>	45-50

## Chemical Resistance Data

This data has been determined from a number of sources including case histories, laboratory testing and practical experience.

It is emphasised however, that this information is only intended to serve as a guide to resistance as exposure combinations, loadings (both static and dynamic) and general environmental conditions will all play a part in overall performance. As such they do not constitute a recommendation of suitability or guarantee. We are always happy to provide samples of the material for testing where there is any doubt about the operating environment.

The table below shows the maximum working temperature to which the chemical resistant surface should be exposed with corresponding concentrations of various chemical substances.

Chemical	%	Maximum working temp °C	Chemical	%	Maximum working temp °C	
Acetic Acid	Glacial	NR	Antimony Trichloride	100	20	
	10	60	Aviation Fuel:			
	25	40	AVTAG/JP4	100	20	
	50	20	AVTUR	100	25	
	78	NR	Barium Chloride	SAT	60	
Acetone	98	NR	Barium Hydroxide	10	NR	
	10	25	Benzaldehyde	100	NR	
	100	NR	Benzoic Acid	SAT	60	
			Boric Acid	SAT	60	
			Brine		60	
Acriflavine	2	50	Bromine	100	NR	
Acrylonitrile	100	NR	Butyl Acetate	100	NR	
Alcohols:			Calcium Chloride	SAT	60	
	Amyl	100	40	Calcium Hydroxide	20	30
	Butyl	100	35	Calcium Oxide		30
	Ethyl	100	30	Calcium Nitrate	SAT	60
Methyl	100	30	Calcium Sulphate	SAT	60	
Aluminium Chloride	SAT	55	Carbon Disulphide	100	NR	
Aluminium Nitrate	10	60	Carbonic Acid	SAT	60	
Alu Potass. Sulphate	SAT	60	Carbon Tetrachloride	100	20	
Aluminium Sulphate	SAT	65	Chloroacetic Acid	25	20	
Ammonium Bromate	SAT	40		50	NR	
Amm. Carbonate	5	40		100	NR	
	SAT	NR				
Ammonium Chloride	50	60	Chlorine Water	SAT	25	
Ammonium Citrate	SAT	50	Chlorobenzene	100	NR	
Ammonium Hydroxide	5	NR	Chloroform	100	NR	
Ammonia	20	NR	Chromic Acid	10	40	
Ammonium Nitrate	SAT	60				
Ammonium Sulphate	SAT	65				

Chemical	%	Maximum working temp °C	Chemical	%	Maximum working temp °C
Chromic Acid	20	20	Magnesium Carbonate	SAT	60
	50	20	Magnesium Chloride	SAT	60
Citric Acid	SAT	60	Magnesium Nitrate	SAT	60
Copper Chloride	SAT	60	Magnesium Sulphate	SAT	60
Copper Cyanide	SAT	60	Maleic Acid	SAT	60
Copper Sulphate	SAT	60	Methylene Chloride	100	NR
Cresol	100	NR	Methyl Ethyl Ketone	100	NR
Cyclohexanol	100	40	Methyl Methacrylate	100	NR
Diesel Fuel	100	40	Mineral Oil	100	50
Diethylene Glycol	100	60	Monochloro Benzene	100	NR
Diethyl Ketone	100	NR	Naphtha	100	35
Diethyl Formamide	100	NR	Naphthalene	100	50
Dimethyl Formamide	100	NR	Nickel Chloride	SAT	60
Dimethyl Phthalate	100	50	Nickel Nitrate	SAT	60
Dipropylene Glycol	100	60	Nickel Sulphate	SAT	60
Ethyl Acetate	100	NR	Nitric Acid	5	50
Ethyl Acrylate	100	NR		10	40
Ethylene Chlorohydrin	50	60		20	NR
	100	60		40	NR
Ethylene Glycol	100	60	Nitroaniline	100	NR
Ferric Chloride	SAT	60	Nitrobenzene	100	NR
Ferric Nitrate	SAT	60	Oleic Acid	100	60
Ferric Sulphate	SAT	60	Oleum		NR
Ferrous Sulphate	SAT	60	Oxalic Acid	SAT	55
Formaldehyde	10	60	Paraffin Wax	100	65
Formic Acid	20	50	Perchloric Acid	25	NR
	50	40	Petrol Lead-Free	100	NR
	100	NR	Phenol Sol	SAT	NR
Furfural	5	NR	Phosphoric Acid	50	60
Glycerol	100	60	Phthalic Acid	SAT	55
Heptane	100	30	Potassium Carbonate	10	20
Hexane	100	30		40	NR
Hydrobromic Acid	20	60	Potassium Chloride	SAT	60
	48	50	Potassium Chromate	SAT	60
Hydrochloric Acid	10	60	Potass. Ferricyanide	SAT	60
	25	50	Potass. Ferrocyanide	SAT	60
	35	30	Potassium Hydroxide	30	NR
Hydroflouric Acid	10	25	Potass. Permanganate	SAT	20
Hydrogen Chloride	100	60	Potassium Phosphate	SAT	60
Hydrogen Peroxide	20vol	30	Potassium Sulphate	SAT	60
	100vol	NR	Propylene Glycol	100	60
Hydrogen Sulphide	100	50	Pyridine	100	NR
Iodine	2	NR	Sea Water		60
Iso-Octane	100	30	Silicone Oils	100	65
Isopropyl Alcohol	100	20	Silver Nitrate	SAT	30
Kerosene (domestic)	100	40	Sodium Acetate	SAT	60
Lactic Acid	50	60	Sodium Bicarbonate	SAT	60
Lanolin	100	55	Sodium Carbonate	10	25
Lead Acetate	SAT	60		25	20
Lead Nitrate	SAT	60	Sodium Chloride	SAT	60
Linseed Oil	100	80	Sodium Ferricyanide	SAT	60
Lubricating Oil	100	60	Sodium Hydroxide	<1	NR

Chemical	%	Maximum working temp °C	Chemical	%	Maximum working temp °C
Caustic Soda	5	NR	Tannic Acid	SAT	60
Sodium Hypochlorite	14 Aq	NR	Tartaric Acid	SAT	60
Sodium Nitrate	SAT	60	Tetrachloroethylene	100	NR
Sodium Nitrite	SAT	60	Tetrahydrofuran	100	NR
Sodium Perborate	SAT	60	Thionyl Chloride	100	NR
Sodium Perchlorate	SAT	60	Toluene	100	20
Sodium Phosphate	SAT	60	Turpentine	100	20
Sodium Sulphate	SAT	65	Urea	2	40
Sodium Sulphide	SAT	65	Urine	-	25
Sodium Sulphite	SAT	65	Vinyl Acetate	100	NR
Sodium Thiosulphate	SAT	60	Water:		
Stannous Chloride	SAT	60	De-ionised	100	55
Stearic Acid		60	Sea	100	60
Styrene	100	NR	White Spirit	100	35
Sulphuric Acid	25	60	Xylene	100	NR
	50	60	Zinc Chloride	SAT	60
	75	NR	Zinc Nitrate	SAT	60
	98	NR	Zinc Sulphate	SAT	60

## SILICON CARBIDE

Produced by a manufacturer accredited to standard BS EN ISO 9002 1994.

A very tough media providing a long life span. Used extensively for specialist blasting applications, grinding wheel manufacture, optical and lapidary processes.

### Chemical Analysis

Compound / Element	Chemical Formula	Typical Content
Silicon Carbide	SiC	96.5 – 97.5% Max
Free Silicon	Si	0.5% Max
Silica	SiO <sub>2</sub>	1.0% Max
Free Carbon	C	0.3% Max
Iron Oxide	Fe <sub>2</sub> O <sub>3</sub>	0.1% Max
Aluminium Oxide	Al <sub>2</sub> O <sub>3</sub>	0.2% Max

### Physical Properties

Shape	Angular
Colour	Black
Hardness	9.0 Mohs
Grades	Offshore – very coarse 12 grains per cm <sup>2</sup> Industrial – coarse 16 grains per cm <sup>2</sup> Pedestrian – medium 24 grains per cm <sup>2</sup> fine 36 grains per cm <sup>2</sup> Barefoot – extra fine 60 grains per cm <sup>2</sup>