

# SUPERLIT GRP JACKING PIPE SYSTEM



ISO25780

CONTINUOUS FILAMENT WOUND (CFW)  
GLASS REINFORCED POLYESTER (GRP)  
JACKING PIPE SYSTEM

Version 1.0

clover 



**For further information relating to Superlit GRP Jacking Pipes or any other Clover product contact your local Clover sales office for assistance.**

The products shown form part of our continuous improvement program and as such the product designs, specifications and materials may be changed without notice.

All warranties relating to accuracy, completeness, or suitability for any particular purpose and all liability for any loss, damage or costs incurred relating to the use of this information are excluded.

© Clover Pipelines Pty Ltd. All Rights Reserved.

# CONTENTS

---

<b>We are Clover</b>	<b>4</b>
<b>Why use Trenchless technology?</b>	<b>6</b>
<b>Superlit Continuous Filament Wound (CFW) Manufacturing Process</b>	<b>6</b>
<b>Technical Data</b>	
Applications	7
Ordering Information	7
Technical Support	7
Features & Benefits	7
Design & Installation	7
Superlit GRP Jacking Pipe Range	8
Design Data	8
Superlit GRP Pipe Wall	8
Certifications & Appraisals	8
<b>Stormwater &amp; Sewer Access Applications</b>	<b>9</b>
<b>GRP Tank, Storage &amp; Access Systems</b>	<b>9</b>
<b>Product Range</b>	<b>10-11</b>
<b>Legacy Pipe OD's and Flange Dimensions</b>	<b>12-12</b>
<b>Chemical Resistance Guide</b>	<b>14-15</b>



# WE ARE CLOVER, AN INTEGRATED PIPELINE INFRASTRUCTURE BUSINESS

Led by a passionate team of industry professionals, we combine strategic project consultation, product innovation and service excellence. We work with global partners to specify world-leading pipelines across Australia and the Asia Pacific region.



## Future facing pipeline infrastructure

We believe in new ways of doing— at Clover, we do things differently. We don't rest on the past, or the present, we're committed to consistent innovation that supports existing communities and establishes new ones.

---

## Australia's most complete pipeline infrastructure provider.

---

We partner with our clients to offer holistic design-led packages that go beyond supply and delivery—bridging the gap between planning, source and supply of pipeline infrastructure systems.

### PLAN

---

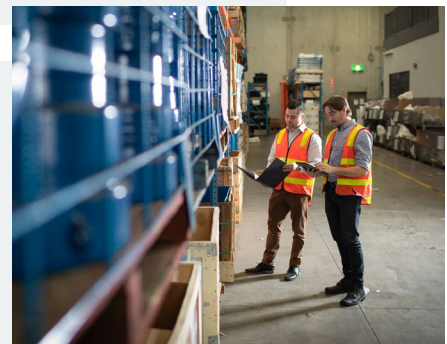
Clover's inhouse engineering team combines specialist technical knowledge, creative thinking and on-the-job experience, to offer our clients a range of project planning and design consultation services.



### SOURCE

---

Constantly pushing to challenge what's achievable, Clover harnesses an extensive global network of product partners to bring our clients the competitive advantage that comes with choice, availability and cutting edge innovation.



### SUPPLY

---

In a project based industry, timing is everything. At Clover, our approach to supply and distribution is based around a dedication to consistency, responsiveness and service excellence.



---

## Why use Trenchless technology?

With today's growing urban areas, it is at times impractical to utilise traditional open trench excavation and disrupt surface conditions to install, replace or repair underground piping systems.

Clover's Superlit trenchless technologies offer significant advantages to contractors and the community when compared to traditional open trench pipe installations:

- No trenches means installation savings
- Minimal surface disruption and reduced community impact
- All weather installation, rain, hail or shine
- Minimal noise and vibration due to underground installation
- Low soil transference and replacement
- Small installation space required
- Faster installation
- Less excavation material, reduced costs associated with disposal of excavated spoil

---

## Superlit Continuous Filament Wound (CFW) Manufacturing Process

### Production Process

Clover Superlit Continuous Filament Wound (CFW) jacking pipes are manufactured using continuous glass fibres, thermosetting polyester resin and silica. The process uses a fully automatic computer controlled system that feeds raw materials onto a continuously advancing mandrel starting from the inside surface of the pipe until the required wall thickness is obtained.

This system precisely determines; measures and applies exact quantities of each of the raw materials throughout the production process. The precision and flexibility of the process enables the production of pipes to suit an extensive range of applications and conditions.

Process parameters, temperature and thickness are constantly monitored during production to ensure quality control of the finished product.

---

## Technical Data

Superlit Continuous Filament Wound (CFW) Glass Reinforced Polyester (GRP) Jacking Pipes are manufactured to ISO25780 for potable, non-potable, sewer, stormwater and industrial applications.

### Applications

- Trenchless pipe installations
- Gravity pipelines & low pressure applications
- Relining & pipeline rehabilitation
- Potable & non potable water applications
- Wastewater & irrigation systems
- Stormwater systems
- Rail under bores & culvert systems
- Industrial & petrochemical applications
- Electrical & cable ducts

### Ordering Information

When ordering Superlit GRP jacking pipe products users must specify the following parameters:

- Pipe diameter
- Pipe stiffness
- Maximum jacking force
- Pipe length
- Pressure (Gravity or PN10)

### Technical support

We have an infrastructure project team that has the experience and expertise to assist you with your project needs. Our team will not only help you choose the right products for the job, they can also assist with the design and specification of those products.

### Features and Benefits

- Long service life. Reduced maintenance costs
- Lengths can be varied to suit application
- Lightweight materials: lower transport costs, significant installation & handling savings
- Superior jacking capabilities: high compression strength, lowest jacking force required for any drive length. Ability to maximise bore lengths and reduce number of required shafts
- Flush Coupling: provides a smooth flush external surface for minimal interference during installation
- Superior hydraulic performance: smooth internal bore means less friction loss, larger internal bore for higher flow rates
- Corrosion resistant materials: suitable for high Ph applications and aggressive environments
- Excellent abrasion and UV resistance
- Non-Conductive materials: not affected by induced currents or earth leakage
- No Cathodic protection required
- Energy efficient: Smooth bore means less pumping energy required and less surface build up for lower maintenance and running costs

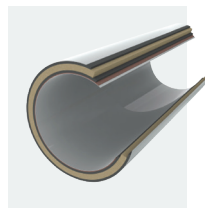
### Design & Installation

The Superlit GRP jacking pipe range is considered flexible pipe system. For information on the installation of Superlit GRP jacking pipe, please refer to the Superlit Design & Installation Manuals.

# Technical Data

## Superlit GRP Jacking Pipe Range

- Size Range: DN300 – DN3000
- Stiffness rating: SN20,000 to SN1,000,000
- Lengths: 1m to 5.8m (Standard length 2.4m)
- Product Range: Pipe, manhole connectors and an extensive range of fabricated fittings
- Manufactured in accordance with the ISO25780 standard
- Pipe Dimensions: Refer to Product Dimensions table (page 9)
- Coupling: Body: Stainless Steel Seal: EPDM 60 ± 5 Shore.



Each layer of the pipe wall construction has a specific function and vary subject to requirements such as stiffness, jacking force, wall thickness and pressure.

## Design Data

### Flow Roughness Coefficient

Hazen-William C = 150  
 Manning n = 0.009  
 Colebrook-White k = 0.029 mm

### Poissons Ratio

Typically 0.22 to 0.29

### Thermal Expansion

Coefficient: 24 to 30 x 1/10<sup>-6</sup> mm/mm/C<sup>o</sup>

### Jacking Force Safety Factor

3.5

### Ultimate Compressive Strength

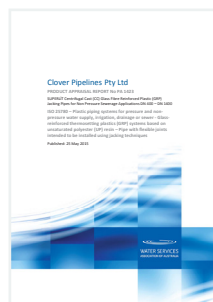
85N/mm<sup>2</sup>

## Superlit GRP Pipe Wall

Superlit has developed a system to optimise the distribution of glass fibres across the pipe wall facilitating greater accuracy in pipe design and in determining the long-term behavioural pipe properties.

## Certifications & Appraisals

Clover Pipelines supports a comprehensive quality assurance program and maintains an ISO 9001: 2015 accreditation. Our GRP product range is manufactured under strict quality guidelines and our products are third party certified to meet the following Australian and International standards:



### WSAA ISO 25780 Approval

SUPERLIT Centrifugal Cast (CC) Glass Fibre Reinforced Plastic (GRP) Jacking Pipes for non-pressure sewerage applications DN 400 – DN 1400.



### Global-Mark AS/NZS ISO 9001 Approval

Design, purchasing, warehousing and distribution of pipes, conduits, valves and associated fittings for the water supply, sewerage, drainage, electrical, communication, mining, rural and gas industries.



### Bureau Veritas ISO 25780 Approval

Plastics piping systems for pressure and non-pressure water supply across irrigation, drainage or sewerage systems.



---

## Stormwater & Sewer Access Applications

Clover's GRP Manhole solution is manufactured to AS/NZS 3571.2 for a range of commercial and custom sewer applications. Made from premium glass-reinforced polymers with superior service life to ensure optimum performance.

### Features:

- Superlit GRP coupling system with full face EPDM seal for guaranteed seal integrity
- Minimal ongoing maintenance
- Long life corrosion resistant material
- Lightweight design for reduced installation time

Clover's GRP manhole solutions can be customised to suit specific project requirements. We can build into the design optional covers, access ladders, foot wells, overflows and storage chambers. Speak to a Clover sales representative to find out more.



## GRP Tank, Storage & Access Systems

Clover's GRP Tank, Storage and Access Systems are used in a variety of industrial applications. Some of these include the retention of storm water prior to filtration and permanent onsite water capture for re-use in irrigation. GRP Tanks and Systems are manufactured from premium glass reinforced polymers for cost effective solutions to corrosion problems.

### Features:

- Lightweight design for reduced installation time
- Long service life
- Minimal ongoing maintenance
- Low roughness coefficient
- Chemical resistance
- Expandability as required



PRODUCT RANGE

# GRP Jacking Pipe SN 20,000 - 80,000

Refer to page 10 for SN 100,000 - 1,000,000

PIPE STIFFNESS SN (N/M2)																		
OD (mm)	20,000			32,000			40,000			50,000			64,000			80,000		
	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax
	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN
345	326.4	20	18	323.4	23	50	321.8	24	69	319.4	27	96	317.2	29	120	315.2	31	141
376	355.8	23	39	352.6	27	78	350.6	29	102	348.0	32	133	345.8	34	160	343.6	37	186
427	404.0	30	84	400.4	35	133	398.0	38	166	395.4	41	202	392.8	44	237	390.2	47	272
530	501.6	46	198	497.0	53	277	494.0	58	328	490.8	63	382	487.4	68	439	484.4	73	489
550	520.4	50	228	515.6	57	311	513.0	62	359	509.2	68	426	505.8	73	485	502.6	78	540
618	584.8	63	330	579.4	72	435	576.0	79	505	572.2	86	580	568.4	92	654	565.0	98	720
650	615.0	70	385	609.0	81	511	606.0	87	574	601.8	95	661	597.8	102	743	594.0	109	821
718	679.6	84	459	673.0	98	612	669.6	105	690	664.8	115	800	660.4	125	900	656.0	134	1000
820	776.0	110	676	769.0	127	862	764.6	138	978	759.2	151	1119	754.0	163	1254	749.4	174	1373
860	814.0	121	767	806.0	141	989	802.0	151	1099	796.4	165	1253	790.8	179	1406	785.8	192w	1541
924	874.0	141	853	866.0	163	1092	862.0	174	1211	855.6	191	1399	850.0	206	1563	844.0	222	1738
960	908.0	153	950	900.0	175	1198	895.0	189	1352	889.0	206	1536	883.0	223	1718	877.0	239	1900
1026	971.0	172	1118	962.0	200	1417	957.0	215	1581	950.0	236	1810	943.6	255	2018	938.0	271	2199
1099	1040.0	198	1344	1030.0	231	1699	1025.0	247	1875	1017.6	270	2135	1011.0	292	2364	1004.0	314	2607
1229	1163.0	248	1789	1153.0	284	2187	1146.0	309	2463	1138.0	338	2776	1130.2	366	3080	1123.0	391	3358
1290	1220.0	276	2049	1209.0	318	2508	1202.4	343	2781	1194.4	373	3110	1186.6	402	3428	1178.4	432	3761
1348	1275.0	301	2276	1264.0	344	2755	1257.0	372	3058	1248.0	408	3445	1240.0	439	3786	1231.6	471	4143
1434	1357.0	337	2613	1344.0	393	3216	1337.0	422	3538	1327.6	461	3967	1318.8	498	4367	1310.0	534	4764
1499	1418.6	368	2901	1405.0	429	3560	1398.0	459	3897	1388.0	503	4375	1379.0	542	4802	1369.0	585	5274
1638	1550.0	440	3474	1536.0	508	4216	1527.0	552	4689	1516.0	604	5263	1506.4	650	5761	1496.0	699	6297
1720	1628.0	484	3878	1612.0	565	4768	1603.2	609	5253	1592.0	666	5867	1582.0	715	6412	1572.0	765	6953
1842	1743.0	557	4582	1726.0	650	5594	1717.0	698	6126	1705.0	763	6831	1694.0	822	7472	1683.0	880	8109
2046	1936.0	688	5840	1918.0	797	7031	1907.0	863	7753	1894.0	940	8600	1882.0	1011	9378			
2160	2044.0	766	6305	2026.0	881	7562	2014.0	957	8394	2000.0	1045	9358						
2250	2129.0	832	6943	2110.0	958	8325	2097.0	1044	9263	2083.0	1136	10267						
2453	2321.0	989	8469	2300.0	1142	10134	2286.0	1243	11235									
2553	2416.0	1069	9241	2393.0	1242	11138												
2658	2515.0	1161	10150	2493.0	1334	12040												
2758	2610.0	1247	10995															
2858	2704.0	1345	11964															
2962	2803.0	1439	12895															
3065	2901.0	1536	13856															

Jacking Force Safety Factor = 3.5

Ultimate Compressive Strength = 85 N/mm2

PRODUCT RANGE

# GRP Jacking Pipe SN 100,000 - 1,000,000

Refer to page 9 for SN 20,000 - 80,000

PIPE STIFFNESS SN (N/M2)																						
OD (mm)	100,000			128,000			160,000			200,000			320,000			640,000			1,000,000			
	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	ID	Mass	Fmax	
	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	mm	kg/m	kN	
345	312.6	33	169	310.0	36	197	306.8	39	231	304.0	42	260	296.8	49	334	285.4	59	448	276.6	67	533	
376	340.8	40	219	338.0	43	251	334.4	46	293	331.0	50	331	323.4	58	417	311.0	70	552	301.6	79	651	
427	387.0	51	315	384.0	55	354	379.8	60	409	376.0	64	459	367.4	74	568	353.2	90	744	342.4	102	873	
530	480.4	79	556	476.4	85	621	471.2	92	706	467.0	99	773	456.0	115	948	438.4	139	1218	425.0	157	1416	
550	498.4	85	612	494.2	91	684	489.0	100	772	484.8	106	842	473.0	124	1036	455.0	150	1322	441.0	170	1537	
618	560.0	107	817	555.2	116	909	549.6	125	1015	544.6	134	1109	531.6	156	1349	511.0	190	1717	496.0	213	1976	
650	589.0	119	923	584.0	128	1023	578.0	139	1143	572.8	148	1245	559.2	172	1510	537.6	210	1916	521.4	237	2210	
718	651.0	144	1112	645.2	156	1241	638.0	170	1399	632.8	181	1513	617.6	211	1839	594.0	255	2329	576.0	288	2691	
820	743.0	189	1537	736.8	203	1694	729.2	221	1885	722.4	236	2054	705.4	274	2471	678.0	334	3121	658.0	376	3580	
860	779.6	207	1707	773.0	223	1883	764.4	244	2110	758.0	259	2277	740.0	301	2740	711.0	368	3462				
924	837.2	240	1934	830.2	258	2134	821.6	281	2378	814.0	300	2591	795.0	348	3116	764.0	424	3945				
960	869.8	259	2115	862.8	278	2324	853.6	303	2594	845.6	324	2828	826.0	376	3390	794.0	457	4279				
1026	930.0	295	2456	922.0	318	2710	912.0	347	3024	904.0	370	3274	882.4	430	3936							
1099	995.8	339	2888	988.2	363	3147	977.0	398	3524	968.6	423	3805	945.4	493	4567							
1229	1114.0	423	3704	1104.6	456	4061	1093.0	496	4499	1082.6	531	4887										
1290	1169.0	467	4140	1160.0	500	4499	1147.0	547	5014	1136.0	587	5445										
1348	1221.6	510	4563	1211.0	550	5006	1198.0	600	5543	1187.0	641	5993										
1434	1299.2	578	5247	1289.0	620	5700	1274.8	677	6325	1270.0	720	6795										
1499	1359.0	628	5742	1348.0	675	6253	1333.0	738	6943													
1638	1485.0	750	6859	1492.0	811	7519																
1720	1559.0	829	7651																			

Ultimate Compressive Strength = 85N/mm<sup>2</sup>  
 Jacking Force Safety Factor = 3.5

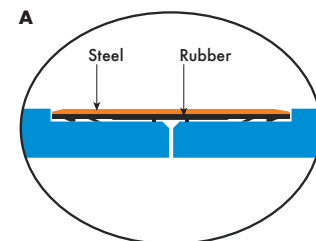
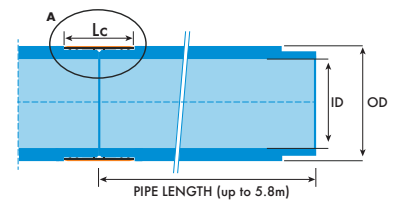
The products shown form part of our continuous improvement program and as such the product designs, specifications and materials may be changed without notice.

### Detail A - Coupling

Stainless Steel

Rubber: EPDM 60 ± 5 Shore

Lc = 120mm (DN 345 - 860)  
 140mm (DN 924 - 1434)  
 170mm (DN 1499 - 3065)



LEGACY OD'S AND FLANGE DIMENSIONS

# Pipe Outside Diameters

## NON-PRESSURE PIPES

Pipe Material	Std	100	150	200	225	250	300	375	400	450	500	525	550	575	600	675	700	750	900	1000	1100	1200	1300	1400	
GRP Jacking	IS025780						345	427		530	550				618	718			820	924	1026	1099	1229	1348	1434
PVC DWV	AS1260	110	160		250		315	400																	
PVC Stormwater	AS1254	110	160		250		315	400																	
VC	AS1741	138	194		280		370	450	485	535		635			710										
Reinf Concrete	AS4058		197		279		362	445		533		616			699	787			870	1029			1359		
FRC Class 2					273		316	427		512		594			678	752			803						
AC Class 35	AS1712	120	177	230	257	283	336	419		497		576			657										
AC Class 50	AS1712	122	183	236	262	289	344	425		505		585			664										
Cast Iron SWV	AS1631	114	165		244		323																		
Cast Iron SWV	En877	110	160	210		274	326		429		532				635										

## PRESSURE PIPES

Pipe Material	Std	100	150	200	225	250	300	375	400	450	500	525	550	575	600	675	700	750	900	1000	1100	1200	1300	1400	
oPVC Series 2	AS4441	122	177	232	259	286	345	426		507	560				667										
mPVC Series 2	AS4765	122	177	232	259	286	345	426		507	560				667										
uPVC Series 2	AS1477	122	177	232	259	286	345	426		507	560				667										
GRP	AS3571						345	426	427	507	560	587			667	747			826	924	1026	1125	1229	1331	1434
Ductile Iron	AS2280	122	177	232	259	286	345	426		507	560				667				826						
Cast Iron CI B	AS1724	122	177	232	259	286	334			492	545				650										
Cast Iron CI C	AS2544	122	177	232	259	286	345	426		507	560				667				826						
AC Class CD	AS1711	122	177	232	259	286	345			507		587			667	747			826						
AC Class AB	AS1711	122	177	232	259	286	334	413		492															
mPVC Series 1		114	160	225	250	280	315			500	560				630										
uPVC Series 1	AS1477	114	160	225	250	280	315	400	450	500	560				630										
Mild Steel	AS1579	114	168	219		273	324		406	457	508				610		711	762	914				1219		
SS Sch 1--160		114	168	219		273	324		406	457	508		599		610			762							
Gal Steel	AS1074	114	168																						
ABS Series 1	AS3518	114	168	225	250		315	400	450	500	560														
SS Tube	AS1528	102	152	203																					
Copper	AS1432	102	152	203	229																				
Poly PE80/100	AS4130	110	160/ 80	200/ 225		250/ 280	315		400	450	500		560		630		710		900	1000			1200		
Ductile Iron ISO	EN545	118	170	222		274	326		429	480	532				635		738		945	1048			1265		

LEGACY OD'S AND FLANGE DIMENSIONS

# Pipe & Flange Dimensions

PIPE		FLANGES: PN16 AS4087 (TABLE C,D)						FLANGES: AS2129 (TABLE E)						FLANGES: PN35 AS4087 (TABLE F,H)							
DIA.	PIPE OD	FLANGE OD	PCD	NO HOLES	HOLE DIA.	BOLT SIZE	FLANGE THICK	FLANGE OD	PCD	NO HOLES	HOLE DIA.	BOLT SIZE	FLANGE THICK	FLANGE OD	PCD	NO HOLES	HOLE DIA.	BOLT SIZE	FLANGE THICK		
80	96	185	146	4	18	M16	18			Same as PN16						205	165	8	18	M16	22
100	122	215	178	4	18	M16	20	215	178	8	18	M16	22	230	191	8	18	M16	22		
150	177	280	235	8	18	M16	23	280	235	8	22	M20	22	305	260	12	22	M20	27		
200	232	335	292	8	18	M16	23	335	292	8	25	M20	25	370	324	12	22	M20	31		
225	259	370	324	8	18	M16	24	370	324	12	25	M20	25	405	356	12	26	M24	34		
250	286	405	356	8	22	M20	24	405	356	12	25	M20	25	430	381	12	26	M24	34		
300	345	455	406	12	22	M20	30	455	406	12	29	M24	29	490	438	16	26	M24	38		
375	426	550	495	12	26	M24	33			Same as PN16						580	521	16	30	M27	42
450	507	640	584	12	26	M24	33	640	584	16	35	M24	35	675	610	20	33	M30	46		
500	560	705	641	16	26	M24	35	705	641	16	38	M24	38	735	673	24	33	M30	49		
525	587	735	673	16	26	M24	38	735	673	16	38	M27	38	760	699	24	33	M30	60		
600	667	825	756	16	30	M27	42	825	756	16	41	M30	41	850	781	24	36	M33	54		
750	826	995	927	20	33	M30	47	995	927	20	48	M33	48	1015	940	28	36	M33	59		

## CHEMICAL RESISTANCE GUIDE

CHEMICAL	STANDARD	SPECIAL
Acetic Acid		x
Acrylic Acid		x
Alcohol Ethyl	x	x
Alcohol Isopropyl	x	x
Alcohol Methyl Isobutyl		x
Alcohol Secondary Butyl		x
Alun	x	x
Aluminium Chloride	x	x
Aluminium Flouride	x	x
Aluminium Hydroxide		x
Aluminium Nitrate	x	x
Aluminium Potassium Sulfate	x	x
Ammonia Aqueous		x
Ammonia Gas		x
Ammonium Bicarbonate		x
Ammonium Bisulfate		x
Ammonium Carbonate		x
Ammonium Chloride	x	x
Ammonium Citrate		x
Ammonium Flouride		x
Ammonium Hydroxide		x
Ammonium Nitrate	x	x
Ammonium Persulfate		x
Ammonium Phosphate	x	x
Ammonium Sulfate	x	x
Aniline Sulfate		x
Barium Carbonate		x
Barium Chloride	x	x
Barium Hydroxide		x
Barium Sulphate	x	x
Beer	x	x
Benzine Sulphonic Acid		x
Benzoic Acid		x
Cadium Chloride		x
Calcium Bisulfite		x
Calcium Carbonate		x
Calcium Chlorate		x
Calcium Chloride	x	x
Calcium Hydroxide		x
Calcium Nitrate	x	x
Calcium Sulfate	x	x
Calcium Sulfite		x
Cane Sugar Liquid		x
Caprylic Acid		x
Carbon Dioxide	x	x
Carbon Monoxide, gas form	x	x
Chlorine, Dry gas		x

CHEMICAL	STANDARD	SPECIAL
Chlorine, wet gas		x
Citric Acid	x	x
Copper Chloride	x	x
Copper Cyanide		x
Copper Flouride		x
Copper N traie:	x	x
Copper Sulphate	x	x
Crude Oil, sour	x	x
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
Flobonic 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
HydrohSoric Acid		x
Hydroyanid Acid		x
Hydrofluosilicic Acid		x
Hydrogen Bronide, wet gas		x
Hydrogen Chloride, dry gas		x
Hydrogen Chloride, wet gas		x
Hydrogen Sulfide, liquid	x	x
Hydrogen Flouride, vapour		x
Hydrosulfide Bleach		x
Hydrochlorous Acid		x
Isopropyl Amine		x
Isopropyl Palmitate		x
Kerosene		x
Lactic Acid		x
Laurel Chloride		x
Laurie Acid		x
Lead Acetate		x

## CHEMICAL RESISTANCE GUIDE

CHEMICAL	STANDARD	SPECIAL
Chlorine, dry gas		x
Lithium Bromide		x
Lithium Sulfate		x
Magnesium Bisulfite		x
Magnesium Carbonate		x
Magnesium Chloride	x	x
Magnesium Hydroxide		x
Magnesium Sulfate	x	x
Maelic Acid		x
Mercuric Chloride	x	x
Mercurous Chloride	x	x
Mineral Oils	x	x
Motor Oil		x
Myristic Acid		x
Naptha		x
Napthalene		x
Nickel Chloride	x	x
Nickel Nitrate	x	x
Nickel Sulfate	x	x
Octanoic Acid		x
Oleic Acid		x
Oxalic Acid		x
Perchlorylene		x
Phosphoric Acid	x	x
Phosphorous Pentoxide		x
Phtalic Acid		x
Potassium Alum Sulfate	x	x
Potassium Bicarbonate		x
Potassium Bromide	x	x
Potassium Carbonate		x
Potassium Chloride	x	x
Potassium Dichromate		x
Potassium Ferrocyanid		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

CHEMICAL	STANDARD	SPECIAL
Levulinic Acid		x
Sodium Acetate		x
Sodium Aluminate		x
Sodium Benzoate		x
Sodium Bicarbonate		x
Sodium Bifluoride		x
Sodium Bisulfate	x	x
Sodium Bisulfite	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 Flouride		x
Sodium Flouro Silicate		x
Sodium Laryl Sulfate		x
Sodium Nitrate	x	x
Sodium Nitrite	x	x
Sodium Silicate		x
Sodium Sulfate	x	x
Sodium Sulfide		x
Sodium Sulfite	x	x
Stannic Chloride		x
Stearic Acid	x	x
Sugar Cane Liquor		x
Sulfuric Acid	x	x
Tartaric Acid		x
Trichlor Acetic 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

The chemical resistance of Superlit GRP products depends on a number of factors: resin selection; the temperature of the material being transported in the pipeline; and the concentration of chemicals contained in the material. This guide should be used as a general overview and should not be used as a design guide.

Clover's technical team can provide assistance regarding design considerations where chemical resistance is required and can design and manufacture pipes for specific conditions. Where the table indicates both standard and special pipes for a particular chemical this implies that the standard pipe is suitable for lower concentrations of the chemical at lower temperatures.

Clover Pipelines Pty Ltd



[solutions@cloverpipe.com.au](mailto:solutions@cloverpipe.com.au)

[www.cloverpipe.com.au](http://www.cloverpipe.com.au)

**VIC** +61 3 8373 8000

**NSW** +61 2 8279 8000

**WA** +61 8 6166 6800

**SA** +61 8 8120 4600

**QL** +61 7 3073 7000

**TAS** +61 3 6111 9500

**NT** +61 8 7999 8400

**INT** +61 3 8373 8000