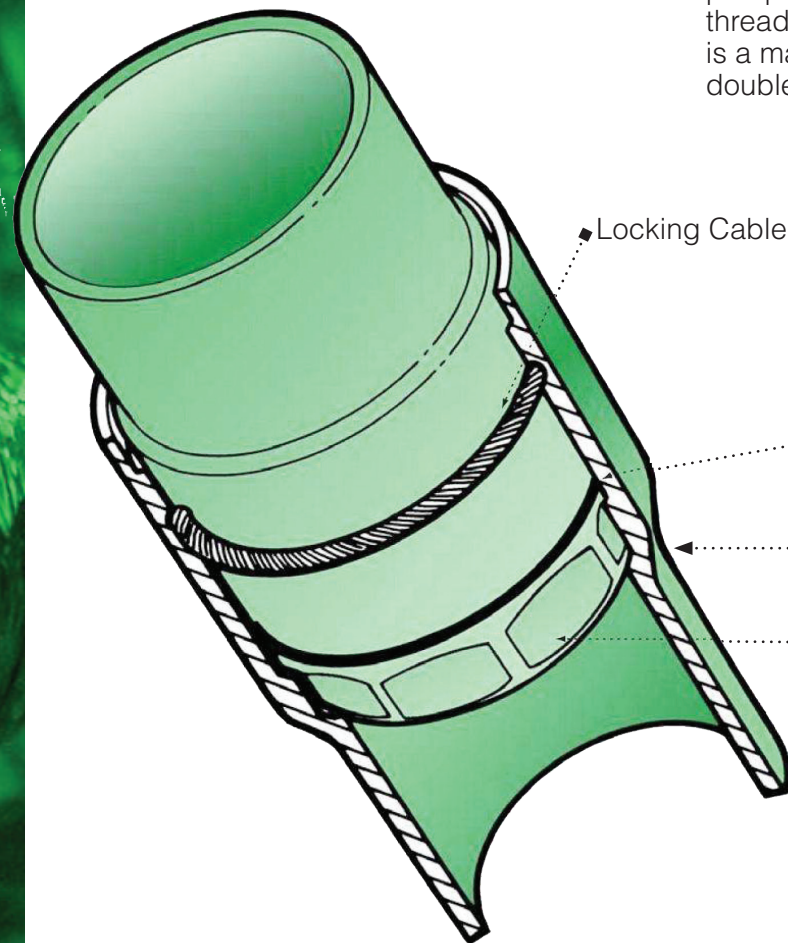


## Basic Instructions for Installation of Permaglass FRP PUMP COLUMN

Permaglass FRP PUMP COLUMN is coupled using the Kwik-Lok joint which consists of an O'ring for pressure sealing and a 316 Stainless Steel Locking Cable. Permaglass FRP PUMP COLUMN has an Anti-Torque Octagonal male end to stop rotation of the pipe joint with pump thrust. 316 grade stainless steel connectors are threaded one end for pump and head works, the other end is a machined Permaglass male for connecting into the double ended female (bottom) and standard female (top).



■ Locking Cable groove - Ensure groove is clean before inserting Cable  
Lubricate and insert Locking Cable through  
until inserted end has visibly passed right  
round the pipe circumference in the groove

■ O'ring Groove - Apply suitable lubricant to installed  
O'ring

■ Fit lifting clamps under female "Bell" (or collar)  
or bottom stainless steel connector

■ Anti-torque hexagonal Joint

Wrap PERMATAPE duct tape around  
inserted locking cable and pipe join to  
ensure cable end is secured flat and  
silt buildup in the joint is prevented.

Fibreglass Reinforced Plastic (FRP/GRP) or GRE are all material names for "Fibreglass" Pipe. Permaglass FRP PUMP COLUMN is high quality Fibreglass Pipe which has been used in Australian (and overseas) pump installations for over 25 years. Permaglass is made to Australian Standards and also incorporates Testing and Post Curing to ensure the highest quality and strength is achieved.



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FIGHT CORROSION AND WATER CONTAMINATION WITH

# PERMAGLASS FRP PUMP COLUMN

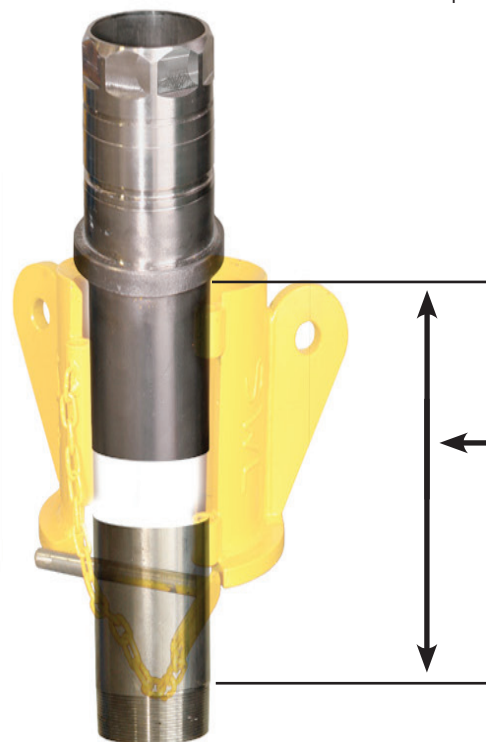
INCLUDES NEW HEAVY DUTY SPECIFICATIONS



## FITTINGS, ADAPTERS AND SPARES

- LIFTING CLAMPS (Certified)
- FLANGES
- REDUCERS
- END CONNECTERS, FLANGES and REDUCERS  
316L stainless steel (standard) or Duplex by request
- DRAIN PLUGS
- LOCKING WIRES & O-RINGS AVAILABLE AS SPARES

BSP Threads are used on all threaded adapters unless requested otherwise (price may vary for alternative thread types)



**Exposed Length of Connector  
(Allow 2 in overall Length)**

Size	Length
	mm
DN80	200
DN100	250
DN125	260
DN150	310
DN200	350



Permaglass FRP PUMP COLUMN is a lightweight, rigid rising main designed for submersible pump installations. It will not corrode like steel and is very quick and easy to install. Permaglass FRP PUMP COLUMN is suitable for pump settings nominally to 150 meters (standard duty) and 325 meters (heavy duty) - more in some instances, contact supplier. Please check the maximum tensile load to select the correct Permaglass FRP PUMP COLUMN to suit your application.

## FEATURES:

- KWIK-LOK JOINTS (very quick and easy to join)
- ANTI-TORQUE NON ROTATING JOINTS
- LIGHTWEIGHT COLUMN
- CORROSION RESISTANT FRP

## BENEFITS:

- FAST INSTALLATION AND REMOVAL (by a team of 2)
- LONG SERVICE LIFE - REUSE OVER MANY YEARS
- EASY TO ADD LENGTH AS WATER TABLE FALLS
- RIGID DESIGN, DOES NOT STRETCH, EXPAND OR TWIST CAUSING POTENTIAL FAILURE OF ELECTRICAL CABLES IN THE BORE

## Permaglass FRP PUMP COLUMN Technical Data

**Standard duty (nominal depth 200 meters) New heavy duty (nominal depth 350 meters)**  
**Deeper applications may apply depending on load (contact supplier)**

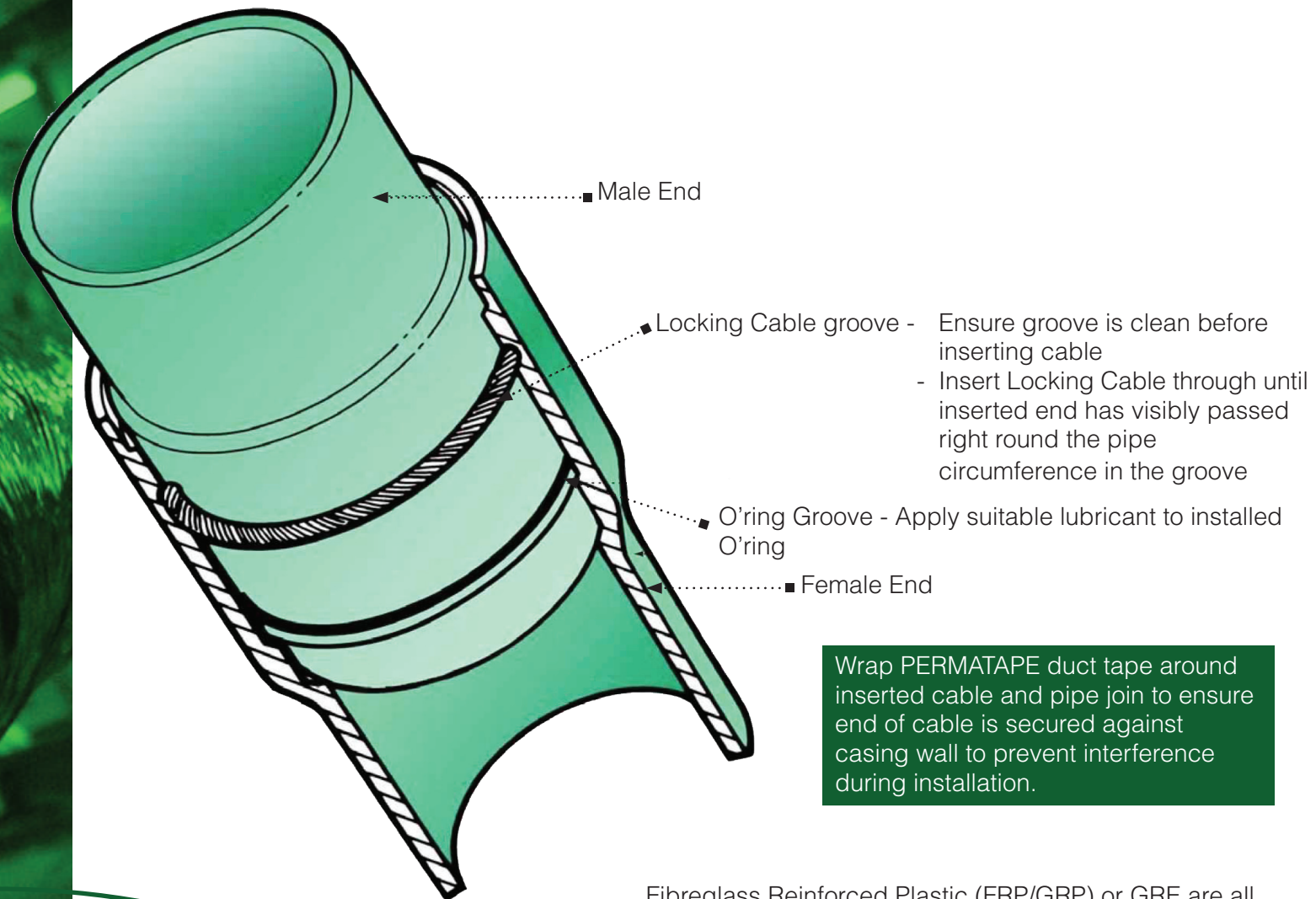
	Internal Diameter	OD at Coupling	Standard Wall Thickness	Locking Cord Diameter	Weight	Maximum Equivalent Tensile Load*	Maximum Allowable Torque	Maximum Allowable Internal Pressure
Size	mm(in.)	mm	mm	mm	kg/m	kg	kg.m	kPa
75SD	76(3)	112	3.5	6	1.5	3580	25	4370
75HD	76(3)	112	6.5	6	2.7	4630	56	8420
100SD	101.7(4)	143	5	6	2.8	6390	71	4875
100HD	101.7(4)	143	8	6	4.5	8070	125	7905
125SD	127.1(5)	169	6.5	6	4.6	8110	151	5190
125HD	127.1(5)	169	9.5	6	6.7	9850	235	7610
150SD	152.5(6)	202	6.5	8	5.5	11340	215	4355
150HD	152.5(6)	202	9.5	8	8	14250	334	6415
200SD	203(8)	267	8	10	8.9	14840	479	4100
200HD	203(8)	267	11	10	12.3	18920	688	5660

- \*Tensile load = axial stress due to the combination of internal pressure, weight of pump & motor, electrical cable, shutoff head, column and water in the column
- Refer to supplier if uncertain of load calculation or should load exceed maximum load
- Effective lengths available - 5m (standard), 3m, 2m, 1m
- Handles 80°C up to 100°C with reference to supplier over 80°C
- Suitable for potable water
- Locking wires in 316 stainless steel (standard) special plastic cord for highly corrosive water (refer supplier)



## Basic Instructions for joining Permaglass FRP BORE CASING

Permaglass FRP BORE CASING is joined using the Kwik-Lok joint which consists of an O'ring for pressure sealing and a 316 Stainless Steel Locking Cable.



Fibreglass Reinforced Plastic (FRP/GRP) or GRE are all material names for "Fibreglass" Pipe. Permaglass FRP BORE CASING is a high quality Fibreglass Pipe which has been used in Australian and overseas bore installations for over 25 years. Permaglass is made to Australian Standards and also incorporates Testing and Post Curing to ensure the highest quality and strength is achieved.



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## PERMAGLASS FRP BORE CASING

- Corrosion Resistant - Perfect for Hyper Saline or Agressive Water
- Strong - Suitable for Very Deep Bores
- Lightweight - Easy to Handle
- Temperature Tolerant - Up to 100°C
- Australian Owned





FITTINGS AND ADAPTERS:

- CROSSOVERS - FABRICATED INTO PIPE
  - CENTRALISERS
  - FLANGES
  - REDUCERS - FABRICATED IN FRP OR STAINLESS STEEL
  - THREADED / PLAIN ADAPTERS
- (Crossovers and reducers available in 304 or 316 Stainless Steel)

OPTIONS:

- SLOTTED Permaglass FRP Bore Casing Factory Performed. Variable open areas up to 4%.
- OPEN WEAVE PIPE. For greater open areas up to 50%.
- FRAS - Fire Resistant Anti Static available.
- THREADED Joint Nom 125mm (5 inch) to 200mm (8 inch) available

Permaglass FRP BORE CASING Technical Data

Nominal Size	Internal Diameter	OD at Coupling	Operating Collapsible pressure*	Ultimate Collapsible pressure*	Standard Wall Thickness	Maximum Operating Internal Pressure*	Maximum Tensile Load*	Weight	Locking Cord Diameter	Effective Length
mm (in.)	mm (in.)	mm (in.)	kPa (psi)	kPa (psi)	mm (in.)	kPa (psi)	kg (lb.)	kg/m (lb/ft)	mm (in.)	m
75 (3)	76 (3)	109 (4.3)	4330 (627)	6490 (941)	5 (0.2)	6440 (934)	3790 (8356)	2.2 (1.5)	6 (0.2)	Up to 5
75 (3)	76 (3)	112 (4.4)	9230 (1339)	13850 (2008)	6.5 (0.26)	8420 (1221)	5150 (11354)	3 (2)	6 (0.2)	Up to 5
100 (4)	101.7 (4)	137 (5.4)	1960 (284)	2940 (426)	5 (0.2)	4880 (708)	5000 (11023)	2.9 (2)	6 (0.2)	Up to 5
100 (4)	101.7 (4)	140 (5.5)	4280 (621)	6420 (931)	6.5 (0.26)	6410 (929)	6760 (14903)	3.9 (2.6)	6 (0.2)	Up to 5
100 (4)	101.7 (4)	143 (5.6)	7730 (1121)	11600 (1682)	8 (0.32)	7910 (1147)	8570 (18894)	4.8 (3.2)	6 (0.2)	Up to 5
125 (5)	127.1 (5)	163 (6.4)	2340 (339)	3510 (509)	6.5 (0.26)	5190 (752)	8360 (18431)	4.8 (3.2)	6 (0.2)	Up to 5
125 (5)	127.1 (5)	166 (6.5)	4290 (622)	6430 (932)	8 (0.32)	6410 (929)	10570 (23303)	6 (4)	6 (0.2)	Up to 5
125 (5)	127.1 (5)	169 (6.6)	6950 (1008)	10430 (1512)	9.5 (0.37)	7610 (1103)	12820 (28263)	7.1 (4.8)	6 (0.2)	Up to 5
150 (6)	152.5 (6)	196 (7.7)	1410 (205)	2120 (307)	6.5 (0.26)	4360 (632)	9960 (21958)	5.7 (3.8)	8 (0.3)	Up to 5
150 (6)	152.5 (6)	199 (7.8)	2610 (379)	3920 (568)	8 (0.32)	5400 (783)	12560 (27690)	7.1 (4.8)	8 (0.3)	Up to 5
150 (6)	152.5 (6)	202 (7.9)	4290 (622)	6430 (932)	9.5 (0.37)	6420 (931)	15220 (33554)	8.5 (5.7)	8 (0.3)	Up to 5
150 (6)	152.5 (6)	205 (8.1)	6460 (937)	9690 (1405)	11 (0.43)	7420 (1076)	17920 (39507)	9.9 (6.7)	8 (0.3)	Up to 5
150 (6)	152.5 (6)	208 (8.2)	9160 (1328)	13740 (1992)	12.5 (0.49)	8400 (1218)	20670 (45570)	11.4 (7.6)	8 (0.3)	Up to 5
200 (8)	203 (8)	252 (9.9)	1190 (172)	1780 (258)	8 (0.32)	4100 (594)	16530 (36442)	9.3 (6.2)	10 (0.4)	Up to 5
200 (8)	203 (8)	255 (10)	1970 (285)	2950 (428)	9.5 (0.37)	4890 (709)	19970 (44026)	11.1 (7.5)	10 (0.4)	Up to 5
200 (8)	203 (8)	258 (10.2)	3000 (435)	4500 (652)	11 (0.43)	5660 (821)	23470 (51742)	13 (8.7)	10 (0.4)	Up to 5
200 (8)	203 (8)	261 (10.3)	4310 (624)	6460 (937)	12.5 (0.49)	6430 (932)	27010 (59547)	14.8 (10)	10 (0.4)	Up to 5
200 (8)	203 (8)	264 (10.4)	5890 (854)	8840 (1282)	14 (0.55)	7180 (1041)	30600 (67461)	16.7 (11.2)	10 (0.4)	up to 12
250 (10)	256 (10.1)	313 (12.3)	1590 (230)	2380 (345)	11 (0.43)	4540 (658)	29290 (64573)	16.2 (10.9)	10 (0.4)	up to 12
250 (10)	256 (10.1)	316 (12.4)	2290 (333)	3440 (499)	12.5 (0.49)	5150 (747)	33670 (74230)	18.5 (12.4)	10 (0.4)	up to 12
250 (10)	256 (10.1)	319 (12.6)	3170 (459)	4750 (689)	14 (0.55)	5770 (837)	38090 (83974)	20.8 (14)	10 (0.4)	up to 12
250 (10)	256 (10.1)	322 (12.7)	4210 (610)	6310 (915)	15.5 (0.61)	6370 (924)	42550 (93807)	23.2 (15.6)	10 (0.4)	up to 12
300 (12)	305 (12)	376 (14.8)	1410 (205)	2120 (307)	12.5 (0.49)	4360 (632)	39820 (87788)	21.9 (14.7)	10 (0.4)	up to 12
300 (12)	305 (12)	379 (14.9)	1960 (284)	2940 (426)	14 (0.55)	4880 (708)	45010 (99230)	24.6 (16.5)	10 (0.4)	up to 12
300 (12)	305 (12)	382 (15)	2610 (379)	3920 (568)	15.5 (0.61)	5400 (783)	50250 (110782)	27.4 (18.4)	10 (0.4)	up to 12
300 (12)	305 (12)	385 (15.2)	3390 (492)	5090 (738)	17 (0.67)	5910 (857)	55530 (122423)	30.2 (20.3)	10 (0.4)	up to 12
300 (12)	305 (12)	388 (15.3)	4290 (622)	6430 (932)	18.5 (0.73)	6420 (931)	60860 (134173)	33 (22.2)	10 (0.4)	up to 12
350 (14)	362 (14.3)	438 (17.2)	1630 (237)	2450 (355)	15.5 (0.61)	4580 (664)	59200 (130514)	32.2 (21.7)	10 (0.4)	9 to 12
350 (14)	362 (14.3)	441 (17.4)	2130 (308)	3190 (463)	17 (0.67)	5020 (728)	65380 (144138)	35.5 (23.9)	10 (0.4)	9 to 12
400 (16)	413 (16.3)	496 (19.5)	1470 (214)	2210 (320)	17 (0.67)	4420 (641)	74180 (163539)	40.3 (27.1)	10 (0.4)	up to 12
400 (16)	413 (16.3)	499 (19.6)	1880 (273)	2820 (409)	18.5 (0.73)	4810 (697)	81210 (179037)	44 (29.6)	10 (0.4)	up to 12
450 (18)	454 (17.9)	542 (21.3)	1450 (210)	2170 (315)	18.5 (0.73)	4390 (636)	88940 (196079)	48.2 (32.4)	10 (0.4)	up to 12
450 (18)	454 (17.9)	545 (21.5)	1810 (262)	2710 (393)	20 (0.79)	4740 (687)	96650 (213077)	52.2 (35.1)	10 (0.4)	up to 12
500 (20)	499 (19.6)	587 (23.1)	1390 (201)	2080 (302)	20 (0.79)	4330 (628)	105840 (233337)	57.2 (38.4)	10 (0.4)	up to 12
600 (24)	611 (24.1)	721 (28.4)	1410 (204)	2110 (306)	24.5 (0.97)	4350 (631)	159530 (351703)	85.8 (57.6)	10 (0.4)	up to 12

FEATURES / BENEFITS:

- CORROSION RESISTANT FRP
- KWIK-LOK JOINTS (very quick and easy to join)
- LIGHTWEIGHT CASING
- HIGH EXTERNAL COLLAPSE (Deep Installations)
- READILY AVAILABILIE
- HANDLES UP TO 100°c (Contact supplier for temperatures greater than 80°c)

APPLICATIONS:

- SALT, BRACKISH OR LOW PH WATER BORES
- POTABLE WATER BORES
- DEWATERING BORES
- SERVICE BORES TO UNDERGROUND OPS
- RESISTANT TO LIGHTING CONDUCTIVITY



NOTE:

- Longer lengths than shown may be available in sizes above DN200 - Refer supplier.
- Wall thickness increases as the external pressure/depths increase. Consult supplier for collapse pressures greater than shown in this table.