



**IRON STRONG**

McWaneDuctile.com

A large, detailed close-up photograph of a mechanical joint pipe flange. The flange is dark grey, cast metal with a rough, industrial texture. It has a central circular opening and several smaller circular holes around its perimeter. The background is a blurred industrial setting with wooden surfaces.

# **MECHANICAL JOINT PIPE**

**3"-24"**



McWane Ductile is a division of McWane, Inc.

**For Generations**

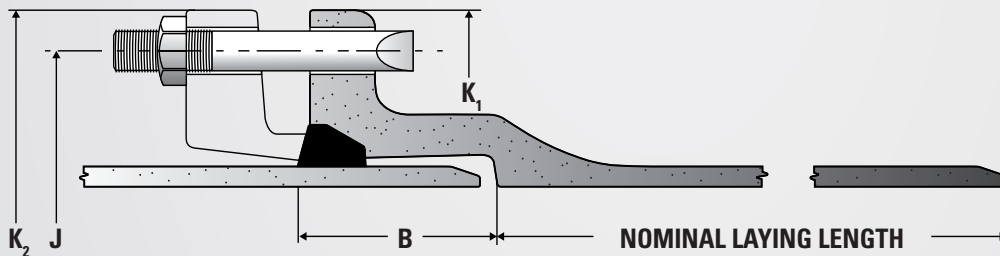
# MECHANICAL JOINT PIPE FROM MCWANE DUCTILE

Mechanical Joint pipe is manufactured by McWane Ductile in 3" through 24" diameters and available in standard and pressure classes.

Mechanical Joints have been utilized with iron pipe for nearly 100 years and were introduced as an alternative to bell and spigot joint and lead joints. McWane Ductile's Mechanical Joint provides deflections from 2 to 8 degrees, depending on pipe diameter.

McWane Ductile offers Mechanical Joint pipe with various lining options, including single and double thickness cement, Protecto 401 or bare. Exterior coating options include standard asphaltic paint, zinc or bare. Please contact your local sales representative for more information.

## DETAILS & DIMENSIONS

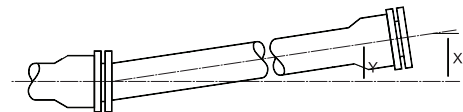


PIPE SIZE IN.	PIPE THICKNESS IN.		OUTSIDE DIAMETER IN.	*DIMENSIONS IN.					BOLTS		BELL WEIGHT LB.	GLAND** BOLTS GASKET WEIGHT LB.
	FROM	TO		B	J	K <sub>1</sub>	K <sub>2</sub>	NO.	SIZE IN.	LEN IN.		
3	.25	.40	3.96	2.50	6.19	7.62	7.69	4	5/8	3	11	7
4	.26	.41	4.80	2.50	7.50	9.06	9.12	4	3/4	3-1/2	16	10
6	.25	.43	6.90	2.50	9.50	11.06	11.12	6	3/4	3-1/2	18	16
8	.27	.45	9.05	2.50	11.75	13.31	13.37	6	3/4	4	24	25
10	.29	.47	11.10	2.50	14.00	15.62	15.62	8	3/4	4	31	30
12	.31	.49	13.20	2.50	16.25	17.88	17.88	8	3/4	4	37	40
14	.33	.51	15.30	3.50	18.75	20.25	20.25	10	3/4	4-1/2	61	45
16	.34	.52	17.40	3.50	21.00	22.50	22.50	12	3/4	4-1/2	74	55
18	.35	.53	19.50	3.50	23.25	24.75	24.75	12	3/4	4-1/2	85	65
20	.36	.54	21.60	3.50	25.50	27.00	27.00	14	3/4	4-1/2	98	85
24	.38	.56	25.80	3.50	30.00	31.50	31.50	16	3/4	5	123	105

\* Nominal laying length is 18 ft. \*\* Weight shown for regular grey cast iron follower gland, corton bolts and rubber gasket.

NOM. INSIDE DIAM. IN.	WALL THICKNESS		DIMENSIONS-INCHES		APPROPRIATE WEIGHT-POUNDS			
	ANSI THICK. CLASS	T IN INCHES	A GLAND O.D.	B PIPE O.D.	BELL METAL ONLY	PIPE BARREL PER FT.	18 FT LAYING LENGTH	
							PER* LENGTH	PER* FT.
3	54	.34	5.80	3.96	7	11.8	220	12.2
	55	.37	5.80	3.96	7	12.8	235	13.2
	56	.40	5.80	3.96	7	13.7	255	14.0
4	51	.26	6.86	4.80	9	11.3	210	11.8
	52	.29	6.86	4.80	9	12.6	235	13.0
	53	.32	6.86	4.80	9	13.8	255	14.2
	54	.35	6.86	4.80	9	15.0	280	15.4
	55	.38	6.86	4.80	9	16.1	300	16.6
	56	.41	6.86	4.80	9	17.3	320	17.8
	50	.25	8.75	6.90	11	16.0	300	16.6
6	51	.28	8.75	6.90	11	17.8	330	18.3
	52	.31	8.75	6.90	11	19.6	365	20.2
	53	.34	8.75	6.90	11	21.4	395	22.0
	54	.37	8.75	6.90	11	23.2	430	23.8
	55	.40	8.75	6.90	11	25.0	460	25.6
56	.43	8.75	6.90	11	26.7	490	27.2	
8	50	.27	11.05	9.05	17	22.8	425	23.7
	51	.30	11.05	9.05	17	25.2	470	26.0
	52	.33	11.05	9.05	17	27.7	515	28.6
	53	.36	11.05	9.05	17	30.1	560	31.0
	54	.39	11.05	9.05	17	32.5	600	33.3
	55	.42	11.05	9.05	17	34.8	645	35.7
	56	.45	11.05	9.05	17	37.2	685	38.0
	10	50	.29	13.15	11.10	24	30.1	565
51		.32	13.15	11.10	24	33.2	620	34.4
52		.35	13.15	11.10	24	36.2	675	37.4
53		.38	13.15	11.10	24	39.2	730	40.4
54		.41	13.15	11.10	24	42.1	780	43.3
55		.44	13.15	11.10	24	45.1	835	46.3
56		.47	13.15	11.10	24	48.0	890	49.2
12	50	.31	15.30	13.20	29	38.4	720	39.8
	51	.34	15.30	13.20	29	42.0	785	43.4
	52	.37	15.30	13.20	29	45.6	850	47.0
	53	.40	15.30	13.20	29	49.2	915	50.7
	54	.43	15.30	13.20	29	52.8	980	54.2
	55	.46	15.30	13.20	29	56.3	1040	57.8
	56	.49	15.30	13.20	29	59.9	1105	61.4
14	50	.33	20.25	15.30	61	47.5	915	50.9
	51	.36	20.25	15.30	61	51.7	990	55.1
	52	.39	20.25	15.30	61	55.9	1065	59.3
	53	.42	20.25	15.30	61	60.1	1145	63.5
	54	.45	20.25	15.30	61	64.2	1215	67.6
	55	.48	20.25	15.30	61	68.4	1290	71.8
16	50	.34	22.25	17.40	74	55.8	1080	59.9
	51	.37	22.25	17.40	74	60.9	1165	64.7
	52	.40	22.25	17.40	74	65.4	1250	69.5
	53	.43	22.25	17.40	74	70.1	1335	74.2
	54	.46	22.25	17.40	74	74.9	1420	79.0
	55	.49	22.25	17.40	74	79.7	1510	83.8
	56	.52	22.25	17.40	74	84.4	1595	88.5

NOM. INSIDE DIAM. IN.	WALL THICKNESS		DIMENSIONS-INCHES		APPROPRIATE WEIGHT-POUNDS			
	ANSI THICK. CLASS	T IN INCHES	A GLAND O.D.	B PIPE O.D.	BELL METAL ONLY	PIPE BARREL PER FT.	18 FT LAYING LENGTH	
							PER* LENGTH	PER* FOOT
18	50	.35	24.75	19.50	85	64.4	1245	69.1
	51	.38	24.75	19.50	85	69.8	1340	74.5
	52	.41	24.75	19.50	85	75.2	1440	79.9
	53	.44	24.75	19.50	85	80.6	1535	85.3
	54	.47	24.75	19.50	85	86.0	1635	90.7
	55	.50	24.75	19.50	85	91.3	1730	96.0
	56	.53	24.75	19.50	85	96.7	1825	101.4
20	50	.36	27.00	21.60	98	73.5	1420	78.9
	51	.39	27.00	21.60	98	79.5	1530	84.9
	52	.42	27.00	21.60	98	85.5	1635	90.9
	53	.45	27.00	21.60	98	91.5	1745	96.9
	54	.48	27.00	21.60	98	97.5	1855	103.0
	55	.51	27.00	21.60	98	103.4	1960	108.8
24	50	.38	31.50	25.80	123	92.9	1795	99.7
	51	.41	31.50	25.80	123	100.1	1925	106.9
	52	.44	31.50	25.80	123	107.3	2055	114.1
	53	.47	31.50	25.80	123	114.4	2180	121.2
	54	.50	31.50	25.80	123	121.6	2310	128.4
	55	.53	31.50	25.80	123	128.8	2440	135.6
56	.56	31.50	25.80	123	135.9	2570	142.7	

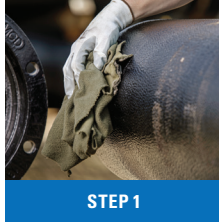


### MECHANICAL JOINT PIPE MAXIMUM ALLOWABLE JOINT DEFLECTION

PIPE SIZE IN.	Y-MAXIMUM JOINT DEFLECTION IN DEGREES	X DEFLECTION IN INCHES 18 FT. LENGTH	APPROXIMATE RADIUS IN FT. OF CURVE PRODUCED BY SUCCESSION OF JOINTS 18 FT. LENGTH
6	7°-7'	27	145
8	5°-21'	20	195
10	5°-21'	20	195
12	5°-21'	20	195
14	3°-35'	13.5	285
16	3°-35'	13.5	285
18	3°-0'	11	340
20	3°-0'	11	340
24	2°-23'	9	450

# MECHANICAL JOINT ASSEMBLY INSTRUCTIONS

**STEP 1.** Clean the bell socket and spigot or plain end. Lubricate both the gasket and plain end by brushing on an approved pipe lubricant.



**STEP 2.** Place the gland on the plain end with the lip extension toward the plain end. Place the gasket on the plain end with the narrow edge facing the plain end.



**STEP 3.** Insert the plain end into the bell and press the gasket into the bell recess. Push the gland toward the socket and center it around the pipe with the gland lip against the gasket.



**STEP 4.** Insert and tighten the bolts. It is important to maintain the same distance between the gland and the bell face at all times. This is best done by alternating side to side and top to bottom, while tightening the bolts.



**NOTE:** Achieving the recommended bolt torque, particularly with large diameter pipe, may require repeating the process up to 5 times or more. Recommended bolt torque ranges are as follows:

PIPE SIZE IN.	BOLT DIAMETER IN.	NUT ACROSS FLATS IN.	WRENCH LENGTH IN.	TORQUE RANGE FOOT LBS.
3	5/8	1-1/16	8	45 to 60
4-24	3/4	1-1/4	10	75 to 90

## STANDARDS APPLICABLE TO DUCTILE IRON PIPE AND FITTINGS

<b>THICKNESS DESIGN OF DUCTILE IRON PIPE</b>	ANSI/AWWA C150/A21.50
<b>DUCTILE IRON PIPE FOR WATER AND OTHER LIQUIDS</b>	ANSI/AWWA C151/A21.51, FEDERAL WWP421D, GRADE C
<b>DUCTILE IRON PIPE FOR GRAVITY FLOW SERVICE</b>	ANSI/ASTM A746
<b>DUCTILE IRON FITTINGS FOR WATER AND OTHER LIQUIDS (3 in. through 36 in.)</b>	ANSI/AWWA C110/A21.10
<b>DUCTILE IRON COMPACT FITTINGS (3 in. through 24 in.)</b>	ANSI/AWWA C153/A21.53
<b>FLANGED FITTINGS</b>	ANSI/AWWA C110/A21.10, ANSI B16.1
<b>DUCTILE IRON PIPE WITH THREADED FLANGES</b>	ANSI/AWWA C115/21.15
<b>COATINGS AND LININGS</b>	
Asphaltic	ANSI/AWWA C151/A21.51, ANSI/AWWA C110/A21.10, ANSI/AWWA C153/A21.53
Cement Lining	ANSI/AWWA C104/A21.4
Various Epoxy Linings and Coatings	MANUFACTURER'S STANDARD
Exterior Polyethylene Encasement	ANSI/AWWA C105/A21.5
<b>JOINTS — PIPE AND FITTINGS</b>	
Push-On and Mechanical Rubber-Gasket Joints	ANSI/AWWA C111/A21.11, FEDERAL WWP421D
Flanged	ANSI/AWWA C115/A21.15, ANSI B16.1
Grooved and Shouldered	ANSI/AWWA C606
<b>PIPE THREADS</b>	ANSI B2.1
<b>INSTALLATION</b>	ANSI/AWWA C600



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