
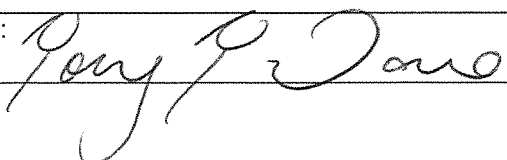


# CONTRACTOR SUBMITTAL FORM

<b>Project Name:</b> Navajo Gallup Water Supply Project Reach 26.3	<input checked="" type="checkbox"/> <b>M</b> (Materials)	<b>Submittal No.</b>  M004
<b>SMA Project No:</b> 6921307	<input type="checkbox"/> <b>T</b> (Testing)	
<b>Date:</b> 06/27/2019	<input type="checkbox"/> <b>A</b> (Administrative)	
<b>Contractor:</b> Navajo Engineering and Construction Authority	<b>No. of Copies:</b> 1	

<b>Supplier:</b> Core & Main	<b>Manufacturer:</b> Star Pipe
<b>Specification No.:</b> 33 11 13 – B. 3. a-d. and f 1)a)	<b>Drawing No.:</b> DT-24, DT-25
<b>Bid Item No(s):</b> 42	
<b>Submittal Checklist No(s):</b> M208	
<b>Product Description:</b> 4", 6", 8" Mechanical Joint Fittings with Tnemec N104 Coating.  Used at Chlorination Building	
<b>Are there any deviations from the Contract Documents?</b> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <b>Explain:</b>	
<b>Contractor's certification that product meets requirements of Contract Documents:</b> <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Certified with variations as noted on shop drawings and/or attached sheets.	
<b>Signed:</b>  Quentin Benally	<b>Date:</b> 06/28/2019

<b>Engineer's Comments:</b> <input checked="" type="checkbox"/> No Exception Taken <input type="checkbox"/> Approved as Corrected <input type="checkbox"/> Exceptions as Noted <input type="checkbox"/> Submittal Rejected <input type="checkbox"/> Revise and Resubmit to Engineer <input type="checkbox"/> Contractor to Submit Specified Information	Review is limited to check for compliance with design concept. No changes from provisions of Contract Documents are intended and Contractor remains responsible for compliance with revisions therein.  The Contractor is solely responsible for quantities; correctness of dimensions; verification of physical interrelation of elements of the work as required by the drawings and specifications and by field determination; fabrication procedures, construction methods, techniques and sequences. This review does not relieve the Contractor from these responsibilities.  Non-conformities and errors detected have been noted but such markings, or lack thereof, shall not relieve the Contractor from compliance with all requirements of the contract drawings and specifications.
	<b>Signed:</b>  <b>Date:</b> 7/9/19



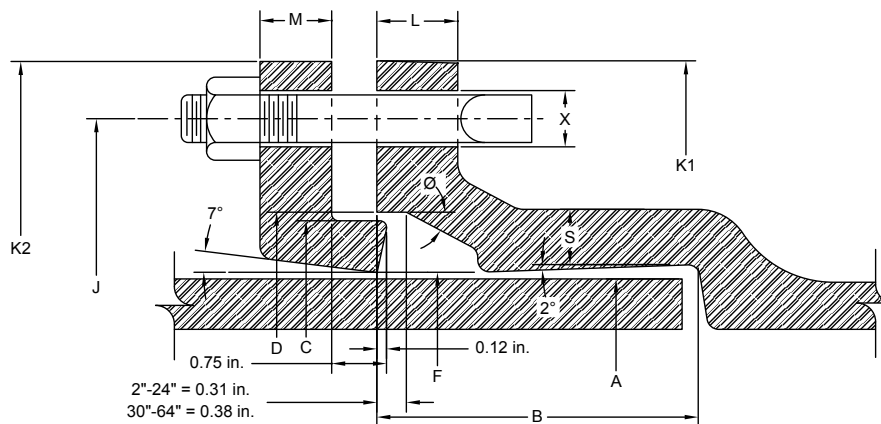
# Compact MJ Fittings

ANSI/AWWA C153/A21.53

## 2" - 64" DUCTILE IRON MECHANICAL JOINT COMPACT FITTINGS

### GENERAL SPECIFICATIONS

<b>MATERIAL:</b>	Ductile Iron per ASTM A536
<b>PRESSURE:</b>	350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
<b>TESTING:</b>	In accordance with ANSI/AWWA C153/A21.53 and UL requirements
<b>LAYING LENGTH:</b>	In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
<b>DEFLECTION:</b>	2"- 4"=8°   6"-7"=7°   8"-12"=5°   14"-16"=3 1/2°   18"-24"=3°   30"-48"=2°
<b>WEIGHTS:</b>	Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
<b>FLANGES:</b>	Flanged ends on fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges
<b>CEMENT LINING:</b>	In accordance with ANSI/AWWA C104/A21.4 -- size 2" - 3" single thickness and sizes 4" - 64" double thickness
<b>COATING:</b>	Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
<b>GASKETS:</b>	SBR in accordance with ANSI/AWWA C111/A21.11 (see pg. 16)
<b>T-BOLTS/NUTS:</b>	Low alloy steel in accordance with ANSI/AWWA C111/A21.11 (see pg. 18)
<b>APPROVALS:</b>	3" - 12" UL/ULC Listed   3" and greater are UL/NSF-61   3" - 16" FM APPROVED. Please consult factory for detail listing and approvals.
<b>DIMENSIONS:</b>	All dimensions are in inches unless noted otherwise.



### MECHANICAL JOINT DIMENSIONS

NOM. SIZE	A DIA.	B	C DIA.	D DIA.	F DIA.	J DIA.	K1 DIA.	K2 DIA.	L	M	S	Ø	X DIA.	BOLTS	
														SIZE	NO.
2	2.50	2.50	3.39	3.50	2.61	4.75	6.19	6.25	0.58	0.62	0.36	28°	3/4	5/8 x 3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.39	28°	3/4	5/8 x 3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.39	28°	7/8	3/4 x 3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.43	28°	7/8	3/4 x 3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.45	28°	7/8	3/4 x 3 1/2	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.47	28°	7/8	3/4 x 3 1/2	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.49	28°	7/8	3/4 x 3 1/2	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	0.79	1.25	0.55	28°	7/8	3/4 x 4	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	0.85	1.31	0.58	28°	7/8	3/4 x 4	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.68	28°	7/8	3/4 x 4	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.69	28°	7/8	3/4 x 4	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	28°	7/8	3/4 x 4 1/2	16
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	0.82	20°	1 1/8	1 x 5 1/2	20
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	20°	1 1/8	1 x 5 1/2	24
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.25	20°	1 3/8	1 1/4 x 6	28
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.35	20°	1 3/8	1 1/4 x 6	32
54	{Fittings & Dimensions Available On Request }														
60															
64															

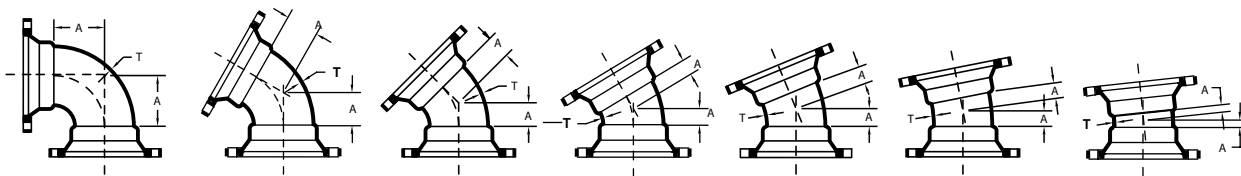


STAR® PIPE PRODUCTS

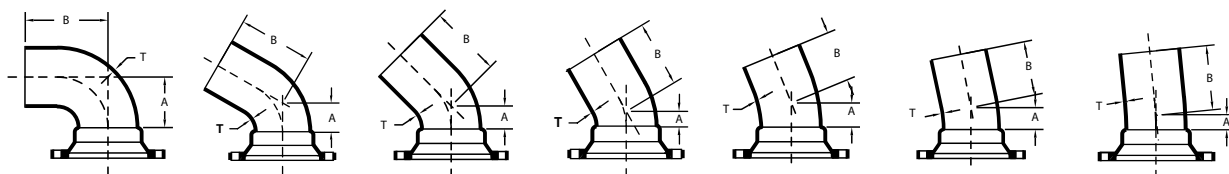


## Compact MJ Fittings

ANSI/AWWA C153/A21.53



MJ x MJ BENDS		90° MJ x MJ BENDS (1/4)		60° MJ x MJ BENDS (1/6)		45° MJ x MJ BENDS (1/8)		30° MJ x MJ BENDS (1/12)		22 1/2° MJ x MJ BENDS (1/16)		11 1/4° MJ x MJ BENDS (1/32)		5 3/8° MJ x MJ BENDS (1/64)	
NOM. SIZE	T	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)
2	0.30	3.25	14	-	-	1.80	13	-	-	1.00	9	1.00	8	-	-
3	0.33	3.50	23	-	-	1.50	21	-	-	1.00	16	1.00	14	-	-
4	0.34	4.00	27	-	-	2.00	23	-	-	1.50	18	1.25	16	-	-
6	0.36	5.00	39	-	-	3.00	32	-	-	2.00	32	1.50	30	-	-
8	0.38	6.50	57	-	-	3.50	46	-	-	2.50	46	1.75	42	-	-
10	0.40	7.50	89	-	-	4.50	70	-	-	3.00	64	2.00	58	-	-
12	0.42	9.00	108	-	-	5.50	86	-	-	3.50	84	2.25	74	-	-
14	0.47	11.50	180	-	-	5.00	145	-	-	3.75	140	2.50	128	-	-
16	0.50	12.50	264	-	-	5.50	202	-	-	3.75	178	2.50	148	-	-
18	0.54	14.00	335	-	-	6.00	250	-	-	4.50	255	3.00	205	-	-
20	0.57	15.00	400	-	-	7.00	305	-	-	4.50	262	3.00	245	-	-
24	0.61	17.00	565	-	-	7.50	405	-	-	4.50	412	3.00	315	-	-
30	0.66	21.50	1005	13.50	843	11.50	798	9.75	692	6.75	665	4.75	568	-	-
36	0.74	24.50	1562	17.00	1350	11.50	1164	11.00	1080	7.75	960	5.00	840	5.00	825
42	0.82	29.25	2506	19.00	2150	14.00	1792	12.00	1465	9.00	1350	6.00	1319	6.00	1125
48	0.90	33.25	3045	21.00	2650	15.00	2390	13.25	2075	10.00	1886	6.50	1700	6.50	1600



MJ x PE BENDS		90° MJ x PE BENDS (1/4)			60° MJ x PE BENDS (1/6)			45° MJ x PE BENDS (1/8)			30° MJ x PE BENDS (1/12)			22 1/2° MJ x PE BENDS (1/16)			11 1/4° MJ x PE BENDS (1/32)			5 3/8° MJ x PE BENDS (1/64)		
NOM. SIZE	T	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
3	0.33	3.50	8.50	16	-	-	-	1.50	7.00	13	-	-	-	1.00	6.50	12	1.00	6.50	12	-	-	-
4	0.34	4.00	9.50	22	-	-	-	2.00	7.50	19	-	-	-	1.50	7.00	18	1.25	6.25	17	-	-	-
6	0.36	5.00	12.00	40	-	-	-	3.00	8.50	31	-	-	-	2.00	7.50	29	1.50	7.00	27	-	-	-
8	0.38	6.50	12.50	61	-	-	-	3.50	9.00	46	-	-	-	2.50	8.00	43	1.75	7.25	39	-	-	-
10	0.40	7.50	13.00	83	-	-	-	4.50	10.00	68	-	-	-	3.00	8.50	61	2.00	7.50	52	-	-	-
12	0.42	9.00	14.50	114	-	-	-	5.50	11.00	95	-	-	-	3.50	9.00	81	2.25	7.75	70	-	-	-
14	0.47	11.50	19.50	197	-	-	-	5.00	13.00	148	-	-	-	3.75	11.25	133	2.50	10.50	122	-	-	-
16	0.50	12.50	20.50	248	-	-	-	5.50	13.50	184	-	-	-	3.75	11.75	166	2.50	10.50	148	-	-	-
18	0.54	14.00	21.00	325	-	-	-	6.00	13.00	235	-	-	-	6.00	13.00	235	6.00	13.00	235	-	-	-
20	0.57	15.00	22.50	390	-	-	-	7.00	14.00	300	-	-	-	7.00	14.00	300	7.00	14.00	300	-	-	-
24	0.61	17.00	25.00	575	-	-	-	7.50	14.50	390	-	-	-	7.50	14.50	395	7.50	14.50	400	-	-	-
30	0.66	22.75	31.75	865	13.50	22.50	846	10.50	19.50	715	9.75	18.75	762	6.75	15.75	600	4.75	13.75	535	4.75	13.75	505
36	0.74	24.50	33.50	1355	-	-	-	12.00	21.00	1040	-	-	-	7.75	16.75	865	5.00	14.00	725	-	-	-
42	0.82	29.25	38.25	2055	-	-	-	14.00	23.00	1460	-	-	-	9.00	18.00	1200	6.00	15.00	1030	-	-	-
48	0.90	33.25	42.25	2805	-	-	-	15.00	24.00	1905	-	-	-	10.00	19.00	1575	6.50	15.50	1290	-	-	-





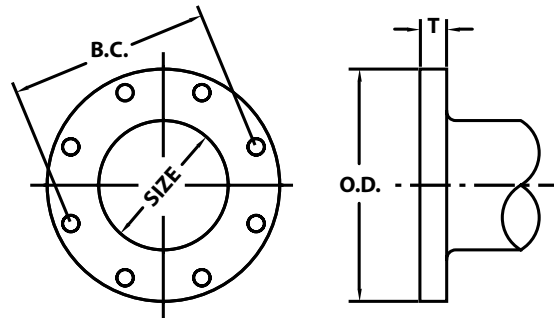
# Flanged Fittings

ANSI/AWWA C110/A21.10

## 1" - 64" DUCTILE IRON FLANGED FITTINGS

### GENERAL SPECIFICATIONS

<b>MATERIAL:</b>	Ductile iron per ASTM A536
<b>PRESSURE:</b>	250 PSI rating for 1" - 48" sizes and 150 PSI rating for 54" - 64"
<b>TESTING:</b>	In accordance with ANSI/AWWA C110/A21.10, UL and FM requirements
<b>LAYING LENGTH:</b>	2" - 48" sizes in accordance with ANSI/AWWA C110/A21.10 and ANSI B16.1 and 54" - 64" sizes in accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
<b>WEIGHTS:</b>	Are in pounds, unless noted otherwise and do not include accessories, cement lining and coatings
<b>DRILLING:</b>	In accordance with ANSI/AWWA C110/A21.10, ANSI/AWWA C153/A21.53 and ANSI B16.1 Class 125 Flanges
<b>CEMENT LINING:</b>	In accordance with ANSI/AWWA C104/A21.4 -- sizes 1"- 3" single thickness and sizes 4"- 64" double thickness
<b>COATING:</b>	Asphaltic seal coat inside in accordance with ANSI/AWWA C104/A21.4 and prime coat outside
<b>APPROVALS:</b>	4" - 12" Underwriters Laboratories Listed and Factory Mutual approved for 300 PSI rating 2" and greater are UL/NSF-61
<b>DIMENSIONS:</b>	All dimensions are in inches unless noted otherwise



FLANGE DETAILS							
	NOM. SIZE	O.D.	B.C.	T	BOLT HOLE DIA.	BOLTS	
						SIZE	NO.
★	1	4.25	3.12	0.44	0.62	1/2 x 2	4
★	1 1/2	5.00	3.88	0.56	0.62	1/2 x 2	4
★	2	6.00	4.75	0.62	0.75	5/8 x 2 1/4	4
★	2 1/2	7.00	5.50	0.69	0.75	5/8 x 2 1/2	4
	3	7.50	6.00	0.75	0.75	5/8 x 2 1/2	4
	4	9.00	7.50	0.94	0.75	5/8 x 3	8
★	5	10.00	8.50	0.94	0.88	3/4 x 3	8
	6	11.00	9.50	1.00	0.88	3/4 x 3 1/2	8
	8	13.50	11.75	1.12	0.88	3/4 x 3 1/2	8
	10	16.00	14.25	1.19	1.00	7/8 x 4	12
	12	19.00	17.00	1.25	1.00	7/8 x 4	12
	14	21.00	18.75	1.38	1.13	1 x 4 1/2	12
	16	23.50	21.25	1.44	1.13	1 x 4 1/2	16
	18	25.00	22.75	1.56	1.25	1 1/8 x 5	16
	20	27.50	25.00	1.69	1.25	1 1/8 x 5	20
	24	32.00	29.50	1.88	1.38	1 1/4 x 5 1/2	20
	30	38.75	36.00	2.12	1.38	1 1/4 x 6 1/2	28
	36	46.00	42.75	2.38	1.63	1 1/2 x 7	32
	42	53.00	49.50	2.62	1.63	1 1/2 x 7 1/2	36
	48	59.50	56.00	2.75	1.63	1 1/2 x 8	44
★	54	66.25	62.75	3.00	2.00	1 3/4 x 8 1/2	44
★	60	73.00	69.25	3.12	2.00	1 3/4 x 9	52
★	64	80.00	76.00	3.38	2.00	1 3/4 x 9	52



★Not Included in AWWA C110

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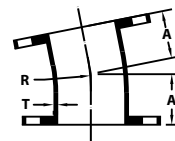
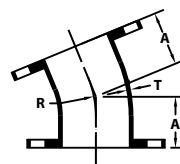
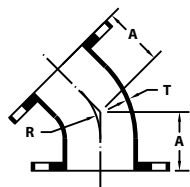
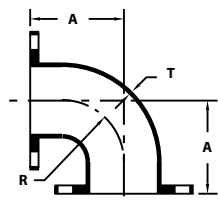
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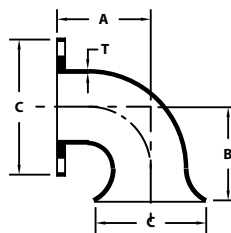
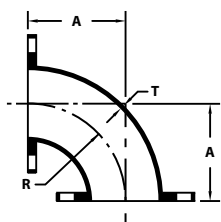


# Flanged Fittings

ANSI/AWWA C110/A21.10



FLANGED BENDS		90° FLANGED BENDS (1/4)			45° FLANGED BENDS (1/8)			22 1/2° FLANGED BENDS (1/16)			11 1/4° FLANGED BENDS (1/32)		
NOM. SIZE	T	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)
★ 2	0.31	4.50	3.00	14	2.50	2.41	12	2.50	6.04	12	2.50	12.69	12
★ 2 1/2	0.31	5.00	3.50	21	3.00	3.62	19	---	---	---	---	---	---
3	0.48	5.50	4.00	25	3.00	3.62	20	3.00	7.56	20	3.00	15.25	20
4	0.52	6.50	4.50	45	4.00	4.81	40	4.00	10.06	40	4.00	20.31	40
★ 5	0.88	7.50	5.50	52	4.50	6.04	45	---	---	---	---	---	---
6	0.55	8.00	6.00	65	5.00	7.25	55	5.00	15.06	55	5.00	30.50	55
8	0.60	9.00	7.00	105	5.50	8.44	90	5.50	17.62	90	5.50	35.50	90
10	0.68	11.00	9.00	165	6.50	10.88	130	6.50	22.62	135	6.50	45.69	135
12	0.75	12.00	10.00	235	7.50	13.25	195	7.50	27.62	205	7.50	55.81	205
14	0.66	14.00	11.50	290	7.50	12.06	220	7.50	25.12	225	7.50	50.75	225
16	0.70	15.00	12.50	370	8.00	13.25	280	8.00	27.62	285	8.00	55.81	285
18	0.75	16.50	14.00	450	8.50	14.50	325	8.50	30.19	335	8.50	60.94	335
20	0.80	18.00	15.50	580	9.50	16.88	430	9.50	35.19	435	9.50	71.06	435
24	0.89	22.00	18.50	900	11.00	18.12	630	11.00	37.69	640	11.00	76.12	645
30	1.03	25.00	21.50	1430	15.00	27.75	1120	15.00	57.81	1135	15.00	116.75	1150
36	1.15	28.00	24.50	2135	18.00	35.00	1755	18.00	72.88	1790	18.00	147.25	1805
42	1.28	31.00	27.50	3055	21.00	42.25	2600	21.00	88.00	2665	21.00	177.69	2680
48	1.42	34.00	30.50	4095	24.00	49.50	3580	24.00	103.06	3665	24.00	208.12	3695
★ 54	0.90	39.00	35.29	3740	20.50	41.05	2735	14.00	32.42	2260	12.00	30.81	2100
★ 60	0.94	43.00	---	4965	23.50	---	3790	14.00	---	2985	10.50	---	2665
★ 64	0.99	48.00	38.80	6745	25.00	---	5105	13.50	---	3995	9.50	---	3585



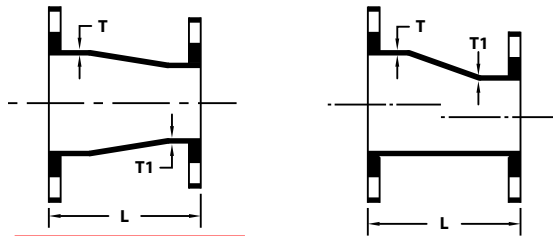
★ 90° FLANGED LONG RADIUS BENDS				
NOM. SIZE	T	B	C	WT (LBS.)
3	0.48	7.75	6.25	30
4	0.52	9.00	7.00	50
6	0.55	11.50	9.50	80
8	0.60	14.00	12.00	140
10	0.68	16.50	14.50	215
12	0.75	19.00	17.00	325
14	0.66	21.50	19.00	400
16	0.70	24.00	21.50	525
18	0.75	26.50	24.00	750
20	0.80	29.00	26.50	875
24	0.89	34.00	30.50	1250
30	1.03	41.50	38.00	2105
36	1.15	49.00	45.50	3285
42	1.28	56.50	53.00	4865
48	1.42	64.00	60.50	7800
54	0.90	73.50	69.50	6205

★ 90° FLANGE x FLARE BENDS					
NOM. SIZE	T	A	B	C	WT (LBS.)
3	0.48	5.50	11.00	7.50	25
4	0.52	6.50	12.00	9.00	40
6	0.55	8.00	12.00	11.00	70
8	0.60	9.00	14.00	13.50	110
10	0.68	11.00	17.00	16.00	175
12	0.75	12.00	18.00	19.00	245
14	0.66	14.00	20.00	21.00	340
16	0.70	15.00	21.00	23.50	460
18	0.75	16.50	22.50	25.00	560
20	0.80	18.00	24.00	27.50	700
24	0.89	22.00	28.00	32.00	1100
30	1.03	25.00	32.00	38.75	1640
36	1.15	28.00	35.00	46.00	2700
42	1.28	31.00	38.00	53.00	3250
48	1.42	34.00	41.00	59.50	4215
54	0.90	39.00	46.00	66.25	3965



# Flanged Fittings

ANSI/AWWA C110/A21.10



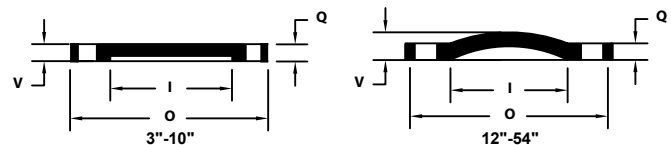
## FE CONCENTRIC & ECCENTRIC REDUCERS

	NOM. SIZE	T	T1	A	WT (LBS.)
★	2 x 1 1/2	0.31	0.31	5.50	10
★	2 1/2 x 2	0.31	0.31	5.50	14
★	3 x 2	0.48	0.31	6.00	16
★	3 x 2 1/2	0.48	0.31	6.00	21
★	4 x 2	0.52	0.31	7.00	25
★	4 x 2 1/2	0.52	0.31	7.00	28
★	4 x 3	0.52	0.48	7.00	30
★	5 x 2	0.50	0.31	8.00	34
★	5 x 2 1/2	0.50	0.31	8.00	35
★	5 x 3	0.50	0.48	8.00	37
★	5 x 4	0.50	0.50	8.00	41
★	6 x 1 1/2	0.55	0.31	9.00	33
★	6 x 2	0.55	0.31	9.00	35
★	6 x 2 1/2	0.55	0.31	9.00	38
★	6 x 3	0.55	0.48	9.00	40
★	6 x 4	0.55	0.52	9.00	45
★	6 x 5	0.55	0.52	9.00	52
★	8 x 3	0.60	0.48	11.00	60
★	8 x 4	0.60	0.52	11.00	65
★	8 x 5	0.60	0.52	11.00	70
★	8 x 6	0.60	0.55	11.00	75
★	10 x 3	0.68	0.48	12.00	81
★	10 x 4	0.68	0.52	12.00	85
★	10 x 6	0.68	0.55	12.00	90
★	10 x 8	0.68	0.60	12.00	110
★	12 x 4	0.75	0.52	14.00	120
★	12 x 5	0.75	0.50	14.00	126
★	12 x 6	0.75	0.55	14.00	130
★	12 x 8	0.75	0.60	14.00	145
★	12 x 10	0.75	0.68	14.00	170
★	14 x 6	0.66	0.55	16.00	155
★	14 x 8	0.66	0.60	16.00	175
★	14 x 10	0.66	0.68	16.00	190
★	14 x 12	0.66	0.75	16.00	248
★	16 x 6	0.70	0.55	18.00	190
★	16 x 8	0.70	0.60	18.00	210
★	16 x 10	0.70	0.68	18.00	235
★	16 x 12	0.70	0.75	18.00	265
★	16 x 14	0.70	0.66	18.00	280
★	18 x 8	0.75	0.60	19.00	240
★	18 x 10	0.75	0.68	19.00	265
★	18 x 12	0.75	0.75	19.00	295
★	18 x 14	0.75	0.66	19.00	310
★	18 x 16	0.75	0.70	19.00	340
★	20 x 8	0.80	0.60	20.00	290
★	20 x 10	0.80	0.68	20.00	310
★	20 x 12	0.80	0.75	20.00	345
★	20 x 14	0.80	0.66	20.00	355

(Con't)➤

## FE CONCENTRIC & ECCENTRIC REDUCERS (Con't)

	NOM. SIZE	T	T1	A	WT (LBS.)
★ ★ ★ ★	20 x 16	0.80	0.70	20.00	390
	20 x 18	0.80	0.75	20.00	410
	24 x 12	0.89	0.75	24.00	480
	24 x 14	0.89	0.66	24.00	490
	24 x 16	0.89	0.70	24.00	525
	24 x 18	0.89	0.75	24.00	550
	24 x 20	0.89	0.80	24.00	590
	30 x 8	1.03	0.60	30.00	700
	30 x 12	1.03	0.75	30.00	730
	30 x 14	1.03	0.66	30.00	745
	30 x 16	1.03	0.70	30.00	770
	30 x 18	1.03	0.75	30.00	810
	30 x 20	1.03	0.80	30.00	870
	30 x 24	1.03	0.89	30.00	970
	36 x 16	1.15	0.70	36.00	1105
	36 x 20	1.15	0.80	36.00	1230
	36 x 24	1.15	0.89	36.00	1345
	36 x 30	1.15	1.03	36.00	1555
	42 x 20	1.28	0.80	42.00	1712
	42 x 24	1.28	0.89	42.00	1820
	42 x 30	1.28	1.03	42.00	2060
	42 x 36	1.28	1.15	42.00	2550
	48 x 30	1.42	1.03	48.00	2625
	48 x 36	1.42	1.15	48.00	2950
	48 x 42	1.42	1.28	48.00	3320
	54 x 30	0.90	0.61	32.00	1625
	54 x 36	0.90	0.66	28.00	1680
	54 x 42	0.90	0.76	35.00	1800
	54 x 48	0.90	0.80	18.00	1695
	60 x 54	0.94	0.90	15.00	2055



## ★ BLIND FLANGES

NOM. SIZE	O	Q	V	I	WT (LBS.)
3	7.50	0.75	0.69	3.00	9
4	9.00	0.94	0.88	4.00	16
6	11.00	1.00	0.94	6.00	25
8	13.50	1.12	1.06	8.00	42
10	16.00	1.19	1.12	10.00	63
12	19.00	1.25	0.81	12.00	85
14	21.00	1.38	0.88	14.00	120
16	23.50	1.44	1.00	16.00	145
18	25.00	1.56	1.06	18.00	195
20	27.50	1.69	1.12	20.00	245
24	32.00	1.88	1.25	24.00	370
30	38.75	2.12	1.44	30.00	500
36	46.00	2.38	1.62	36.00	960
42	53.00	2.62	1.81	42.00	1300
48	59.50	2.75	2.00	48.00	1740
54	66.25	3.00	2.50	54.00	2600



★Not Included in AWWA C110

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## POTA-POX® PLUS SERIES N140

## PRODUCT PROFILE

**GENERIC DESCRIPTION** Polyamidoamine Epoxy**COMMON USAGE** Innovative potable water coating which offers high-build edge protection and allows for application at a wide range of temperatures (down to 35°F or 2°C with 44-700 Accelerator). For use on the interior and exterior of steel or concrete tanks, reservoirs, pipes, valves, pumps and equipment in potable water service.**COLORS** 1211 Red, 1255 Beige, 00WH Tnemec White, 15BL Tank White, 35GR Black and 39BL Delft Blue. **Note:** Epoxies chalk with extended exposure to sunlight. Lack of ventilation, incomplete mixing, miscatalyzation or the use of heaters that emit carbon dioxide and carbon monoxide during application and initial stages of curing may cause yellowing to occur.**SPECIAL QUALIFICATIONS** Certified by **NSF International** in accordance with **ANSI/NSF Std. 61**. Ambient air cured Series N140 (with or without 44-700 Epoxy Accelerator) is qualified for use on tanks and reservoirs of 1,000 gallons (3,785 L) capacity or greater, pipes 18 inches (46 cm) in diameter or greater, valves four (4) inches (10 cm) in diameter or greater and fittings four (4) inches (10 cm) in diameter or greater. Conforms to **AWWA D 102 Inside Systems No. 1 and No. 2** (with or without 44-700). Conforms to **AWWA C 210** (without 44-700). Contact your Tnemec representative for systems and additional information. A two-coat system at 4.0-6.0 dry mils (100-150 dry microns) per coat passes the performance requirements of MIL-PRF-4556F for fuel storage. Reference the "Search Listings" section of the NSF website at [www.nsf.org](http://www.nsf.org) for details on the maximum allowable DFT.**PERFORMANCE CRITERIA** Extensive test data available. Contact your Tnemec representative for specific test results.

## COATING SYSTEM

**SURFACER/FILLER/PATCHER** 215, 217, 218**PRIMERS** Self-priming, 22, 91-H<sub>2</sub>O, 94-H<sub>2</sub>O, L140, L140F, N140F, V140, V140F, 141**TOPCOATS** **Interior:** Series 22, FC22, L140, L140F, N140, N140F, V140, V140F, 141, 406.  
**Exterior:** Series 27, 66, L69, L69F, N69, N69F, V69, V69F, 72, 73, L140, L140F, N140, N140F, V140, V140F, 156, 157, 161, 175, 180, 181, 446, 740, 750, 1028, 1029, 1074, 1074U, 1075, 1075U, 1077, 1078, 1080, 1081. Refer to COLORS on applicable topcoat data sheets for additional information. **Note:** The following recoat times apply for Series N140: Immersion Service—Surface must be scarified by blasting with fine abrasive after 60 days. Atmospheric Service—After 60 days, scarification or an epoxy tie-coat is required. When topcoating with Series 740 or 750, recoat time for N140 is 21 days. Contact your Tnemec representative for specific recommendations.

## SURFACE PREPARATION

**PRIMED STEEL** **Immersion Service:** Scarify the epoxy prime coat surface by abrasive blasting with fine abrasive before topcoating if it has been exterior exposed for 60 days or longer and N140 is the specified topcoat.**STEEL** **Immersion Service:** SSPC-SP10/NACE 2 Near-White Blast Cleaning with a minimum angular anchor profile of 1.5 mils. **Non-Immersion Service:** SSPC-SP6/NACE 3 Commercial Blast Cleaning with a minimum angular anchor profile of 1.5 mils.**CAST/DUCTILE IRON** Contact your Tnemec representative or Tnemec Technical Services.**CONCRETE** Allow new concrete to cure 28 days. For optimum results and/or immersion service, abrasive blast referencing SSPC-SP13/NACE 6, ICRI-CSP 2-4 Surface Preparation of Concrete and Tnemec's Surface Preparation and Application Guide. Fill all holes, pits, voids and cracks with 215, 217 or 218.**ALL SURFACES** Must be clean, dry and free of oil, grease and other contaminants.

## TECHNICAL DATA

**VOLUME SOLIDS** 67.0 ± 2.0% (mixed—A, B & 44-700 Epoxy Accelerator) †**RECOMMENDED DFT** 2.0 to 10.0 mils (50 to 225 microns) per coat. **Note:** MIL-PRF-4556F applications require two coats at 4.0-6.0 mils (100-150 microns) per coat. Otherwise, the number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.**CURING TIME AT 5 MILS DFT** Without 44-700 Accelerator:

Temperature	To Handle	To Recoat	Immersion
90°F (32°C)	5 hours	7 hours	7 days
80°F (27°C)	7 hours	9 hours	7 days
70°F (21°C)	9 hours	12 hours	7 days
60°F (16°C)	16 hours	22 hours	9 to 12 days
50°F (10°C)	24 hours	32 hours	12 to 14 days

Curing time varies with surface temperature, air movement, humidity and film thickness. **Note:** For valve applications allow 14 days cure at 75°F (24°C) prior to immersion. For pipe applications allow 30 days cure at 75°F (24°C) prior to immersion. **Ventilation:** When used in enclosed areas, provide adequate ventilation during application and cure. **Note:** Refer to product listing on [www.nsf.org](http://www.nsf.org) for specific potable water return to service information. **Note:** For faster curing and low temperature applications, add No. 44-700 Epoxy Accelerator, see separate product data sheet for cure information.

**VOLATILE ORGANIC COMPOUNDS** **Unthinned:** 2.4 lbs/gallon (285 grams/litre)  
**Thinned 5% (#60):** 2.6 lbs/gallon (311 grams/litre)  
**Thinned 10% (#4):** 2.8 lbs/gallon (334 grams/litre) †**HAPS** **Unthinned:** 2.4 lbs/gal solids **Thinned 5% (#60):** 2.4 lbs/gal solids  
**Thinned 10% (#4):** 3.3 lbs/gal solids**THEORETICAL COVERAGE** 1,070 mil sq ft/gal (27.2 m<sup>2</sup>/L at 25 microns). See APPLICATION for coverage rates. †**NUMBER OF COMPONENTS** Two: Part A (amine) and Part B (epoxy) — One (Part A) to one (Part B) by volume.



# POTA-POX® PLUS | SERIES N140

<b>PACKAGING</b>	5 gallon (18.9L) pails and 1 gallon (3.79L) cans - Order in multiples of 2. Reference 44-700 Epoxy Accelerator product data sheet for its packaging information.
<b>NET WEIGHT PER GALLON</b>	12.66 ± 0.25 lbs (5.82 ± .11 kg) (mixed) †
<b>STORAGE TEMPERATURE</b>	Minimum 20°F (-7°C) Maximum 110°F (43°C)
<b>TEMPERATURE RESISTANCE</b>	(Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)
<b>SHELF LIFE</b>	Part A: 24 months; Part B: 12 months at recommended storage temperature.
<b>FLASH POINT - SETA</b>	Part A: 82°F (28°C) Part B: 80°F (27°C) 44-700: None
<b>HEALTH &amp; SAFETY</b>	Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. <b>Keep out of reach of children.</b>

## APPLICATION

### COVERAGE RATES

	Dry MILS (Microns)	Wet MILS (Microns)	Sq Ft/Gal (m²/Gal)
Suggested	6.0 (150)	9.0 (230)	179 (16.6)
Minimum	2.0 (50)	3.0 (75)	537 (49.9)
Maximum	10.0 (225)	15.0 (375)	107 (10.0)

**Note:** Roller or brush application requires two or more coats to obtain recommended film thickness. Allow for overspray and surface irregularities. Wet film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. Reference the "Search Listings" section of the NSF website at [www.nsf.org](http://www.nsf.org) for details on the maximum allowable DFT. †

### MIXING

1. Start with equal amounts of both Parts A & B.
2. Using a power mixer, separately stir Parts A & B.
3. (For accelerated version. If not using 44-700, skip to No. 4.)  
Add four (4) fluid ounces of 44-700 per gallon of Part A while Part A is under agitation.
4. Add Part A to Part B under agitation, stir until thoroughly mixed.
5. Both components must be above 50°F (10°C) prior to mixing. For application of the unaccelerated version to surfaces between 50°F to 60°F (10°C to 16°C) or the accelerated version to surfaces between 35°F to 50°F (2°C to 10°C), allow mixed material to stand 30 minutes and restir before using.
6. For optimum application properties, the material temperature should be above 60°F (16°C).

**Note:** The use of more than the recommended amount of 44-700 will adversely affect performance.

### THINNING

Use No. 4 or No. 60 Thinner. For air spray, thin up to 10% or 3/4 pint (380 mL) per gallon with No. 4 Thinner or thin up to 5% or 1/4 pint (190 mL) per gallon with No. 60 Thinner. For airless spray, roller or brush, thin up to 5% or 1/4 pint (190 mL) per gallon. **Caution: Series N140 NSF certification is based on thinning with No. 4 or No. 60 Thinner for tanks and only No. 60 Thinner for pipe, valves and fittings.** Use of any other thinner voids ANSI/NSF Std. 61 certification.

### POT LIFE

Without 44-700 6 hours at 50°F (10°C) 4 hours at 75°F (24°C) 1 hour at 100°F (38°C)  
With 44-700 2 hours at 50°F (10°C) 1 hour at 75°F (24°C) 30 minutes at 100°F (38°C)

### SPRAY LIFE

Without 44-700: 1 hour at 77°F (25°C) With 44-700: 30 minutes at 75°F (24°C)

**Note:** Spray application after listed times will adversely affect ability to achieve recommended dry film thickness.

### APPLICATION EQUIPMENT

#### Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss JGA	E	765 or 704	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	75-100 psi (5.2-6.9 bar)	10-20 psi (0.7-1.4 bar)

#### Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.015"-0.019" (380-485 microns)	3000-4800 psi (207-330 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	60 mesh (250 microns)

Low temperatures or longer hoses require higher pot pressure. Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.

**Roller:** Use 3/8" or 1/2" (9.5 mm to 12.7 mm) synthetic woven nap roller cover. Use longer nap to obtain penetration on rough or porous surfaces.

**Brush:** Recommended for small areas only. Use high quality natural or synthetic bristle brushes.

### SURFACE TEMPERATURE

Without 44-700: Min. 50°F (10°C), Max. 135°F (57°C) With 44-700: Min. 35°F (2°C), Max. 135°F (57°C)

The surface should be dry and at least 5°F (3°C) above the dew point. Coating will not cure below minimum surface temperature.

### CLEANUP

Flush and clean all equipment immediately after use with the recommended thinner or MEK.  
† Values may vary with color.

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