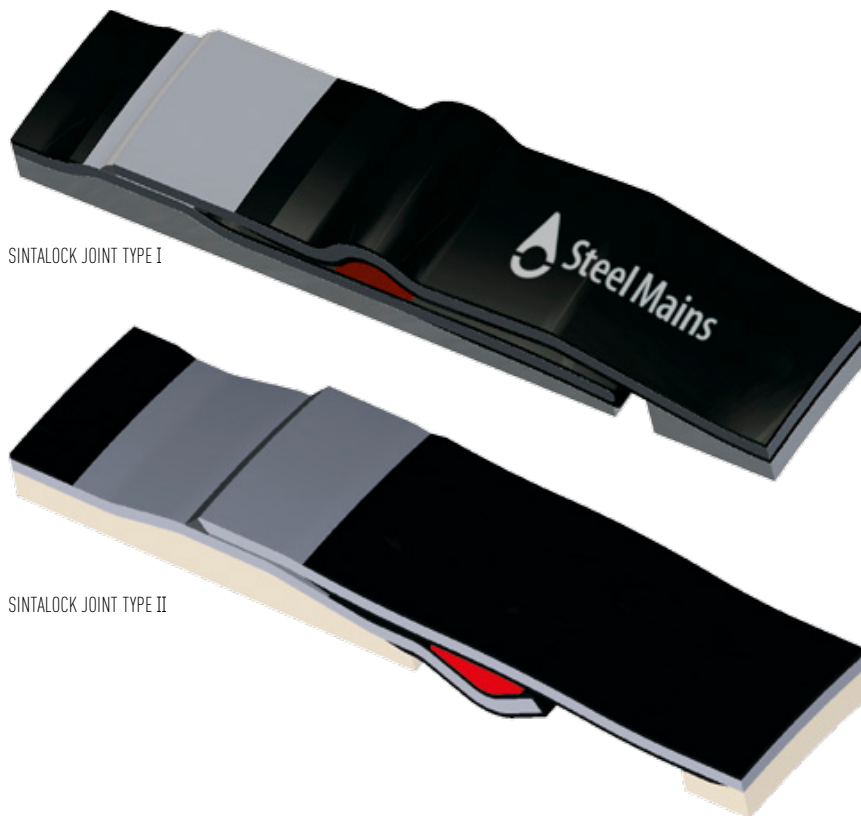


SINTALOCK® STEEL PIPELINE SYSTEM

DN 300 TO DN 1800. RESTRAINED RUBBER RING JOINT



SINTALOCK JOINT TYPE I

SINTALOCK JOINT TYPE II

FEATURES

Steel Mains SINTALOCK joint consists of a rubber ring joint and external site fillet weld

With no need to enter pipes for welding or lining reinstatement, safety is increased, corrosion protection enhanced and laying rates improved

SINTALOCK eliminates the need for thrust blocks, significantly reducing construction time

SINTALOCK is available for 324-1829mm outside diameter pipe

Type I and Type II joints are available dependant upon pipe diameter and rated pressure required

Each joint provides an angular deflection of up to 1.1°

Unique joint design means the lining is unaffected by the fillet welding process

Suitable for potable and non-potable applications

DESCRIPTION

Pressure rating

SINTALOCK Type I and Type II joints do not require internal welding or lining reinstatement and enables construction of a fully end restrained pipeline without the need for concrete thrust blocks.

This is a significant improvement on welded joints as it eliminates the safety issues associated with entry.

The pressure rating of the SINTALOCK Joint Type I is 45% Yield Strength and a maximum of 4.25MPa rated pressure (RP) for 300MPa YS. This is a result of recalibrating the basis of the original design.

Following over five years of extensive research and development, Steel Mains has introduced a revolutionary, new joint technology - SINTALOCK Joint Type II.

The SINTALOCK Joint Type II is rated at a pressure corresponding to 72% Yield Strength and a maximum of 4.25MPa rated pressure (RP) for 300 MPa YS.

These advanced designs have outpaced the ability of Standards to define appropriate testing and therefore the rated pressure

of the Sintalock joints are based on extensive testing and research by Steel Mains.

A welded rubber ring joint doesn't fall under the criteria for a type test for an elastomeric seal joint (Australian Standard AS1579 clause 4.4.3) or the weld gap criteria of the welded joints.

Physical fatigue testing as well as finite element analysis on a range of wall thickness and pipe diameters have been performed to determine the joint configuration and allowable operating pressures.

The pressure rating of both joints are based on worst case assumptions for operating conditions of the pipeline. Increased pressure ratings for Sintajoint Type I are possible for specific operating conditions. Please consult Steel Mains for further advice.

TECHNICAL DATA

Size Range 324 to 1829mm

Rated Pressures Up to 5.0MPa*

Temperature Range -40° to 70°C

End Connections AS 1579 - Arc-welded steel pipes and fittings for water and wastewater

Standards AS 1579 - Arc-welded steel pipes and fittings for water and wastewater**

Certifications

Certified to AS/NZS 4020 - Suitable for contact with drinking water

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SINTALOCK JOINT RATED PRESSURES

Pipe OD mm	Wall thickness mm	Material YS MPa	SINTALOCK rated pressures	
			Type I MPa	Type II MPa
324	4.5	300	3.75	NA
324	5	300	4.17	NA
324	6	300	4.25	NA
337	4.5	300	3.61	NA
337	5	300	4.01	NA
337	6	300	4.25	NA
356	4.5	300	3.41	NA
356	5	300	3.79	NA
356	6	300	4.25	NA
406	4.5	300	2.99	NA
406	5	300	3.33	NA
406	6	300	3.99	NA
419	4.5	300	2.90	NA
419	5	300	3.22	NA
419	6	300	3.87	NA
457	4.5	300	2.66	NA
457	5	300	2.95	NA
457	6	300	3.54	NA
457	8	300	4.25	NA
502	4.5	300	2.42	3.87
502	5	300	2.69	4.25
502	6	300	3.23	4.25
502	8	300	4.25	4.25
508	4.5	300	2.39	3.83
508	5	300	2.66	4.25
508	6	300	3.19	4.25
508	8	300	4.25	4.25
559	4.5	300	2.17	3.48
559	5	300	2.42	3.86
559	6	300	2.90	4.25
559	8	300	3.86	4.25

Pipe OD mm	Wall thickness mm	Material YS MPa	SINTALOCK rated pressures	
			Type I MPa	Type II MPa
610	4.5	300	1.99	3.19
610	5	300	2.21	3.54
610	6	300	2.66	4.25
610	8	300	3.54	4.25
610	10	300	4.25	4.25
648	4.5	300	1.88	3.00
648	5	300	2.08	3.33
648	6	300	2.50	4.0
648	8	300	3.33	4.25
648	10	300	4.17	4.25
660	4.5	300	1.84	2.95
660	5	300	2.05	3.27
660	6	300	2.45	3.5
660	8	300	3.27	4.25
660	10	300	4.09	4.25
700	4.5	300	1.74	2.78
700	5	300	1.93	3.09
700	6	300	2.31	3.70
700	8	300	3.09	4.25
700	10	300	3.80	4.25
711	5	300	1.90	3.04
711	6	300	2.28	3.65
711	8	300	3.04	4.25
711	10	300	3.80	4.25
762	5	300	1.77	2.83
762	6	300	2.13	3.40
762	8	300	2.83	4.25
762	10	300	3.54	4.25

Pipe OD mm	Wall thickness mm	Material YS MPa	SINTALOCK rated pressures	
			Type I MPa	Type II MPa
813	5	300	1.66	2.66
813	6	300	1.99	3.19
813	7	300	2.32	3.72
813	8	300	2.66	4.25
813	10	300	3.32	4.25
914	6	300	1.77	2.84
914	7	300	2.07	3.31
914	8	300	2.36	3.78
914	10	300	2.95	4.25
960	6	300	1.69	2.70
960	8	300	2.25	3.60
960	10	300	2.81	4.25
972	6	300	1.67	2.67
972	8	300	2.22	3.56
972	10	300	2.78	4.25
1016	8	300	2.13	3.40
1016	10	300	2.66	4.25
1035	8	300	2.09	3.34
1035	10	300	2.61	4.17
1067	8	300	2.02	3.24
1067	10	300	2.53	4.05
1085	8	300	1.99	3.19
1085	10	300	2.49	3.98
1124	8	300	1.92	3.07
1124	10	300	2.40	3.5
1200	8	300	1.80	2.88
1200	10	300	2.25	3.60
1219	8	300	1.77	2.84
1219	9	300	1.99	3.19
1219	10	300	2.21	3.54

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SINTALOCK JOINT RATED PRESSURES CONTINUED

Pipe OD mm	Wall thickness mm	Material YS MPa	SINTALOCK rated pressures	
			Type I MPa	Type II MPa
1283	8	300	1.68	2.69
1283	10	300	2.10	3.37
1290	8	300	1.67	2.68
1290	10	300	2.09	3.35
1404	10	300	1.92	3.08
1404	12	300	NA	3.69
1422	10	300	1.90	3.04
1422	12	300	NA	3.65
1440	10	300	1.88	3.00
1440	12	300	NA	3.60
1451	10	300	1.86	2.98
1451	12	300	NA	3.57
1500	10	300	NA	2.88
1500	12	300	NA	3.46
1575	12	300	NA	3.29
1600	12	300	NA	3.24
1626	12	300	NA	3.19
1750	12	300	NA	2.96

* For further sizes and greater pressures please contact your local Steel Mains Regional Sales Office

SINTALOCK Joint Type I maximum allowed operating hoop stress is 45% of the Yield Strength (YS) for 300MPa YS pipe steel

SINTALOCK Joint Type II is rated at a pressure corresponding to 72% Yield Strength with a maximum of 4.25MPa Rated Pressure (RP) for 300 MPa YS pipe steel

** SINTALOCK Joint Type II StandardsMark™ approval pending



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