

WSAA PRODUCT APPRAISAL CERTIFICATE

Clover Pipelines Pty Ltd - SUPERLIT® Centrifugally Cast GRP Jacking Pipes for Non-Pressure Applications.

SUPERLIT jacking pipe and fittings have been appraised for compliance with the requirements of ISO 25780:2011 and WSAA Product Specification WSA PS 205J.

The scope of this appraisal applies to SUPERLIT jacking pipes and their grade 316 stainless steel and GRP couplings, for non-pressure applications using various trenchless installation methods such as slip lining, micro tunneling and pipe jacking. A listing of Quality and Product Certification Certificates and details of products is included in the attached Schedules A and B.

Product Category	GRP Pipe Systems
PA Number:	PA 1423 Issue 2
Supplier	Clover Pipelines Pty Ltd
Brand	SUPERLIT
Standards	ISO 25780 – <i>Plastic piping systems for pressure and non-pressure water supply, irrigation, drainage or sewerage - Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin – Pipes with flexible joints intended to be installed using jacking techniques</i>
WSAA Product Specification	WSA PS – 205J - <i>Centrifugally Cast Glass Reinforced Plastics (CC-GRP) Pipes for Pressure and Non-Pressure Applications – Water Supply and Sewerage - Installed Using Trenchless Installation Methods</i>
Other Specifications	
Issue date	Thursday 13 August 2020
Expiry date	Tuesday 12 August 2025
Recommendations	It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise the SUPERLIT CC GRP jacking pipe as detailed in the report for use in non-pressure applications for installation using trenchless techniques, provided the design, installation and commissioning are in accordance with applicable WSAA Codes and the manufacturer's requirements, where specified.
Disclaimer	The disclaimer on Page 2 explains a number of very important limits on your ability to rely on the information in this Product Appraisal Certificate and the assessment criteria used to underlay it. Please read it carefully and take it into account when considering the content in this Certificate.

1. Disclaimer

This Product Appraisal Certificate (Certificate) is issued by WSAA on the understanding that:

This Certificate applies to the product(s) as submitted in Schedule A. Any changes to the product(s) either minor or major shall void this Certificate.

To maintain the recommendations of this Certificate any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Certificate including the product appraisal criteria underlying it and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Certificates will be reviewed and reissued at regular intervals not exceeding five (5) years.

WSAA reserves the right to withdraw this Certificate at any time in its sole and absolute discretion for any reason.

The following information explains a number of very important limits on your ability to rely on the information in this Certificate. Please read it carefully and take it into account when considering the contents of this Certificate.

Any enquiries regarding this Certificate should be directed to the Product Appraisal Manager Phone: 03 8605 7601 email carl.radford@wsaa.asn.au.

1.1. Issue of Certificate

This Certificate has been published and/or prepared by WSAA and nominated Project Manager and peer group of technical specialists (the Publishers).

The Certificate and the underlying product appraisal criteria have been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Certificate (the Recipients).

By accepting this Certificate, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Certificate and product appraisal criteria underlying it that the Recipient has understood and accepted the terms of this Disclaimer.

1.2. Limits on Reliance on Information and Recommendations

1.2.1. Disclaimer of liability

Neither the Publisher(s) nor any person involved in the preparation of the Certificate and product appraisal criteria underlying it accept(s) any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do anything) relating in any way to the Certificate or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Certificate or any errors or omissions.

1.2.2. Intellectual Property and other rights

WSAA does not undertake any assessment of whether the importation, manufacture, sale or use of the Product the subject of this Certificate infringes the intellectual property rights or proprietary rights of any person. Recipients of the Certificate should undertake their own assessment of whether (as relevant) the importation, manufacture, sale or use of the relevant Products infringe the intellectual property rights or other proprietary rights of any person. If the Product infringes intellectual property rights or other proprietary rights there is potential for the supply of the Products to be interrupted.

From time to time WSAA and the other Publishers may receive notice of allegations that the importation, manufacture, sale or use of the Product infringes intellectual property rights or other proprietary rights. WSAA's policy is to not refer to such allegations in its Certificate or take any other steps to put Recipients on notice of such allegations. If, however, WSAA becomes aware that the allegations have been admitted or proved in Court, then WSAA may, at its discretion, take such steps as it considers appropriate. As such, Recipients acknowledge, agree and accept that WSAA may have information in its possession about intellectual property rights infringement allegations or other infringement allegations in relation to the Product which are not referred to or disclosed in this Certificate and which are not otherwise communicated to Recipients.

1.2.3. Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Certificate are provided in good faith (and subject to the limitations noted in this Certificate). However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

This Certificate does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it. The product appraisal criteria used in preparing this Certificate may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product. Recipients should also independently verify and assess the appropriateness of any recommendation in the Certificate, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

1.3. No Updating

Neither the Publisher(s) nor any person involved in the preparation of this Certificate or the product appraisal criteria underlying it [has] [have] any obligation to notify you of any change in the information contained in this Certificate or of any new information concerning the Publisher(s) or the Product or any other matter.

1.4. No Warranty

The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Certificate, or the accuracy, completeness or reasonableness of any recommendation in this Certificate.

APPENDIX A - QUALITY AND PRODUCT CERTIFICATIONS

Copies of the following Quality and Product Certification Certificates are available for downloading from the WSAA 'Members Only' project portal website.

SCHEDULE A1 CLOVER PIPELINES PTY LTD – MANAGEMENT SYSTEMS


141 National Boulevard, Campbellfield, Victoria 3061	
Quality Systems Standard	ISO 9001:2015
Certification licence no.	AMI-QM-78026
Certifying agency	ApprovalMark International
Current date of certification	26 August 2019
Expiry date of certification	26 August 2022

SCHEDULE A2 - SUPERLIT BORU VE LEVHA SANAYI A.Ş – MANAGEMENT SYSTEMS


Cele Mah. Duzce Cad. No:33 81900 Kaynasli, Duzce Turkey	
Quality Systems Standard	ISO 9001:2015
Certification licence no.	01 100 1715894
Certifying agency	TUV Rheinland
First date of certification	2012
Current date of certification*	16 October 2018
Expiry date of certification**	15 October 2021

SCHEDULE A3 SÜPERLIT BORU VE LEVHA SANAYI A.Ş – PRODUCT CERTIFICATION

Cele Mah. Duzce Cad. No:33 81900 Kaynasli, Duzce Turkey	
Product Standard/Spec.	ISO 25780:2011
Certificate No.	CTC.TR299.5320.18. B16 / 001
Issuing certification body	Bureau Veritas
Current date of certification	10 April 2019
Expiry date of certification	10 April 2022




GRP JACKING DATASHEET



CENTRIFUGAL CASTING (CC)

GLASS REINFORCED POLYESTER (GRP) ISO 25780

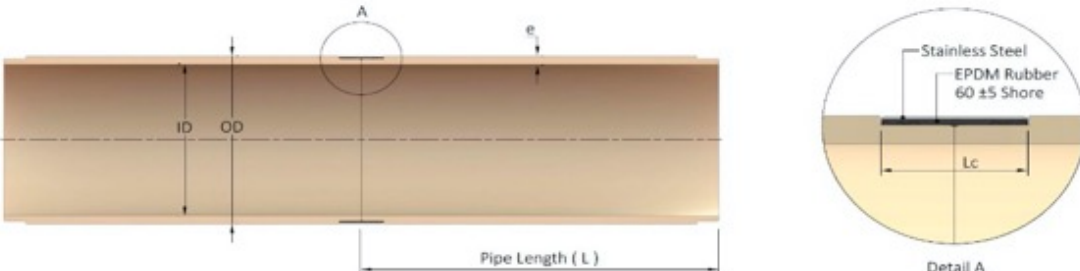
JOINT TYPE : FULLFACE STAINLESS STEEL JACKING COUPLING



GRP JACKING PIPE TABLE : SN 32 000 – 640 000

OD (mm)	PIPE STIFFNESS SN (N/m ²)																								
	32 000				40 000				50 000				64 000				80 000				100 000				
	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	
mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN		
427	x	x	x	x	x	x	x	x	393.6	16.7	40	263	391.4	17.8	42	295	389.8	19.1	46	332	386.0	20.5	49	371	
530	x	x	x	x	x	491.6	39.2	57	421	489.2	20.4	61	465	486.0	22.0	66	520	482.8	23.6	71	577	479.4	25.3	76	636
616	574.8	20.6	71	552	571.6	22.2	77	618	568.6	23.7	83	618	565.0	25.5	89	754	561.4	27.3	96	828	557.2	29.4	104	913	
718	670.4	23.9	97	753	666.6	25.7	105	845	663.0	27.5	113	932	658.8	29.6	122	1039	654.4	31.8	131	1138	649.4	34.3	142	1258	
820	765.8	27.1	128	1049	761.6	29.2	139	1166	757.8	31.3	149	1282	752.4	33.8	162	1419	747.2	36.4	174	1561	741.6	39.2	188	1712	
924	863.2	30.4	160	1330	858.4	32.8	173	1480	853.6	35.2	186	1630	848.0	38.0	202	1803	842.4	40.8	218	1975	836.0	44.0	235	2130	
1026	959.0	33.5	196	1701	953.8	36.1	212	1881	948.4	38.8	229	2068	942.0	42.0	248	2288	935.6	45.2	268	2506	928.8	48.6	288	2737	
1229	1149.2	39.9	280	2590	1143.2	42.9	302	2840	1136.8	46.1	326	3105	1129.4	49.8	353	3410	1121.6	53.7	382	3729	x	x	x	x	
1434	1341.8	46.1	379	3647	1334.6	49.7	409	3998	1327.2	53.4	442	4356	x	x	x	x	x	x	x	x	x	x	x	x	

OD (mm)	PIPE STIFFNESS SN (N/m ²)																						
	128 000				160 000				200 000				320 000				640 000						
	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max			
mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN				
427	382.8	22.1	53	436	379.6	23.7	57	460	376.0	25.5	62	510	367.4	29.8	73	626	352.6	37.2	92	820			
530	475.2	27.4	83	709	471.0	29.5	89	781	466.6	31.7	96	856	455.8	37.1	114	1037	436.8	46.6	144	1345			
616	552.4	31.8	112	1010	547.6	34.2	121	1106	542.4	36.8	131	1209	529.6	43.2	155	1409	x	x	x	x			
718	643.8	37.1	154	1388	638.2	39.9	166	1518	631.8	43.1	179	1666	618.4	50.8	213	2016	x	x	x	x			
820	735.2	42.4	204	1884	728.4	45.8	221	2085	723.2	49.4	239	2255	x	x	x	x	x	x	x	x			
924	828.6	47.7	255	2394	821.4	51.3	276	2610	x	x	x	x	x	x	x	x	x	x	x	x			
1026	920.8	52.6	313	3006	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1229	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1434	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x



Design Assumptions:

- *The nominal pressure classes are PN1, PN6 and PN10 for jacking pipes and couplings.
- *Stainless steel jacking coupling grade 316.
- *The pipe lengths are 1.8 – 2.8 m.
- *Factor of safety (for jacking load) = 3.5
- *Ultimate compressive strength > 90 N/m²
- *Pipe thickness, weights and jacking load values are roughly calculated. All values derive from calculations and may therefore slightly vary from the finished product due to manufacturing tolerances.
- *The manufacturer SUPERLIT has rights to change the technical data without notice.

23.04.2020
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GRP JACKING DATASHEET



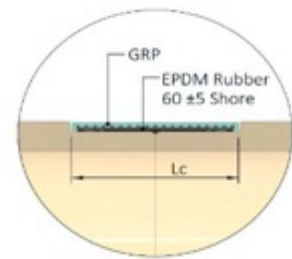
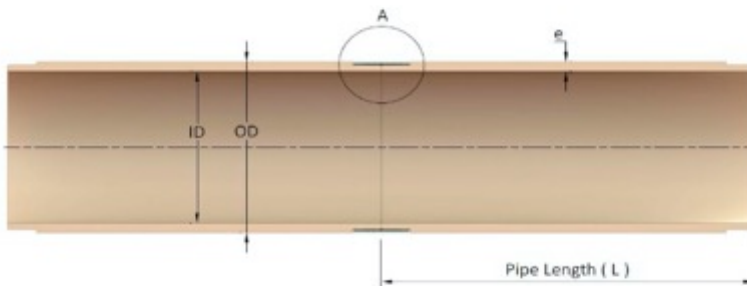
CENTRIFUGAL CASTING (CC)
GLASS REINFORCED POLYESTER (GRP) ISO 25780
JOINT TYPE : FULLFACE GRP JACKING COUPLING



GRP JACKING PIPE TABLE : SN 32 000 – 640 000

OD (mm)	PIPE STIFFNESS SN (N/m ²)																							
	32 000			40 000			50 000			64 000			80 000			100 000								
	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max				
mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN					
427	X	X	X	X	X	X	X	X	393,6	16,7	40	164	391,4	17,8	42	195	388,8	19,1	46	232	386,0	20,5	49	272
530	X	X	X	X	491,6	19,2	57	298	489,2	20,4	61	341	486,0	22,0	66	397	482,8	23,6	71	454	479,4	25,3	76	513
616	574,8	20,6	71	406	671,6	22,2	77	479	668,6	23,7	81	537	665,0	25,5	89	613	661,4	27,3	96	695	657,8	29,4	104	779
718	670,4	23,8	97	636	686,6	25,7	105	728	683,0	27,5	113	815	679,8	29,6	122	916	676,4	32,8	131	1021	673,0	34,3	142	1140
820	765,8	27,1	128	863	761,6	29,2	139	980	757,4	31,3	149	1096	752,4	33,8	162	1233	747,2	36,4	174	1379	741,6	39,2	188	1526
924	861,2	30,4	160	1114	856,6	32,8	173	1264	851,6	35,2	186	1414	846,0	38,0	202	1587	842,4	40,8	218	1759	836,0	44,0	235	1954
1026	959,0	33,5	196	1460	953,8	36,1	212	1641	948,4	38,8	229	1827	942,0	42,0	248	2047	935,4	45,2	268	2264	928,8	48,6	288	2496
1229	1149,2	39,9	280	2300	1143,2	42,9	302	2550	1136,8	46,1	326	2815	1129,4	49,8	353	3120	1121,6	53,7	382	3439	X	X	X	X
1434	1341,8	46,1	379	3309	1334,6	49,7	409	3659	1327,2	53,4	442	4017	X	X	X	X	X	X	X	X	X	X	X	X

OD (mm)	PIPE STIFFNESS SN (N/m ²)																				
	128 000			160 000			200 000			320 000			640 000								
	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max	ID	e	Mass	F max					
mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN	mm	mm	kg/m	kN						
427	382,8	22,1	55	316	379,6	23,7	57	361	376,0	25,5	62	410	367,4	29,8	73	526	352,6	32,2	92	720	
530	475,2	27,4	81	586	471,0	29,5	89	658	466,6	31,7	96	733	455,8	37,1	114	914	436,8	46,6	144	1223	
616	551,4	31,8	112	867	547,6	34,2	121	963	542,4	36,8	131	1066	529,6	43,2	155	1315	X	X	X	X	
718	641,8	37,1	154	1271	638,2	39,9	166	1402	631,8	43,1	179	1549	616,4	50,8	213	1899	X	X	X	X	
820	735,2	42,4	204	1698	728,4	45,8	221	1879	721,2	49,4	239	2089	X	X	X	X	X	X	X	X	
924	838,6	47,7	255	2178	821,4	51,3	276	2394	X	X	X	X	X	X	X	X	X	X	X	X	
1026	930,8	52,6	313	2765	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1229	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1434	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



Detail A
Lc = 148 mm (OD: 427 - 1434 mm)

Design Assumptions:
 *The nominal pressure classes are PN1 and PN6 for jacking pipes and couplings.
 *The pipe lengths are 1,8 - 2,8 m.
 *Factor of Safety (for jacking load) = 3,5
 *Ultimate compressive strength = 90 N/m²
 *Pipe thickness, weights and jacking load values are roughly calculated. All values derive from calculations and may therefore slightly vary from the finished product due to manufacturing tolerances.
 *The manufacturer SUPERLIT has rights to change the technical data without notice.



SUPERLIT CC GRP JACKING PIPE EXTERNAL DIAMETERS

DN	Outside Diameter mm
400	426.6
450	477.6
500	529.5
600	616
700	718
800	820
900	924
1000	1026
1100	1126
1200	1229
1300	1332
1400	1434



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