

SUPERLIT GRP PIPE & FITTINGS



AS3571.1
AS3571.2

**GLASS REINFORCED POLYESTER
(GRP) PIPELINE SYSTEM**

Version 1.0

clover 



For further information relating to Superlit GRP 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.

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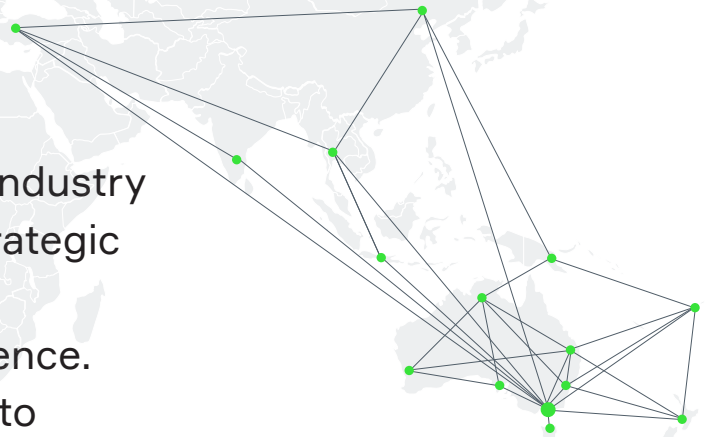
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WE ARE CLOVER, AN INTEGRATED PIPELINE INFRASTRUCTURE BUSINESS

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.

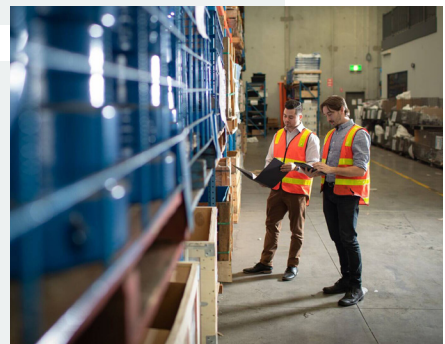
PLAN

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.



Technical Data

Superlit GRP Pipe and fittings are manufactured to AS/NZS 3571 for potable, non-potable, sewer and industrial pipeline applications.

Applications

- Pressure & non pressure pipelines
- Below & above ground applications
- Potable & non potable water applications
- Wastewater & irrigation systems
- Detention & cooling systems
- Industrial & petrochemical applications

AS/NZS2280 Compatible

Conventional socket joint ductile iron fittings and valves complying with AS/NZS2280 dimensions are compatible for use with Superlit GRP pipes in sizes DN100 to DN750.

Ordering Information

Standard nominal stiffness classes for Superlit GRP products;

- SN2,500
- SN5,000
- SN10,000
- SN20,000

Products with higher stiffness classes not listed above are available upon request.

Flanged fittings are supplied standard with AS4087 Fig B5 flanges. PN35 and other high pressure flanges can be made available upon special request.

Flange gasket sets are not included with flange fittings and are sold separately. Bolt and gasket materials must comply with WSA109.

Features & Benefits

- Full face EPDM coupling system which is simple to join and can not be dislodged during installation.
- Exceptionally smooth internal bore, reducing friction losses and pump operating costs.
- Corrosion resistant material with no need for protective coatings, sleeving or cathodic protection.
- 75-90% lighter than alternate pipe materials reducing installation time and costs.
- Compatible with Australian standard PVC Series 2 and ductile iron pipeline products.
- Superlit GRP pipe and fittings do not require de-rating for cyclic pressure fatigue.
- Lower wave celerity reduces costs associated with water hammer, surge pressure design and mitigation.
- Ultra violet & weather resistant construction suitable for above ground installation and storage.
- Non conductive material which is unaffected by induced or stray currents.
- Custom fittings can be designed to suit specific project requirements.
- 100+ year expected service life.
- No special equipment is required for installation.

Technical Data

Water Hammer Surge Celerity (m/s)

TYPE	DN300-375	DN450-750	≥ DN900
PN6 SN5,000	405	382	375
PN10 SN5,000	433	420	406
PN16 SN5,000	502	491	481
PN25 SN5,000	578	568	564
PN6 SN10,000	454	421	415
PN10 SN10,000	454	421	415
PN16 SN10,000	460	492	481
PN25 SN10,000	572	565	557
PN32 SN10,000	624	616	615

Pressure Rating: The allowable pressure for a pipeline system is limited to the lowest pressure classification of all pipes, fittings & components within the pipe system.

Design & Installation

Superlit GRP is a flexible pipe system. GRP pipelines should be designed and installed in accordance with AS/NZS 2566 – Buried flexible pipelines (Part 1 & Part 2).

For more information on the installation of GRP pipes, please refer to the Superlit Design & Installation Manuals.

Our experienced team of engineers can assist with free technical support and advice on the design and installation of our complete range of products.

Please contact your local Clover office for further assistance.

Allowable Pipeline Pressure (MPa)

TYPE	PN1	PN6	PN10	PN16	PN20	PN25	PN32
Allowable							
Operating Pressure	0.1	0.6	1.0	1.6	2.0	2.5	3.2
Max. Allowable							
Operating Pressure	0.125	0.75	1.25	2.0	2.5	3.125	4.0
Allowable							
Site Test Pressure	0.125	0.75	1.25	2.0	2.5	3.125	4.0

Allowable Operating Pressure: The allowable internal pressure, excluding surge, that a component can safely withstand in service.

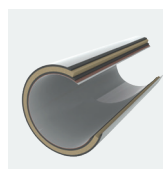
Maximum Allowable Operating Pressure:

The maximum internal pressure, including surge, that a component can safely withstand in service. (Refer table above)

Allowable site test pressure: Maximum pressure applied on site in a newly installed pipeline, includes a safety factor and allowances for surge.

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.



Each layer of the pipe wall has a specific function. If you take a cross-section of the pipe, the innermost layer consists entirely of flexible resin. This

layer is designed to ensure that no fluids or solids carried by the pipe penetrate to the structural layers.

The structural layers vary according to the design pressure and rigidity. The surface layer protects the pipe during the pipe laying process. It also acts as a UV barrier.

Technical Data

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 1/106 mm/mm/C°

Temperature Derating:

≤35° No Pressure derating required.

36-50° Derate pressure 30% (36°) - 50% (50°).

51-70° Contact Clover for technical advice regarding vinyl ester resin use for higher operating temperatures.

Refer to Superlit GRP Technical Design Manual for further details.

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;



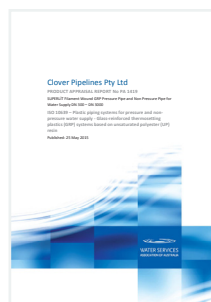
ApprovalMark International AS 3571.1

GRP systems for pressure and non-pressure drainage and sewerage



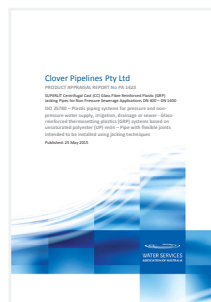
ApprovalMark International AS 3571.2

GRP systems for pressure and non-pressure water supply



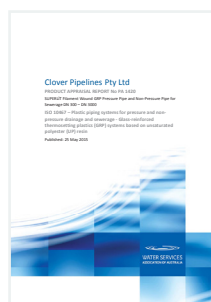
WSAA Product Appraisal

ISO 10639 for plastic piping systems in pressure and non-pressure water supply



WSAA Product Appraisal

ISO 25780 for plastic piping systems in pressure, non-pressure water supply, irrigation, drainage or sewer jacking applications



WSAA Product Appraisal

ISO 10467 for plastic piping systems in pressure and non-pressure drainage and sewerage



ApprovalMark International AS 3571.1

GRP systems for pressure and non-pressure drainage and sewerage



Bureau Veritas Certification

ISO 25780-2011 for GRP Pipes and Joints for jacking applications

PRODUCT RANGE

Pipe & Fittings Specifications

Pipe CFW SN10,000

DN	PIPE OD	ID	KG/M	ID	KG/M	ID	KG/M
PN1, PN6 & PN10				PN 16		PN25	
300	345	333	13	333	14	334	14
375	426	411	17	412	18	412	20
450	507	489	26	490	30	492	28
525	587	566	41	568	33	569	35
600	667	644	50	646	47	647	46
675	747	721	64	723	58	724	57
750	826	797	70	800	72	800	71
900	924	891	103	894	91	897	86
1000	1026	990	128	994	112	996	106
1100	1126	1085	155	1089	135	1093	127
1200	1229	1185	183	1190	161	1193	151
1300	1331	1284	215	1289	188	1292	176
1400	1434	1382	249	1388	218	1392	204
1500	1536	1482	284	1488	250	1490	238
1600	1638	1581	324	1587	284	1589	271
1700	1740	1678	365	1685	319	1686	309
1800	1842	1777	409	1784	358		
1900	1944	1875	455	1883	398		
2000	2045	1973	503	1981	441		
3000	3066	2956	1064	2968	931		
4000	4085	3941	1883	3957	1596		



Pipe CFW SN20,000

DN	PIPE OD	ID	KG/M	ID	KG/M
PN1, PN6 & PN10				PN16	
300	345	329	17	330	16
375	426	407	25	408	24
450	507	484	36	485	34
525	587	561	48	562	44
600	667	638	59	639	56
675	747	714	75	716	71
750	826	790	93	792	85

Contact Clover for information on alternate stiffness classes, pressure classes and jacking pipe. Standard pipe lengths include 11.8m, 5.8m & 2.8m. Other lengths available upon request.

PRODUCT RANGE

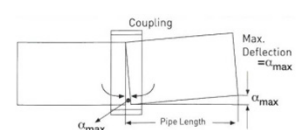
Coupling

DN	W	OD	KG	OD	KG	OD	KG
		PN1, PN6 & PN10		PN16		PN25	
300	220	375	5.8	375	5.8	379	6.6
375	242	457	8.6	458	9.1	462	10.1
450	242	539	10.6	542	11.3	547	12.5
525	242	619	12.5	623	14	631	16.2
600	242	703	14.4	706	16.1	715	20.4
675	260	783	19	786	20.8	795	26.3
750	260	863	20.1	867	22.2	876	28.3
900	260	963	23.5	967	26.3	977	33.5
1000	260	1067	27.3	1071	30.4	1081	38.4
1100	260	1169	30	1174	34.7	1185	43.5
1200	260	1271	32.6	1276	37.7	1290	50
1300	260	1375	36.9	1381	42.3	1394	55.7
1400	275	1479	47.8	1483	53.2	1498	70
1500	275	1582	52.6	1587	58.4	1602	75.8
1600	275	1686	58.3	1693	64.5	1705	83.1
1700	275	1788	61.7	1794	69.6	1809	89.9
1800	275	1893	67.7	1898	76	1915	99.6
1900	275	1995	71.3	2002	82.3	2018	107.2
2000	275	2098	75.1	2106	89	2122	115.2
3000	330	3121	159	3129	182	3144	224
4000	330	4160	256	4168	289	4181	339

Contact Clover for alternate pressure classes.

Maximum Angular Joint Deflection

DN	DEF°
DN300 – DN450	3.0
DN525 – DN900	2.0
DN1000 – DN1800	1.0
DN1900+	0.5



PRODUCT RANGE

Bend

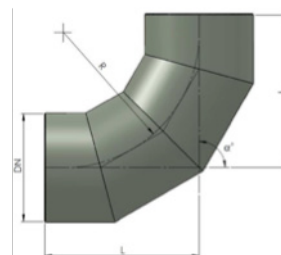
DN	RADIUS	L			
		11.25°	22.5°	45°	90°
300	525	275	300	425	700
375	600	325	350	475	800
450	750	325	375	525	950
525	900	325	400	600	1075
600	1050	400	425	650	1200
675	1050	400	425	650	1200
750	1170	400	450	700	1350
900	1200	400	475	725	1400
1000	1270	425	500	750	1450
1100	1320	475	525	800	1550
1200	1370	475	525	825	1600

Not all available sizes shown. Contact Clover for further information.

Connector SP-FL

DN	H
300	600
375	600
450	600
525	600
600	600
675	600
750	600
900	600
1000	600
1100	700
1200	700

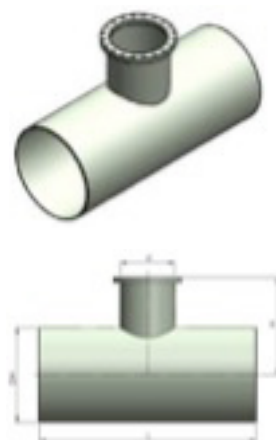
Not all available sizes shown. Contact Clover for further information.



PRODUCT RANGE

Tee SP-FL

DN	BRANCH	L	H	L	H	L	H
		PN1, PN6 & PN10		PN16		PN25	
300	150	800	430	800	450	900	490
	250	900	450	1000	500	1100	550
	300	1200	530	1400	630	1500	680
375	150	800	460	800	490	900	530
	250	900	490	1000	540	1100	590
	375	1300	610	1500	690	1600	740
450	150	800	510	800	540	1000	590
	250	1000	570	1100	640	1200	690
	375	1300	670	1500	740	1600	790
	450	1500	720	1700	820	1800	870
525	150	800	570	900	600	1000	650
	250	1000	620	1100	690	1200	760
	375	1300	720	1500	790	1600	840
	525	1700	790	1800	870	1900	920
600	150	800	630	900	670	1000	720
	300	1300	740	1500	870	1600	920
	450	1600	840	1800	940	1900	990
	600	1900	870	2100	990	2200	1040
675	150	800	630	900	670	1000	720
	300	1300	740	1500	870	1600	920
	450	1600	840	1800	940	1900	990
	675	1900	870	2100	990	2200	1040
750	200	900	710	1000	760	1200	830
	450	1700	920	1900	1040	2000	1090
	600	1900	940	2200	1090	2300	1140
	750	2100	970	2400	1120	2500	1170
900	300	1400	900	1700	1050	2100	1110
	525	1900	1020	2100	1150	2200	1200
	675	2000	1020	2300	1170	2400	1220
	900	2200	1050	2600	1250	2700	1300
1000	300	1400	970	1800	1150	2300	1210
	450	1800	1070	2100	1220	2300	1270
	600	2000	1100	2400	1270	2500	1320
	750	2200	1120	2500	1300	2600	1350
	1000	2400	1150	2800	1350	2900	1400

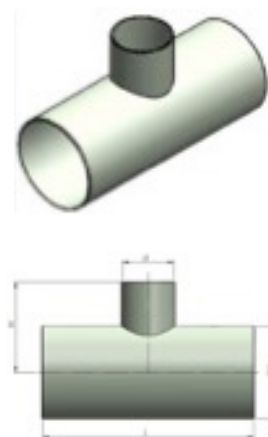


Not all available sizes shown. Contact Clover for further information.

PRODUCT RANGE

Tee

DN	BRANCH	L	H	L	H	L	H	
PN1 & PN6		PN10		PN16		PN25		
300	150	800	430	800	450	900	490	
	250	900	450	1000	500	1100	550	
	300	1200	530	1400	630	1500	680	
375	150	800	460	800	490	900	530	
	250	900	490	1000	540	1100	590	
	375	1300	610	1500	690	1600	740	
450	150	800	510	800	540	1000	590	
	250	1000	570	1100	640	1200	690	
	375	1300	670	1500	740	1600	790	
	450	1500	720	1700	820	1800	870	
	525	150	800	570	900	600	1000	650
		250	1000	620	1100	690	1200	760
375		1300	720	1500	790	1600	840	
	525	1700	790	1800	870	1900	920	
	600	150	800	630	900	670	1000	720
		300	1300	740	1500	870	1600	920
450		1600	840	1800	940	1900	990	
	600	1900	870	2100	990	2200	1040	
	675	150	800	630	900	670	1000	720
		300	1300	740	1500	870	1600	920
450		1600	840	1800	940	1900	990	
	675	1900	870	2100	990	2200	1040	
	750	200	900	710	1000	760	1200	830
		450	1700	920	1900	1040	2000	1090
600		1900	940	2200	1090	2300	1140	
	750	2100	970	2400	1120	2500	1170	
	900	300	1400	900	1700	1050	2100	1110
		525	1900	1020	2100	1150	2200	1200
675		2000	1020	2300	1170	2400	1220	
	900	2200	1050	2600	1250	2700	1300	
	1000	300	1400	970	1800	1150	2300	1210
		450	1800	1070	2100	1220	2300	1270
600		2000	1100	2400	1270	2500	1320	
	750	2200	1120	2500	1300	2600	1350	
	1000	2400	1150	2800	1350	2900	1400	

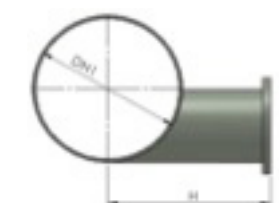
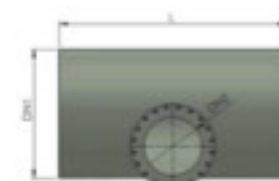


Not all available sizes shown. Contact Clover for further information.

PRODUCT RANGE

Scour Tee SP-FL

DN	BRANCH	L	H	L	H	L	H
		PN1, PN6 & PN10		PN16		PN25	
300	150	800	430	800	450	900	490
	250	900	450	1000	500	1100	550
	300	1200	530	1400	630	1500	680
375	150	800	460	800	490	900	530
	250	900	490	1000	540	1100	590
	375	1300	610	1500	690	1600	740
450	150	800	510	800	540	1000	590
	250	1000	570	1100	640	1200	690
	375	1300	670	1500	740	1600	790
	450	1500	720	1700	820	1800	870
525	150	800	570	900	600	1000	650
	250	1000	620	1100	690	1200	760
	375	1300	720	1500	790	1600	840
	525	1700	790	1800	870	1900	920
600	150	800	630	900	670	1000	720
	300	1300	740	1500	870	1600	920
	450	1600	840	1800	940	1900	990
	600	1900	870	2100	990	2200	1040
675	150	800	630	900	670	1000	720
	300	1300	740	1500	870	1600	920
	450	1600	840	1800	940	1900	990
	675	1900	870	2100	990	2200	1040
750	200	900	710	1000	760	1200	830
	450	1700	920	1900	1040	2000	1090

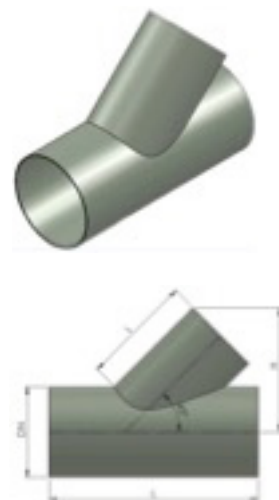


Not all available sizes shown. Contact Clover for further information.

PRODUCT RANGE

Junction 45° SP-SP-SP

DN	BRANCH	LENGTH	L	H
PN1 ONLY				
300	150	867	470	420
	200	988	520	491
	300	1343	670	703
375	150	867	500	409
	200	988	560	490
	375	1476	795	823
450	150	867	550	419
	250	1109	665	579
	450	1710	945	974
525	150	867	605	439
	250	1109	710	589
	525	1943	1060	1084
600	200	988	715	540
	450	1810	1050	1014
	600	2176	1185	1204
675	200	988	730	500
	450	1810	1065	974
	675	2209	1255	1244
750	200	988	775	510
	450	1910	1130	1014
	600	2176	1260	1194
	750	2442	1390	1383

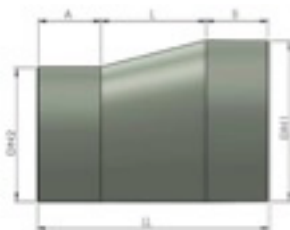
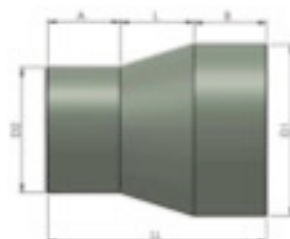


Some sizes not shown for clarity purposes. Larger diameters also available.

PRODUCT RANGE

Reducer SP-SP Concentric & Eccentric

DN1	DN2	A&B	L	LL
PN1-25				
375	300	400	205	1005
450	300	400	405	1205
	375	400	205	1005
525	300	400	605	1405
	375	400	405	1205
	450	400	200	1000
600	375	400	605	1405
	450	400	400	1200
	525	400	200	1000
675	450	400	600	1400
	525	400	400	1200
	600	400	200	1000
750	525	400	600	1400
	600	400	400	1200
	675	400	200	1000
900	525	400	845	1645
	600	400	645	1445
	675	400	445	1245
	750	400	245	1045
1000	525	400	1100	1900
	600	400	900	1700
	675	400	700	1500
	750	400	500	1300
	900	400	255	1055

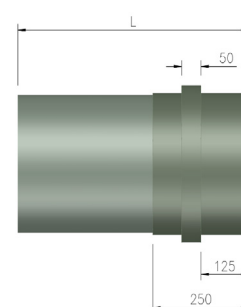


Not all available sizes shown. Contact Clover for further information.

PRODUCT RANGE

Manhole Connector

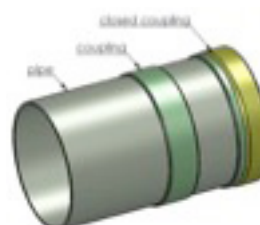
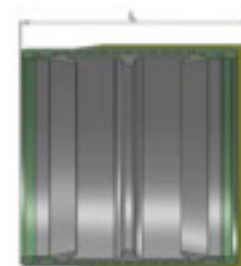
DN	L
PN1 ONLY	
300	600
375	600
450	600
525	600
600	600
675	750
750	750
900	750
1000	1000
1100	1000
1300	1000
1500	1000
1700	1000
1800	1200
2000	1200



Not all available sizes shown. Contact Clover for further information.

Cap (Closed Coupling)

DN	L
PN1 ONLY	
300	226
375	248
450	248
525	248
600	248
675	266
750	266
900	266
1000	266
1100	266
1200	266
1300	266
1400	281
1700	281
2000	281



Not all available sizes shown. Contact Clover for further information.

PRODUCT RANGE

Blind Flange AS4087 Fig B5

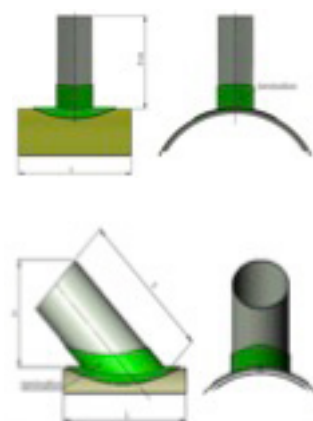
DN	OD	L			
		PN1	PN6&10	PN16	PN25
300	455	52	63	79	126
375	550	54	66	82	131
450	640	61	74	93	148
525	740	63	77	100	159
600	825	74	90	116	184
675	918	74	90	116	184
750	995	79	97	126	201
900	1175	85	104	137	218
1000	1255	91	111	145	232



Not all available sizes shown. Contact Clover for further information.

Saddle Junction SP-SP-SP

DN	BRANCH	L	F	H	L	H
				45° PN1 ONLY		
				90° PN1 ONLY		
300	100	700	600	425	700	600
	150	700	600	425	700	600
375	100	700	600	425	700	600
	150	700	600	425	700	600
450	225	700	600	425	700	600
	300	700	600	425	700	600
	150	700	600	425	700	600
525	225	700	600	425	700	600
	300	700	600	425	700	600
	150	700	600	425	700	600
600	225	700	600	425	700	600
	300	700	600	425	700	600
	150	700	600	425	700	600
675	225	700	600	425	700	600
	300	700	600	425	700	600
	150	700	600	425	700	600
750	225	700	600	425	700	600
	300	700	600	425	700	600
	150	700	600	425	700	600
900	225	700	600	425	700	600
	300	700	600	425	700	600
	150	700	600	425	700	600



Not all available sizes shown. Contact Clover for further information.

All dimensions are quoted in millimetres.

PIPE OD'S AND FLANGE DIMENSIONS

Pipe Outside Diameters

PRESSURE PIPES

PRESSURE PIPES		NOMINAL SIZE (DN)																							
Pipe Material	Std	80	90	100	125	150	175	200	225	250	300	350	375	400	450	500	525	550	575	600	675	700	750	800	900
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	376	426	427	507	560	587		667	747		826		924	
Ductile Iron	AS2280	96		122		177		232	259	286	345		426		507	560			667				826		
Cast Iron CI B	AS1724			122		177		232	259	286	334		413		792	545			667						
Cast Iron CI C	AS2544	96		122	149	177	203	232	259	286	345		426		507	560			667				826		
AC Class CD	AS1711	96		122		177		232	259	286	345		426		507		587		667	747		826			
AC Class AB	AS1711	96		122		177		232	259	286	334		413		492		572		650						
mPVC Series 1	AS4765			114	140	160	200	225	259	280	315		400		500	560			630						
uPVC Series 1	AS1477	89		114	140	160	200	225	259	280	315	355	400	450	500	560			630						
Mild Steel	AS1579			114		168		219		273	324	356		406	457	508	711		610		711	762	813	914	
SS Sch 10-160		89		114	141	168		219		273	324	356		406	457	508		559		610			762		
Gal Steel	AS1074	89		114	140	168												630							
ABS Series 1	AS3518	89		114	140	168		225	250		315	355	400	450	500	560									
SS Tube	AS1528	76		102	127	152		203																	
Copper	AS1432	76		102	127	152		203	229																
Reinf Concrete	AS4058					197			279		362		445		533		616		699	787		870			
Poly PE80/100	AS4130	90		110	125/ 140	160/ 180		200/ 225		200/ 280	315	355		400	450	500		560		630		710		800	900
Ductile Iron ISO	EN545	98		118	114	170		222		274	326	378		429	480	532			635		738		842	945	

NON-PRESSURE PIPES

NON-PRESSURE PIPES		NOMINAL SIZE (DN)																							
Pipe Material	Std	80	90	100	125	150	175	200	225	250	300	350	375	400	450	500	525	550	575	600	675	700	750	800	900
PVC DWV	AS1260	82	90	110		160			250		315		400												
PVC Stormwater	AS1254	75	90	110		160			250		315		400												
VC	AS1741			138		194			280		370		450	485	535		635			710					
FRC Class X				124		179			261		345		426		510		594			664					
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	85		114	140	165			244		323														
Cast Iron SWV	EN877	83		110	135	160		210		274	326			429		532				635					

PIPE 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	

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



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 Fluoride	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 Fluoride		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
Benzene Sulphonic Acid		x
Benzoic Acid		x
Cadmium 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 Fluoride		x
Copper Nitrate	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
Fibronic Acid	x	x
Fluoboric Acid	x	x
Fluorosilicic 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 Sulfide, liquid	x	x
Hydrogen Fluoride, vapour		x
Hydrogen Sulfide Bleach		x
Hydrochlorous Acid		x
Isopropyl Amine		x
Isopropyl Palmitate		x
Kerosene		x
Lactic Acid		x
Laurel Chloride		x
Lauric 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
Maleic 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
Perchlorethylene		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.

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