



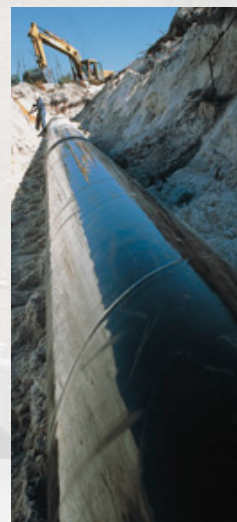
SINTAKOTE[®] **STEEL PIPELINE SYSTEMS**

PRODUCT DATA VERSION 1

Steel Mains is Australia's leading manufacturer and supplier of complete steel pipeline systems for the transportation of water and wastewater, offering a total solutions approach to its customers

Throughout Australia and the rest of the world, steel pipelines have long been used in water supply, particularly where high pressures, difficult laying conditions or security of supply, have required the strength and toughness of steel

Steel Mains, and its forerunners, have traditionally been at the forefront of developments in the water industry for more than 125 years of manufacturing pipelines in Australia. Over that period steel pipeline design, manufacturing processes and technology have evolved into today's SINTAKOTE® steel pipeline system



Today, Steel Mains products and services cover a range of industry needs both within Australia and globally, delivering quality, strength, durability and endurance.

**Steel Mains...
Solutions for Life**

WWW.STEELMAINS.COM

SINTAKOTE PIPE DATA

Steel strength	1
Recommended maximum internal pressures	2
Coatings	2
Linings	2
Nominal bores	2
Pipe masses	2
Pipe lengths	2
Welded end pipe specification	3
SINTAJOINT® & SINTALOCK® JOINT rated pressures	8

SINTAKOTE JOINTING

SINTAJOINT	11
Spherical slip-in joint	11
Ball and socket joint	12
SINTALOCK rubber ring joint—Type II	12
SINTALOCK rubber ring joint—Type II	12
Plain butt joint	13
Butt joint with collar	13
Flange joints	13

SINTAKOTE FITTINGS

SINTAKOTE fittings	14
SINTAJOINT fittings	14
Fittings configurations	15

SINTAKOTE

STEEL PIPELINE SYSTEM



Steel water pipe produced in accordance with AS 1579 is normally manufactured from the following grades of steel manufactured to AS/NZS 1594 Hot-rolled steel coil or AS/NZS 3678 Structural steel - hot rolled plate.

STEEL STRENGTH

Wall Thickness t mm	Min Yield Strength MYS MPa	Min Tensile Strength MTS MPa	Product Standard	Grade
$t \leq 5.80$	300	400	AS/NZS 1594	HA1016
$5.80 < t \leq 7.99$	300	400	AS/NZS 1594	HXA1016
$t = 8.00$	300	400	AS/NZS 1594	HU300
$8.00 < t \leq 12.70$	250	350	AS/NZS 1594	HXA1016
$12.7 < t$	250	350	AS/NZS 1594	HA250

Steel to other grades and specifications can be supplied on request.

HA1016 and HXA1016 are chemical analysis grades of steel hence the mechanical property limits are not guaranteed by the steel maker, but the statistical distributions associated with the chemical analysis limits are accurately known from historical data. Minimum mechanical property values associated with these limits have been identified and are included in the table above.

Yield strength performance of the steel used to make the pipe is assured by the hydrostatic test of each pipe after manufacture to 90% MYS (minimum yield strength).

The hydrostatic factory test not only proves the minimum steel strength but also tests the welding and ultimate fitness for purpose.

SINTAKOTE

STEEL PIPELINE SYSTEM

RECOMMENDED MAXIMUM INTERNAL PRESSURES

All pipe manufactured to AS 1579 is hydrostatically proof tested in the factory.

Maximum test pressures are calculated using the following formula.

$$P_t = \frac{0.90 (2 \text{ MYS} \times t)}{D_o}$$

Maximum working pressures (rated pressures) are calculated using the following formula.

$$P_r = \frac{0.72 (2 \text{ MYS} \times t)}{D_o}$$

where

t = steel wall thickness

D_o = outside diameter of steel shell

MYS = Minimum Yield Strength of the steel

LININGS

Steel Mains offers Portland cement, Sulfate Resisting and Calcium Aluminate cement mortar linings. Please contact your local Steel Mains regional office for more information.

Outside Diameter. D _o mm	Cement Mortar Lining Thickness. T mm	Tolerance ± mm
114 - 273	9	3
> 273 - 762	12	4
> 762 - 1219	16	4
> 1219 - 2159	19	4



COATINGS

SINTAKOTE is a medium-density polyethylene coating which is fusion bonded directly to the steel pipe surface.

SINTAKOTE offers superior corrosion protection and its features include:

- Excellent adhesion
- High impact and load resistance
- Excellent chemical resistance
- High dielectric strength
- High electrical resistance
- Low water absorption
- Resistance to soil stresses
- Wide service temperature range (-40°C to 70°C)
- Inbuilt ultraviolet stabiliser

Outside Diameter. D _o mm	SINTAKOTE Thickness. t _s mm
114 - 273	1.6
> 273 - 508	1.8
> 508 - 762	2.0
> 762 - 2159	2.3

NOMINAL BORES

Nominal bores listed on page 3 - 7 are based on CML thicknesses given in the table under Linings on this page.

PIPE MASSES

Pipe masses are calculated from the following formulae.

Plain steel shell:

$$M_1 = 0.02466(D_o - t)t \quad \text{kg/m}$$

Cement mortar lining:

$$M_2 = 0.00755T(D_o - 2t - T) \quad \text{kg/m}$$

SINTAKOTE:

$$M_3 = 0.00295D_o t_s \quad \text{kg/m}$$

where

t = steel wall thickness

D_o = outside diameter of steel shell

MYS = Minimum Yield Strength of the steel

T = cement mortar lining thickness mm

PIPE LENGTHS

Pipes are normally supplied in 6m, 9m, 12.2m and 13.5m total lengths.

Minimum length is usually 6 metres.

SINTAKOTE

WELDED END PIPE DATA

UP TO 300mm WELDED END

Outside Diameter D _o mm	Wall Thickness t mm	Test Pressure		Rated Pressure		SK t _s mm	CML T mm	Bore CML mm	Empty Pipe		Tonnes per Pipe SKCL				Min Yield Strength MYS MPa
		P _t		P _R					SKCL kg/m	UCCL kg/m	6 m	9 m	12.2 m	13.5 m	
		MPa	m	MPa	m										
114	4.8	8.5	866	6.8	693	1.6	9	86	19.9	19.4	0.1				300
168	5	8.5	866	6.8	693	1.6	9	140	31.0	30.2	0.2	0.3			300
190	5	8.5	866	6.8	693	1.6	9	162	35.3	34.4	0.2	0.3			300
219	5	8.5	866	6.8	693	1.6	9	191	41.0	40.0	0.2	0.4			300
240	5	8.5	866	6.8	693	1.6	9	212	45.1	44.0	0.3	0.4			300
257	5	8.5	866	6.8	693	1.6	9	229	48.5	47.2	0.3	0.4			300
273	5	8.5	866	6.8	693	1.6	9	245	51.6	50.3	0.3	0.5			300
290	5	8.5	866	6.8	693	1.8	12	256	61.0	59.4	0.4	0.5			300

300-600mm WELDED END

Outside Diameter D _o mm	Wall Thickness t mm	Test Pressure		Rated Pressure		SK t _s mm	CML T mm	Bore CML mm	Empty Pipe		Tonnes per Pipe SKCL				Min Yield Strength MYS MPa
		P _t		P _R					SKCL kg/m	UCCL kg/m	6 m	9 m	12.2 m	13.5 m	
		MPa	m	MPa	m										
324	5	8.3	849	6.7	680	1.8	12	290	68.4	66.7	0.4	0.6			300
324	6	8.5	866	6.8	693	1.8	12	288	76.0	74.2	0.5	0.7			300
337	5	8.0	817	6.4	653	1.8	12	303	71.3	69.5	0.4	0.6			300
337	6	8.5	866	6.8	693	1.8	12	301	79.1	77.3	0.5	0.7			300
356	5	7.6	773	6.1	618	1.8	12	322	75.4	73.5	0.5	0.7			300
356	6	8.5	866	6.8	693	1.8	12	320	83.8	81.9	0.5	0.8			300
406	5	6.7	678	5.3	542	1.8	12	372	86.4	84.2	0.5	0.8	1.1		300
406	6	8.0	813	6.4	651	1.8	12	370	95.9	93.8	0.6	0.9	1.2		300
419	5	6.4	657	5.2	525	1.8	12	385	89.2	87.0	0.5	0.8	1.1		300
419	6	7.7	788	6.2	631	1.8	12	383	99.1	96.9	0.6	0.9	1.2		300
457	5	5.9	602	4.7	482	1.8	12	423	97.6	95.1	0.6	0.9	1.2		300
457	6	7.1	723	5.7	578	1.8	12	421	108.4	106.0	0.7	1.0	1.3		300
502	5	5.4	548	4.3	439	1.8	12	468	107.4	104.8	0.6	1.0	1.3	1.5	300
502	6	6.5	658	5.2	526	1.8	12	466	119.4	116.7	0.7	1.1	1.5	1.6	300
508	5	5.3	542	4.3	433	1.8	12	474	108.7	106.1	0.7	1.0	1.3	1.5	300
508	6	6.4	650	5.1	520	1.8	12	472	120.8	118.1	0.7	1.1	1.5	1.6	300
559	5	4.8	492	3.9	394	2.0	12	525	120.3	117.0	0.7	1.1	1.5	1.6	300
559	6	5.8	591	4.6	473	2.0	12	523	133.6	130.3	0.8	1.2	1.6	1.8	300

SKCL: SINTAKOTE Cement Mortar Lined Steel Pipe
 UCCL: Uncoated Cement Mortar Lined Steel Pipe

SINTAKOTE

WELDED END PIPE DATA

600-900mm WELDED END

Outside Diameter D _o mm	Wall Thickness t mm	Test Pressure		Rated Pressure		SK t _s mm	CML T mm	Bore CML mm	Empty Pipe		Tonnes per Pipe SKCL				Min Yield Strength MYS MPa
		P _t		P _R					SKCL kg/m	UCCL kg/m	6 m	9 m	12.2 m	13.5 m	
		MPa	m	MPa	m										
610	5	4.4	451	3.5	361	2.0	12	576	131.5	127.9	0.8	1.2	1.6	1.8	300
610	6	5.3	541	4.2	433	2.0	12	574	146.1	142.5	0.9	1.3	1.8	2.0	300
648	5	4.2	425	3.3	340	2.0	12	614	139.8	136.0	0.8	1.3	1.7	1.9	300
648	6	5.0	510	4.0	408	2.0	12	612	155.3	151.5	0.9	1.4	1.9	2.1	300
648	8	6.7	680	5.3	544	2.0	12	608	186.3	182.4	1.1	1.7	2.3	2.5	300
660	5	4.1	417	3.3	334	2.0	12	626	142.5	138.6	0.9	1.3	1.7	1.9	300
660	6	4.9	500	3.9	400	2.0	12	624	158.3	154.4	0.9	1.4	1.9	2.1	300
660	8	6.5	667	5.2	534	2.0	12	620	189.8	185.9	1.1	1.7	2.3	2.6	300
700	5	3.9	393	3.1	315	2.0	12	666	151.3	147.1	0.9	1.4	1.8	2.0	300
700	6	4.6	472	3.7	377	2.0	12	664	168.1	163.9	1.0	1.5	2.1	2.3	300
700	8	6.2	629	4.9	503	2.0	12	660	201.5	197.4	1.2	1.8	2.5	2.7	300
711	5	3.8	387	3.0	310	2.0	12	677	153.7	149.5	0.9	1.4	1.9	2.1	300
711	6	4.6	465	3.6	372	2.0	12	675	170.7	166.6	1.0	1.5	2.1	2.3	300
711	8	6.1	619	4.9	495	2.0	12	671	204.8	200.6	1.2	1.8	2.5	2.8	300
762	5	3.5	361	2.8	289	2.0	12	728	164.9	160.4	1.0	1.5	2.0	2.2	300
762	6	4.3	433	3.4	347	2.0	12	726	183.2	178.7	1.1	1.6	2.2	2.5	300
762	8	5.7	578	4.5	462	2.0	12	722	219.7	215.2	1.3	2.0	2.7	3.0	300
800	5	3.4	344	2.7	275	2.3	16	758	197.0	191.5	1.2	1.8	2.4	2.7	300
800	6	4.1	413	3.2	330	2.3	16	756	216.2	210.7	1.3	1.9	2.6	2.9	300
800	8	5.4	550	4.3	440	2.3	16	752	254.4	249.0	1.5	2.3	3.1	3.4	300
813	5	3.3	339	2.7	271	2.3	16	771	200.2	194.7	1.2	1.8	2.4	2.7	300
813	6	4.0	406	3.2	325	2.3	16	769	219.7	214.2	1.3	2.0	2.7	3.0	300
813	7	4.6	474	3.7	379	2.3	16	767	239.2	233.7	1.4	2.2	2.9	3.2	300
813	8	5.3	542	4.3	433	2.3	16	765	258.7	253.2	1.6	2.3	3.2	3.5	300

SKCL: SINTAKOTE Cement Mortar Lined Steel Pipe

UCCL: Uncoated Cement Mortar Lined Steel Pipe

900-1200mm WELDED END

Outside Diameter D _o mm	Wall Thickness t mm	Test Pressure		Rated Pressure		SK t _s mm	CML T mm	Bore CML mm	Empty Pipe		Tonnes per Pipe SKCL				Min Yield Strength MYS MPa
		P _t		P _R					SKCL kg/m	UCCL kg/m	6 m	9 m	12.2 m	13.5 m	
		MPa	m	MPa	m										
914	6	3.5	361	2.8	289	2.3	16	870	247.6	241.4	1.5	2.2	3.0	3.3	300
914	7	4.1	422	3.3	337	2.3	16	868	269.6	263.4	1.6	2.4	3.3	3.6	300
914	8	4.7	482	3.8	385	2.3	16	866	291.5	285.3	1.7	2.6	3.6	3.9	300
914	10	4.9	502	3.9	402	2.3	16	862	335.2	329.0	2.0	3.0	4.1	4.5	250
960	8	4.5	459	3.6	367	2.3	16	912	306.4	299.9	1.8	2.8	3.7	4.1	300
960	10	4.7	478	3.8	382	2.3	16	908	352.4	345.9	2.1	3.2	4.3	4.8	250
972	6	3.3	340	2.7	272	2.3	16	928	263.6	257.0	1.6	2.4	3.2	3.6	300
972	8	4.4	453	3.6	362	2.3	16	924	310.3	303.7	1.9	2.8	3.8	4.2	300
972	10	4.6	472	3.7	378	2.3	16	920	356.9	350.3	2.1	3.2	4.4	4.8	250
1016	8	4.3	433	3.4	347	2.3	16	968	324.6	317.7	1.9	2.9	4.0	4.4	300
1016	10	4.4	451	3.5	361	2.3	16	964	373.4	366.5	2.2	3.4	4.6	5.0	250
1035	8	4.2	425	3.3	340	2.3	16	987	330.8	323.8	2.0	3.0	4.0	4.5	300
1035	10	4.3	443	3.5	355	2.3	16	983	380.5	373.4	2.3	3.4	4.6	5.1	250
1067	8	4.0	413	3.2	330	2.3	16	1019	341.2	333.9	2.0	3.1	4.2	4.6	300
1067	10	4.2	430	3.4	344	2.3	16	1015	392.4	385.2	2.4	3.5	4.8	5.3	250
1085	8	4.0	406	3.2	325	2.3	16	1037	347.0	339.7	2.1	3.1	4.2	4.7	300
1085	10	4.1	423	3.3	338	2.3	16	1033	399.2	391.8	2.4	3.6	4.9	5.4	250
1125	8	3.8	391	3.1	313	2.3	16	1077	360.0	352.4	2.2	3.2	4.4	4.9	300
1125	10	4.0	408	3.2	326	2.3	16	1073	414.1	406.5	2.5	3.7	5.1	5.6	250

SKCL: SINTAKOTE Cement Mortar Lined Steel Pipe
 UCCL: Uncoated Cement Mortar Lined Steel Pipe



SINTAKOTE

WELDED END PIPE DATA

1200-1500mm WELDED END

Outside Diameter D _o mm	Wall Thickness t mm	Test Pressure		Rated Pressure		SK t _s mm	CML T mm	Bore CML mm	Empty Pipe		Tonnes per Pipe SKCL				Min Yield Strength MYS MPa
		P _t		P _R					SKCL kg/m	UCCL kg/m	6 m	9 m	12.2 m	13.5 m	
		MPa	m	MPa	m										
1200	8	3.6	367	2.9	294	2.3	16	1152	384.4	376.3	2.3	3.5	4.7	5.2	250
1200	10	3.8	382	3.0	306	2.3	16	1148	442.2	434.1	2.7	4.0	5.4	6.0	250
1200	12	4.5	459	3.6	367	2.3	16	1144	499.8	491.7	3.0	4.5	6.1	6.7	250
1219	8	3.5	361	2.8	289	2.3	16	1171	390.6	382.3	2.3	3.5	4.8	5.3	300
1219	9	3.3	339	2.7	271	2.3	16	1169	420.0	411.7	2.5	3.8	5.1	5.7	250
1219	10	3.7	376	3.0	301	2.3	16	1167	449.3	441.0	2.7	4.0	5.5	6.1	250
1219	12	4.4	452	3.5	361	2.3	16	1163	507.9	499.6	3.0	4.6	6.2	6.9	250
1283	8	3.4	343	2.7	275	2.3	19	1229	439.3	430.6	2.6	4.0	5.4	5.9	300
1283	10	3.5	358	2.8	286	2.3	19	1225	501.1	492.4	3.0	4.5	6.1	6.8	250
1283	12	4.2	429	3.4	343	2.3	19	1221	562.7	554.0	3.4	5.1	6.9	7.6	250
1290	8	3.3	341	2.7	273	2.3	19	1236	441.7	432.9	2.7	4.0	5.4	6.0	300
1290	10	3.5	356	2.8	284	2.3	19	1232	503.9	495.1	3.0	4.5	6.1	6.8	250
1290	12	4.2	427	3.3	341	2.3	19	1228	565.8	557.1	3.4	5.1	6.9	7.6	250
1404	10	3.2	327	2.6	261	2.3	19	1346	549.1	539.6	3.3	4.9	6.7	7.4	250
1404	12	3.8	392	3.1	314	2.3	19	1342	616.7	607.2	3.7	5.6	7.5	8.3	250
1422	10	3.2	323	2.5	258	2.3	19	1364	556.2	546.6	3.3	5.0	6.8	7.5	250
1422	11	3.5	355	2.8	284	2.3	19	1362	590.5	580.9	3.5	5.3	7.2	8.0	250
1422	12	3.8	387	3.0	310	2.3	19	1360	624.7	615.1	3.7	5.6	7.6	8.4	250
1440	10	3.1	319	2.5	255	2.3	19	1382	563.4	553.6	3.4	5.1	6.9	7.6	250
1440	12	3.8	382	3.0	306	2.3	19	1378	632.7	623.0	3.8	5.7	7.7	8.5	250
1451	10	3.1	316	2.5	253	2.3	19	1393	567.7	557.9	3.4	5.1	6.9	7.7	250
1451	12	3.7	379	3.0	303	2.3	19	1389	637.7	627.8	3.8	5.7	7.8	8.6	250

SKCL: SINTAKOTE Cement Mortar Lined Steel Pipe

UCCL: Uncoated Cement Mortar Lined Steel Pipe

1500-1750mm WELDED END

Outside Diameter D _o mm	Wall Thickness t mm	Test Pressure		Rated Pressure		SK t _s mm	CML T mm	Bore CML mm	Empty Pipe		Tonnes per Pipe SKCL				Min Yield Strength MYS MPa
		P _t		P _R					SKCL kg/m	UCCL kg/m	6 m	9 m	12.2 m	13.5 m	
		MPa	m	MPa	m										
1500	10	3.0	306	2.4	245	2.3	19	1442	587.2	577.0	3.5	5.3	7.2	7.9	250
1500	12	3.6	367	2.9	294	2.3	19	1438	659.5	649.3	4.0	5.9	8.0	8.9	250
1575	10	2.9	291	2.3	233	2.3	19	1517	617.0	606.3	3.7	5.6	7.5	8.3	250
1575	12	3.4	349	2.7	280	2.3	19	1513	693.0	682.3	4.2	6.2	8.5	9.4	250
1600	12	3.4	344	2.7	275	2.3	19	1538	704.1	693.3	4.2	6.3	8.6	9.5	250
1600	16	4.5	459	3.6	367	2.3	19	1530	858.0	847.2	5.1	7.7	10.5	11.6	250
1626	12	3.3	339	2.7	271	2.3	19	1564	715.7	704.7	4.3	6.4	8.7	9.7	250
1626	16	4.4	451	3.5	361	2.3	19	1556	872.2	861.2	5.2	7.8	10.6	11.8	250
1750	12	3.1	315	2.5	252	2.3	19	1688	771.1	759.2	4.6	6.9	9.4	10.4	250
1750	16	4.1	419	3.3	336	2.3	19	1680	939.8	927.9	5.6	8.5	11.5	12.7	250

SKCL: SINTAKOTE Cement Mortar Lined Steel Pipe

UCCL: Uncoated Cement Mortar Lined Steel Pipe

SINTAJOINT & SINTALOCK JOINT

RATED PRESSURES

Pipe OD mm	Wall thickness mm	Material MYS MPa	SINTAJOINT		SINTALOCK	
			RRJ-S rated pressure MPa	RRJ-D rated pressure MPa	Type 1 rated pressure MPa	Type 2 rated pressure MPa
324	5	300	4.25	NA	4.17	NA
324	6	300	4.25	NA	5.00	NA
337	5	300	4.25	NA	4.01	NA
337	6	300	4.25	NA	4.81	NA
356	5	300	4.25	NA	3.79	NA
356	6	300	4.25	NA	4.55	NA
406	5	300	4.25	NA	3.33	NA
406	6	300	4.25	NA	3.99	NA
419	5	300	4.25	NA	3.22	NA
419	6	300	4.25	NA	3.87	NA
457	5	300	4.25	NA	2.95	NA
457	6	300	4.25	NA	3.54	NA
502	5	300	4.25	NA	2.69	3.5
502	6	300	4.25	NA	3.23	3.5
508	5	300	4.25	NA	2.66	3.5
508	6	300	4.25	NA	3.19	3.5
559	5	300	3.86	NA	2.42	3.5
559	6	300	4.25	NA	2.90	3.5
610	5	300	3.54	NA	2.21	3.5
610	6	300	4.25	NA	2.66	3.5
610	8	300	4.25	NA	3.54	3.5
648	5	300	3.33	NA	2.08	3.33
648	6	300	4.00	NA	2.50	3.5
648	8	300	4.25	NA	3.33	3.5
660	5	300	3.27	NA	2.05	3.27
660	6	300	3.93	NA	2.45	3.5
660	8	300	4.25	NA	3.27	3.5
700	5	300	3.09	NA	1.93	3.09
700	6	300	3.70	NA	2.31	3.5
700	8	300	4.25	NA	3.09	3.5

Rated Pressure = Maximum allowable operating internal pressure

Test Pressure = Maximum internal pressure each pipe is tested to during manufacturing

Note: For further sizes and greater pressures please contact your local Steel Mains Regional Sales Office.

Pipe OD mm	Wall thickness mm	Material MYS MPa	SINTAJOINT		SINTALOCK	
			RRJ-S rated pressure MPa	RRJ-D rated pressure MPa	Type 1 rated pressure MPa	Type 2 rated pressure MPa
711	5	300	3.04	NA	1.90	3.04
711	6	300	3.65	NA	2.28	3.5
711	8	300	4.25	NA	3.04	3.5
762	5	300	2.83	NA	1.77	2.83
762	6	300	3.40	NA	2.13	3.40
762	8	300	4.25	NA	2.83	3.5
813	5	300	2.66	NA	1.66	2.66
813	6	300	3.19	NA	1.99	3.19
813	7	300	3.72	NA	2.32	3.5
813	8	300	4.25	NA	2.66	3.5
914	6	300	2.84	NA	1.77	2.84
914	7	300	3.31	NA	2.07	3.31
914	8	300	3.78	NA	2.36	3.5
914	10	300	4.25	NA	2.95	3.5
960	6	300	2.70	NA	1.69	2.70
960	8	300	3.60	NA	2.25	3.5
960	10	300	4.25	NA	2.81	3.5
972	6	300	2.67	NA	1.67	2.67
972	8	300	3.56	NA	2.22	3.5
972	10	300	4.25	NA	2.78	3.5
1016	8	300	3.40	NA	2.13	3.40
1016	10	300	4.25	NA	2.66	3.5
1035	8	300	2.80	NA	2.09	3.34
1035	10	300	2.80	3.70	2.61	3.5
1067	8	300	2.80	NA	2.02	3.24
1067	10	300	2.80	3.70	2.53	3.5
1085	8	300	2.80	NA	1.99	3.19
1085	10	300	2.80	3.70	2.49	3.5
1125	8	300	2.80	NA	1.92	3.07
1125	10	300	2.80	3.70	2.40	3.5
1200	8	300	2.80	NA	1.80	2.88
1200	10	300	2.80	3.60	2.25	3.5

Rated Pressure = Maximum allowable operating internal pressure

Test Pressure = Maximum internal pressure each pipe is tested to during manufacturing

Note: For further sizes and greater pressures please contact your local Steel Mains Regional Sales Office.

SINTAJOINT & SINTALOCK JOINT

RATED PRESSURES

Pipe OD mm	Wall thickness mm	Material MYS MPa	SINTAJOINT		SINTALOCK	
			RRJ-S rated pressure MPa	RRJ-D rated pressure MPa	Type 1 rated pressure MPa	Type 2 rated pressure MPa
1219	8	300	2.80	NA	1.77	2.84
1219	9	300	2.80	NA	1.99	3.19
1219	10	300	2.80	3.54	2.21	3.5
1283	8	300	2.69	NA	1.68	2.69
1283	10	300	2.80	3.37	2.10	3.37
1290	8	300	2.68	NA	1.67	2.68
1290	10	300	2.80	3.35	2.09	3.35
1404	10	300	NA	3.08	1.92	3.08
1404	12	300	NA	3.69	NA	3.5
1422	10	300	NA	3.04	1.90	3.04
1440	10	300	NA	3.00	NA	3.00
1440	12	300	NA	3.60	NA	3.5
1451	10	300	NA	2.98	NA	2.98
1451	12	300	NA	3.57	NA	3.5
1500	10	300	NA	2.88	NA	2.88
1500	12	300	NA	3.46	NA	3.46
1575	10	300	NA	2.74	NA	2.74
1575	12	300	NA	3.29	NA	3.29
1600	12	300	NA	3.24	NA	3.24
1626	12	300	NA	3.19	NA	3.19
1750	12	300	NA	2.96	NA	2.96
1829	12	300	NA	2.83	NA	2.83

Rated Pressure = Maximum allowable operating internal pressure

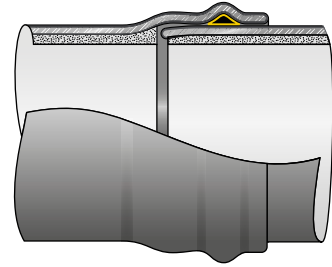
Test Pressure = Maximum internal pressure each pipe is tested to during manufacturing

Note: For further sizes and greater pressures please contact your local Steel Mains Regional Sales Office.

SINTAKOTE JOINTING



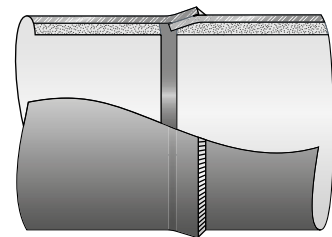
SINTAJOINT



Steel Mains SINTAJOINT, rubber ring joint, features:

- Extremely fast installation speeds over welded joints.
- Speedier backfilling over welded joints as this can be done immediately after the joint has been laid and checked.
- Available from 324 - 1829mm outside diameter.
- Each joint provides angular deflection of up to approximately 3° , dependent on diameter.

SPHERICAL SLIP-IN JOINT

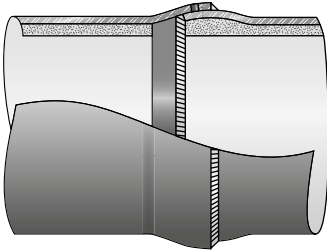


Spherical slip-in Joints are:

- Available in outside diameters ranging from 168 - 1422mm.
- Available for wall thicknesses up to 12mm.
- Allow angular deflections of up to 3° dependent on diameter.
- Can generally weld internally above 813mm outside diameter.

SINTAKOTE JOINTING

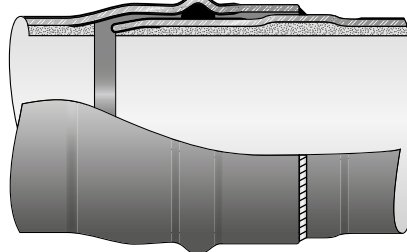
BALL & SOCKET JOINT



Ball and socket joints are:

- Available in outside diameters from 900 to 2159mm.
- Available for wall thicknesses up to 20mm.
- Allow angular deflections of up to 3° for all diameters and wall thicknesses for each joint prior to welding.
- Welding comprises internal and external welds.
- Each joint has a pneumatic test hole for checking joint integrity.

SINTALOCK RUBBER RING JOINT—TYPE I

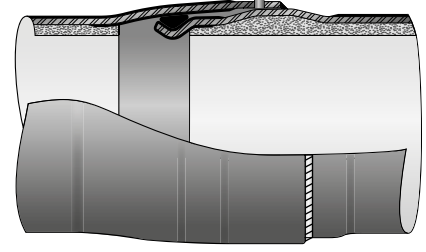


Steel Mains SINTALOCK rubber ring joint—Type I consists of a rubber ring joint and external fillet weld. SINTALOCK manages to combine the advantages of RRJ's with those of welded joints.

SINTALOCK rubber ring joint
—Type I offers:

- Structural integrity, similar to that of a welded joint.
- Provides fast installation speeds comparable to SINTAJOINT.
- Removes the need to enter pipes for welding or lining reinstatement.
- Eliminates or reduces the need for thrust blocks.
- Rated pressures range from 1.6MPa - 5.0MPa.
- Angular deflection up to 1.1°, dependent on diameter.
- Will suit wall thicknesses of ≤ 10 mm.
- Available for 324 - 1440mm outside diameters.

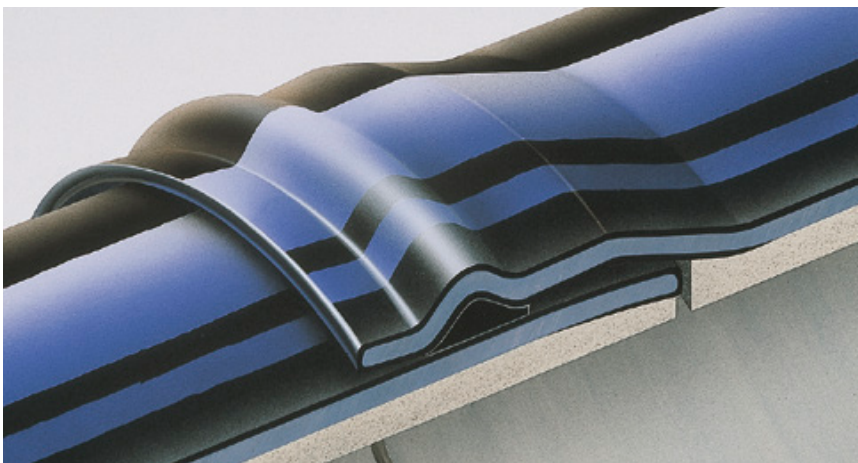
SINTALOCK RUBBER RING JOINT—TYPE II



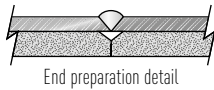
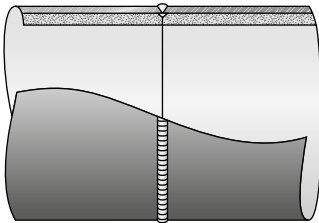
Steel Mains SINTALOCK rubber ring joint—Type II consists of a rubber ring joint and external fillet weld. SINTALOCK manages to combine the advantages of RRJ's with those of welded joints.

SINTALOCK rubber ring joint
—Type II offers:

- Structural integrity, similar to that of a welded joint.
- Provides fast installation speeds comparable to SINTAJOINT.
- Removes the need to enter pipes for welding or lining reinstatement.
- Eliminates or reduces the need for thrust blocks.
- Rated pressures range from 1.6MPa - 5.0MPa.
- Angular deflection up to 1.1°, dependent on diameter.
- Will suit wall thicknesses of ≤ 10 mm.
- Available for 324 - 1440mm outside diameters.



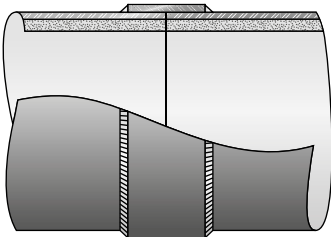
PLAIN BUTT JOINT



Plain butt pipe joints:

- May be satisfactorily welded from one side using a root fill and hot-pass method.
- A full penetration weld is required for this joint.
- This method is particularly useful for small diameter pipes where internal reinstatement of the cement mortar lining cannot be performed by hand.

BUTT JOINT WITH COLLAR



Butt joints with collars:

- Are often used for closing lengths
- Are used to aid with field alignment as the weld collar assists alignment.
- Square end preparation is required for this joint.
- Weld collars are supplied loose in one or two sections.
- Can also be used for smaller diameter pipes to eliminate internal gaps in cement mortar lining.

FLANGED JOINTS

Flanged joints are completely rigid and should not be used for applications where movement of the pipeline is expected, unless special provision is made to accommodate it by, for example, the inclusion of expansion joints.

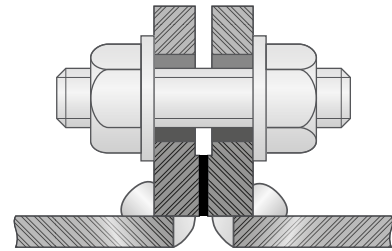
Flanged joints are used mainly for above ground applications, e.g. pumping stations, water and sewage treatment plants and for industrial pipework.

Commonly used at connections to valves or other areas where disassembly of the joint may be required for service or access. They are also used to facilitate the installation and removal of valves in SINTAJOINT and welded pipelines and for valve by-pass arrangements.

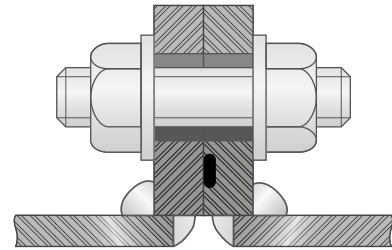
For assembly of flanged joints no field welding or other special equipment is required. Flange dimensions are normally in accordance with AS 4087 and are currently supplied in Class 16, Class 21 and Class 35.

Elastomeric gaskets are only recommended for use with Class 16 flanges, while compressed fibre gaskets are recommended for use with Class 21 and Class 35 flanges.

Note. Compressed fibre gaskets may be used with Class 16 flanges, however this requires the use of high strength bolts because of the higher initial compression necessary.



RAISED FACE
TYPE FLANGE



MATCHED O-RING
TYPE FLANGE

SINTAKOTE

FITTINGS



Steel Mains offers customers fittings fabrication at each of their manufacturing facilities around Australia.

All fittings are manufactured from detailed drawings and sign off on customer designs ensures the highest level of quality. Fabricated from pipe, the wall thickness, coating thickness and lining thickness are all in accordance with current pipe data (see pages 3 - 7).

Steel Mains is capable of producing steel:

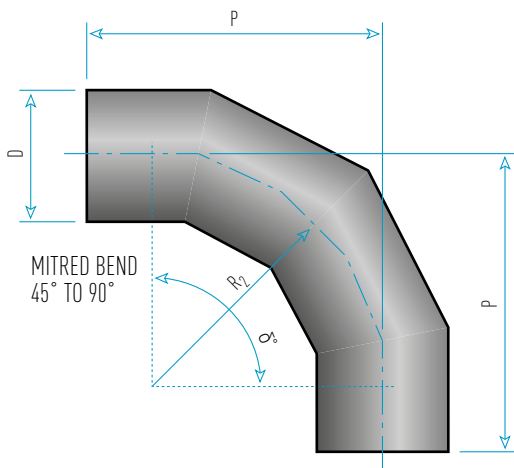
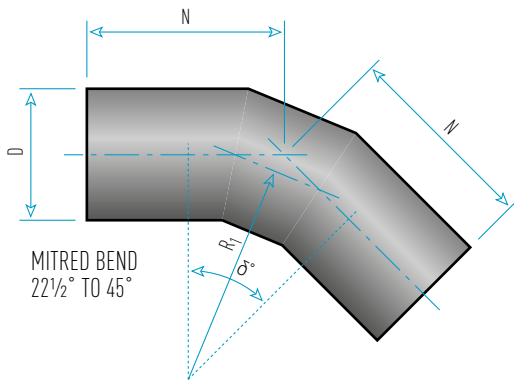
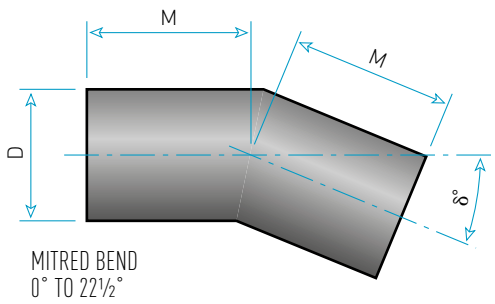
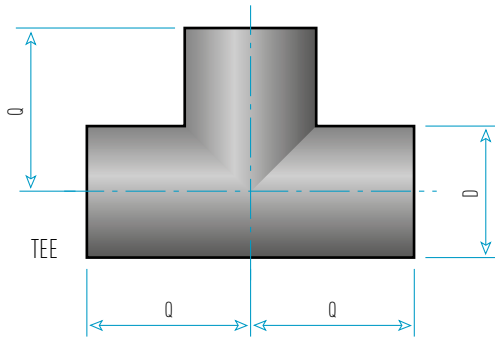
- Tees
- Angle Tees. Minimum 30 degrees
- Y-pieces. 45 degrees (Bifurcates)
- Mitred Bends. Common sizes 11¼, 22½, 45, 90 degrees
- Concentric/Eccentric tapers
- Dismantling Joints
- Expansion Joints
- Scours / Branches
- Reducers
- Steppers
- Flanges & Weld Collars
- Construction Access Manways
- Manholes

Example details of some fittings are shown on page 15.

SINTAJOINT FITTINGS

- Available in sizes 324 - 1829mm OD
- Fast installation speeds

Note. Welded joint fittings and flanged joint fittings are also available.



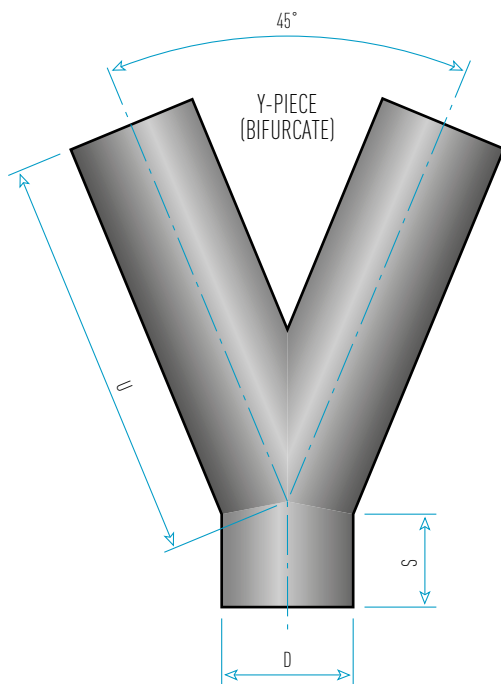
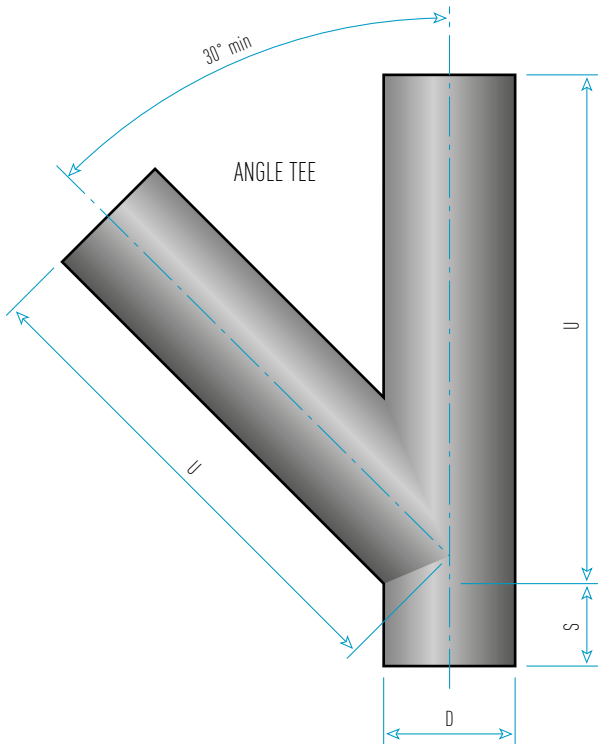
SINTAKOTE FITTINGS—CONFIGURATIONS

Diameter D mm	Mitred Bends					Tee Q mm
	Up to 22½° M mm	22½° < δ ≤ 45°		45° < δ ≤ 90°		
		N mm	R ₁ mm	P mm	R ₂ mm	
200	300	360	500	650	500	325
250	375	360	500	650	500	350
300	375	380	550	700	550	375
350	450	420	650	800	650	400
400	450	465	750	900	750	425
450	450	485	800	950	800	450
500	450	525	900	1,050	900	475
550	525	565	1,000	1,150	1,000	525
600	525	610	1,100	1,250	1,100	575
650	525	650	1,200	1,350	1,200	625
700	525	690	1,300	1,450	1,300	675
750	600	710	1,350	1,500	1,350	750
800	600	755	1,450	1,600	1,450	775
900	600	815	1,600	1,750	1,600	825
1000	750	900	1,800	1,950	1,800	875
1100	750	980	2,000	2,150	2,000	925
1200	825	1,065	2,200	2,350	2,200	975
1300	825	1,105	2,300	2,450	2,300	1,025
1400	825	1,190	2,500	2,650	2,500	1,075
1500	825	1,270	2,700	2,850	2,700	1,125
1600	900	1,355	2,900	3,050	2,900	1,175
1700	900	1,395	3,000	3,150	3,000	1,225
1800	900	1,500	3,250	3,400	3,250	1,275
1900	900	1,560	3,400	3,550	3,400	1,325
2000	900	1,645	3,600	3,750	3,600	1,375
2100	900	1,725	3,800	3,950	3,800	1,425

Note.

1. Mitred bend radii designed to restrict stress concentration at inside leg to max of 1.25 times hoop stress in pipe.
2. 'Q' dimension may need to be increased when crotch plate reinforcement or a flange is used.
3. Steel Mains is capable of manufacturing specific sizes.

SINTAKOTE FITTINGS



SINTAKOTE FITTINGS—CONFIGURATIONS

Diameter D mm	Angle Tee (30° minimum)		Y Piece (45°)	
	S mm	U mm	S mm	U mm
200	250	850	250	825
250	250	1,000	250	890
300	250	1,100	250	950
350	250	1,200	250	1,025
400	250	1,300	250	1,100
450	250	1,400	250	1,150
500	300	1,500	300	1,225
550	300	1,650	300	1,300
600	300	1,800	300	1,350
650	300	1,900	300	1,425
700	300	2,000	300	1,500
750	300	2,100	300	1,550
800	300	2,200	300	1,600
900	350	2,400	400	1,750
1000	400	2,600	400	1,850
1100	400	2,800	400	2,000
1200	500	3,000	500	2,150
1300	500	3,200	500	2,275
1400	500	3,400	500	2,400
1500	600	3,600	600	2,550
1600	600	3,800	600	2,675
1700	600	4,000	600	2,800
1800	600	4,200	600	2,950
1900	600	4,400	600	3,050
2000	600	4,600	600	3,200
2100	600	4,800	600	3,325

Steel Mains is capable of manufacturing specific sizes.



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