

# Superlit<sup>®</sup> GRP Pipe

Technical Guide W1.7

For over 50 years Superlit<sup>®</sup> have successfully serviced the Water and Waste industry, manufacturing high quality Fiberglass pipes and fittings for a wide range of uses.



10.21 | W1.7 SUPERLIT GRP PIPE

## Applications

Irrigation

Potable water

Wastewater

Stormwater

## Product Attributes

Lightweight

Superior coupling technology

Low friction loss

Good chemical resistance

## Approvals/Standards

AS3571, ISO10639, DIN16869, BS5480, AWWA C950

## Quality

ISO 9001:2008 Quality Management Standard

*We are the supply partner of choice for New Zealand's civil construction industry, specialising in water and infrastructure based solutions.*

# Founded in 1961, Superlit® specialise in pressure and non-pressure Glass Fiber Reinforced Plastic (GRP) pipes and fittings.

Superlit® GRP pipe has the advantage of being strong, lightweight, and economical, with a smooth internal bore to assist in Hydraulic Loss Prevention (requiring less pumping energy). Superlit® is one of the few companies to specialise in two different automated processes of GRP manufacture.

## Product Attributes

- Available in sizes DN300 > DN4000
- Made to either ASNZS or ISO dimensions, with other standards also available.
- Multiple stiffness classes, from SN1250 > SN20,000
- Up to 40 bar pressure capabilities
- Full offer of jacking pipe, pressure pipe, fittings, and accessories
- Specialists in filament wound and centrifugal cast technologies
- Wide range of products available, with superior consultancy and after sales services
- Modern technology manufacturing and testing, to ensure a quality end product
- Superior coupling technology allows pipe installation without the need for pressure testing every joint
- Lightweight; up to 90% lighter than other pipe materials.

## Applications

- Drinking and raw water transmission
- Bulk irrigation
- Stormwater infrastructure
- Pressure and non-pressure wastewater
- Cooling Systems
- Undersea piping
- Chemical plants
- Hydro-electric power plants
- Petro-chemical materials
- Pipe jacking
- Large scale pipe conduits

## Continuous Filament Winding Method

The production principle is based on a continuous process taking place on a rotating mold created from a continuous steel band. All manufacturing parameters and product characteristics are tightly controlled, with multiple sensors and cameras monitoring the entire production process.

## Centrifugal Casting Method

Requires raw materials to be introduced layer by layer into a heated rotating mold, with centrifugal forces reaching up to 80 g. State of the art software enables pipe parameters to be set via simple computer interface.



FIG. 1



FIG. 2



## Couplers

Superlit® GRP Couplers are specially designed to allow for easy installation and safer joint tightness under higher pressure. The unique EPDM seal is 100% captive, with the fiberglass body manufactured around the seal. This methodology provides a secure, easy, and trouble-free fit, saving on installation time as the need for pressure testing every joint is eliminated.

## Fittings

All Superlit® GRP fittings are produced in compliance with strict quality standards, with design support and drawings available as part of Superlits superior backup service. Standard fittings include bends, tees, wyes, flanges, reducers and manholes. Depending on customer requirements, fittings can be manufactured by either Superlit® in Turkey, or our factory trained in-house fabrication workshop at Gillies in Oamaru.

## Jacking Pipe

Superlit® offer specific design services for GRP Pipe Jacking, and manufacture a uniform pipe with close tolerances to allow for better load distribution.

Save on excavation costs and talk to Hynds about your next Pipe Jacking Project. Superlit® Jacking Pipe features:

- Extended service life with minimum maintenance
- High compression strength
- Smooth, non-absorbing outer surface
- Longer drive allows fewer jacking pits
- High flow rate, reduced diameters
- Thin, strong walls
- Uniform pipe properties
- Special flush couplings

## Pipe Re-lining

Repair and renew old pipeline with Superlit® GRP pipe re-lining products.

- High stiffness, good structural properties
- Light weight, longer pushes
- High compression strength
- Thin wall, minimum space loss
- Low profile couplings
- High flow rates help to maintain the original hydraulic design

**Note:** Full Installation guidelines available – Hynds recommend adhering to manufacturer's instructions at all times.



FIG. 3 Coupler



FIG. 4 Fitting



FIG. 5 Fittings



FIG. 6 Jacking Pipe

**TABLE 1 GRP Chemical Resistance Chart**

Chemical	Standard Pipe	Special Pipe
Acetic Acid		X
Acrylic Acid		X
Alcohol Ethyl	X	X
Alcohol Isopropyl	X	X
Alcohol Methyl Isobutyl		X
Alcohol Secondary Butyl		X
Alum	X	X
Aluminium Chloride	X	X
Aluminium Fluoride	X	X
Aluminium Hydroxide		X
Aluminium Nitrate	X	X
Aluminium Potassium Sulphate	X	X
Ammonia Aqueous		X
Ammonia Gas		X
Ammonium Bicarbonate		X
Ammonium Bisulphate		X
Ammonium Carbonate		X
Ammonium Chloride	X	X
Ammonium Citrate		X
Ammonium Fluoride		X
Ammonium Hydroxide		X
Ammonium Nitrate	X	X
Ammonium Persulfate		X
Ammonium Phosphate	X	X
Ammonium Sulphate	X	X
Aniline Sulphate		X
Barium Carbonate		X
Barium Chloride	X	X
Barium Hydroxide		X
Barium Sulphate	X	X
Beer	X	X
Benzene Sulphonic Acid		X
Benzoic Acid		X
Cadmium Chloride		X
Calcium Bisulphite		X
Calcium Carbonate		X
Calcium Chlorate		X
Calcium Chloride	X	X
Calcium Hydroxide		X
Calcium Nitrate	X	X
Calcium Sulphate	X	X
Calcium Sulphite		X
Cane Sugar Liquid		X
Caprylic Acid		X
Carbon Dioxide	X	X
Carbon Monoxide in gas form	X	X
Chlorine, dry gas		X
Chlorine, wet gas		X
Citric Acid	X	X
Copper Chloride	X	X
Copper Cyanide		X
Copper Fluoride		X
Copper Nitrate	X	X
Copper Sulphate	X	X
Crude Oil, sour	X	X

**TABLE 1 GRP Chemical Resistance Chart**

Chemical	Standard Pipe	Special Pipe
Crude Oil, sweet	X	X
Diesel Fuel	X	X
Ethylene Glycol	X	X
Ferric Chloride	X	X
Ferric Nitrate	X	X
Ferric Sulphate	X	X
Ferrous Chloride	X	X
Ferrous Nitrate	X	X
Ferrous Sulphate	X	X
Fluoroboric Acid	X	X
Fluosilicic Acid	X	X
Formic Acid	X	X
Fuel Oil	X	X
Gas, natural		X
Gluconic Acid		X
Glucose	X	X
Glycerine	X	X
Heptane		X
Hexane		X
Hexylene Glycol		X
Hydraulic Fluid		X
Hydrochloric Acid		X
Hydrocyanic Acid		X
Hydrofluosilicic Acid		X
Hydrogen Bromide, wet gas		X
Hydrogen Chloride, dry gas		X
Hydrogen Chloride, wet gas		X
Hydrogen Sulphide, liquid	X	X
Hydrogen Fluoride, vapour		X
Hydrosulphide Bleach		X
Hypochlorous Acid		X
Isopropyl Amine		X
Isopropyl Palmitate		X
Kerosene		X
Lactic Acid		X
Laurel Chloride		X
Laurie Acid		X
Lead Acetate		X
Levulinic Acid		X
Lithium Bromide		X
Lithium Sulphate		X
Magnesium Bisulphite		X
Magnesium Carbonate		X
Magnesium Chloride	X	X
Magnesium Hydroxide		X
Magnesium Sulphate	X	X
Maleic Acid		X
Mercuric Chloride	X	X
Mercurous Chloride	X	X
Mineral Oils	X	X
Motor Oil		X
Myristic Acid		X
Naphtha		X
Naphthalene		X
Nickel Chloride	X	X

**TABLE 1 GRP Chemical Resistance Chart**

Chemical	Standard Pipe	Special Pipe
Nickel Nitrate	X	X
Nickel Sulphate	X	X
Octanoic Acid		X
Oleic Acid		X
Oxalic Acid		X
Perchlorethylene		X
Phosphoric Acid	X	X
Phosphorous Pentoxide		X
Phthalic Acid		X
Potassium Alum Sulphate	X	X
Potassium Bicarbonate		X
Potassium Bromide	X	X
Potassium Carbonate		X
Potassium Chloride	X	X
Potassium Dichromate		X
Potassium Ferrocyanide		X
Potassium Hydroxide		X
Potassium Nitrate	X	X
Potassium Persulfate		X
Potassium Sulphate	X	X
Propylene Glycol		X
Salicylic Acid		X
Sebacic Acid		X
Soaps	X	X
Sodium Acetate		X
Sodium Aluminate		X
Sodium Benzoate		X
Sodium Bicarbonate		X
Sodium Bifluoride		X
Sodium Bisulphate	X	X
Sodium Bisulphite	X	X
Sodium Bromide	X	X
Sodium Chlorate		X
Sodium Chloride	X	X
Sodium Chlorite		X
Sodium Chromate		X
Sodium Cyanide		X
Sodium Dichromate		X
Sodium Diphosphate		X
Sodium Ferricyanide		X
Sodium Ferrocyanide		X
Sodium Fluoride		X
Sodium Fluoro Silicate		X
Sodium Lauryl Sulphate		X
Sodium Nitrate	X	X
Sodium Nitrite	X	X
Sodium Silicate		X
Sodium Sulphate	X	X
Sodium Sulphide		X
Sodium Sulphite	X	X
Stannic Chloride		X
Stearic Acid	X	X
Sugar Cane Liquor		X
Sulphuric Acid	X	X
Tartaric Acid		X

**TABLE 1 GRP Chemical Resistance Chart**

Chemical	Standard Pipe	Special Pipe
Trichloroacetic Acid		X
Trisodium Phosphate		X
Vegetable Oils	X	X
Vinegar	X	X
Water, demineralised	X	X
Water, distilled	X	X
Water, fresh	X	X
Water, sea	X	X
Zinc Chlorate		X

**TABLE 2 AS/NZS Dimensions**

<b>NB</b>	<b>OD</b>
300	345
375	426
450	507
525	587
600	667
675	747
750	826
900	923
1000	1025
1200	1229
1400	1433
1600	1637
1800	1841
2000	2045
2200	2249
2400	2453
3000	3065

**TABLE 3 ISO Dimensions**

<b>NB</b>	<b>OD</b>
300	324
350	376
400	427
450	475
500	530
600	633
600-S	617
700	718
800	820
900	924
1000	1026
1100	1126
1200	1229
1300	1331
1400	1434
1500	1536
1600	1638
1700	1739
1800	1842
1900	1944
2000	2046
2100	2148
2200	2250
2300	2351
2400	2454
2500	2555
2600	2658
2700	2759
2800	2859
2900	2963
3000	3066
3100	3167
3200	3269
3300	3371
3400	3473
3500	3575
3600	3677
3700	3779
3800	3881
3900	3983
4000	4085



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