

G-CAST[®]



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BS5911-1 : 2002

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Precast Concrete Jacking Pipes with GRP Spigot Ring Lining

For Deep Tunnel

Patent Pending



CERTIFIED TO ISO 9001:2015

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G-CAST Concrete Jacking Pipe with GRP Spigot Ring Lining Patent Pending for Deep Tunnel

Deep Tunnel projects usually require pipes which are able to withstand increased water pressures at deep depths.

G-Cast concrete jacking pipes for deep tunnel comes with glass-reinforced plastic (GRP) lined spigot ring. This GRP lined spigot ring, which includes the groove line for rubber seal seating, is neatly formed to near perfection in terms of roundness and being damage-free.

This lined profile thus enables higher compression ratios to the rubber seal and eliminates worries that the seal will roll backward and come off from its intended position during homing of pipes. Furthermore, watertight joints for applications up to 5 bars can be achieved by incorporating the following features:

- Double rubber seal to safeguard the water tightness of the joint
- Waterproofing admixture to reduce permeability of the concrete pipe wall
- Optional thicker collar to reduce risk of damage during transport or jacking

Special Pipes

- Special pipes can be designed and manufactured to suit individual project requirements
- Special pipes for INTERMEDIATE JACKING STATION
- Concrete cladded COMPOSITE WATER STEEL PIPE for jacking operation
- Pipes can be manufactured using PFA cement (MASCETE), OPC or Sulphate Resistance Portland Cement / SRPC
- Pipe Internal Lining : High alumina cement / HAC lining, HDPE lining, SACRIFICIAL lining
- Pipe External Lining : SACRIFICIAL lining, EPOXY coating

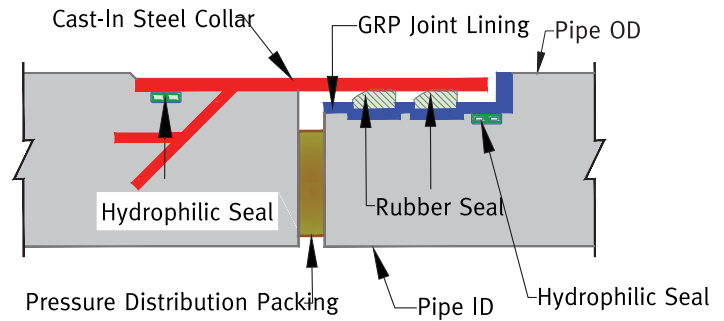


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FLEXIBLE PIPE JOINT

This joint incorporates the well proven steel collar and elastomeric sealing gasket to ensure a watertight and yet flexible type joint. This butt end joint design ensures that the jacking forces are transmitted over the maximum area of the pipe, thus reducing the possibility of damage during jacking operation.

CONCRETE

Concrete of characteristic strength 50 N/mm².

CAST-STEEL COLLAR

Standard cast-in steel collars are of mild steel type. Stainless steel may be provided on request.

SEALS

Standard flexible joint seals are manufactured from natural rubber. EPDM type is available on request.

BENTONITE INJECTION PORTS

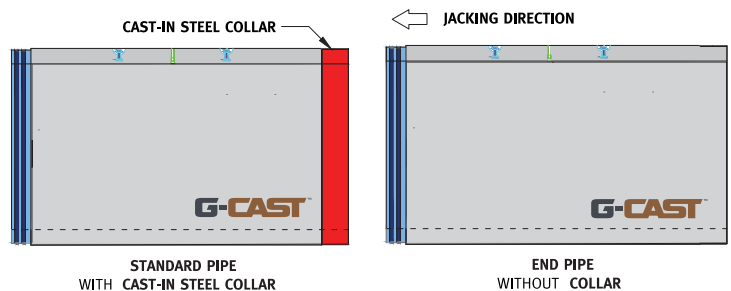
Pipes can be supplied with or without threaded injection/grouting ports.

PRESSURE DISTRIBUTION PACKING

A pressure distribution packing is to be positioned between every pipe to ensure even distribution of the jacking load.

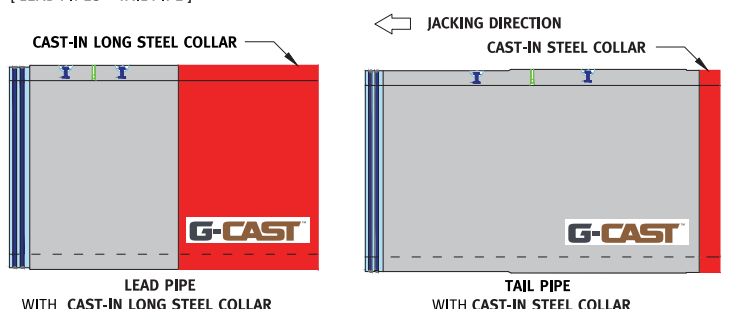
PIPES FOR NORMAL JACKING OPERATION

[STANDARD PIPES + END PIPE]



PIPES FOR INTERMEDIATE JACKING STATION

[LEAD PIPES + TAIL PIPE]



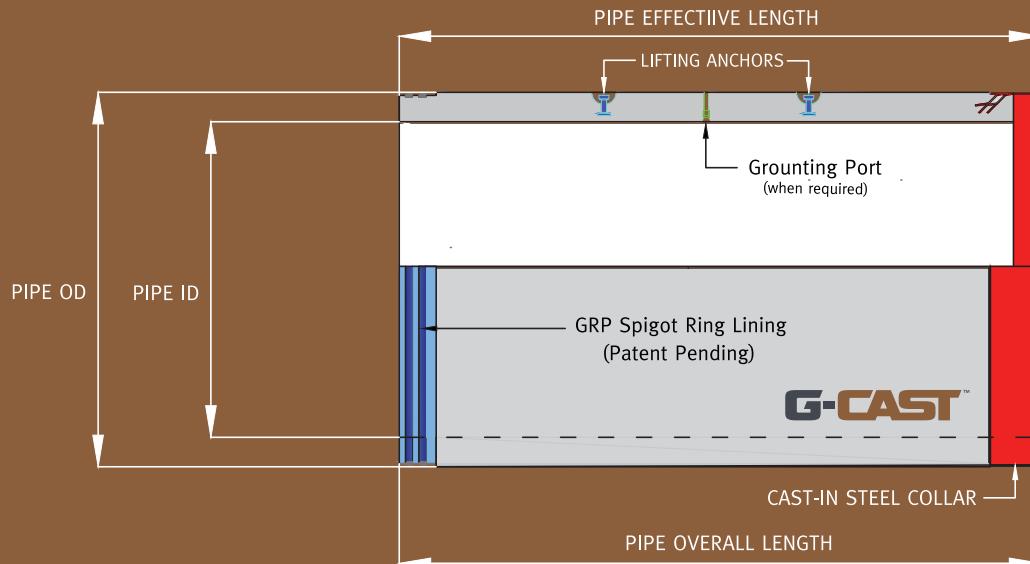
Product Specification

Diameter Range

300 - 4800mm

Strength Class

X, Y, Z, Z-PLUS(1.5Z, 2Z, ETC) ; L, M, H, H-PLUS(1.5H, 2H, ETC)



Strength Class	Nominal Diameter (mm)	Pipe ID (mm)	Pipe OD (mm)	Wall Thickness (mm)	Pipe Overall Length (Metre)	Pipe Effective Length (Metre)	Pipe Weight (Ton)	Allowable Jacking Force (Ton)
Z 1.5Z 2.0Z H 1.5H 2.0H	300	300	520	110	3.050	2.960	1.03	170
	375	375	520	72.5	3.050	2.960	0.74	102
	450	450	610	80	3.050	2.960	0.97	142
	525	525	690	82.5	3.050	2.940	1.14	172
	600	600	775	87.5	3.050	2.940	1.36	213
	750	750	960	105	3.050	2.940	2.03	345
	900	900	1,200	150	3.050	2.940	3.56	690
	1,050	1,050	1,250	100	3.050	2.940	2.60	457
	1,200	1,200	1,430	115	3.050	2.940	3.42	605
	1,350	1,350	1,600	125	3.050	2.940	4.17	757
	1,500	1,500	1,780	140	3.050	2.940	5.20	964
	1,650	1,650	1,970	160	3.050	2.940	6.55	1,255
	1,800	1,800	2,140	170	3.050	2.940	7.58	1,472
	2,100	2,100	2,470	185	2.645	2.520	8.20	1,891
	2,400	2,400	2,730	165	2.655	2.520	8.21	1,855
	2,700	2,700	3,064	182	2.670	2.520	10.17	2,346
	3,000	3,000	3,440	220	2.170	2.020	10.90	3,271

NOTES

1. The "Allowable Jacking Force" quoted above is for guidance only with assumption that the jacking load / thrust is evenly distributed over the full circumference of the pipe end with zero joint deflection, and concrete cube strength at 50 N/mm² with a factor of safety of 3.0.
2. Non standard pipes can be designed and manufactured to meet individual customer requirements such as pipe outside diameter (to suit the size of cutter head of the tunneling machine), special strength classes for high depth of fill, etc.

In view of continual improvements we reserve the right to alter the specifications contained in this catalogue without prior notice.

G-CAST CONCRETE SDN BHD (971228-X)

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- Lot 12448-12473, Kawasan Perindustrian Bidor, Mukim Bidor,
Daerah Batang Padang, 35500 Perak
- Lot 1561, Kampung Stesen, Sungai Choh, 48000 Rawang, Selangor
- Lot 89, Jalan Kulai-Kota Tinggi, Mukim Kota Tinggi, Daerah Kota Tinggi,
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