Hiline Steel
Imperial Catalogue

CPV
Engineering Pipework Solutions

CPV-HILINE

Pre-insulated Pipe Systems

For further information please visit www.cpv.co.uk

MANUFACTURE & STANDARDS

HILINE IMPERIAL STEEL pre-insulated pipes and fittings for thermal utilities are manufactured within an ISO 9001 accredited environment generally in accordance with EN 253, EN 448, EN 488, EN 489

SERVICE PIPE

Seamless Pipe
Certified seamless carbon steel pipe manufactured in accordance with EN 10217-1:API5L Grade B/X42 Schedule 20 or Schedule 40 & EN 10217-1:ASTM A106 Grade B Schedule 20 or Schedule 40

Seamed Pipe (Welded)
Certified welded carbon steel pipe manufactured in accordance with EN 10217-1:EN 10255 Grade S195T Heavy gauge or Medium gauge (formerly BS1387) & EN 10217-1:API5L Grade B/X42 Schedule 20 or Schedule 40

General Properties

- Upper yield strength 195 MPa
- Tensile strength 320 - 520 MPa
- Density 7850 kg/m³
- Pressure rating According to service pipe specification

The external surfaces of the pipes are coated with black varnish or red primer to improve adhesion of the rigid polyurethane foam (PUR) thus improving the bond between the service pipe and casing

Inspection Certificate EN 10204: 2.1 or 2.2 available on prior request

THERMAL INSULATION

The insulation material is CFC free rigid polyurethane foam (PUR) homogenously filling the space between the service pipe and casing over the total length and generally in compliance with standard EN 253

Properties

- Thermal conductivity coefficient 0.022 w/mK
- Radial compression strength 0.30 MPa
- Minimum core mass density 60 kg/ m³
- Maximum operating temperature 130°C
- Minimum operating temperature 4°C

CASING PIPE

Casing pipe is manufactured generally in accordance with standard EN 253 from high density polyethylene (HDPE)

Properties

- Density 950 kg/m³
- Upper yield stress 19 MPa
- Elongation at break at least 350%
- Expected life up to 50 years

HDPE casing is also available with additional UV stabiliser offering greater protection against direct sunlight for above ground installations

SITE JOINTING TECHNIQUES

Service Pipes

The welding of pre-insulated steel pipes to be installed in buried and above ground thermal utilities can be carried out using the following techniques:

- Manual arc welding with shielded electrodes 111 as per EN ISO 4063
- Inert gas arc welding with a non-consumable electrode (TIG welding) 141 as per EN ISO 4063
- Gas welding 311 as per EN ISO 4063

Casing pipes

The sealing of HDPE casing pipes in the field can be carried out using the following techniques:

- Heat shrinkable HDPE oversleeve sealed with hot melt adhesive and heat shrinkable bands (Types NT & DSJ)
- Heat shrinkable crosslinked HDPE oversleeve sealed with hot melt adhesive (Type TS)
- Wrap around HDPE electrofusion coupling forming a fully fused casing joint (Type DX)
- Slide over HDPE heat shrinkable oversleeve sealed by the electrofusion technique (Type DT)

Insulation

Field joints can be insulated using the following methods:

- Moulded PUR ½ shells installed before the oversleeve is fitted
- PUR liquid 2-part resin and activator either hand mixed or machine mixed and poured into casing oversleeve after it has been sealed to the casing pipe

SUPPLY PROGRAMME

Hiline Imperial Steel pipes and fittings are available in the following size ranges:

- API5L & ASTM A106 finished pipes are available in 6.0m lengths
  Size range DN20 to DN200
- EN 10255 (BS1387) finished pipes are available in 6.5m lengths
  Size range DN20 to DN150

SURVEILLANCE SYSTEMS

Hiline Imperial Steel can be supplied with imbedded alarm wires of various manufacture for locating and/or detecting moisture ingress according to EN 14419 including:

- Nordic pulse system (plain and tinned copper wires 2.0mm^2)
- Resistance system (eg Brandes)
- Client specified system

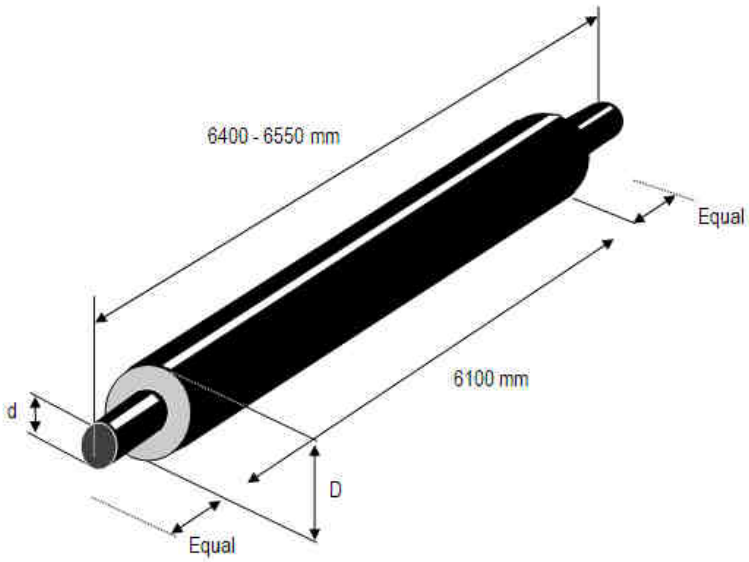
INSTALLATION

Hiline Imperial Steel pre-insulated pipe systems can be installed both above and below ground and can operate at a maximum continuous operating temperature of 130°C, following the general principles and practices of EN 13941 "Design and Installation of Pre-insulated Bonded Pipes for District Heating" and strictly in accordance with CPV's instructions and terms and conditions of supply

Hiline Imperial Steel pre-insulated pipes and fittings are manufactured and supplied by:

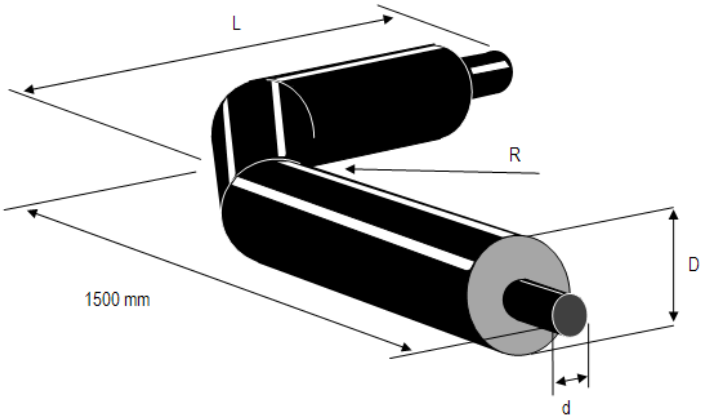
CPV Ltd
Tel: +44(0) 1794 322884 Fax: +44(0) 1794 322885
email: sales@cpv.co.uk web: www.cpv.co.uk
Woodington Mill, East Wellow, Romsey, Hampshire, SO51 6DQ, UK

Hiline Steel: Pipe



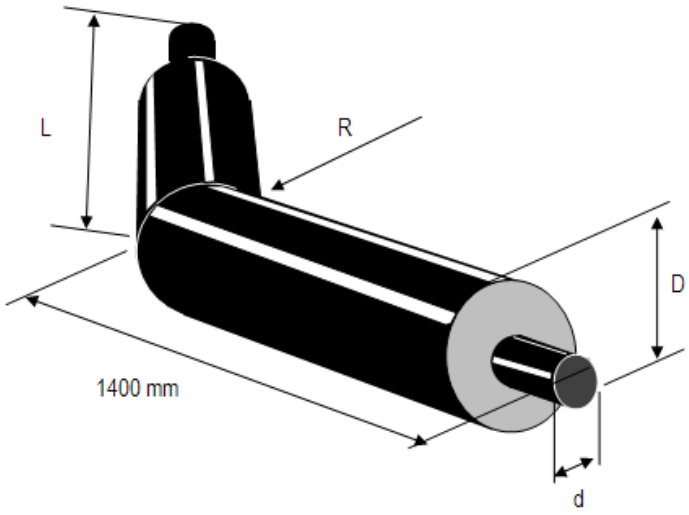
Size	Code	Service Pipe		Casing OD D	Insulation Thickness	WT (Kg)
		NB	OD d			
Heavy Gauge						
¾	HS.026.PH-	20	26.9	90	28	19.8
1	HS.033.PH-	25	33.7	90	25	26.6
1 ¼	HS.042.PH-	32	42.4	110	31	34.5
1 ½	HS.048.PH-	40	48.3	110	28	38.0
2	HS.060.PH-	50	60.3	125	29	51.6
2 ½	HS.076.PH-	65	76.1	140	28	65.5
3	HS.089.PH-	80	88.9	160	32	84.1
4	HS.114.PH-	100	114.3	200	38	122.3
5	HS.139.PH-	125	139.7	225	38	146.3
6	HS.165.PH-	150	165.1	250	38	174.2
Medium Gauge						
2	HS.060.PH-	50	60.3	125	29	44.6
2 ½	HS.076.PH-	65	76.1	140	28	56.5
3	HS.089.PH-	80	88.9	160	32	73.5
4	HS.114.PH-	100	114.3	200	38	106.4
5	HS.139.PH-	125	139.7	225	38	135.0
6	HS.165.PH-	150	165.1	250	38	174.2

Hiline Steel: 90˚ Bends



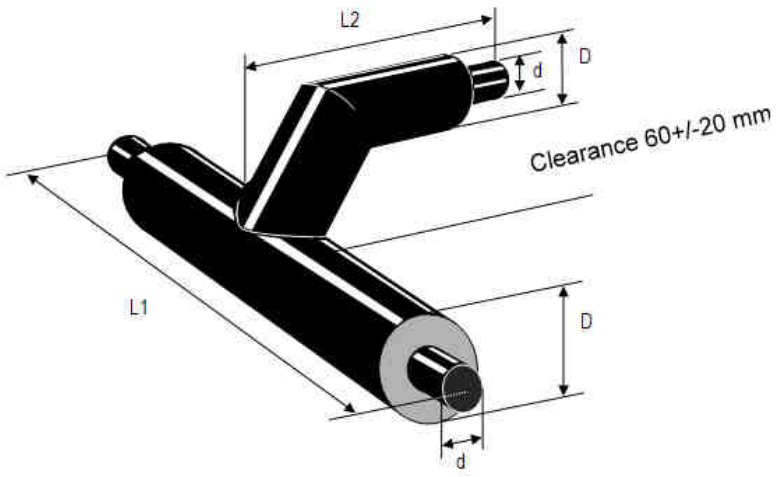
Size	Code	Service Pipe		Casing OD D	Length L *	Radius R	WT (Kg)
		NB	OD d				
90˚ Short							
¾	HS.026.B--	20	26.9	90	660	75	6.2
1	HS.033.B--	25	33.7	90	670	95	8.5
1 ¼	HS.042.B--	32	42.4	110	680	120	10.9
1 ½	HS.048.B--	40	48.3	110	666	95	12.1
2	HS.060.B--	50	60.3	125	672	98	16.5
2 ½	HS.076.B--	65	76.1	140	676	108	20.9
3	HS.089.B--	80	88.9	160	688	134	26.9
4	HS.114.B--	100	114.3	200	703	170	39.0
5	HS.139.B--	125	139.7	225	1000	190	51.7
6	HS.165.B--	150	165.1	250	1080	230	61.6
90˚ Long							
¾	HS.026.BL-	20	26.9	90	1730	75	9.3
1	HS.033.BL-	25	33.7	90	1740	95	12.8
1 ¼	HS.042.BL-	32	42.4	110	1750	120	16.4
1 ½	HS.048.BL-	40	48.3	110	1736	95	18.2
2	HS.060.BL-	50	60.3	125	1742	98	24.8
2 ½	HS.076.BL-	65	76.1	140	1746	108	31.4
3	HS.089.BL-	80	88.9	160	1758	134	40.4
4	HS.114.BL-	100	114.3	200	1773	170	58.5

Hiline Steel: 45˚ Bends



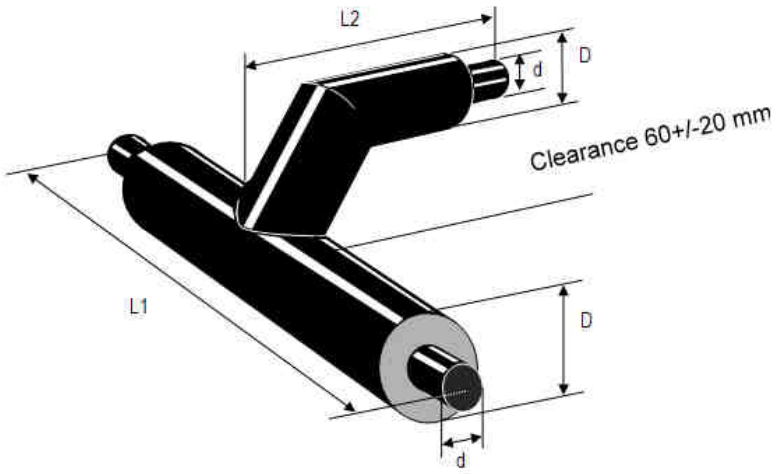
Size	Code	Service Pipe		Casing	Length	Radius	WT
		NB	OD d	OD D	L *	R	(Kg)
45˚ Bends							
¾	HS.026.BH-	20	26.9	90	730	75	6.2
1	HS.033.BH-	25	33.7	90	730	95	8.5
1 ¼	HS.042.BH-	32	42.4	110	730	120	10.9
1 ½	HS.048.BH-	40	48.3	110	730	95	12.1
2	HS.060.BH-	50	60.3	125	730	98	16.5
2 ½	HS.076.BH-	65	76.1	140	740	108	20.9
3	HS.089.BH-	80	88.9	160	740	134	26.9
4	HS.114.BH-	100	114.3	200	740	170	39.0
5	HS.139.BH-	125	139.7	225	725		46.8
6	HS.165.BH-	150	165.1	250	725		55.7

Hiline Steel: Cranked Tees – Equal Branch



Size	Code	Service Pipe		Casing OD D	Length L * / L1	Length L2	Radius R	WT (Kg)
		NB	OD d					
¾	HS.026.TC-	20	26.9	90	730	580		6.0
1	HS.033.TC-	25	33.7	90	730	580		8.3
1 ¼	HS.042.TC-	32	42.4	110	730	590		10.7
1 ½	HS.048.TC-	40	48.3	110	730	590		11.9
2	HS.060.TC-	50	60.3	125	730	590		16.2
2 ½	HS.076.TC-	65	76.1	140	740	590		20.5
3	HS.089.TC-	80	88.9	160	740	590		26.4
4	HS.114.TC-	100	114.3	200	740	590		38.3
5	HS.139.TC--	125	139.7	225	725	590		46.0
6	HS.165.TC-	150	165.1	250	725	600		54.8

Hiline Steel: Cranked Tees – Reduced Branch



Size	Code	Run			Branch			WT (Kg)
		Service Pipe		Casing OD D	Service Pipe		Casing	
		NB	OD d		NB	OD / d1	OD / D1	
1 x ¾	HS.033.TC1	25	33.7	90	20	26.9	90	7.2
1 ¼ x 1	HS.042.TC1	32	42.4	110	25	33.7	90	9.5
1 ¼ x ¾	HS.042.TC2	32	42.4	110	20	26.9	90	8.4
1 ½ x 1 ¼	HS.048.TC1	40	48.3	110	25	33.7	110	10.0
1 ½ x 1	HS.048.TC2	40	48.3	110	25	33.7	90	10.0
1 ½ x ¾	HS.048.TC3	40	48.3	110	20	26.9	90	8.9
2 x ½	HS.060.TC1	50	60.3	125	40	48.3	110	14.0
2 x 1 ¼	HS.060.TC2	50	60.3	125	32	42.4	110	13.4
2 x 1	HS.060.TC3	50	60.3	125	25	33.7	90	12.2
2 x ¾	HS.060.TC4	50	60.3	125	20	26.9	90	11.1
2 ½ x 2	HS.076.TC1	65	76.1	140	50	60.3	125	18.3
2 ½ x 1 ½	HS.076.TC2	65	76.1	140	40	48.3	110	16.1
2 ½ x 1 ¼	HS.076.TC3	65	76.1	140	32	42.4	110	15.6
2 ½ x 1	HS.076.TC4	65	76.1	140	25	33.7	90	14.3
2 ½ x 3/4	HS.076.TC5	65	76.1	140	20	26.9	90	13.2
3 x 2 ½	HS.089.TC1	80	88.9	160	65	76.1	140	23.4
3 x 2	HS.089.TC2	80	88.9	160	50	60.3	125	21.2
3 x 1 ½	HS.089.TC3	80	88.9	160	40	48.3	110	19.0
3 x 1 ¼	HS.089.TC4	80	88.9	160	32	42.4	110	18.4
3 x 1	HS.089.TC5	80	88.9	160	25	33.7	90	17.1
3 x ¾	HS.089.TC6	80	88.9	160	20	26.9	90	16.1
4 x 3	HS.114.TC1	100	114.3	200	80	88.9	160	32.2
4 x 2 ½	HS.114.TC2	100	114.3	200	65	76.1	140	29.2
4 x 2	HS.114.TC3	100	114.3	200	50	60.3	125	27.0
4 x 1 ½	HS.114.TC4	100	114.3	200	40	48.3	110	24.8
4 x 1 ¼	HS.114.TC5	100	114.3	200	32	42.4	110	24.3
4 x 1	HS.114.TC6	100	114.3	200	25	33.7	90	23.0
4 x ¾	HS.114.TC7	100	114.3	200	20	26.9	90	21.9

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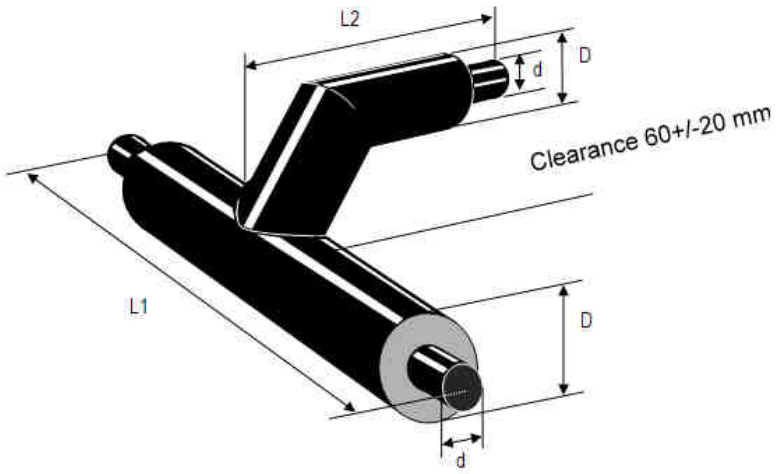
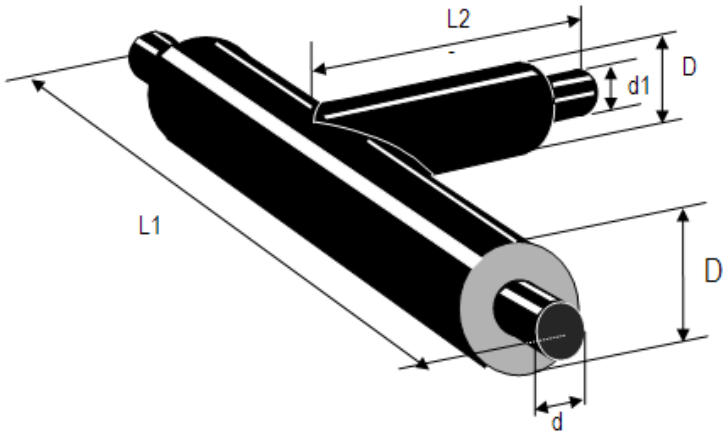


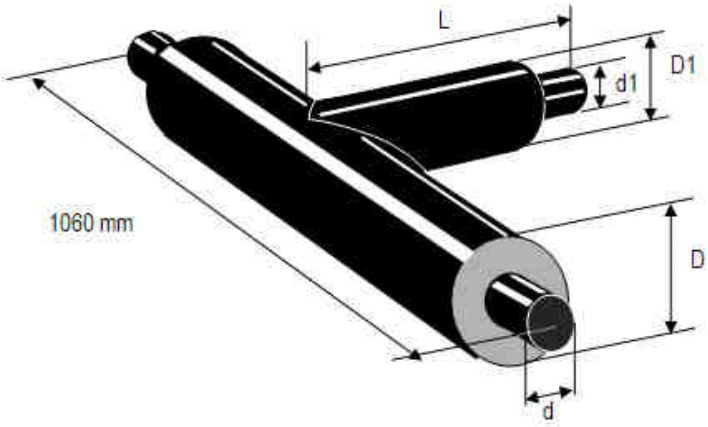
Size	Code	Run			Branch			WT (Kg)
		Service Pipe		Casing OD D	Service Pipe		Casing	
		NB	OD d		NB	OD / d1	OD / D1	
5 x 4	HS.139.TC1	125	139.7	225	100	114.3	200	42.1
5 x 3	HS.139.TC2	125	139.7	225	80	88.9	160	36.1
5 x 2 ½	HS.139.TC3	125	139.7	225	65	76.1	140	33.1
5 x 2	HS.139.TC4	125	139.7	225	50	60.3	125	30.9
5 x 1 ½	HS.139.TC5	125	139.7	225	40	48.3	110	28.7
5 x 1 ¼	HS.139.TC6	125	139.7	225	32	42.4	110	28.1
5 x 1	HS.139.TC7	125	139.7	225	25	33.7	90	26.9
5 x ¾	HS.139.TC8	125	139.7	225	20	26.9	90	25.7
6 x 5	HS.165.TC1	150	165.1	250	125	139.7	225	50.3
6 x 4	HS.165.TC2	150	165.1	250	100	114.3	200	46.4
6 x 3	HS.165.TC3	150	165.1	250	80	88.9	160	40.4
6 x 2 ½	HS.165.TC4	150	165.1	250	65	76.1	140	37.2
6 x 2	HS.165.TC5	150	165.1	250	50	60.3	125	35.2
6 x 1 ½	HS.165.TC6	150	165.1	250	40	48.3	110	33.0
6 x 1 ¼	HS.165.TC7	150	165.1	250	32	42.4	110	32.4
6 x 1	HS.165.TC8	150	165.1	250	25	33.7	90	31.2
6 x ¾	HS.165.TC9	150	165.1	250	20	26.9	90	30.1

Hiline Steel: Flat Tees – Equal Branch



Size	Code	Service Pipe		Casing	Length	Length	Radius	WT
		NB	OD d	OD D	L * / L1	L2	R	(Kg)
¾	HS.026.TF-	20	26.9	90	1108	554		5.1
1	HS.033.TF-	25	33.7	90	1126	563		6.9
1 ¼	HS.042.TF-	32	42.4	110	1145	573		9.2
1 ½	HS.048.TF-	40	48.3	110	1164	582		10.2
2	HS.060.TF-	50	60.3	125	1177	589		14.1
2 ½	HS.076.TF-	65	76.1	140	1202	601		18.2
3	HS.089.TF-	80	88.9	160	1221	611		23.8
4	HS.114.TF-	100	114.3	200	1260	630		35.7
5	HS.139.TF--	125	139.7	225	1298	649		44.0
6	HS.165.TF-	150	165.1	250	1336	680		53.9

Hiline Steel: Flat Tees – Reduced Branch



Size	Code	Run			Branch			WT (Kg)
		Service Pipe		Casing OD D	Service Pipe		Casing	
		NB	OD d		NB	OD / d1	OD / D1	
1 x ¾	HS.033.TF1	25	33.7	90	20	26.9	90	6.0
1 ¼ x 1	HS.042.TF1	32	42.4	110	25	33.7	90	7.9
1 ¼ x ¾	HS.042.TF2	32	42.4	110	20	26.9	90	7.3
1 ½ x 1 ¼	HS.048.TF1	40	48.3	110	25	33.7	110	9.1
1 ½ x 1	HS.048.TF2	40	48.3	110	25	33.7	90	8.4
1 ½ x ¾	HS.048.TF3	40	48.3	110	20	26.9	90	7.9
2 x ½	HS.060.TF1	50	60.3	125	40	48.3	110	11.6
2 x 1 ¼	HS.060.TF2	50	60.3	125	32	42.4	110	11.4
2 x 1	HS.060.TF3	50	60.3	125	25	33.7	90	10.7
2 x ¾	HS.060.TF4	50	60.3	125	20	26.9	90	10.1
2 ½ x 2	HS.076.TF1	65	76.1	140	50	60.3	125	15.1
2 ½ x 1 ½	HS.076.TF2	65	76.1	140	40	48.3	110	14.0
2 ½ x 1 ¼	HS.076.TF3	65	76.1	140	32	42.4	110	13.7
2 ½ x 1	HS.076.TF4	65	76.1	140	25	33.7	90	13.0
2 ½ x 3/4	HS.076.TF5	65	76.1	140	20	26.9	90	12.4
3 x 2 ½	HS.089.TF1	80	88.9	160	65	76.1	140	19.3
3 x 2	HS.089.TF2	80	88.9	160	50	60.3	125	18.2
3 x 1 ½	HS.089.TF3	80	88.9	160	40	48.3	110	17.1
3 x 1 ¼	HS.089.TF4	80	88.9	160	32	42.4	110	16.8
3 x 1	HS.089.TF5	80	88.9	160	25	33.7	90	16.1
3 x ¾	HS.089.TF6	80	88.9	160	20	26.9	90	15.5
4 x 3	HS.114.TF1	100	114.3	200	80	88.9	160	27.3
4 x 2 ½	HS.114.TF2	100	114.3	200	65	76.1	140	25.8
4 x 2	HS.114.TF3	100	114.3	200	50	60.3	125	24.6
4 x 1 ½	HS.114.TF4	100	114.3	200	40	48.3	110	23.4
4 x 1 ¼	HS.114.TF5	100	114.3	200	32	42.4	110	23.1
4 x 1	HS.114.TF6	100	114.3	200	25	33.7	90	22.4
4 x ¾	HS.114.TF7	100	114.3	200	20	26.9	90	21.8

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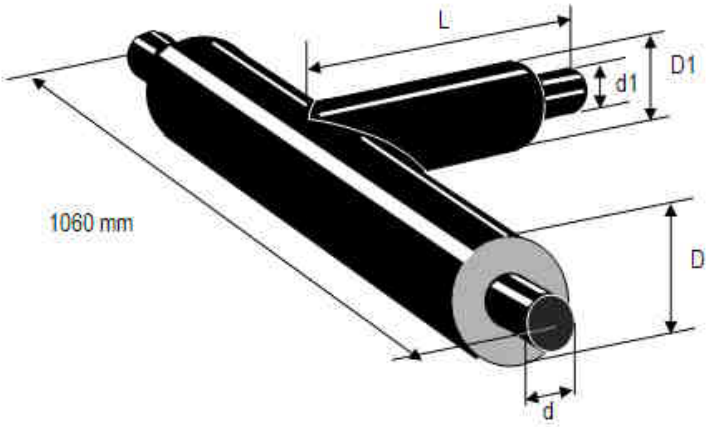
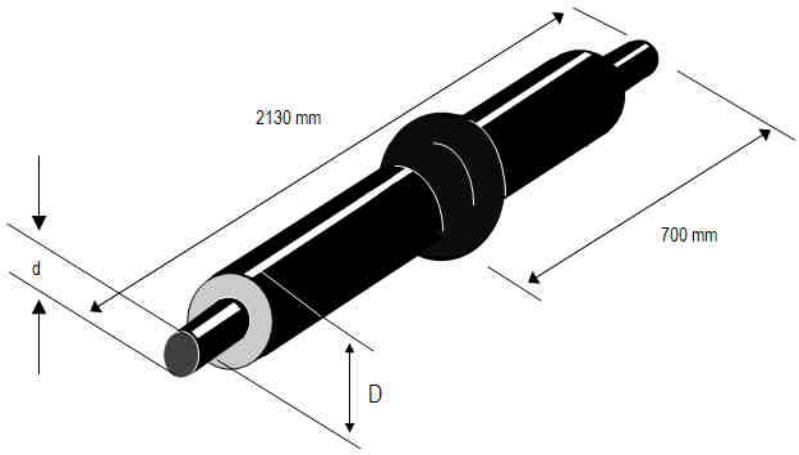


Size	Code	Run			Branch			WT (Kg)
		Service Pipe		Casing OD D	Service Pipe		Casing	
		NB	OD d		NB	OD / d1	OD / D1	
5 x 4	HS.139.TF1	125	139.7	225	100	114.3	200	34.6
5 x 3	HS.139.TF2	125	139.7	225	80	88.9	160	31.5
5 x 2 ½	HS.139.TF3	125	139.7	225	65	76.1	140	29.8
5 x 2	HS.139.TF4	125	139.7	225	50	60.3	125	28.6
5 x 1 ½	HS.139.TF5	125	139.7	225	40	48.3	110	27.4
5 x 1 ¼	HS.139.TF6	125	139.7	225	32	42.4	110	27.1
5 x 1	HS.139.TF7	125	139.7	225	25	33.7	90	26.4
5 x ¾	HS.139.TF8	125	139.7	225	20	26.9	90	25.8
6 x 5	HS.165.TF1	150	165.1	250	125	139.7	225	41.4
6 x 4	HS.165.TF2	150	165.1	250	100	114.3	200	39.6
6 x 3	HS.165.TF3	150	165.1	250	80	88.9	160	36.2
6 x 2 ½	HS.165.TF4	150	165.1	250	65	76.1	140	34.6
6 x 2	HS.165.TF5	150	165.1	250	50	60.3	125	33.3
6 x 1 ½	HS.165.TF6	150	165.1	250	40	48.3	110	32.1
6 x 1 ¼	HS.165.TF7	150	165.1	250	32	42.4	110	31.7
6 x 1	HS.165.TF8	150	165.1	250	25	33.7	90	31.0
6 x ¾	HS.165.TF9	150	165.1	250	20	26.9	90	30.4

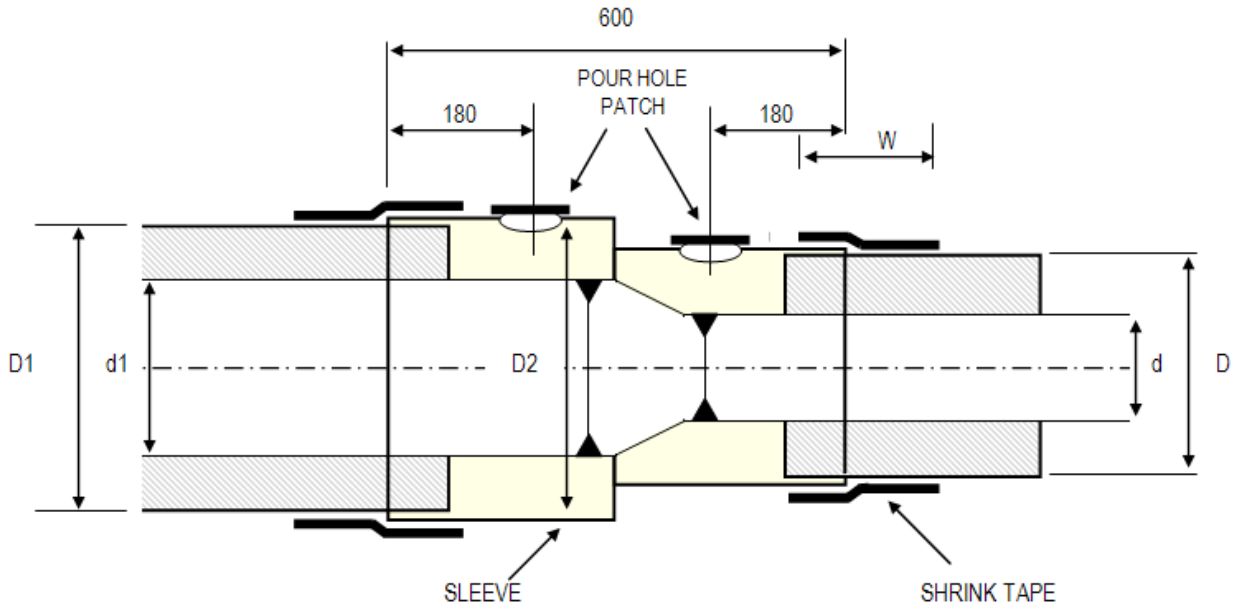
Hiline Steel: Anchor



Size	Code	Service Pipe		Casing OD D	Flange OD	WT (Kg)
		NB	OD d			
Heavy Gauge						
¾	HS.026.A--	20	26.9	90	225	10.3
1	HS.033. A--	25	33.7	90	225	12.5
1 ¼	HS.042. A--	32	42.4	110	225	14.9
1 ½	HS.048. A--	40	48.3	110	225	16.0
2	HS.060. A--	50	60.3	125	225	20.4
2 ½	HS.076. A--	65	76.1	140	250	26.9
3	HS.089. A--	80	88.9	160	270	33.9
4	HS.114. A--	100	114.3	200	310	48.2
5	HS.139. A--	125	139.7	225	335	59.7
6	HS.165. A--	150	165.1	250	360	69.9

Ancillaries

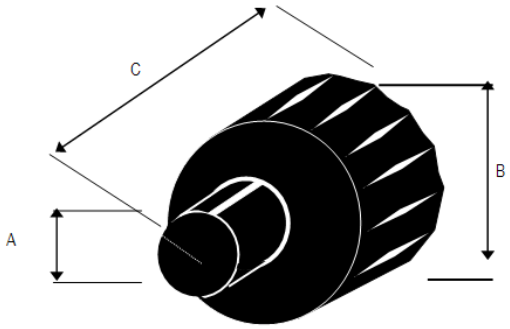
HP Joint Kit



Size	Code	Service Pipe		Casing	Casing	Shrink Tape	
		NB	OD / d	OD / D1	OD / D2	Width	Length
90	H-.090.HPJ	20	26.9	90	110	150	435
90	H-.090.HPJ	25	33.7	90	110	150	435
110	H-.110.HPJ	32	42.4	110	125	150	495
110	H-.110.HPJ	40	48.3	110	125	150	495
125	H-.125.HPJ	50	60.3	125	140	150	555
140	H-.140.HPJ	65	76.1	140	160	150	625
160	H-.160.HPJ	80	88.9	160	175	150	700
200	H-.200.HPJ	100	114.3	200	2174	225	840
225	H-.225.HPJ	125	139.7	225	250	225	935
250	H-.250.HPJ	150	165.1	250	268	225	1010

Ancillaries

Shrink End Caps



Size NB	Code	Service Pipe OD / d	Casing OD / D	Expanded Dimensions			WT g
				A	B	C	
20	H-.090.SC-	26.9	90	40	120	110	54
25	H-.090. SC-	33.7	90	40	120	110	54
32	H-.110. SC-	42.4	110	68	138	105	72
40	H-.110. SC-	48.3	110	68	138	105	72
50	H-.125. SC-	60.3	125	68	138	105	72
65	H-.140. SC-	76.1	140	97	170	110	96
80	H-.160. SC-	88.9	160	97	170	110	96
100	H-.200. SC-	114.3	200	123	215	115	112
125	H-.225. SC-	139.7	225	150	240	95	130
150	H-.250. SC-	165.1	250	178	265	130	175

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