

TECHNICAL SPECIFICATIONS

CertainTeed CertainTeed Corporation Pipe and Plastics Group	SPECIFICATIONS CLASSIFICATION:					
	A/C Standard Product Specification					
	T.C.O. REF. NO.	SPECIFICATION NO:		PAGE NO.:		
	11	158		1		
SUPERSEDES:			DATE OF ISSUE:			
April 30, 1979			FEB 1 1982			
DESCRIPTION: A/C Bureau of Reclamation/Fluid Transmissions Pipe, Couplings and Accessories						
1.0 GENERAL CertainTeed Corporation Pipe and Plastics Group "Fluid Transmission" (FT) pipe and "Bureau of Reclamation" (B/R) pipe is made in nine classes and is used in supply systems that carry liquid under pressure. The available classes are FT 30 AC, 35, 40, 45, 50, 60, 70, 80, and 90 in the following pipe sizes: 6", 8", 10", 12", 14", 15", 16", 18", 20", 21", and 24", except 6" class FT 30 and 35 and 21" and 24" FT 90. Fluid Transmission and Bureau of Reclamation pipe and couplings are the same, except Fluid Transmission will be supplied with Common Groove (CG) rings, and Bureau of Reclamation will be supplied with round, rubber rings.						
2.0 GENERAL PRODUCT DESCRIPTION Unless otherwise listed herein, refer to "General Product Specification Data", Section D of the General Standards Manual, for information concerning the following: 1. Composition 2. Trademarks 3. Test Methods 4. General Requirements a. Pipe length b. Lubricant c. Marking d. Installation Instructions e. Finish f. Straightness g. Leakage Allowance All Fluid Transmission pipe and couplings shall be completely free of loose or hanging A/C chips in the interior. Machined outer surfaces of all pipe (regardless of length), fittings, and adaptors shall be free of hanging machined trim (lace curtains). The interior corner of the pipe nose shall be free of all loose or hanging chips. The approved method for cleaning the pipe interior nose is to use the I.D. bevel tool to break this corner.						
3.0 CONFORMANCE The Fluid Transmission Product Line will meet the requirements of the latest issue of: ASTM C668 - Spec. for Asbestos Cement Transmission Pipe AWWA C402 - Asbestos Cement Transmission Pipe, 18 Inches through 42 Inches for Water and Other Liquids The Bureau of Reclamation Product line (round rings) will meet the requirements of the latest issue of: Standard Specification for Asbestos-Cement Pressure Pipe put out by the Bureau of Reclamation.						
CTD012326						
PREPARED BY:	APPROVED BY:	R & D	MFG.	SALES	I.E.	OTHERS
M. R. Steefny		11	050	J.R.A.		

4.0 TABLE OF HYDRO TEST REQUIREMENTS

<u>Product</u>	
Standard Pipe Lengths	(1) Each length to the pressure specified in Table A for at least five seconds without failure. (2) Additionally from each 300 pieces of each size and class per shift of manufacturing or fraction thereof, an unmachined length of at least one foot must pass an instantaneous pressure equal to ten times the class designation (see Table B). The remaining length may then be shipped if it passed a retest of part (1). If the first sample fails, two more will be tested and both must pass or the lot is rejected.
Random Pipe Lengths	Same as Test (1) above.
Short Lengths ($\frac{1}{4}$ and $\frac{1}{2}$ MEO)	Same as Test (1) above.
Short Lengths ($\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ FM)	Same as Test (1).
Standard Coupling	Same as Test (1).
Coupling Adaptor (FT to Steel)	Stock to meet Test (1).
Coupling Adaptor (FT to FT)	Stock to meet Test (1) for lower class.
Pipe Adaptors	Stock to meet Test (1) for lower class.

TABLE A

<u>Class</u>	<u>Hydro Proof Test Value</u>
30	225
35	263
40	300
45	338
50	375
60	450
70	525
80	600
90	675

TABLE B

<u>Class</u>	<u>Hydro Burst Test Value</u>
30	300
35	350
40	400
45	450
50	500
60	600
70	700
80	800
90	900

5.0 Flexural Strength

Each standard 13 foot length of pipe in sizes 6 and 8 inch shall be tested for flexural strength in accordance with the following table when tested in accordance with ASTM C500.

FLEXURAL PROOF LOADS
Total Applied Load, Lbs. 12 ft. Span

<u>Nominal Pipe Size Inches</u>	<u>Class 30</u>	<u>Class 35</u>	<u>Class 40</u>	<u>Class 45</u>	<u>Class 50</u>	<u>Class 60</u>	<u>Class 70</u>	<u>Class 80</u>	<u>Class 90</u>
6	-	-	1700	1900	2100	2400	2800	3000	3700
8	2800	3300	3800	4300	4800	5200	5700	6600	7600

6.0 Crush Requirements

A one foot unmachined sample shall be taken from a pipe in each size and class for each 300 lengths or portion thereof per shift of manufacturing for this test. The test shall be performed in accordance with ASTM C500.

Fully machined Pipe, Threaded Couplings, and Pipe Adaptors shall be capable of withstanding 75 per cent of the minimum crushing strength specified for the corresponding size and class of pipe. All other items, particularly the couplings, shall be capable of withstanding the same minimum crush loads as specified for the corresponding size and class of pipe. For those items acting as connecting pieces between sizes and/or classes, the lowest minimum crush load shall apply.

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	11	15B	3						
SUPERSEDES:		DATE OF ISSUE:							
April 30, 1979		FEB 1 1982							
DESCRIPTION: A/C Bureau of Reclamation/Fluid Transmission Pipe, Couplings and Accessories									
MINIMUM CRUSHING STRENGTH LBS./FT.									
Nominal Pipe Size Inches	30	35	40	45	Class 50	60	70	80	90
6	-	-	2400	3200	4000	4700	5400	6700	9000
8	2000	2400	2800	3400	4000	4800	5500	7400	9300
10	2000	2500	3000	3500	4500	5500	7000	9000	11000
12	2000	2500	3000	4000	5700	6400	7300	10000	12200
14	2000	2500	3000	4000	5200	7000	8500	11000	13500
15	2300	2800	3300	4300	5500	7400	9300	12000	14500
16	2500	3000	3500	4500	5800	7500	9500	12400	15400
18	2500	3000	4000	5000	6500	8500	11000	14000	18000
20	2500	3500	4500	5500	7100	9500	12000	15000	20000
21	2500	3500	4500	5800	7300	9700	12500	16000	-
24	2800	3600	5000	6700	8100	11000	15000	19000	-
7.0 <u>Diameter</u> - The inside pipe diameter shall not vary from the stated nominal standard diameter more than 1/4 inch for pipe 21 inches and smaller in diameter and 5/16 inch for pipe 24 inches and larger in diameter. 8.0 <u>Straightness</u> - The straightness of each length of pipe shall not vary more than 0.05 inch per foot of length measured in accordance with Section 12 of ASTM Designation: C500. 9.0 <u>CHEMICAL REQUIREMENTS</u> Uncombined Calcium Hydroxide - 1.0 per cent maximum 10.0 <u>STANDARD COUPLING</u> One coupling suitable for the particular size and class of pipe with which it is to be used shall be attached to each standard and random length and shipped as a prebelled unit. Other couplings for use with includes shall be shipped loose. 11.0 <u>RUBBER RINGS FOR FLUID TRANSMISSION</u> Two CG rubber rings shall be furnished with each coupling. The rubber rings shall meet the requirements of the latest issue of ASTM D1869 and P&PG Purchasing Specification No. 507. Rubber rings shall be composed of natural rubber, synthetic elastomer, or when specifically requested, an oil resistant compound. Rubber rings are to be shipped in cartons and properly identified. 12.0 <u>RUBBER RINGS FOR BUREAU OF RECLAMATION</u> Two Round Rubber Rings shall be furnished with each coupling. The rubber rings shall meet the requirements of the latest issue of ASTM D1869 and P&PG Purchasing Specification No. 530. Rubber rings shall be composed of natural rubber, synthetic elastomer, and when specifically requested, an oil resistant compound. Rubber rings are to be shipped in cartons and properly identified. Note: For plants supplying Bureau of Reclamation and Fluid-Transmission, it is permissible to prebell the pipe using round rubber rings. The rings that are shipped loose to the field must be the correct rings. That is, round rubber for the Bureau and CG rings for Fluid-Transmission.									
PREPARED BY:		APPROVED BY:		R & D	MFG.	SALES	I.E.	OTHERS	
M. R. Steep				H	RSH	J.R.A.			

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CTD012328

13.0 B.O.D. CONTROL

All B.O.D.'s in this specification are called out as minimums. Costs are based on a B.O.D. + .04" over the minimum and it is intended that the costs will prevent excessive B.O.D.'s.

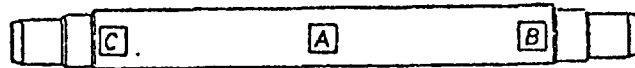
14.0 LUBRICANT

Field lubricant shall be furnished in 1½ quart cans in accordance with the following table. Five (5) gallon pails may be substituted on special customer order.

Pipe Size, Inches	Joints Per 1 Qt. Container All Classes	Joints Per 5 Gal. Pail All Classes
6	46	955
8	33	725
10	26	545
12	16	415
14	13	280
15	13	270
16	12	260
18	8	170
20	7	155
21	7	145
24	6	135

15.0 PACKAGING

Package in accordance with CT Standard Packaging Specification Number 1.

MARKING

Marking ink shall conform to P&PG Standard Purchasing Specification No. 502.

Color Code:

Use Standard Black ink for Areas (A, B, & C)

AREA A At the exact center of the pipe, the following shall be stamped.

CERTAINTED (Size) FT (Class) AC TYPE II FLUID TRANSMISSION
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DESCRIPTION:			
A/C Bureau of Reclamation/Fluid Transmission Pipe, Couplings and Accessories			

AREA B

Identification Markings: First line - Month, Day, Year, Plant, Shift Example 03087758C
Second line - Pipe No. 259

AREA C

Class Pipe: Tested at ____ PSI. (Insert Proof Pressure)
Example: For FT 30 pipe the proof pressure would be 225 PSI.

Coupling At the approximate center around the coupling.

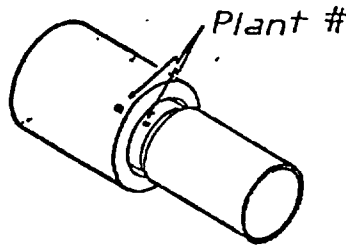
CERTAINTEED
(Size) FT (Class) AC T
FLUID TRANSMISSION

T - indicates Coupling has been
hydrostatically tested.

Example:

CERTAINTEED
6" FT 40 AC T
FLUID TRANSMISSION

Pre-Belled The plant number shall be stamped in black ink on the Coupling B.O.D. and stamped on the pipe O.D. shoulder near to where the coupling is stamped. Stamp to be 1 inch minimum.



Fully Mechined (FM) At the approximate center of the pipe, the following shall appear:

CERTAINTEED
(Size) FT (Class) AC TYPE II
FLUID TRANSMISSION

Example:

CERTAINTEED
6" FT 40 AC TYPE II
FLUID TRANSMISSION

In addition, the following shall appear:

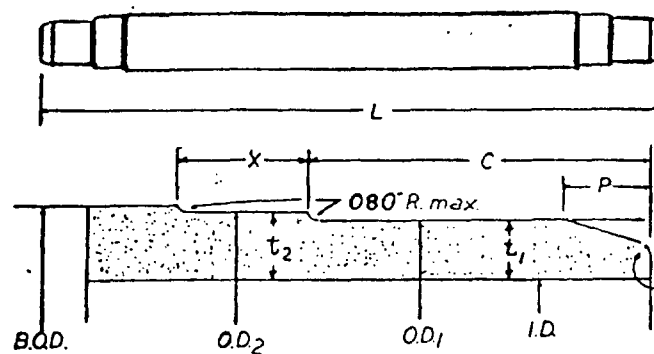
1st line: FM tested at ____ psi.

2nd line: Company Code.

Example: FM Tested at 300 psi.
03087758C

CTD012330

PREPARED BY:	APPROVED BY:	R & D	MFG.	SALES	I.E.	OTHERS
<i>M. R. Steffy</i>		<i>4</i>	<i>MS</i>	<i>J.R.A.</i>		

 Length of Pipe L' Length Tol. "										
Standard Random 1/2 Standard (MEO) 1/4 Standard (MEO) 1/8 Standard (MEO)										
7'0" to 12'6" (6" increments) 6'6" 3'3" 19.5" (Sizes 6" thru 12" only)										
080° R. max. α° 3/16" R. ± 1/16"										
B.O.D. O.D.₂ O.D.₁ I.D.										
Dimensions										
Pipe Size, Inches	I.D. Nom.	OD ₂ "	OD ₁ "	C ±0.06"	P ±0.06"	OC ^o ± 2°	X ±0.06"	B.O.D. Min.	t ₁ ***	t ₂ ***
Class 30										
8	8.00	8.80	8.96	2.40	.75	16	1.50	9.12	.400	.480
10	10.00	10.87	11.05	2.40	.75	16	1.50	11.14	.445	.525
12	12.00	12.99	13.15	2.90	1.00	16	1.50	13.24	.495	.575
14	14.00	15.07	15.23	3.25	1.00	18	1.50	15.38	.535	.615
15	15.00	16.11	16.27	3.25	1.00	18	1.50	16.44	.555	.635
16	16.00	17.15	17.31	3.25	1.00	18	1.50	17.58	.575	.655
18	18.00	19.28	19.44	3.75	1.00	20	1.50	19.60	.640	.720
20	20.00	21.44	21.60	3.75	1.00	20	1.50	21.76	.720	.800
21	21.00	22.52	22.68	3.75	1.00	20	1.50	22.84	.760	.840
24	24.00	25.76	25.92	3.75	1.00	20	1.50	26.08	.880	.960
Class 35										
8	8.00	8.80	8.96	2.40	.75	16	1.50	9.26	.400	.480
10	10.00	10.89	11.05	2.40	.75	16	1.50	11.18	.445	.525
12	12.00	12.99	13.15	2.90	1.00	16	1.50	13.27	.495	.575
14	14.00	15.07	15.23	3.25	1.00	18	1.50	15.44	.535	.615
15	15.00	16.11	16.27	3.25	1.00	18	1.50	16.62	.555	.635
16	16.00	17.15	17.31	3.25	1.00	18	1.50	17.58	.575	.655
18	18.00	19.28	19.44	3.75	1.00	20	1.50	19.60	.640	.720
20	20.00	21.44	21.60	3.75	1.00	20	1.50	21.87	.720	.800
21	21.00	22.52	22.68	3.75	1.00	20	1.50	22.91	.760	.840
24	24.00	25.76	25.92	3.75	1.00	20	1.50	26.19	.880	.960
Class 40										
6	6.00	6.69	6.85	2.40	.75	16	1.50	7.06	.345	.425
8	8.00	8.80	8.96	2.40	.75	16	1.50	9.26	.400	.480
10	10.00	10.89	11.05	2.40	.75	16	1.50	11.30	.445	.525
12	12.00	12.99	13.15	2.90	1.00	16	1.50	13.38	.495	.575
14	14.00	15.07	15.23	3.25	1.00	18	1.50	15.44	.535	.615
15	15.00	16.11	16.27	3.25	1.00	18	1.50	16.72	.555	.635
16	16.00	17.15	17.31	3.25	1.00	18	1.50	17.71	.575	.655
18	18.00	19.90	20.06	3.75	1.00	20	1.50	20.21	.950	1.030
20	20.00	22.12	22.28	3.75	1.00	20	1.50	22.43	1.060	1.140
21	21.00	23.28	23.44	3.75	1.00	20	1.50	23.59	1.140	1.220
24	24.00	26.48	26.64	3.75	1.00	20	1.50	26.82	1.240	1.320
Class 45										
6	6.00	6.69	6.85	2.40	.75	16	1.50	7.06	.345	.425
8	8.00	8.80	8.96	2.40	.75	16	1.50	9.36	.400	.480
10	10.00	11.24	11.40	2.40	.75	16	1.50	11.49	.620	.700
12	12.00	13.44	13.60	2.90	1.00	16	1.50	13.70	.720	.800
14	14.00	15.50	15.66	3.25	1.00	18	1.50	15.78	.750	.830
15	15.00	16.68	16.84	3.25	1.00	18	1.50	17.05	.840	.920
16	16.00	17.74	17.90	3.25	1.00	18	1.50	18.07	.870	.950
18	18.00	19.90	20.06	3.75	1.00	20	1.50	20.21	.950	1.030
20	20.00	22.12	22.28	3.75	1.00	20	1.50	22.43	1.060	1.140
21	21.00	23.28	23.44	3.75	1.00	20	1.50	23.72	1.140	1.220
24	24.00	26.48	26.64	3.75	1.00	20	1.50	26.97	1.240	1.320
Class 50										
6	6.00	6.91	7.07	2.40	.75	16	1.50	7.16	.455	.535
8	8.00	9.11	9.27	2.40	.75	16	1.50	9.38	.555	.635
10	10.00	11.24	11.40	2.40	.75	16	1.50	11.52	.620	.700
12	12.00	13.44	13.60	2.90	1.00	16	1.50	13.87	.720	.800
14	14.00	15.50	15.66	3.25	1.00	18	1.50	15.95	.750	.830
15	15.00	16.68	16.84	3.25	1.00	18	1.50	17.15	.840	.920
16	16.00	17.74	17.90	3.25	1.00	18	1.50	18.22	.870	.950
18	18.00	19.90	20.06	3.75	1.00	20	1.50	20.44	.950	1.030
20	20.00	22.12	22.28	3.75	1.00	20	1.50	22.72	1.060	1.140
21	21.00	23.28	23.44	3.75	1.00	20	1.50	23.84	1.140	1.220
24	24.00	26.48	26.64	3.75	1.00	20	1.50	27.25	1.240	1.320

* Tolerance O.D.₁ and O.D.₂ 6" through 16" ±.02",
18" through 24" ±.03".

*** t₁ & t₂ 6" thru 12" = -.08"
14" thru 18" = -.12"
20" thru 24" = -.14"

CTD012331

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

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SPECIFICATION NO:

15B

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SUPERSEDES:

April 30, 1979

DATE OF ISSUE:

FEB 1 1982

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

Pipe Size, Inches	I.D.* In.	OD ₁ * "	OD ₂ * "	C* ±0.06"	P* ±0.06"	OC ₂ * ± 2°	K* ±0.06"	B.O.D.* Min.	t ₁ ***	t ₂ ***
Class 60										
6	5.80	6.91	7.07	2.40	.75	16	1.50	7.12	.555	.635
8	7.80	9.11	9.27	2.40	.75	16	1.50	9.32	.655	.735
10	10.00	11.66	11.82	2.90	.75	16	1.50	11.91	.830	.910
12	12.00	13.92	14.08	3.25	1.00	16	1.50	14.17	.960	1.040
14	14.00	16.22	16.38	3.25	1.00	18	1.50	16.50	1.610	1.190
16	15.00	17.28	17.44	3.25	1.00	18	1.50	17.61	1.140	1.220
18	16.00	18.46	18.62	3.25	1.00	18	1.50	18.74	1.230	1.310
20	18.00	20.50	20.66	3.75	1.00	20	1.50	20.94	1.250	1.330
22	20.00	22.93	22.99	3.75	1.00	20	1.50	23.26	1.415	1.495
24	21.00	23.95	24.12	3.75	1.00	20	1.50	24.44	1.480	1.560
26	24.00	27.42	27.58	3.75	1.00	20	1.50	27.96	1.710	1.790
Class 70										
6	5.80	6.91	7.07	2.40	.75	16	1.50	7.12	.555	.635
8	7.80	9.11	9.27	2.40	.75	16	1.50	9.32	.655	.735
10	10.00	11.66	11.82	2.90	.75	16	1.50	11.93	.830	.910
12	12.00	13.92	14.08	3.25	1.00	16	1.50	14.35	.960	1.040
14	14.00	16.22	16.38	3.25	1.00	18	1.50	16.70	1.310	1.390
16	15.00	17.28	17.44	3.25	1.00	18	1.50	17.93	1.420	1.500
18	16.00	18.46	18.62	3.25	1.00	18	1.50	19.09	1.230	1.310
20	18.00	20.94	21.10	3.75	1.00	20	1.50	21.48	1.470	1.550
22	20.00	23.28	23.44	3.75	1.00	20	1.50	23.75	1.640	1.720
24	21.00	24.18	24.54	3.75	1.00	20	1.50	25.10	1.690	1.770
26	24.00	27.96	28.12	3.75	1.00	20	1.50	28.60	1.980	2.060
Class 80										
6	5.70	6.91	7.07	2.40	.75	16	1.50	7.36	.605	.685
8	7.60	9.11	9.27	2.40	.75	16	1.50	9.46	.755	.835
10	9.60	11.66	11.82	2.90	.75	16	1.50	11.91	1.030	1.110
12	11.44	13.92	14.08	3.25	1.00	16	1.50	14.17	1.240	1.320
14	13.60	16.22	16.38	3.25	1.00	18	1.50	16.50	1.310	1.390
16	15.00	17.99	18.15	3.25	1.00	18	1.50	18.43	1.495	1.575
18	16.00	18.46	18.62	3.25	1.00	18	1.50	18.95	1.480	1.560
20	18.00	20.94	21.10	3.75	1.00	20	1.50	21.92	1.470	1.550
22	20.00	23.28	23.44	3.75	1.00	20	1.50	24.36	1.640	1.720
24	21.00	24.38	24.54	3.75	1.00	20	1.50	25.69	1.690	1.770
26	24.00	27.96	28.12	3.75	1.00	20	1.50	29.22	1.930	2.060
Class 90										
6	5.70	6.91	7.07	2.40	.75	16	1.50	7.36	.605	.685
8	7.60	9.11	9.27	2.40	.75	16	1.50	9.62	.755	.835
10	9.60	11.66	11.82	2.90	.75	16	1.50	12.34	1.030	1.110
12	11.44	13.92	14.08	3.25	1.00	16	1.50	14.52	1.240	1.320
14	13.60	16.22	16.38	3.25	1.00	18	1.50	16.92	1.310	1.390
16	15.00	17.99	18.15	3.25	1.00	18	1.50	18.28	1.775	1.855
18	16.00	18.46	18.62	3.25	1.00	18	1.50	19.52	1.480	1.560
20	18.00	22.18	22.34	3.75	1.00	20	1.50	22.60	2.090	2.170
22	20.00	24.66	24.82	3.75	1.00	20	1.50	25.16	2.330	2.410

* Tolerance O.D.₁ and O.D.₂ 6" through 16" ±.02".
16" through 24" ±.03".

***t₁ & t₂ 6" thru 12" = -.08"
14" thru 18" = -.12"
20" thru 24" = -.14"

PREPARED BY:

M.R. Sweeney

APPROVED BY:

R & D

MFG.

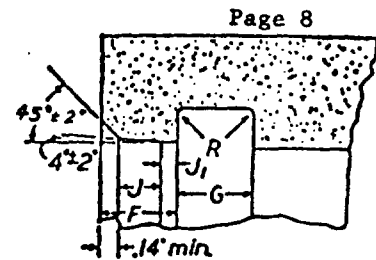
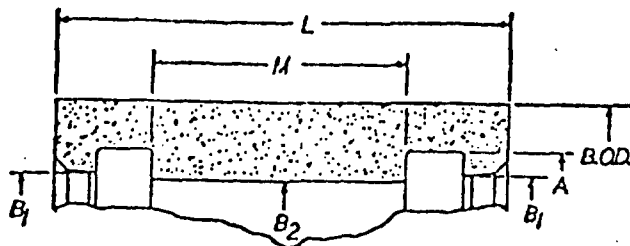
SALES

I.E.

OTHERS

NSA

J.R.A.



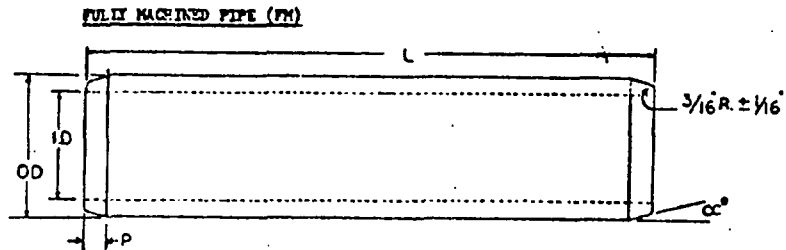
Coupling Size, Inches	A" *	B ₁ " *	B ₂ " *	G" +0.03" -0.01"	J" +0.00" -0.04"	J ₁ " +0.02" -0.00	F" Min.	R" +0.032" -0.000"	M" +0.00" -0.06"	L" +0.06	B.O.D." Min.
Class 30											
8	9.54	9.09	8.92	.92	.42	.18	.76	.093	3.50	7.00	10.50
10	11.63	11.18	11.01	.92	.42	.18	.76	.093	3.50	7.00	12.50
12	13.73	13.28	13.11	.92	.42	.18	.76	.093	4.50	8.00	14.70
14	15.95	15.39	15.20	1.00	.42	.25	.83	.093	5.20	9.00	17.60
15	16.99	16.43	16.24	1.00	.42	.25	.83	.093	5.20	9.00	18.40
16	18.03	17.47	17.28	1.00	.42	.25	.83	.093	5.20	9.00	19.31
18	20.16	19.60	19.41	1.00	.42	.25	.83	.093	6.20	10.00	21.53
20	22.32	21.76	21.57	1.00	.42	.25	.83	.093	6.20	10.00	23.83
21	23.40	22.84	22.65	1.00	.42	.25	.83	.093	6.20	10.00	25.11
24	26.64	26.08	25.89	1.00	.42	.25	.83	.093	6.20	10.00	28.43
Class 35											
8	9.54	9.09	8.92	.92	.42	.18	.76	.093	3.50	7.00	10.50
10	11.63	11.18	11.01	.92	.42	.18	.76	.093	3.50	7.00	12.75
12	13.73	13.28	13.11	.92	.42	.18	.76	.093	4.50	8.00	15.00
14	15.95	15.39	15.20	1.00	.42	.25	.83	.093	5.20	9.00	17.60
15	16.99	16.43	16.24	1.00	.42	.25	.83	.093	5.20	9.00	18.40
16	18.03	17.47	17.28	1.00	.42	.25	.83	.093	5.20	9.00	19.80
18	20.16	19.60	19.41	1.00	.42	.25	.83	.093	6.20	10.00	21.77
20	22.32	21.76	21.57	1.00	.42	.25	.83	.093	6.20	10.00	24.01
21	23.40	22.84	22.65	1.00	.42	.25	.83	.093	6.20	10.00	25.24
24	26.64	26.08	25.89	1.00	.42	.25	.83	.093	6.20	10.00	28.65
Class 40											
6	7.43	6.98	6.81	1.00	.42	.18	.76	.093	3.40	7.00	8.18
8	9.54	9.09	8.92	.92	.42	.18	.76	.093	3.50	7.00	10.50
10	11.63	11.18	11.01	.92	.42	.18	.76	.093	3.50	7.00	12.75
12	13.73	13.28	13.11	.92	.42	.18	.76	.093	4.50	8.00	15.00
14	15.95	15.39	15.20	1.00	.42	.25	.83	.093	5.20	9.00	17.60
15	16.99	16.43	16.24	1.00	.42	.25	.83	.093	5.20	9.00	18.67
16	18.03	17.47	17.28	1.00	.42	.25	.83	.093	5.20	9.00	19.80
18	20.78	20.22	20.03	1.00	.42	.25	.83	.093	6.20	10.00	22.82
20	23.00	22.44	22.25	1.00	.42	.25	.83	.093	6.20	10.00	25.24
21	24.16	23.60	23.41	1.00	.42	.25	.83	.093	6.20	10.00	26.79
24	27.36	26.80	26.61	1.00	.42	.25	.83	.093	6.20	10.00	29.98
Class 45											
6	7.43	6.98	6.81	1.00	.42	.18	.76	.093	3.40	7.00	8.18
8	9.54	9.09	8.92	.92	.42	.18	.76	.093	3.50	7.00	10.67
10	11.98	11.53	11.36	.92	.42	.18	.76	.093	3.50	7.00	13.30
12	14.18	13.73	13.56	.92	.42	.18	.76	.093	4.50	8.00	15.55
14	16.38	15.82	15.63	1.00	.42	.25	.83	.093	5.20	9.00	18.20
15	17.56	17.00	16.81	1.00	.42	.25	.83	.093	5.20	9.00	19.51
16	18.62	18.06	17.87	1.00	.42	.25	.83	.093	5.20	9.00	20.42
18	20.78	20.22	20.03	1.00	.42	.25	.83	.093	6.20	10.00	23.20
20	23.00	22.44	22.25	1.00	.42	.25	.83	.093	6.20	10.00	25.66
21	24.16	23.60	23.41	1.00	.42	.25	.83	.093	6.20	10.00	26.93
24	27.36	26.80	26.61	1.00	.42	.25	.83	.093	6.20	10.00	30.52
Class 50											
6	7.65	7.20	7.03	.92	.42	.18	.76	.093	3.50	7.00	8.40
8	9.85	9.40	9.23	.92	.42	.18	.76	.093	3.50	7.00	10.90
10	11.98	11.53	11.36	.92	.42	.18	.76	.093	3.50	7.00	13.30
12	14.18	13.73	13.56	.92	.42	.18	.76	.093	4.50	8.00	15.76
14	16.38	15.82	15.63	1.00	.42	.25	.83	.093	5.20	9.00	18.49
15	17.56	17.00	16.81	1.00	.42	.25	.83	.093	5.20	9.00	19.82
16	18.62	18.06	17.87	1.00	.42	.25	.83	.093	5.20	9.00	20.69
18	20.78	20.22	20.03	1.00	.42	.25	.83	.093	6.20	10.00	23.30
20	23.00	22.44	22.25	1.00	.42	.25	.83	.093	6.20	10.00	25.78
21	24.16	23.60	23.41	1.00	.42	.25	.83	.093	6.20	10.00	27.07
24	27.36	26.80	26.61	1.00	.42	.25	.83	.093	6.20	10.00	30.66

* Tolerance A, B₁ and B₂ 6" through 16" $\pm .025"$,
18" through 24" $\pm .040"$.

TECHNICAL SPECIFICATIONS

CertainTeed CertainTeed Corporation Pipe and Plastics Group				SPECIFICATIONS CLASSIFICATION:							
				A/C Standard Product Specification							
				T.C.O. REF. NO.		SPECIFICATION NO.			PAGE NO.		
				11		15B			9		
				SUPERSEDES:			DATE OF ISSUE:				
				April 30, 1979			FEB 1 1982				
DESCRIPTION:											
A/C Bureau of Reclamation/Fluid Transmission Pipe, Couplings and Accessories											
Coupling Size, In	A" *	B1" *	B2" *	C" +0.03" -0.01"	J" +0.00" -0.04"	J1" +0.02" -0.00"	F" Min.	R" +0.032" -0.000"	H" +0.00" -0.06"	L" +0.06"	E.O.D." Min.
Class 60											
6	7.65	7.20	7.03	.92	.42	.18	.76	.093	3.50	7.00	8.76
8	9.85	9.40	9.23	.92	.42	.18	.76	.093	3.50	7.00	11.32
10	12.40	11.95	11.78	.92	.42	.18	.76	.093	3.50	7.00	14.36
12	14.66	14.21	14.04	.92	.42	.18	.76	.093	4.50	8.00	17.00
14	17.10	16.54	16.35	1.00	.42	.25	.83	.093	5.20	9.00	19.80
15	18.16	17.60	17.41	1.00	.42	.25	.83	.093	5.20	9.00	21.02
16	19.34	18.78	18.59	1.00	.42	.25	.83	.093	5.20	9.00	22.28
18	21.38	20.82	20.63	1.00	.42	.25	.83	.093	6.20	10.00	24.79
20	23.71	23.15	22.96	1.00	.42	.25	.83	.093	6.20	10.00	27.49
21	24.84	24.28	24.09	1.00	.42	.25	.83	.093	6.20	10.00	28.79
24	28.30	27.74	27.55	1.00	.42	.25	.83	.093	6.20	10.00	32.47
Class 70											
6	7.65	7.20	7.03	.92	.42	.18	.76	.093	3.50	7.00	8.76
8	9.85	9.40	9.23	.92	.42	.18	.76	.093	3.50	7.00	11.32
10	12.40	11.95	11.78	.92	.42	.18	.76	.093	3.50	7.00	14.36
12	14.66	14.21	14.04	.92	.42	.18	.76	.093	4.50	8.00	17.13
14	17.10	16.54	16.35	1.00	.42	.25	.83	.093	5.20	9.00	20.26
15	18.16	17.60	17.41	1.00	.42	.25	.83	.093	5.20	9.00	21.52
16	19.34	18.78	18.59	1.00	.42	.25	.83	.093	5.20	9.00	22.54
18	21.82	21.26	21.07	1.00	.42	.25	.83	.093	6.20	10.00	26.00
20	24.16	23.60	23.41	1.00	.42	.25	.83	.093	6.20	10.00	28.78
21	25.26	24.70	24.51	1.00	.42	.25	.83	.093	6.20	10.00	30.03
24	28.84	28.28	28.09	1.00	.42	.25	.83	.093	6.20	10.00	34.34
Class 80											
6	7.65	7.20	7.03	.92	.42	.18	.76	.093	3.50	7.00	9.35
8	9.85	9.40	9.23	.92	.42	.18	.76	.093	3.50	7.00	12.00
10	12.40	11.95	11.78	.92	.42	.18	.76	.093	3.50	7.00	15.15
12	14.66	14.21	14.04	.92	.42	.18	.76	.093	4.50	8.00	17.90
14	17.10	16.54	16.35	1.00	.42	.25	.83	.093	5.20	9.00	20.50
15	18.87	18.31	18.12	1.00	.42	.25	.83	.093	5.20	9.00	22.46
16	19.34	18.78	18.59	1.00	.42	.25	.83	.093	5.20	9.00	23.20
18	21.82	21.26	21.07	1.00	.42	.25	.83	.093	6.20	10.00	26.68
20	24.16	23.60	23.41	1.00	.42	.25	.83	.093	6.20	10.00	29.52
21	25.26	24.70	24.51	1.00	.42	.25	.83	.093	6.20	10.00	30.81
24	28.84	28.28	28.09	1.00	.42	.25	.83	.093	6.20	10.00	35.22
Class 90											
6	7.65	7.20	7.03	.92	.42	.18	.76	.093	3.50	7.00	9.35
8	9.85	9.40	9.23	.92	.42	.18	.76	.093	3.50	7.00	12.00
10	12.40	11.95	11.78	.92	.42	.18	.76	.093	3.50	7.00	15.15
12	14.66	14.21	14.04	.92	.42	.18	.76	.093	4.50	8.00	17.90
14	17.10	16.54	16.35	1.00	.42	.25	.83	.093	5.20	9.00	21.06
15	18.87	18.31	18.12	1.00	.42	.25	.83	.093	5.20	9.00	23.01
16	19.34	18.78	18.59	1.00	.42	.25	.83	.093	5.20	9.00	23.47
18	23.06	22.50	22.31	1.00	.42	.25	.83	.093	6.20	10.00	28.29
20	25.54	24.98	24.79	1.00	.42	.25	.83	.093	6.20	10.00	31.41
* Tolerance A, B1 and B2 6" through 16" $\pm .025"$. 18" through 24" $\pm .040"$.											
PREPARED BY:		APPROVED BY:		R & D	MFG.	SALES	I.E.	OTHERS			
<i>M.R. Steffy</i>				<i>[Signature]</i>	<i>[Signature]</i>	<i>J.R.A.</i>					

Pipe Size	P" $\pm 0.06"$	OC" $\pm 2"$
6" through 12"	1.00	16
14" through 16"	1.00	18
18" through 24"	1.00	22



Pipe Size	L		
	Std. Half +0" -1"	Std. Quarter +0" -1"	Std. Eighth $\pm 0.5"$
6" thru 12"	6' 6"	3' 3"	19.3"
14" thru 16"	6' 6"	---	---
18" thru 24"	6' 6"	3' 3"	---

Pipe Size, Inches	I.D." Nom.	O.D." *	Pipe Size, Inches	I.D." Nom.	O.D." *	Pipe Size, Inches	I.D." Nom.	O.D." *
Class 30			Class 45			Class 70		
8	8.00	8.80	6	5.80	6.69	6	5.66	6.91
10	9.90	10.89	8	7.55	8.80	8	7.80	9.11
12	12.00	12.99	10	9.90	11.24	10	9.90	11.66
14	14.00	15.07	12	12.00	13.44	12	12.00	13.92
15	14.80	16.11	14	14.00	15.50	14	14.00	16.22
16	15.85	17.15	15	15.00	16.68	15	15.00	17.28
18	18.00	19.28	16	16.00	17.74	16	15.85	18.46
20	20.00	21.44	18	17.35	19.90	18	17.35	20.94
21	21.00	22.52	20	19.65	22.12	20	19.00	23.28
24	24.00	25.76	21	21.00	23.28	21	20.70	24.38
			24	23.35	26.48	24	24.00	27.96
Class 35			Class 50			Class 80		
8	7.80	8.80	6	5.95	6.91	6	5.70	6.91
10	9.90	10.89	8	8.00	9.11	8	7.55	9.11
12	11.85	12.99	10	9.90	11.24	10	9.55	11.66
14	13.75	15.07	12	11.44	13.44	12	11.85	13.92
15	14.80	16.11	14	13.75	15.50	14	13.45	16.22
16	15.50	17.15	15	15.00	16.68	15	15.00	17.99
18	17.35	19.28	16	15.85	17.74	16	15.50	18.46
20	19.65	21.44	18	17.35	19.90	18	17.35	20.94
21	20.70	22.52	20	19.65	22.12	20	19.00	23.28
24	24.00	25.76	21	20.70	23.28	21	20.00	24.38
			24	23.40	26.48	24	23.40	27.96
Class 40			Class 60			Class 90		
6	5.90	6.69	6	5.80	6.91	6	5.30	6.91
8	7.80	8.80	8	7.80	9.11	8	7.45	9.11
10	9.55	10.89	10	9.90	11.66	10	9.55	11.66
12	11.70	12.99	12	12.00	13.92	12	11.55	13.92
14	13.75	15.07	14	14.00	16.22	14	13.20	16.22
15	14.45	16.11	15	15.00	17.28	15	14.45	17.99
16	15.50	17.15	16	16.00	18.46	16	15.30	18.46
18	18.00	19.90	18	17.35	20.50	18	18.00	22.18
20	20.00	22.12	20	19.65	22.83	20	20.00	24.66
21	21.00	23.28	21	20.70	23.96			
24	24.00	26.48	24	23.40	27.42			

* Tolerance
Center O.D. 6" through 16" $\pm 0.025"$
18" through 24" $\pm 0.035"$
End O.D. 6" through 16" $\pm 0.020"$
18" through 24" $\pm 0.030"$
Measured 6" in on both ends.

At Plant 57 the following tolerance is effective to allow for gang tooling.

OO125" Tolerance - 6" through 16" Center O.D. $\pm 0.025"$
End O.D. $\pm 0.020"$
18" through 24" Center O.D. $\pm 0.035"$
End O.D. $\pm 0.030"$

In addition, there cannot be a step greater than 0.025" (0.0125" on a side).

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

10

SPECIFICATION NO:

15B

PAGE NO.:

11

SUPERSEDES:

January 16, 1978

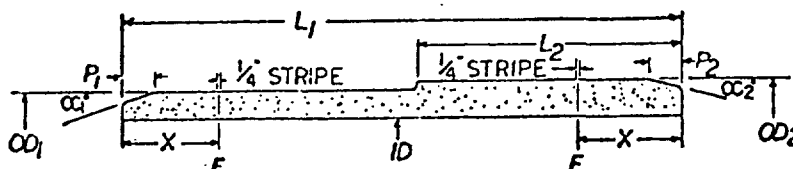
DATE OF ISSUE:

APR 30 1979

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

PIPE ADAPTOR (PAD 13)



For dimensions not shown refer to Fully Machined Pipe.

Marking:

HIGHER CLASS END
CT - PAD 13
(Size) FT (Class) AC
FLUID TRANSMISSION

LOWER CLASS END
CT-PAD 13
(Size) FT (Class) AC
FLUID TRANSMISSION

Dimensions

Pipe Size, Inches	AC Class to AC Class	I.D. ^a Nom.	O.D. ^a Nom.	O.D. ^a ±0.02"	L ₁ ^a ±0.0" -0.5"	L ₂ ^a ±0.0" -0.5"	X ^a
6	45 to 50	5.80	6.69	6.91	15.0	8.0	3.06
8	45 to 50	7.55	8.80	9.11	15.0	8.0	3.06
10	40 to 45	9.55	10.89	11.24	15.0	8.0	3.06
10	50 to 60	9.90	11.24	11.66	15.0	8.0	3.06
12	40 to 45	11.70	12.99	13.44	15.0	8.0	3.56
12	50 to 60	11.85	13.44	13.92	15.0	8.0	3.56
14	40 to 45	13.75	15.07	15.50	19.5	11.5	4.08
14	50 to 60	13.90	15.50	16.22	19.5	11.5	4.08
15	40 to 45	15.00	16.11	16.68	19.5	11.5	4.08
15	50 to 60	15.00	16.68	17.28	19.5	11.5	4.08
15	70 to 80	15.00	17.28	17.99	19.5	11.5	4.08
16	40 to 45	15.50	17.15	17.74	19.5	11.5	4.08
16	50 to 60	15.85	17.74	18.46	19.5	11.5	4.08
18	35 to 40	17.35	19.28	19.90	19.5	11.5	4.58
18	50 to 60	17.35	19.90	20.50	19.5	11.5	4.58
18	60 to 70	17.35	20.50	20.94	19.5	11.5	4.58
18	80 to 90	17.35	20.94	22.18	19.5	11.5	4.58
20	35 to 40	19.65	21.44	22.12	19.5	11.5	4.58
20	50 to 60	19.65	22.12	22.83	19.5	11.5	4.58
20	60 to 70	19.65	22.83	23.28	19.5	11.5	4.58
20	80 to 90	19.00	23.28	24.66	19.5	11.5	4.58
21	35 to 40	20.70	22.52	23.28	19.5	11.5	4.58
21	50 to 60	20.70	23.28	23.96	19.5	11.5	4.58
21	60 to 70	20.70	23.96	24.38	19.5	11.5	4.58
24	35 to 40	24.00	25.76	26.48	19.5	11.5	4.58
24	50 to 60	23.40	26.48	27.42	19.5	11.5	4.58
24	60 to 70	23.40	27.42	27.96	19.5	11.5	4.58

Note: Distance X is insertion depth into coupling to insure positive separation of pipe ends. Mark will be painted around the circumference of the PAD with standard black ink, and shall be 1/4" wide. Point F to be in line with outside face of coupling.

PREPARED BY:

APPROVED BY:

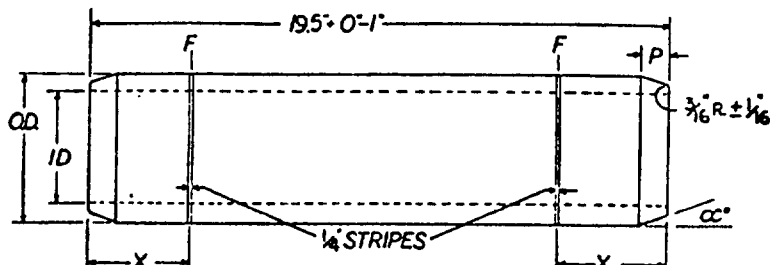
R & D

MFG.

SALES

I.E.

OTHERS

PIPE ADAPTOR (PAD 15)

Marking:

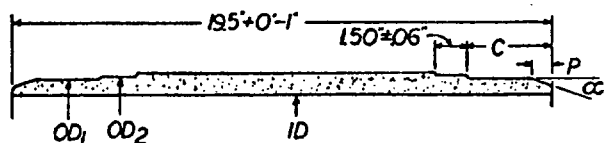
CT - PAD 15
(Size) FT (Class) AC
FLUID TRANSMISSION

Dimensions

Pipe Size, Inches	AC Class	X"
6, 8, 10	All	3.06
12	All	3.56
14, 15, 16	All	4.08
18, 20, 21, 24	All	4.58

Note: 1. Refer to Fully Machined Pipe, Page 10, for dimensions not shown.

2. Distance X is insertion depth into coupling to insure positive separation of pipe ends. Mark will be painted around the circumference of the PAD with standard black ink and shall be 1/4" wide. Point F to be in line with outside face of coupling.

PIPE ADAPTOR (PAD 16)

Marking:

CT - PAD 16
(Size) FT (Class) AC
FLUID TRANSMISSION

Dimensions

Note: 1. Available in all sizes and classes.

2. Refer to Standard Pipe, Pages 6 and 7, for all dimensions not shown except for length.

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO:

SPECIFICATION NO:

PAGE NO.:

11

15B

13

SUPERSEDES:

April 30, 1979

DATE OF ISSUE:

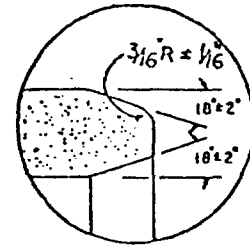
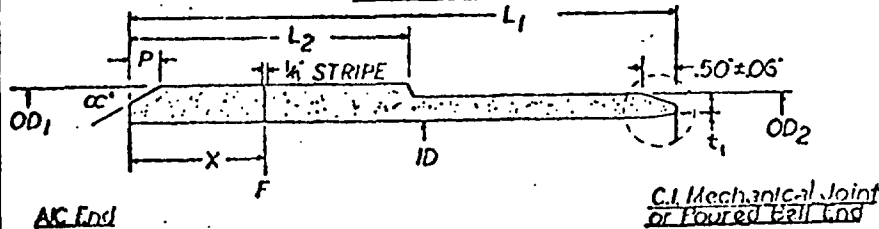
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DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

Pipe Adaptor (PAD 17)

A/C to Mechanical Joint and/or Poured Bell End



AC End

C.I. Mechanical Joint
or Poured Bell End

For dimensions not shown, refer to Fully Machined Pipe.

Marking:

AC SIDE
CT - PAD 17
(Size) FT (Class) AC
FLUID TRANSMISSION

MJ/PB SIDE
CT-PAD 17
FLUID TRANSMISSION

Dimensions

Pipe Size, Inches	AC Classes	I.D. ^a Inch	O.D. ¹ ±0.02 ^a	O.D. ² ±0.02 ^a	L ₁ ^a ±0.50 ^a	L ₂ ^a ±0.50 ^a	X ^a	t ₁ ^a Max.
6	40, 45	5.05	6.69	6.91	15.00	8.00	3.06	.60
8	30 to 45	7.55	8.80	9.05	15.00	8.00	3.06	.60
8	50 to 90	7.55	9.11	9.05	15.00	8.00	3.06	.60
10	30 to 40	9.55	10.89	11.10	15.00	8.00	3.06	.75
10	45, 50	9.55	11.24	11.10	15.00	8.00	3.06	.75
10	60 to 90	9.55	11.66	11.10	15.00	8.00	3.06	.75
12	30 to 40	11.45	12.99	13.20	15.00	8.00	3.56	.75
12	45, 50	11.45	13.44	13.20	15.00	8.00	3.56	.75
12	60 to 90	11.45	13.92	13.20	15.00	8.00	3.56	.75
14	30 to 40	13.60	15.07	15.30	19.50	11.50	4.03	1.05
14	45, 50	13.60	15.50	15.30	19.50	11.50	4.03	1.05
14	60 to 90	13.60	16.22	15.30	19.50	11.50	4.03	1.05
16	30 to 40	15.50	17.15	17.40	19.50	11.50	4.03	1.20
16	45, 50	15.50	17.74	17.40	19.50	11.50	4.03	1.20
16	60 to 90	15.50	18.46	17.40	19.50	11.50	4.03	1.20
18	30, 35	17.35	19.28	19.50	19.50	11.50	4.53	1.20
18	40 to 50	17.35	19.90	19.50	19.50	11.50	4.53	1.20
18	60	17.35	20.50	19.50	19.50	11.50	4.53	1.20
18	70, 80	17.35	20.54	19.50	19.50	11.50	4.53	1.20
18	90	17.35	22.10	19.50	19.50	11.50	4.53	1.20
20	30, 35	19.00	21.44	21.60	19.50	11.50	4.53	1.20
20	40 to 50	19.00	22.32	21.60	19.50	11.50	4.53	1.20
20	60	19.00	22.83	21.60	19.50	11.50	4.53	1.20
20	70, 80	19.00	23.28	21.60	19.50	11.50	4.53	1.20
24	30	19.00	24.66	21.60	19.50	11.50	4.53	1.20
24	30, 35	23.00	25.76	25.80	19.50	11.50	4.53	1.40
24	40 to 50	23.00	26.43	25.80	19.50	11.50	4.53	1.40
24	60	23.00	27.42	25.80	19.50	11.50	4.53	1.40
24	70, 80	23.00	27.96	25.80	19.50	11.50	4.53	1.40

Note: 1. Distance X is insertion depth into coupling to insure positive separation of pipe ends. Mark will be painted around the circumference of the PAD with standard black ink, and shall be 1/4" wide. Point F to be in line with outside face of coupling.

^a Tolerance on 18" through 24" ±0.01".

PREPARED BY:

M. R. [Signature]

APPROVED BY:

R & D

MFG.

SALES

I.E.

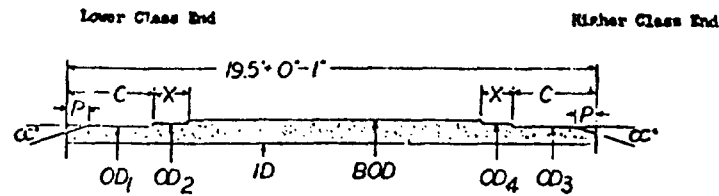
OTHERS

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[Signature]

[Signature]

PIPE ADAPTOR (PAD 18)



Refer to Standard Pipe, Pages 6 and 7 for dimensions not shown.

Marking: CT - PAD 18
(Size) FT (Class) AC
FLUID TRANSMISSION

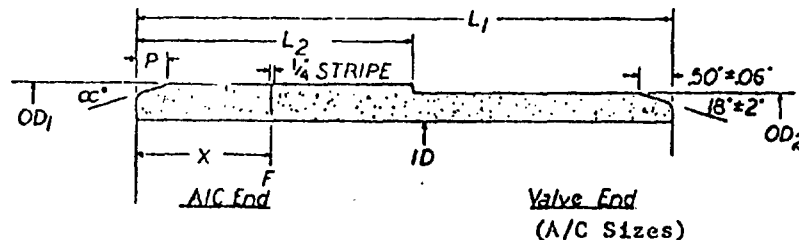
CT - PAD 18
(Size) FT (Class) AC
FLUID TRANSMISSION

Pipe Size, Inches	AC Class To AC Class	I.D." Nom.	Dimensions				C" ±0.04"	B.O.D." Min.
			O.D.1" *	O.D.2" *	O.D.3" *	O.D.4" *		
6	45 to 50	6.00	6.69	6.85	6.91	7.07	2.30	7.16
8	45 to 50	8.00	8.80	8.96	9.11	9.27	2.30	9.38
10	40 to 45	10.00	10.89	11.05	11.24	11.40	2.30	11.46
10	50 to 60	10.00	11.24	11.40	11.66	11.82	2.30	11.85
12	40 to 45	12.00	12.99	13.15	13.44	13.60	2.80	13.70
12	50 to 60	12.00	13.60	13.76	13.92	14.08	2.80	14.11
14	40 to 45	13.60	15.07	15.23	15.50	15.66	3.25	15.75
14	50 to 60	14.00	15.50	15.66	16.22	16.38	3.25	16.41
15	40 to 45	15.00	16.11	16.27	16.68	16.84	3.25	17.05
15	50 to 60	15.00	16.68	16.84	17.28	17.44	3.25	17.61
15	70 to 80	15.00	17.20	17.44	17.99	18.15	3.25	18.33
16	40 to 45	15.50	17.15	17.31	17.74	17.90	3.25	17.99
16	50 to 60	16.00	17.74	17.90	18.46	18.62	3.25	18.65
18	35 to 40	18.00	19.28	19.44	19.90	20.06	3.75	20.14
18	50 to 60	18.00	19.90	20.06	20.50	20.66	3.75	20.94
18	60 to 70	18.00	20.50	20.66	20.94	21.10	3.75	21.48
18	80 to 90	18.00	20.94	21.10	22.18	22.34	3.75	22.60
20	35 to 40	20.00	21.44	21.60	22.12	22.28	3.75	22.38
20	50 to 60	20.00	22.12	22.28	22.83	22.99	3.75	23.26
20	60 to 70	20.00	22.83	22.99	23.28	23.44	3.75	23.60
20	80 to 90	20.00	23.28	23.44	24.66	24.82	3.75	25.16
21	35 to 40	21.00	22.52	22.68	23.28	23.44	3.75	23.72
21	50 to 60	21.00	23.28	23.44	23.96	24.12	3.75	24.44
21	60 to 70	21.00	23.96	24.12	24.38	24.54	3.75	25.10
24	35 to 40	24.00	25.76	25.92	26.48	26.64	3.75	26.82
24	50 to 60	24.00	26.48	26.64	27.42	27.58	3.75	27.96
24	60 to 70	24.00	27.42	27.58	27.96	28.12	3.75	28.60

* Tolerance on O.D.1, O.D.2, O.D.3, O.D.4
6" through 16" ±0.02"
18" through 24" ±0.03"

PIPE ADAPTOR (PAD 19)

CT to VALVE



Refer to Standard Pipe, Pages 6 and 7, for machined dimensions not shown.

Marking:

AC END

VALVE END

CT - PAD 19
(Size) FT (Class) AC
FLUID TRANSMISSION

Valve End
(Class)

CTD012339

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

10

SPECIFICATION NO:

15B

PAGE NO.:

15

SUPERSEDES:

January 16, 1978

DATE OF ISSUE:

APR 30 1979

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

PIPE ADAPTOR (PAD 19) FOR VALVE INSTALLATION

Dimensions

Pipe Size, Inches	A/C Classes	I.D." Nom.	O.D. ₁ " ±0.02"	O.D. ₂ " ±0.02"	L ₁ " ±0.50"	L ₂ " ±0.50"	X"
To Class 100							
6	40, 45	5.65	6.69	6.91	15.00	8.00	3.06
8	30 to 45	7.55	8.80	9.11	15.00	8.00	3.06
10	30 to 40	9.55	10.89	11.24	15.00	8.00	3.06
10	60 to 90	9.55	11.66	11.24	15.00	8.00	3.06
12	30 to 40	11.45	12.99	13.44	15.00	8.00	3.56
12	60 to 90	11.45	13.92	13.44	15.00	8.00	3.56
14	45, 50	13.60	15.50	15.07	19.50	11.50	4.08
14	60 to 90	13.60	16.22	15.07	19.50	11.50	4.08
16	45, 50	15.50	17.74	17.15	19.50	11.50	4.08
16	60 to 90	15.50	18.46	17.15	19.50	11.50	4.08
18	30, 35	17.35	19.28	19.90	19.50	11.50	4.58
18	60	17.35	20.50	19.90	19.50	11.50	4.58
18	70, 80	17.35	20.94	19.90	19.50	11.50	4.58
18	90	17.35	22.18	19.90	19.50	11.50	4.58
20	30, 35	19.00	21.44	22.12	19.50	11.50	4.58
20	60	19.00	22.83	22.12	19.50	11.50	4.58
20	70, 80	19.00	23.28	22.12	19.50	11.50	4.58
20	90	19.00	24.66	22.12	19.50	11.50	4.58
24	30, 35	23.00	25.76	26.48	19.50	11.50	4.58
24	60	23.00	27.42	26.48	19.50	11.50	4.58
24	70, 80	23.00	27.96	26.48	19.50	11.50	4.58
To Class 150 and 200							
6	40, 45	5.65	6.69	6.91	15.00	8.00	3.06
8	30 to 45	7.55	8.80	9.11	15.00	8.00	3.06
10	30 to 40	9.55	10.89	11.66	15.00	8.00	3.06
10	45, 50	9.55	11.24	11.66	15.00	8.00	3.06
12	30 to 40	11.45	12.99	13.92	15.00	8.00	3.56
12	45, 50	11.45	13.44	13.92	15.00	8.00	3.56
14	45, 50	13.60	15.50	16.22	19.50	11.50	4.08
14	60 to 90	13.60	16.22	16.22	19.50	11.50	4.08
16	30 to 40	15.50	17.15	18.46	19.50	11.50	4.08
16	45, 50	15.50	17.74	18.46	19.50	11.50	4.08
To Class 150							
18	30, 35	17.35	19.28	20.94	19.50	11.50	4.58
18	40 to 50	17.35	19.90	20.94	19.50	11.50	4.58
18	60	17.35	20.50	20.94	19.50	11.50	4.58
18	90	17.35	22.18	20.94	19.50	11.50	4.58
20	30, 35	19.00	21.44	23.28	19.50	11.50	4.58
20	40 to 50	19.00	22.12	23.28	19.50	11.50	4.58
20	60	19.00	22.83	23.28	19.50	11.50	4.58
20	90	19.00	24.66	23.28	19.50	11.50	4.58
24	30, 35	23.00	25.76	27.96	19.50	11.50	4.58
24	40 to 50	23.00	26.48	27.96	19.50	11.50	4.58
24	60	23.00	27.42	27.96	19.50	11.50	4.58

Note: Distance X is insertion depth into coupling to insure positive separation of pipe ends. Mark will be painted around the circumference of the PAD with standard black ink, and shall be 1/4" wide. Paint P to be in line with outside face of coupling.

PREPARED BY:

APPROVED BY:

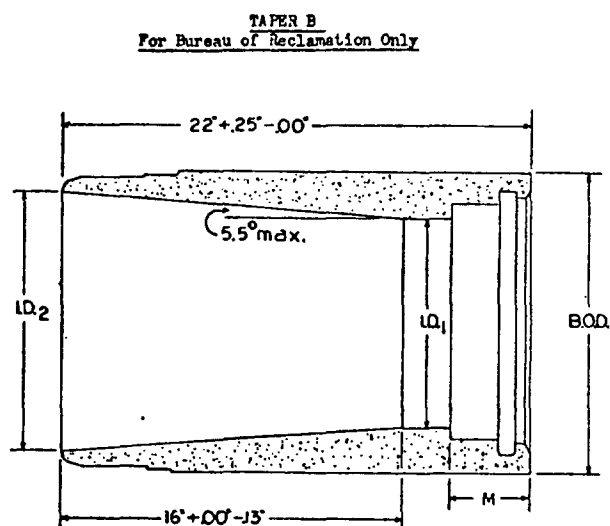
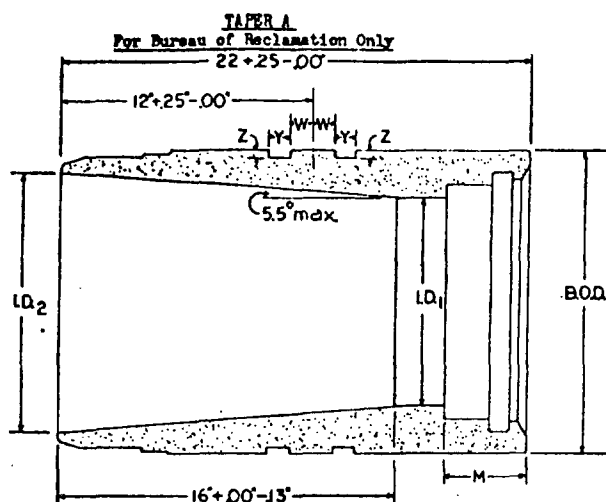
R & D

MFG.

SALES

I.E.

OTHERS



Refer to Standard Pipe, Pages 6 and 7 and Standard Coupling, Pages 8 and 9 for dimensions not shown.

Marking:

CERTAINTED
(Size) x (Size) TAPER
(Class) AC

Dimensions						Dimensions					
Size Inches Class 30	I.D. 1" Nom.	I.D. 2" +0.00" -0.05"	Type A H" +0.125" -0.00"	Type B H" +0.00" -0.063"	B.O.D." Min.	Size Inches Class 35	I.D. 1" Nom.	I.D. 2" +0.00" -0.05"	Type A H" +0.125" -0.00"	Type B H" +0.00" -0.063"	B.O.D." Min.
10x8	8.00	10.00	3.50	3.50	11.14	10x8	8.00	10.00	3.50	3.50	11.18
12x10	10.00	12.00	3.50	3.50	13.24	12x10	10.00	12.00	3.50	3.50	13.27
14x12	12.00	14.00	4.00	4.00	15.38	14x12	12.00	14.00	4.00	4.00	15.44
15x12	12.00	15.00	4.00	4.00	16.64	15x12	12.00	15.00	4.00	4.00	16.82
15x14	14.00	15.00	4.50	4.50	17.60	15x14	14.00	15.00	4.50	4.50	17.60
16x15	15.00	16.00	4.50	4.50	18.40	16x15	15.00	16.00	4.50	4.50	17.94
18x15	15.00	18.00	4.50	4.50	19.60	18x15	15.00	18.00	4.50	4.50	19.60
18x16	16.00	18.00	4.50	4.50	19.60	18x16	16.00	18.00	4.50	4.50	19.80
20x18	18.00	20.00	5.00	5.00	21.76	20x18	18.00	20.00	5.00	5.00	21.77
21x18	18.00	21.00	5.00	5.00	22.84	21x18	18.00	21.00	5.00	5.00	22.84
21x20	20.00	21.00	5.00	5.00	23.83	21x20	20.00	21.00	5.00	5.00	24.01
24x21	21.00	24.00	5.00	5.00	26.08	24x21	21.00	24.00	5.00	5.00	26.08

CTD012341

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

10

SPECIFICATION NO:

15B

PAGE NO.:

17

SUPERSEDES:

January 16, 1978

DATE OF ISSUE:

APR 30 1979

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

FOR BUREAU OF RECLAMATION ONLY TAPERS A & B

Dimensions

Size Inches	I.D., 1" Nom.	I.D., 2" +0.00" -0.05"	Type A H" +0.125" -0.00"	Type B H" +0.00" -0.063"	B.O.D." Min.	Size Inches	I.D., 1" Nom.	I.D., 2" +0.00" -0.05"	Type A H" +0.125" -0.00"	Type B H" +0.00" -0.063"	B.O.D." Min.
Class 40						Class 60					
8x6	6.00	8.00	3.50	3.50	9.26	8x6	6.00	8.00	3.50	3.50	9.32
10x8	8.00	10.00	3.50	3.50	11.30	10x8	8.00	10.00	3.50	3.50	11.91
12x10	10.00	12.00	3.50	3.50	13.38	12x10	10.00	12.00	3.50	3.50	14.36
14x12	12.00	14.00	4.00	4.00	15.44	14x12	12.00	14.00	4.00	4.00	17.00
15x12	12.00	15.00	4.00	4.00	16.82	15x12	12.00	15.00	4.00	4.00	17.81
15x14	14.00	15.00	4.50	4.50	17.60	15x14	14.00	15.00	4.50	4.50	19.80
16x15	15.00	16.00	4.50	4.50	18.67	16x15	15.00	16.00	4.50	4.50	21.02
18x15	15.00	18.00	4.50	4.50	20.21	18x15	15.00	18.00	4.50	4.50	21.02
18x16	16.00	18.00	4.50	4.50	20.21	18x16	16.00	18.00	4.50	4.50	22.28
20x18	18.00	20.00	5.00	5.00	22.82	20x18	18.00	20.00	5.00	5.00	24.79
21x18	18.00	21.00	5.00	5.00	23.72	21x18	18.00	21.00	5.00	5.00	24.79
21x20	20.00	21.00	5.00	5.00	25.24						
24x21	21.00	24.00	5.00	5.00	26.82						
Class 45						Class 70					
8x6	6.00	8.00	3.50	3.50	9.36	8x6	6.00	8.00	3.50	3.50	9.32
10x8	8.00	10.00	3.50	3.50	11.49	10x8	8.00	10.00	3.50	3.50	11.93
12x10	10.00	12.00	3.50	3.50	13.70	12x10	10.00	12.00	3.50	3.50	14.36
14x12	12.00	14.00	4.00	4.00	15.78	14x12	12.00	14.00	4.00	4.00	17.13
15x12	12.00	15.00	4.00	4.00	17.05	15x12	12.00	15.00	4.00	4.00	17.66
15x14	14.00	15.00	4.50	4.50	18.20	15x14	14.00	15.00	4.50	4.50	20.86
16x15	15.00	16.00	4.50	4.50	19.51	16x15	15.00	16.00	4.50	4.50	21.52
18x15	15.00	18.00	4.50	4.50	20.21	18x15	15.00	18.00	4.50	4.50	22.54
18x16	16.00	18.00	4.50	4.50	20.42						
20x18	18.00	20.00	5.00	5.00	23.20						
21x18	18.00	21.00	5.00	5.00	23.72						
21x20	20.00	21.00	5.00	5.00	25.66						
24x21	21.00	24.00	5.00	5.00	26.93						
Class 50						Class 80					
8x6	6.00	8.00	3.50	3.50	9.38	8x6	6.00	8.00	3.50	3.50	9.46
10x8	8.00	10.00	3.50	3.50	11.52	10x8	8.00	10.00	3.50	3.50	12.00
12x10	10.00	12.00	3.50	3.50	13.76	12x10	10.00	12.00	3.50	3.50	15.15
14x12	12.00	14.00	4.00	4.00	15.87	14x12	12.00	14.00	4.00	4.00	17.90
15x12	12.00	15.00	4.00	4.00	17.36	15x12	12.00	15.00	4.00	4.00	18.43
15x14	14.00	15.00	4.50	4.50	18.49	15x14	14.00	15.00	4.50	4.50	20.90
16x15	15.00	16.00	4.50	4.50	19.82						
18x15	15.00	18.00	4.50	4.50	20.44						
18x16	16.00	18.00	4.50	4.50	20.69						
20x18	18.00	20.00	5.00	5.00	23.30						
21x18	18.00	21.00	5.00	5.00	23.84						
21x20	20.00	21.00	5.00	5.00	25.78						
24x21	21.00	24.00	5.00	5.00	27.25						

W = 1.00" +.06", -.00"

Y = 1.00" +.06", -.01"

Z = .375" +.125", -.000"

CTD012342

PREPARED BY:

APPROVED BY:

R & D

MFG.

SALES

I.E.

OTHERS

TAPPED COUPLING WITH 2 1/4" x 2" HEXAGONAL BUSHING

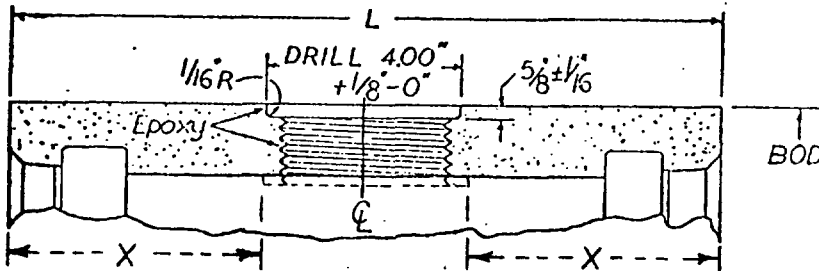
Page 18

Physical Requirements

Coupling shall be hydrostatically tested prior to drilling and tapping and shall meet the requirements of the standard coupling. It is also intended that couplings shall be able to withstand the specified hydrostatic pressure after the bushing has been secured.

Rubber Rings

Each coupling shall be supplied with two (2) rubber rings of the appropriate size and class. Oil resistant rings will be supplied when specified by the purchaser.



Marking:

CERTAINTEED
(Size) FT (Class) AC
2" NIT TAPPED CPLG
FLUID TRANSMISSION

Note: It is not essential that the coupling be machined on the entire I.D. The dotted line above shows an acceptable machining alternative. X" $\pm$.125"
for all classes 6" - 10" = 3.50", 12" = 4.00", 14" - 16" = 4.50",
18" - 24" = 5.00".

L" = 24.00 $\pm$.25" $\pm$.00" for all sizes and classes or L" = 15.00 $\pm$.25" $\pm$.00" for all sizes and up to and including class 50 when so specified on an order.

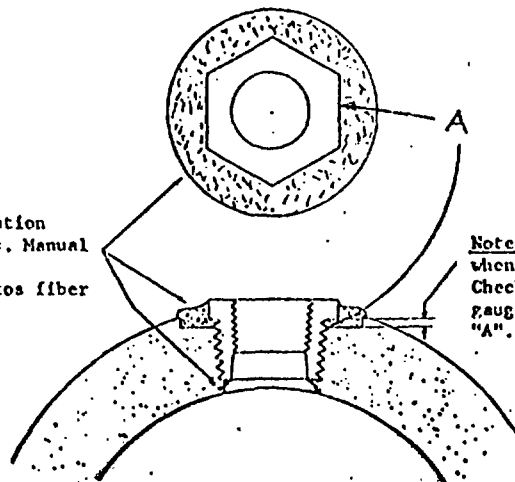
For dimensions not shown refer to standard coupling pages.

Class Size	B.O.D." Min.								
	30	35	40	45	50	60	70	80	90
6	-	-	9.25	9.25	9.80	9.80	9.80	10.65	10.65
8	11.50	11.50	11.50	11.50	12.40	12.40	12.40	13.50	13.50
10	13.90	13.90	13.90	14.55	14.55	16.23	16.23	16.80	16.80
12	16.25	16.25	16.25	16.90	16.90	19.00	19.00	19.50	19.50
14	18.60	18.60	18.60	19.70	19.70	20.85	20.85	21.35	21.35
15	19.80	19.80	19.80	21.20	21.20	22.40	22.40	23.60	23.60
16	20.20	20.20	20.20	22.60	22.60	24.00	24.00	24.50	24.50
18	23.00	23.00	24.50	24.50	24.50	26.00	-	-	-
20	25.40	25.40	26.70	26.70	26.70	28.30	-	-	-
21	26.70	26.70	27.90	27.90	27.90	-	-	-	-
24	30.10	30.10	31.60	31.60	31.60	-	-	-	-

2 1/4" x 2" Hexagonal Bushing may be manufactured in:

- Galvanized Iron
- Brass
- Malleable Iron
- Stainless Steel

Epoxy Formulation
Per Gen. Stds. Manual
Section "O".
Use no asbestos fiber
filler.



Note: Must have clearance when thread is tight. Check threads with go/no-go gauge. Check visually at "A".

CTD012343

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

10

SPECIFICATION NO:

15B

PAGE NO.:

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SUPERSEDES:

January 16, 1978

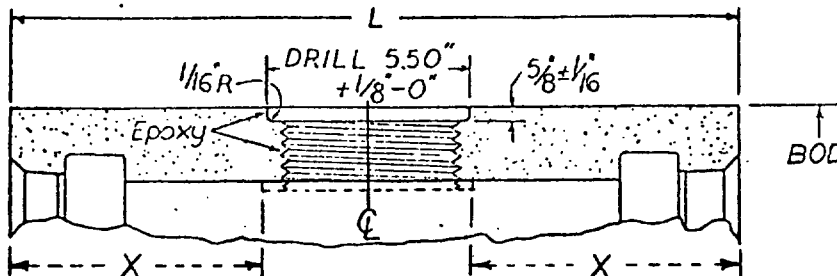
DATE OF ISSUE:

APR 30 1979

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

Tapped Coupling with 4" x 3" Hexagonal Bushing
For Fluid Transmission Only



Marking:

CERTAINTEED
(Size) TAPPED CPLG FT (Class)
FLUID TRANSMISSION
3" NPT

Note: It is not essential that the coupling be machined on the entire I.D. The dotted line above shows an acceptable machining alternative. $X'' \pm .125''$ for all classes 6" - 10" = 3.50", 12" = 4.00", 14" - 16" = 4.50", 18" - 24" = 5.00".

4" x 3" Hexagonal Bushing may be manufactured in:

- A. Galvanized Iron
- B. Brass
- C. Malleable Iron
- D. Stainless Steel

- Notes:**
- For dimensions not shown refer to Standard Coupling dimensions.
 - Tapped Hole shall be centered on coupling length.

B.O.D." Min.

Size" Class	8	10	12	14	15	16	18	20	21	24
30	11.27	13.83	16.19	18.63	19.83	20.95	23.13	25.46	26.72	30.15
35	11.17	13.83	16.19	18.63	19.83	20.95	23.13	25.46	26.72	30.15

L" $\pm$ 0.06"

CTD012344

Size" Class	8	10	12	14	15	16	18	20	21	24
30	13.00	13.00	14.00	15.00	15.00	15.00	16.00	16.00	16.00	16.00
35	13.00	13.00	14.00	15.00	15.00	15.00	16.00	16.00	16.00	16.00

PREPARED BY:

APPROVED BY:

R & D

MFG.

SALES

I.E.

OTHERS

THREADED BRASS INSERT COUPLINGS (TBIC)

USE

To provide a means for making service connections in asbestos cement pressure pipe systems where either NPT or AWWA threads are employed.

PHYSICAL REQUIREMENTS:

All inserts shall be cemented in place with an epoxy adhesive. The workmanship shall be such that there is no evidence of voids or holes, and there shall be no sharp protrusions of the cement on any of its surfaces. The rubber O-ring shall not be placed on the insert until the insert is ready to be cemented in place.

Coupling shall be hydrostatically tested prior to drilling and cementing the insert into position and shall meet the requirements of the standard coupling. It is also intended that couplings shall be able to withstand the specific hydrostatic pressure after the inserts have been secured.

RUBBER RINGS:

Each coupling shall be supplied with two (2) CG Rubber Rings of the appropriate size and class. Oil resistant rings will be supplied when specified by the purchaser.

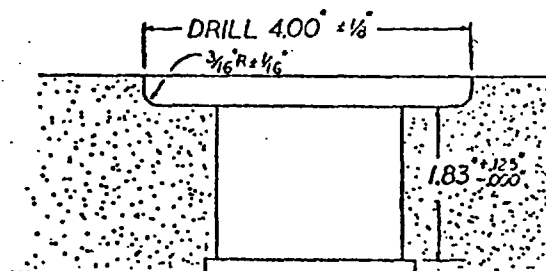
PLASTIC CLOSURES:

Prior to insertion, storage and/or shipment, each insert shall be covered with a plastic closure to prevent damage to the brass threads. Plastic closures are defined in Standard Purchasing Specification No. 525.

BRASS INSERTS:

Threaded Brass Inserts and Bushings shall meet the requirements of Purchasing Specifications 523A and 562. Threaded Brass Inserts are available in 3/4" and 1" AWWA "A" and "B" lengths, 3/4" NPT, 1" NPT in "A" and "B" lengths, 1 1/2" NPT in "A", "B" and "C" lengths. In the cases marked $\odot$, a 1 1/2" NPT insert shall be used and bushed down, if necessary, to the proper size.

In the cases marked $\odot$, the coupling shall be counterbored, as shown below, to allow for proper joining of the Corporation Stop. A "C" length 1 1/2" NPT insert shall be used and bushed down, if necessary.



MARKING

Insert size is to be stenciled near the insert. Example: 1 1/2" NPT. Other marking as shown.

- Notes:**
1. For machining dimensions not shown refer to standard CG Pipe and Coupling in the specification.
 2. TBIC's are available in any combination of listed inserts and coupling sizes.
 3. TBIPA's are available in any combination of listed inserts and pipe sizes.
 4. Double outlet - Inserts are to be located 180° apart.
 5. Protrusions shall be filleted with epoxy.
 6. "J" diameter to be centered on "D".
 7. Rubber "O" rings per Standard Purchasing Specification No. 524..

PROCEDURE FOR USE OF BUSHINGS

Use normal cleaning procedure for inserts and bushings (degreasing). After shaking the bottle as directed on the label, apply Loc-tite #252 to the second full thread of the bushing, filling the thread nearly full all the way around. Screw the bushing into the insert and tighten immediately to about 60-80 foot pounds. If loc-tite oozes outside the fitting in any noticeable amount, use less. Allow 24 hours to cure.

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

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SPECIFICATION NO:

15B

PAGE NO.:

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SUPERSEDES:

January 16, 1978

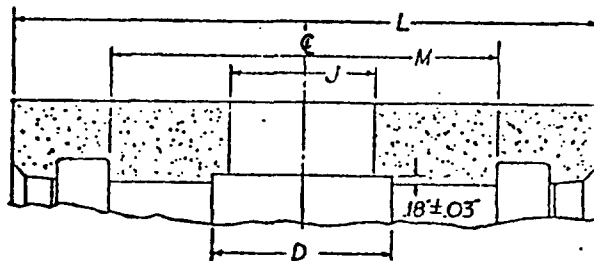
DATE OF ISSUE:

APR 30 1979

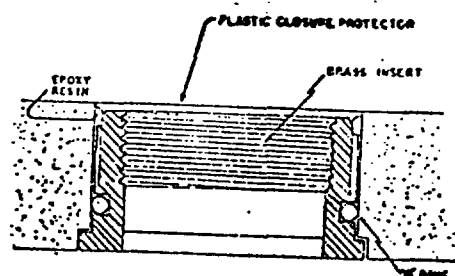
DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

THREADED BRASS INSERT COUPLINGS (TBIC)



B.O.D.



Note: For dimensions not shown, refer to Standard Coupling Dimensions.

Class Size	B.O.D. Min.									
	30	35	40	45	50	60	70	80	90	
6	-	-	8.20	8.20	8.80	9.30	9.30	10.25	10.25	
8	10.75	10.75	10.75	10.75	11.35	12.00	12.00	13.15	13.15	
10	13.05	13.05	13.05	13.63	13.63	15.03	15.90	15.90	15.90	
12	15.38	15.38	15.38	16.08	16.08	17.85	18.80	18.80	18.80	

Class Size	L" ± .06"									
	30	35	40	45	50	60	70	80	90	
6	-	-	8.50	8.50	8.50	8.50	8.50	8.50	8.50	
8	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	
10	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	
12	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	

Class Size	Insert Length									
	30	35	40	45	50	60	70	80	90	
6	--	--	A	A	A	A	A	B	B	
8	A	A	A	A	A	B	B	C①	C①	
10	A	A	A	A	A	B	C①	C①	C①	
12	A	A	A	B	B	C①	②	②	②	

M" - 6", 8", and 10" All Classes = 5.00" +.00" -.06"
12" All Classes = 6.00" +.00" -.06"

Insert Size	J" ± .01"	D" ± .03"
3/4" NPT	1.335	2.56
1" NPT	1.635	2.56
1 1/2" NPT *		
1 1/2" NPT	2.240	2.56
3/4" AWWA	1.635	2.56
1" AWWA	1.885	2.56

Marking:

CERTAINTEED
TBIC
(Size) FT (Class) AC
FLUID TRANSMISSION

* 1 1/2" NPT - Use 1 1/2" NPT and bush down to 1 1/2" NPT. Bushings per Spec 562.

PREPARED BY:

APPROVED BY:

R & D

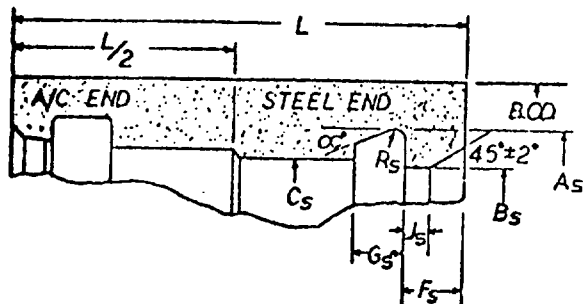
MFG.

SALES

I.E.

OTHERS

Coupling Adaptor (A/C to Steel)
For Fluid Transmission Only



Notes: For dimensions not shown, refer to Standard Coupling Dimensions.

Adaptor Size, In.	Types and Class	Steel or Plastic Size, In.	O.D.	Dimensions									
				12"	13"	14"	15"	16"	18"	20"	22"	24"	26"
6	All	4	4.500	13	.70	.612	.75	.125	5.52	4.56	4.65	4.65	7.00
6	All	6	6.625	13	.63	.50	.35	.200	7.31	6.69	6.77	6.77	7.00
8	All	6	6.625	13	.63	.50	.35	.200	7.31	6.69	6.77	6.77	7.00
8	All	8	8.625	16	.63	.62	.50	.200	9.40	8.69	8.78	8.78	7.00
10	All	10	10.750	16	.63	.62	.50	.200	11.55	10.81	10.91	10.91	7.00
12	All	12	12.750	16	.63	.62	.50	.200	13.55	12.81	12.92	12.92	8.00

Adaptor Size, Inches	(B.O.D.) Min.									
	30	35	40	45	50	60	70	80	90	
6 x 4	-	-	8.18	8.18	8.40	8.76	8.76	9.35	9.35	
6 x 6	-	-	8.18	8.18	8.40	8.76	8.76	9.35	9.35	
8 x 6	10.50	10.50	10.50	10.67	10.90	11.32	11.32	12.00	12.00	
8 x 8	10.50	10.50	10.50	10.67	10.90	11.32	11.32	12.00	12.00	
10 x 10	12.50	12.75	12.75	13.30	13.30	14.36	14.36	15.15	15.15	
12 x 12	14.70	15.00	15.00	15.55	15.76	17.00	17.13	17.90	17.90	

Rubber Rings

Each coupling adaptor shall be supplied with two (2) rubber rings. The ring for the A/C end shall be of CO design of the proper size and class. The ring for the steel end shall be as shown below:

Coupling Size In.

6 x 4
6 x 6
8 x 6
8 x 8
10 x 10
12 x 12

Steel End Ring to be supplied.

1" Class 100 FLOW-TITE - Std. Purchasing Spec. No. 503-B
6" CAS ring per Std. Purchasing Spec. No. 531
6" CAS ring per Std. Purchasing Spec. No. 531
8" Sewer ring per Std. Purchasing Spec. No. 531
10" Sewer ring per Std. Purchasing Spec. No. 531
12" Sewer ring per Std. Purchasing Spec. No. 531

* Oil resistant rings will be supplied when specified by the customer.

- Notes: 1) For excessively oval steel pipe, field reworking of the B₅ to the C₅ dimension is permitted.
 2) Dimensions accommodate threaded and coupled, black or galvanized steel pipe, schedule 10 through 160.

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

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SPECIFICATION NO:

15B

PAGE NO.:

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SUPERSEDES:

April 30, 1979

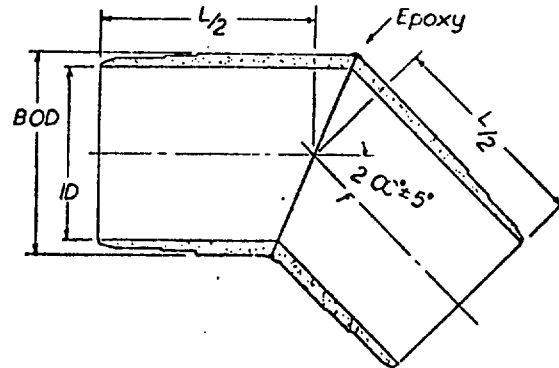
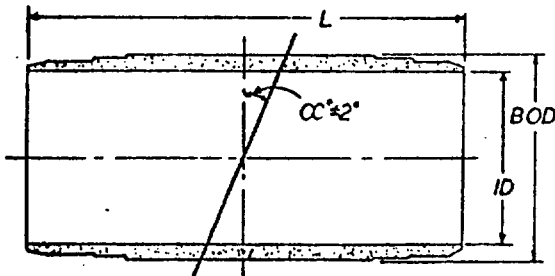
DATE OF ISSUE:

FEB 1 1982

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

ELBOWS
For Bureau of Reclamation Only



Refer to Standard Pipe, Pages 6 and 7, for dimensions not shown.

Pipe Size, Inches	B.O.D." Min.					I.D. ±		I.D. ± Max.					Pipe Size, Inches
	AC 30	AC 35	AC 40	AC 45	AC 50	+1" -0"	±0"	AC 30	AC 35	AC 40	AC 45	AC 50	
6	--	--	7.06	7.06	7.16	32.00	--	--	6.00	6.00	6.00	6.00	6
8	9.12	9.26	9.26	9.36	9.38	37.50	8.00	8.00	8.00	8.00	8.00	8.00	8
10	11.14	11.18	11.30	11.49	11.52	43.00	10.00	10.00	10.00	10.00	10.00	10.00	10
12	13.24	13.27	13.38	13.70	13.87	47.00	12.00	12.00	12.00	12.00	12.00	12.00	12
14	15.38	15.44	15.44	15.78	15.95	53.50	14.00	14.00	13.70	14.00	14.00	14.00	14
15	16.44	16.62	16.72	17.05	17.15	56.00	15.00	15.00	15.00	15.00	15.00	15.00	15
16	17.58	17.58	17.71	18.07	18.22	59.00	16.00	16.00	15.50	16.00	16.00	16.00	16
18	19.60	19.60	20.21	20.44	20.44	64.00	18.00	18.00	18.00	18.00	18.00	18.00	18
20	21.76	21.87	22.43	22.43	22.27	69.50	20.00	20.00	20.00	20.00	20.00	20.00	20
21	22.84	22.91	23.59	23.72	23.84	72.00	21.00	21.00	21.00	21.00	21.00	21.00	21
24	26.08	26.19	26.82	26.97	27.25	80.00	24.00	24.00	24.00	24.00	24.00	24.00	24

Pipe Size	Classes	Degrees	0° ±2°	20° ±5°
All	All	11-1/4	5-5/8	11-1/4
All	All	22-1/2	11-1/4	22-1/2
All	All	30	15	30
All	All	45	22-1/2	45

Marking:

CERTAINTEED
(Degree) EL
(Size) (Class) AC

Note: 1. Epoxy all adjoining surfaces. Remove excess on inside for smooth surface.
2. Length for all classes.

CTD012348

PREPARED BY:

M. R. [Signature]

APPROVED BY:

R & D

MFG.

SALES

I.E.

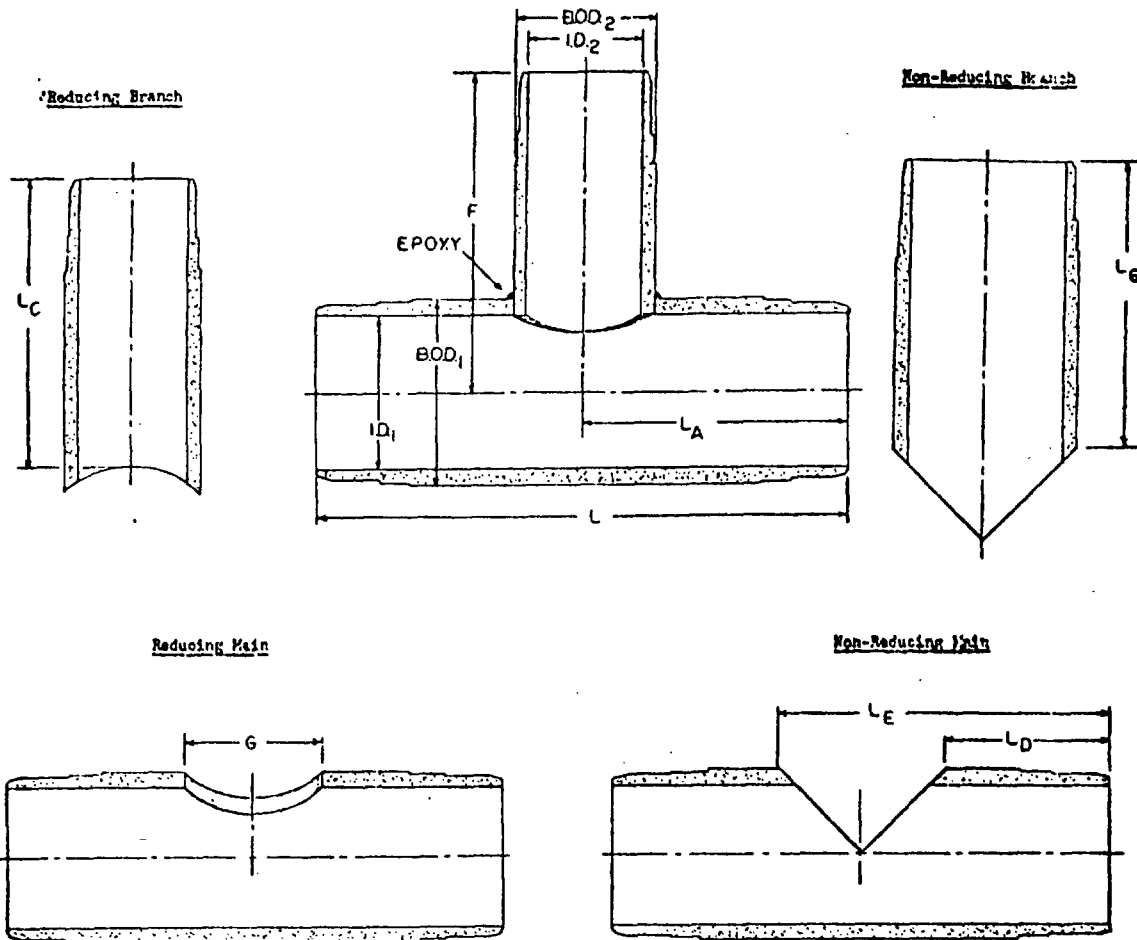
OTHERS

[Signature]

[Signature]

JRA

For Bureau of Oceanation Only



Dimensions

Marking:

CAST-IRON
TEE FITTING
(Size) x (Size) (Class) AC

Refer to Standard Pipe, Pages 6 and 7, for dimensions not shown.

Non-Reducing Tee

$L = +1.0" -0.0"$					Fitting Size, Inches	L_A				
AC 30	AC 35	AC 40	AC 45	AC 50		AC 30	AC 35	AC 40	AC 45	AC 50
--	--	40.00	40.00	40.00	6x6x6	24.00	24.00	24.00	24.00	24.00
48.00	48.00	48.00	48.00	48.00	8x8x8	28.00	28.00	28.00	28.00	28.00
56.00	56.00	56.00	56.00	56.00	10x10x10	32.00	32.00	32.00	32.00	32.00
64.00	64.00	64.00	64.00	64.00	12x12x12	36.00	36.00	36.00	36.00	36.00
72.00	72.00	72.00	72.00	72.00	14x14x14	38.00	38.00	38.00	38.00	38.00
76.00	76.00	76.00	76.00	76.00	15x15x15	40.00	40.00	40.00	40.00	40.00
80.00	80.00	80.00	80.00	80.00	16x16x16	44.00	44.00	44.00	44.00	44.00
88.00	88.00	88.00	88.00	88.00	18x18x18	48.00	48.00	48.00	48.00	48.00
96.00	96.00	96.00	96.00	96.00	20x20x20	50.00	50.00	50.00	50.00	50.00
100.00	100.00	100.00	100.00	100.00	21x21x21	56.00	56.00	56.00	56.00	56.00
112.00	112.00	112.00	112.00	112.00	24x24x24					

$L_g = +0.06"$					Fitting Size, Inches	P				
AC 30	AC 35	AC 40	AC 45	AC 50		AC 30	AC 35	AC 40	AC 45	AC 50
--	--	22.47	22.47	22.42	6x6x6	28.00	28.00	28.00	28.00	28.00
23.44	23.37	23.37	23.32	23.31	8x8x8	30.00	30.00	30.00	30.00	30.00
24.46	24.41	24.35	24.27	24.24	10x10x10	30.00	30.00	30.00	30.00	30.00
23.41	23.37	23.31	23.15	23.06	12x12x12	31.00	31.00	31.00	31.00	31.00
23.31	23.21	23.22	23.13	23.02	14x14x14	32.00	32.00	32.00	32.00	32.00
23.78	23.69	23.64	23.48	23.42	15x15x15	32.00	32.00	32.00	32.00	32.00
23.21	23.21	23.14	22.96	22.89	16x16x16	34.00	34.00	34.00	34.00	34.00
24.20	24.20	23.93	23.93	23.78	18x18x18	35.00	35.00	35.00	35.00	35.00
24.12	24.06	23.81	23.81	23.86	20x20x20	35.00	35.00	35.00	35.00	35.00
23.58	23.54	23.20	23.14	23.08	21x21x21	38.00	38.00	38.00	38.00	38.00
24.96	24.80	24.59	24.51	24.38	24x24x24					

CTD012349

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.	SPECIFICATION NO.	PAGE NO.
11	15B	25

SUPERSEDES:	DATE OF ISSUE:
April 30, 1979	FEB 1 1982

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

FOR BUREAU OF RECLAMATION ONLY Non-Reducing Tee

Lp" +0.00" -0.06"					Fitting Size, Inches	Lp" +0.06" -0.00"				
AC 30	AC 35	AC 40	AC 45	AC 50		AC 30	AC 35	AC 40	AC 45	AC 50
--	--	16.47	16.47	16.42	6x6x6	--	--	23.53	23.53	23.58
19.44	19.37	19.37	19.32	19.31	8x8x8	28.56	28.63	28.63	28.68	28.69
22.46	22.41	22.35	22.27	22.24	10x10x10	33.54	33.59	33.65	33.73	33.76
25.41	25.37	25.31	25.15	25.12	12x12x12	38.59	38.64	38.69	38.85	38.88
28.31	28.21	28.22	28.13	28.07	14x14x14	43.69	43.79	43.78	43.88	43.94
29.63	29.59	29.59	29.48	29.32	15x15x15	46.32	46.41	46.41	46.53	46.68
31.21	31.03	31.03	31.01	30.89	16x16x16	48.79	48.97	48.97	49.00	49.11
34.20	34.20	33.93	33.93	33.78	18x18x18	53.80	53.80	54.07	54.07	54.22
37.12	37.12	36.81	36.81	36.72	20x20x20	58.88	58.88	59.19	59.19	59.28
38.58	38.56	38.14	38.14	38.08	21x21x21	61.42	61.44	61.86	61.86	61.92
42.94	42.56	42.59	42.59	42.38	24x24x24	69.04	69.04	69.41	69.41	69.63

I.D.1" & I.D.2" Nom.					Fitting Size, Inches	B.O.D.1" & B.O.D.2" Min.				
AC 30	AC 35	AC 40	AC 45	AC 50		AC 30	AC 35	AC 40	AC 45	AC 50
--	--	6.00	6.00	6.00	6x6x6	--	--	7.06	7.06	7.16
8.00	8.00	8.00	8.00	8.00	8x8x8	9.12	9.26	9.26	9.36	9.38
10.00	10.00	10.00	10.00	10.00	10x10x10	11.14	11.18	11.30	11.49	11.52
12.00	12.00	12.00	12.00	12.00	12x12x12	13.24	13.27	13.38	13.70	13.87
14.00	14.00	13.60	14.00	14.00	14x14x14	15.38	15.44	15.44	15.78	15.95
15.00	15.00	15.00	15.00	15.00	15x15x15	16.44	16.62	16.72	17.05	17.15
16.00	16.00	15.50	16.00	16.00	16x16x16	17.58	17.58	17.71	18.07	18.22
18.00	18.00	18.00	18.00	18.00	18x18x18	19.60	19.60	20.21	20.21	20.44
20.00	20.00	20.00	20.00	20.00	20x20x20	21.76	21.87	22.43	22.43	22.77
21.00	21.00	21.00	21.00	21.00	21x21x21	22.84	22.91	23.59	23.72	23.94
24.00	24.00	24.00	24.00	24.00	24x24x24	26.08	26.19	26.82	26.97	27.15

CTD012350

PREPARED BY:

M.R. Steffy

APPROVED BY:

R & D

MFG.

SALES

I.E.

OTHERS

R

RW

J.R.A.

**Reducing Tee
FOR BUREAU OF MINING ONLY**

L" ±1.0" -0.0"					Fitting		1A"				
AC 30	AC 35	AC 40	AC 45	AC 50	Size, Inches	AC 30	AC 35	AC 40	AC 45	AC 50	
--	--	40.00	40.00	40.00	8x8x6	--	--	20.00	20.00	20.00	
--	--	40.00	40.00	40.00	10x10x6	--	--	20.00	20.00	20.00	
40.00	40.00	40.00	40.00	40.00	10x10x8	24.00	24.00	24.00	24.00	24.00	
--	--	40.00	40.00	40.00	12x12x6	--	--	20.00	20.00	20.00	
40.00	40.00	40.00	40.00	40.00	12x12x8	24.00	24.00	24.00	24.00	24.00	
56.00	56.00	56.00	56.00	56.00	12x12x10	28.00	28.00	28.00	28.00	28.00	
--	--	40.00	40.00	40.00	14x14x6	--	--	20.00	20.00	20.00	
40.00	40.00	40.00	40.00	40.00	14x14x8	24.00	24.00	24.00	24.00	24.00	
56.00	56.00	56.00	56.00	56.00	14x14x10	28.00	28.00	28.00	28.00	28.00	
64.00	64.00	64.00	64.00	64.00	14x14x12	32.00	32.00	32.00	32.00	32.00	
--	--	40.00	40.00	40.00	15x15x6	--	--	20.00	20.00	20.00	
40.00	40.00	40.00	40.00	40.00	15x15x8	24.00	24.00	24.00	24.00	24.00	
56.00	56.00	56.00	56.00	56.00	15x15x10	28.00	28.00	28.00	28.00	28.00	
64.00	64.00	64.00	64.00	64.00	15x15x12	32.00	32.00	32.00	32.00	32.00	
72.00	72.00	72.00	72.00	72.00	15x15x14	36.00	36.00	36.00	36.00	36.00	
--	--	40.00	40.00	40.00	16x16x6	--	--	20.00	20.00	20.00	
40.00	40.00	40.00	40.00	40.00	16x16x8	24.00	24.00	24.00	24.00	24.00	
56.00	56.00	56.00	56.00	56.00	16x16x10	28.00	28.00	28.00	28.00	28.00	
64.00	64.00	64.00	64.00	64.00	16x16x12	32.00	32.00	32.00	32.00	32.00	
72.00	72.00	72.00	72.00	72.00	16x16x14	36.00	36.00	36.00	36.00	36.00	
76.00	76.00	76.00	76.00	76.00	16x16x15	38.00	38.00	38.00	38.00	38.00	

F"					Fitting	LC ±.25"				
AC 30	AC 35	AC 40	AC 45	AC 50	Size, Inches	AC 30	AC 35	AC 40	AC 45	AC 50
--	--	26.00	26.00	26.00	8x8x6	--	--	22.00	22.00	22.00
--	--	27.50	27.50	27.50	10x10x6	--	--	22.50	22.50	22.50
27.00	27.00	27.00	27.00	27.00	10x10x8	22.00	22.00	22.00	22.00	22.00
--	--	29.00	29.00	29.00	12x12x6	--	--	23.00	23.00	23.00
28.75	28.75	28.75	28.75	28.75	12x12x8	22.75	22.75	22.75	22.75	22.75
28.00	28.00	28.00	28.00	28.00	12x12x10	22.00	22.00	22.00	22.00	22.00
--	--	30.00	30.00	30.00	14x14x6	--	--	23.00	23.00	23.00
30.25	30.25	30.25	30.25	30.25	14x14x8	23.25	23.25	23.25	23.25	23.25
30.25	30.25	30.25	30.25	30.25	14x14x10	23.25	23.25	23.25	23.25	23.25
29.75	29.25	29.25	29.25	29.25	14x14x12	22.25	22.25	22.25	22.25	22.25
--	--	30.50	30.50	30.50	15x15x6	--	--	23.00	23.00	23.00
31.00	31.00	31.00	31.00	31.00	15x15x8	23.50	23.50	23.50	23.50	23.50
31.00	31.00	31.00	31.00	31.00	15x15x10	23.50	23.50	23.50	23.50	23.50
30.50	30.50	30.50	30.50	30.50	15x15x12	23.00	23.00	23.00	23.00	23.00
29.75	29.75	29.75	29.75	29.75	15x15x14	22.25	22.25	22.25	22.25	22.25
--	--	31.25	31.25	31.25	16x16x6	--	--	23.25	23.25	23.25
31.50	31.50	31.50	31.50	31.50	16x16x8	23.50	23.50	23.50	23.50	23.50
31.75	31.75	31.75	31.75	31.75	16x16x10	23.75	23.75	23.75	23.75	23.75
31.50	31.50	31.50	31.50	31.50	16x16x12	23.50	23.50	23.50	23.50	23.50
30.25	30.25	30.25	30.25	30.25	16x16x14	22.25	22.25	22.25	22.25	22.25
30.50	30.50	30.50	30.50	30.50	16x16x15	22.50	22.50	22.50	22.50	22.50

G" + .04", -.01"					Fitting
AC 30	AC 35	AC 40	AC 45	AC 50	Size, Inches
--	--	7.08	7.08	7.18	8x8x6
--	--	7.08	7.08	7.18	10x10x6
9.14	9.28	9.28	9.38	9.40	10x10x8
--	--	7.08	7.08	7.18	12x12x6
9.14	9.28	9.28	9.38	9.40	12x12x8
11.10	11.20	11.32	11.48	11.54	12x12x10
--	--	7.08	7.08	7.18	14x14x6
9.14	9.28	9.28	9.38	9.40	14x14x8
11.10	11.20	11.32	11.48	11.54	14x14x10
13.20	13.29	13.40	13.72	13.89	14x14x12
--	--	7.08	7.08	7.18	15x15x6
9.14	9.28	9.28	9.38	9.40	15x15x8
11.10	11.20	11.32	11.48	11.54	15x15x10
13.20	13.29	13.40	13.72	13.89	15x15x12
15.40	15.60	15.58	15.77	15.97	15x15x14
--	--	7.08	7.08	7.18	16x16x6
9.14	9.28	9.28	9.38	9.40	16x16x8
11.10	11.20	11.32	11.48	11.54	16x16x10
13.20	13.29	13.40	13.72	13.89	16x16x12
15.40	15.60	15.58	15.77	15.97	16x16x14
16.46	16.64	16.74	17.07	17.17	16x16x15

*If existing core drills are not the proper size, machine branch end to fit or use oversize stock, as the situation warrants.

I.D. 1" Min.					Main		B.O.D. 1" Min.				
AC 30	AC 35	AC 40	AC 45	AC 50	Size, Inches	AC 30	AC 35	AC 40	AC 45	AC 50	
8.00	8.00	8.00	8.00	8.00	8x8	9.12	9.26	9.26	9.36	9.38	
10.00	10.00	10.00	10.00	10.00	10x10	11.14	11.18	11.30	11.49	11.52	
12.00	12.00	12.00	12.00	12.00	12x12	13.24	13.27	13.38	13.70	13.87	
14.00	14.00	13.60	14.00	14.00	14x14	15.38	15.44	15.44	15.78	15.95	
15.00	15.00	15.00	15.00	15.00	15x15	16.44	16.62	16.72	17.05	17.15	
16.00	16.00	15.50	16.00	16.00	16x16	17.58	17.58	17.71	18.07	18.22	

I.D. 2" Min.					Branch		R.O.D. 2" Min.				
AC 30	AC 35	AC 40	AC 45	AC 50	Size, Inches	AC 30	AC 35	AC 40	AC 45	AC 50	
--	--	6.00	6.00	6.00	6	--	--	7.06	7.06	7.16	
8.00	8.00	8.00	8.00	8.00	8	9.12	9.26	9.26	9.36	9.38	
10.00	10.00	10.00	10.00	10.00	10	11.14	11.18	11.30	11.49	11.52	
12.00	12.00	12.00	12.00	12.00	12	13.24	13.27	13.38	13.70	13.87	
14.00	14.00	13.60	14.00	14.00	14	15.38	15.44	15.44	15.78	15.95	
15.00	15.00	15.00	15.00	15.00	15	16.44	16.62	16.72	17.05	17.15	

CTD012351

TECHNICAL SPECIFICATIONS

CertainTeed

CertainTeed Corporation
Pipe and Plastics Group

SPECIFICATIONS CLASSIFICATION:

A/C Standard Product Specification

T.C.O. REF. NO.

10

SPECIFICATION NO:

15B

PAGE NO.:

27

SUPERSEDES:

January 16, 1978

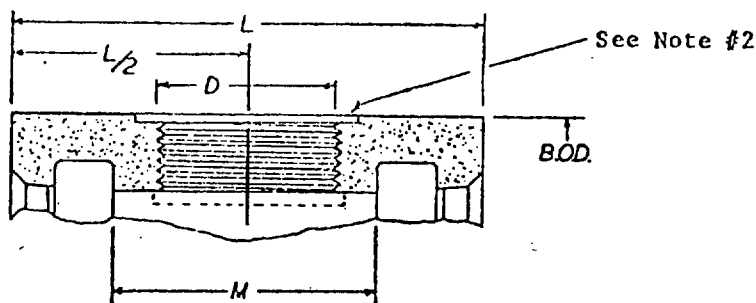
DATE OF ISSUE:

APR 30 1979

DESCRIPTION:

A/C Bureau of Reclamation/Fluid Transmission
Pipe, Couplings and Accessories

Type 25, 3" and 4" Direct Tap Couplings



Drill Size for 3" Direct Tap Coupling = 3.25"
Drill Size for 4" Direct Tap Coupling = 4.25"

Marking Example:

CERTAINTEED
(3" or 4") DIRECT TAP CPLG
(Size) FT (Class) AC
FLUID TRANSMISSION

B.O.D." Min.

Size" Class	8	10	12	14	15	16	18	20	21	24
30	11.27	13.83	16.19	18.63	19.83	20.95	23.13	25.46	26.72	30.15
35	11.27	13.83	16.19	18.63	19.83	20.95	23.13	25.46	26.72	30.15

M" +0.00" -0.06"

Size" Class	8	10	12	14	15	16	18	20	21	24
30	8.00	8.00	9.00	9.70	9.70	9.70	10.70	10.70	10.70	10.70
35	8.00	8.00	9.00	9.70	9.70	9.70	10.70	10.70	10.70	10.70

L" ± 0.06"

Size" Class	8	10	12	14	15	16	18	20	21	24
30	11.50	11.50	12.50	13.50	13.50	13.50	14.50	14.50	14.50	14.50
35	11.50	11.50	12.50	13.50	13.50	13.50	14.50	14.50	14.50	14.50

- Notes: 1. For dimensions not shown, refer to Standard Coupling dimensions
2. Counter bore each tap to a depth that allows the first full thread engagement. Use a 3.5" counter bore for a 3" tap, and a 4.5" counter bore for a 4" tap.
3. Use NPT (IPT) threads.

CTD012352

PREPARED BY:

APPROVED BY:

R & D

MFG.

SALES

I.E.

OTHERS

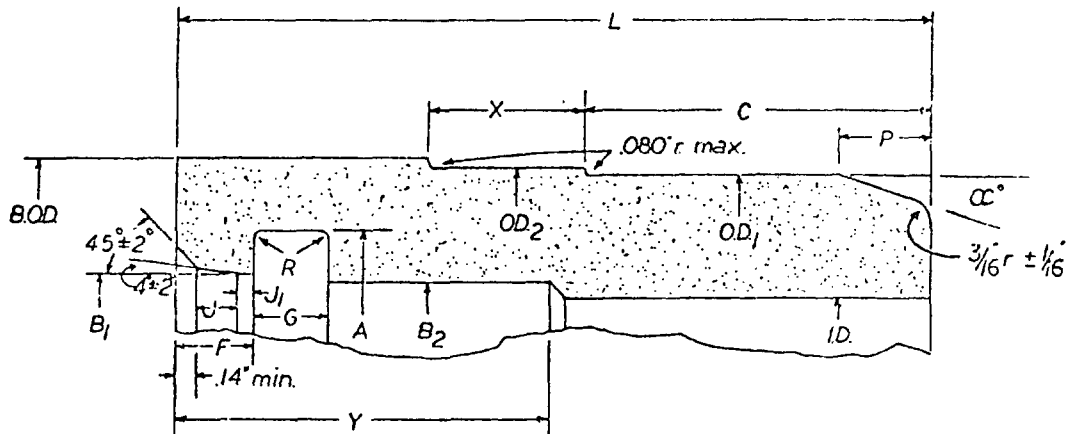
COUPLING REDUCERS - FLUID TRANSMISSION TO FLUID TRANSMISSION
FOR FLUID TRANSMISSION ONLY

Rubber Rings

Each coupling reducer shall be supplied with one (1) rubber ring of the appropriate class corresponding with the coupling side. An oil resistant ring will be supplied when specified by the purchaser.

Marking

CERTAINTRED CRD CLASS (Size) FT - (Size) FT FLUID-TRANSMISSION



Reducer Size, In.	L" ± .063"	T" ± .13"	Nom. I. D. "				B.O.D. " Min.			
			Classes	Classes	Classes	Classes	Classes	Classes	Classes	Classes
			20-35	40-45	50-60	70-90	30-35	40-45	50-60	70-90
8 to 6	6.50	3.50	-	6.60	6.50	6.30	-	9.36	9.32	9.62
10 to 8	6.50	3.50	8.70	8.70	9.00	9.00	11.18	11.49	11.91	12.34
12 to 10	7.60	3.50	10.60	10.60	11.00	11.50	13.27	13.70	14.36	15.15
14 to 12	7.75	4.00	12.70	12.70	13.20	13.60	15.44	15.78	17.00	17.90
15 to 14	8.60	4.50	14.90	14.90	15.00	15.00	17.60	18.20	19.80	21.06
16 to 14	8.60	4.50	14.90	14.90	15.30	15.50	17.95	18.20	19.80	21.06
16 to 15	8.00	4.50	15.90	15.90	15.90	15.90 ③	18.40	19.51	21.02	21.52 ③
18 to 15	9.00	4.50	16.80	16.60	17.40	-	19.80	20.42	22.28	-
20 to 15	10.00	5.00	19.00	19.60	19.60	-	21.77	23.20	24.79	-
21 to 20	10.60	5.00	21.00	21.00	21.00 ②	-	24.01	25.66	27.07 ②	-
24 to 21	10.00	5.00	21.80	23.00	-	-	26.08	26.93	-	-

② (class 50 only)

③ (class 70 only)

- Note:** A) For machining dimensions not shown refer to standard pipe and coupling this specification.
 B) I.D. subject to manufacturing tolerances, machining of I.D. not required on pipe side.
 C) Physical Requirements - Coupling Reducer shall be designed to meet the hydrostatic test requirements of the appropriate class.

CTD012353