



RED DIAMOND BRAND CASING

FOR UNDERGROUND STEAM AND HOT WATER LINES

Sizes:

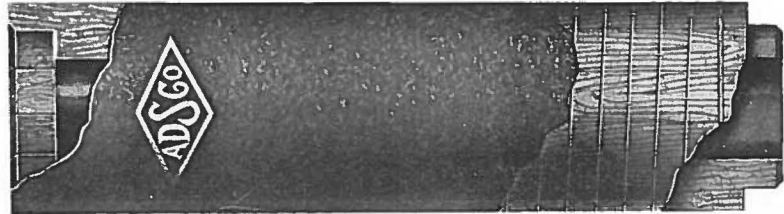
For all pipe sizes to 24 inch inclusive.

Shell Thickness:

Furnished in 4 inch or 2 inch shell.

Service:

Conduit and insulation for steam pipes to 50 lbs. pressure or 300°F., and for 125 lbs. pressure or 350°F. with one inch of insulation applied to the pipe line.



ADSCO Casing is 91% efficient.

WHERE ADSCO RED DIAMOND BRAND CASING IS USED

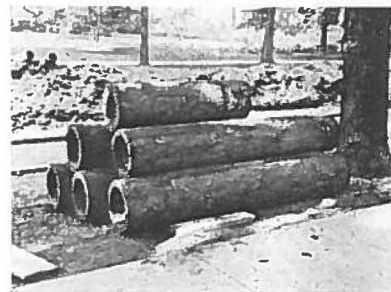
ADSCO Red Diamond Brand Casing is recommended for underground steam and hot water mains for Industrial plants, Colleges and Institutions, District Heating systems and for runs of pipe between buildings. It is the most economical of all casings or conduits offering high efficiency and low installation cost. It combines strength, long life and durability. It does not expand and contract.

ADSCO Casing is particularly well adapted for use with underground steam and hot water pipes where high insulation value is necessary but where the number of pipes used is not sufficient to justify a pipe tun-

nel. The ease and quickness of installation makes ADSCO Red Diamond Casing especially desirable when only a short time is allowable for interference with traffic or other operations.

Tin and asbestos lined or tin lined Casing with 4 in. shell thickness is recommended for use on steam lines with steam pressures up to 50 lbs. or temperatures to 300° F. For pressures up to 125 lbs. and temperatures to 350°F., it is recommended that 1 in. thick laminated asbestos or similar moulded insulation be applied to the pipe line before the application of the Casing.

For hot water lines, 2 in. thick Casing, either tin lined or unlined is recommended.

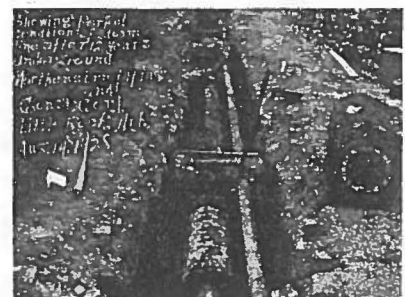


ADSCO Casing installed in Erie, Pa., removed after 27 years of service and reinstalled on a new line.



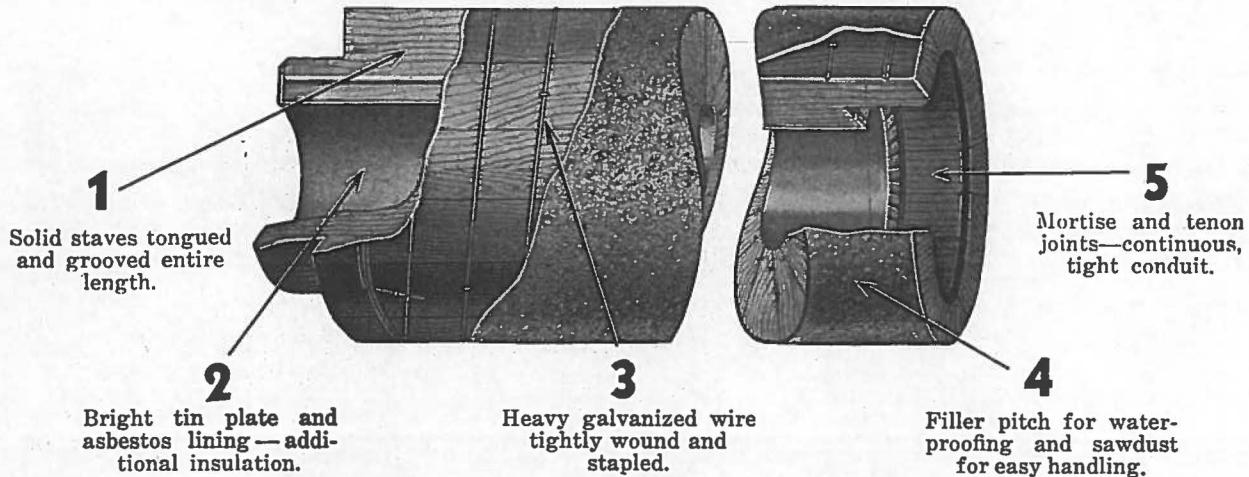
ADSCO Casing installed in Excelsior Springs, Mo.

ADSCO Casing in perfect condition after 12 years of service in Little Rock, Ark. Line removed to be replaced by larger size.





CONSTRUCTION OF ADSCO RED DIAMOND BRAND CASING



For efficiency and dependability, conduit for steam pipes must be substantial, waterproof, have good insulating qualities and long life. ADSCO Red Diamond Brand Casing meets these requirements in every particular. Its design and construction are based upon more than sixty years of manufacturing experience.

The durability and efficiency of ADSCO Casing is proved by examination of installations which have been in service for periods of from 20 to 30 years. They have been found to be in first-class condition, able to give many additional years of service.

The staves used in manufacturing ADSCO Red Diamond Brand Casing are sound and thoroughly kiln dried. The staves are accurately tongued and grooved throughout their entire length. Galvanized wire 3/16" in diameter, binds the staves together. The wire is applied under pressure and is so tightly wound that it is embedded in the each stave. ADSCO Casing is furnished in sections 5 ft. to 7 ft. 8 in. long.

Hot ADSCO Filler Pitch is applied to the entire outer surface of the casing, protecting both wood and wire from moisture. Since the wood is always kept dry, its insulating qualities remain at the maximum. While the waterproof coating is still hot, the casing is rolled in sawdust to facilitate handling.

A 4 inch mortise and tenon joint, treated with a preservative is provided on each sec-

tion. During installation, hot pitch is applied to these joints, assuring a water tight construction when driven together.

High insulation value is provided not only by the 4 in. staves, but also by the bright charcoal tin plate and asbestos lining. The bright tin plate reflects a large portion of the heat radiated from the pipe and the layers of asbestos between the tin and the staves add to the insulating qualities of the conduit.

SPLIT CASING

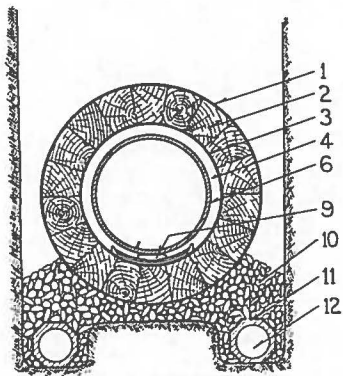


When casing is to be applied to existing pipe lines or where two or more pipes are to be in one casing, ADSCO Split Casing is convenient and practical. It is also valuable in welded pipe work where casing is applied after piping is tested. Special Guides, illustrated on page 6, are available for use with various combinations of pipes.

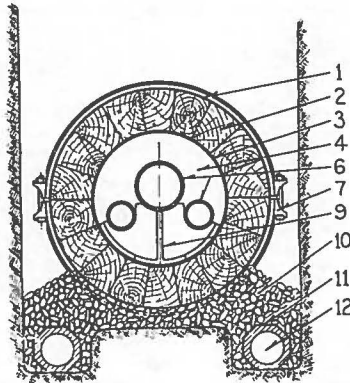
ADSCO Split Casing is furnished in the same sizes as standard casing. It is constructed in the same manner and with the same care, being cut in half after completion. Each half is lined separately. Heavy clamps with bolts are furnished for bolting the halves together.



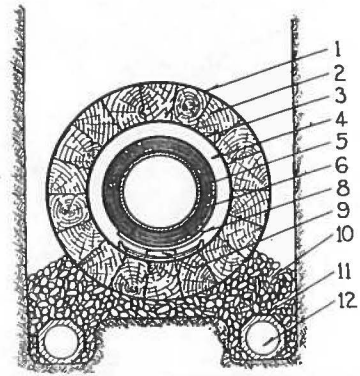
INSTALLATION OF ADSCO RED DIAMOND BRAND CASING
REQUIRES NO SUPPORTING STRUCTURE OR COVERING
OTHER THAN THE BACKFILL OF THE TRENCH



Installation for pressures to 50 lbs.
or 300°F.



Application of 3 pipes in Split
Casing Conduit.



Installation for pressures to 125 lbs.
or 350°F.

- | | | | |
|----------------------------|---------------|-----------------------|------------------------------|
| 1. Roofing Paper | 4. Air Space | 7. Split Casing Clamp | 10. Crushed Stone |
| 2. Wood Casing | 5. Insulation | 8. Saddle Plate | 11. Roofing over tile joints |
| 3. Tin and Asbestos Lining | 6. Pipe | 9. Pipe Guide | 12. Drain Tile |

RECOMMENDATIONS

For the proper installation of ADSCO Red Diamond Brand Casing, the trench should be provided with two lines of 4 inch drain tile—one drain tile is used for mains less than 6 inches in diameter. They are laid in the bottom of the trench with outlets to sewers at all low points. All open joints are covered with strips of roofing paper. The drain tile should then be covered with 2 inches of crushed stone or coarse gravel and the top graded to carry the conduit at the proper elevation.

When the steam pipe is placed in the trench, the Casing is slipped over and the pipe guide is inserted to carry the pipe. The casing sections are then driven together to within about one-half inch when hot ADSCO Filler Pitch is poured into the joints. The joint is then covered with a piece of roofing paper and the sections driven tight. When installation is completed, roofing paper should be laid over the top of the casing, extending down below the center line on each side. This provides additional protection against seepage water. More stone or gravel should be added, as shown in illustration, and the trench backfilled.

ADSCO Split Casing is made and shipped in full sections which are easily separated on the job. The lower half is first placed in position, the pipe installed, all joints

poured with hot ADSCO Filler Pitch and the top half is added. The joints are then drawn up by the bolts and made water-tight. Otherwise, the installation of ADSCO Split Casing is the same as described above for standard Casing.

If the construction is for high pressure, one inch thick insulation is applied to the pipe before the Casing is slipped over. When using Split Casing on similar installations, the insulation is applied before the top half of the Casing is put into place. ADSCO Saddle Plates are used in addition to the Pipe Guides to permit the pipe to be fully insulated and to prevent the insulation from being damaged when the pipe line expands and contracts. These Saddle Plates are described in another Bulletin.

At manhole and fitting boxes, the ends of the Casing are made flush with the inside wall. ADSCO Pipe Collars are used to prevent the circulation of air in the conduit between manholes.

When the random lengths of Casing result in a conduit slightly longer than a given section of the pipe line, the last section of Casing is cut to meet the requirements. At elbows, a brick or concrete box is built and the installation is made in the same manner as at manholes.



FILLER PITCH FOR CASING CONDUIT

Best installation results with ADSCO Red Diamond Brand Casing can be obtained by using ADSCO Filler Pitch for making up the joints. It is obtainable in drums of about 500 pounds each, but since it is in solid form, any approximate number of pounds can be fur-

nished. Heat to a temperature suitable for pouring and apply.

The following tables can be used to determine the amount required per 100 feet of conduit.

List price.....\$.05 per pound

FILLER PITCH REQUIRED PER 100 FEET OF CASING

Size Casing	Pounds per 100 Ft.	
	Regular Casing	Split Casing
3"	35	100
4	40	125
5	45	140
6	50	150
7	53	160
8½"	55	170

Size Casing	Pounds per 100 Ft.	
	Regular Casing	Split Casing
9½"	60	180
11	62	190
12	65	200
13	70	210
15	75	220
16½"	80	240

SUGGESTED SPECIFICATION FOR CASING CONDUIT

All underground steam and hot water lines shall be installed in ADSCO Red Diamond Brand Casing Conduit made of thoroughly kiln dried pine or cedar cut into staves the full thickness of the Casing and tongued and grooved the entire length of each stave. These staves shall be securely bound together in the form of a cylinder with 4 in. mortise and tenon ends and the completed unit made waterproof. The inside shall be lined or unlined as hereinafter specified. All sections of Casing, before being driven together, shall have the joints treated with ADSCO Filler Pitch to make them watertight.

Where one pipe only is to be installed in a line of conduit, the inside diameter shall be approximately 2 in. larger than the outside diameter of the pipe and the Casing shall be the regular type. Where more than one pipe is to be installed in one conduit, the Casing shall be of sufficient size to allow at least one inch clearance between the wall of the pipe and the inside of the Casing and at least one inch clearance between each of the pipes. The manufacturer's recommendations shall be followed in this respect.

Casing Conduit with 4 in. thick shell, tin and asbestos lined shall be used for steam pipes carrying steam not in excess of 50 lbs. pres-

sure or 300°F. For lines carrying steam up to 125 lbs. pressure or 350°F., 4 in. thick shell, tin and asbestos lined Casing shall be used and 1 in. thick, laminated asbestos insulation shall be applied to the pipe line. ADSCO Saddle Plates shall be used on these lines to protect the insulation as the pipe expands and contracts.

Hot water lines and condensate return lines shall be installed in 2 in. thick shell Casing, tin lined (or unlined.)

All pipe lines shall be supported at 6 ft. to 8 ft. intervals in proper position in the Casing by Pipe Guides as recommended by the manufacturer.

To prevent the circulation of air between manholes and create a "dead" air space in the conduit, ADSCO Pipe Collars shall be used as recommended.

Two lines of four inch drain tile with open joints covered by strips of roofing paper shall be laid in the trench with crushed stone or gravel at least 2 inches thick. After the pipe lines and conduit are installed and graded, the entire conduit shall be covered with medium weight roofing paper reaching below the center line on each side as an additional protection against seepage water and sufficient gravel added to the trench to bring it well up the sides of the conduit.



HOW TO ORDER ADSCO RED DIAMOND BRAND CASING

Always state inside diameter of Casing, thickness of shell, whether split and lined or unlined, size of pipe or pipes and thickness of insulation, if any.

Refer to page 1 for recommendations regarding shell thickness and lining for various conditions.

Determine the size required by referring to the table below for ADSCO Casing if only one pipe is to be installed and if no additional insulation is to be applied to the pipe. If addi-

tional insulation is to be used, add the thickness and select the nearest size Casing having an inside diameter approximately 2 in. greater than the outside diameter of the pipe and insulation.

Where two pipes are to be installed in one conduit, follow the same procedure as above, allowing 1 in. clearance between pipes or refer to the tabulation below for Split Casing.

Unless otherwise ordered, a sufficient number of pipe guides are shipped with each order of Casing.

DIMENSIONS AND LIST PRICES

ADSCO CASING

Inside Dia. of Casing, Inches	*For covering pipe, inches	Thick-ness of shell, inches	Approx. weight per lineal foot, pounds	List Price per lineal foot		
				Unlined	Tin lined	Tin and asbestos lined
4 INCH SHELL CASING						
3	1 or 1 1/4	4	20	\$2.95	\$3.35	\$3.60
4	1 1/2 or 2	4	21	3.25	3.70	4.00
5	2 1/2 or 3	4	23	3.60	4.10	4.40
6	3 1/2 or 4	4	26	3.95	4.50	4.85
7	5	4	29	4.35	4.90	5.30
8 1/2	6	4	33	4.65	5.25	5.70
9 1/2	7	4	36	5.10	5.75	6.20
11	8	4	40	5.45	6.15	6.65
12	9	4	42	5.90	6.70	7.20
13	10	4	45	6.35	7.20	7.75
15	12	4	50	6.85	7.80	8.40
16 1/2	14 O.D.	4 1/2	63	7.60	8.60	9.30
17 1/2	15 O.D.	4 1/2	72	8.50	9.45	10.40
18 1/2	16 O.D.	5	80	9.60	10.80	11.75
21	18 O.D.	5	90	10.90	12.35	13.35
22 3/4	20 O.D.	5	100	12.90	14.60	15.80
2 INCH SHELL CASING						
3	1 or 1 1/4	2	9	\$1.90	\$2.05	\$2.40
4	1 1/2 or 2	2	10	2.15	2.50	2.75
5	2 1/2 or 3	2	12	2.35	2.75	3.00
6	3 1/2 or 4	2	14	2.65	3.00	3.30
7	5	2	16	2.80	3.25	3.60
8 1/2	6	2	18	3.00	3.50	3.90
9 1/2	7	2	20	3.30	3.90	4.25
11	8	2	22	3.55	4.10	4.55
12	9	2	24	3.80	4.50	4.90
13	10	2	26	4.10	4.90	5.30
15	12	2	28	4.55	5.25	5.75

*Tabulation based on bare pipes.

ADSCO SPLIT CASING

Inside Diam. of Casing, Inches	*For covering pipe, inches		Approx. weight per lineal foot, pounds	List Price per Ft. T & A Lined
	1 Pipe	2 Pipes		
4 INCH SHELL SPLIT CASING				
4	1 1/2-2		24	\$5.60
5	2 1/2-3	1 1/4 x 3/4	28	6.15
6	3 1/2-4	1 1/4 x 1 1/4	32	6.80
6	3 1/2-4	2 x 1	32	6.80
7	5	1 1/2 x 1 1/2	37	7.40
7	5	2 1/2 x 1 1/4	37	7.40
8 1/2	6	2 x 2	43	8.00
8 1/2	6	2 1/2 x 2 1/2	43	8.00
8 1/2	6	3 x 1 1/2	43	8.00
9 1/2	7	4 x 2	47	8.70
11	8	3 x 3	52	9.30
11	8	3 1/2 x 3 1/2	52	9.30
11	8	5 x 2 1/2	52	9.30
12	9	4 x 4	56	10.00
13	10	6 x 3	60	10.90
15	12	5 x 5	75	11.75
15	12	8 x 3	75	11.75
16 1/2	14	6 x 6	86	13.00
16 1/2	14	8 x 4	86	13.00

*Tabulation based on bare pipes.



Installing ADSCO Casing in Wilkes-Barre, Pa.



PIPE COLLARS FOR CASING CONDUIT

ADSCO Semi-steel Pipe Collars are furnished in split form with the two halves bolted together. They are used wherever the run of casing is broken to install fittings. These Collars are fitted over the pipe with the flange against the Casing thereby stopping the circulation of air between manholes, thus creating a "dead" air space.

Model C Collars are used where only one pipe is to be installed in the conduit—sizes, dimensions, weights and prices are given in the tabulation below. Where more than one pipe is being installed, the Model E Collar is recommended and prices will be quoted on application. State the sizes of the pipes and the bore of the casing to be used.



Model C Pipe Collar

LIST PRICES FOR MODEL C PIPE COLLARS

Size In.	Diam. Inches		Wgt. lbs.	List Price	Size In.	Diam. Inches		Wgt. lbs.	List Price
	In-side	Out-side				In-side	Out-side		
2	2 ⁷ / ₈	14	18	\$1.95	10	11 ¹ / ₄	24	50	\$ 5.40
2 ¹ / ₂	3 ³ / ₈	14 ¹ / ₂	18	1.95	12	13 ¹ / ₄	26	63	7.10
3	4	15	18	2.10	14	15	28 ¹ / ₂	95	9.40
4	5	16	20	2.40	15	16	29 ¹ / ₂	112	10.50
5	6	17 ¹ / ₂	25	2.80	16	17	31 ¹ / ₂	123	14.00
6	7 ¹ / ₈	19	27	3.10	18	19	35	138	16.00
7	8 ¹ / ₈	20	29	3.50	20	21	35 ³ / ₄	145	18.50
8	9 ¹ / ₈	22	37	4.00	22	23	38	151	22.00
9	10 ¹ / ₈	23	40	4.60	24	25	40	164	26.00

PIPE GUIDES FOR CASING CONDUIT

These pipe guides are used for centering the pipe in the wood casing. They are designed to permit free movement of the pipe in

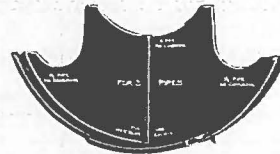
expanding and contracting. They are placed approximately 6 feet apart and small lugs on the bottom prevent them from moving.



Model A for 1 to 5 in. Pipe



Model B with Rollers for Pipe 6 in. and Larger



Special Guide for 3 Pipes

LIST PRICES FOR PIPE GUIDES

MODEL A GUIDES			
*Pipe Size (1 Pipe)	*Inside Diam. of Casing	Weight of Guide, Pounds	List Price
1-1 ¹ / ₄ "	3"	1/4	\$.08
1 ¹ / ₂ -2"	4	2/8	.10
2 ¹ / ₂	5	1/8	.14
3	5	3/4	.14
3 ¹ / ₂	6	2/8	.16
4	6	3/4	.18
5	7	3/4	.24
MODEL B GUIDES			
6"	8 ¹ / ₂ "	2 ¹ / ₄	\$.32
7	9 ¹ / ₂	2 ¹ / ₄	.36
8	11	2 ² / ₈	.40
9	12	2 ¹ / ₈	.44
10	13	2 ¹ / ₈	.48
12	15	3 ³ / ₈	.54
14	16 ¹ / ₂	2 ¹ / ₈	.60
15	17 ¹ / ₂	3 ² / ₈	.68
16	18 ¹ / ₂	4 ³ / ₈	.75
18	21	4 ³ / ₈	1.00
20	22 ³ / ₄	8 ¹ / ₈	1.40

*Tabulation based on bare pipes.

SPECIAL GUIDES			
*Pipe Sizes (2 Pipes)	*Inside Diam. of Casing	Weight of Guide, Pounds	List Price
1 ¹ / ₄ x 3 ³ / ₄ "	5"	2 ³ / ₄	\$.40
1 ¹ / ₄ x 1 ¹ / ₄	6	3	.45
2 x 1	6	3	.45
1 ¹ / ₂ x 1 ¹ / ₂	7	3	.45
2 ¹ / ₂ x 1 ¹ / ₄	7	3 ¹ / ₄	.50
2 x 2	8 ¹ / ₂	3 ¹ / ₄	.60
2 ¹ / ₂ x 2 ¹ / ₂	8 ¹ / ₂	3 ¹ / ₂	.60
3 x 1 ¹ / ₂	8 ¹ / ₂	3 ¹ / ₂	.60
4 x 2	9 ¹ / ₂	3 ¹ / ₂	.70
3 x 3	11	3 ¹ / ₂	.80
3 ¹ / ₂ x 3 ¹ / ₂	11	3 ³ / ₄	.80
5 x 2 ¹ / ₂	11	3 ¹ / ₂	.80
4 x 4	12	4	.90
6 x 3	13	4 ¹ / ₂	1.00
5 x 5	15	4 ¹ / ₂	1.10
8 x 3	15	5 ¹ / ₂	1.10
6 x 6	16 ¹ / ₂	6	1.20
8 x 4	16 ¹ / ₂	6	1.20

*Tabulation based on bare pipes.