

Allen-Sherman-Hoff® ASHcore® Ceramic-lined Pipe and Fittings

For fine particle hydraulic and pneumatic conveying

Resist fine particle abrasion in the entire conveying system with ASHcore® ceramic-lined pipe and fittings from Babcock & Wilcox (B&W). Each ASHcore product features wear-resistant tiled ceramic liners that are custom fit to an outer steel shell for optimum performance and long wear life.

ASHcore pipe and fittings are well-suited for pneumatic fly ash applications. Because dramatic wear improvements can be realized, they're recommended for high-abrasion areas such as elbows, tees, laterals, inlet regions and transfer points.

Benefits

Extended wear life

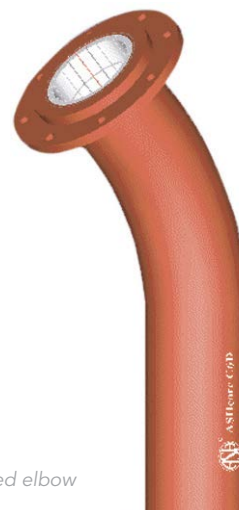
ASHcore pipe and fittings are ceramic-lined because ceramic is one of the best high-wear materials available for resisting fine particle abrasion. ASHcore ceramic-lined pipe and fittings are even harder and more wear-resistant than Ni-hard or basalt. The alumina ceramic lining in our pipe and fittings has a hardness of 9 on the Mohs scale — considerably more than other abrasion-resistant alloys.

No-hassle installation

Piping end-connection variations are available to accommodate site-specific needs. Standard ANSI-dimension flanges make ASHcore ceramic-lined products readily compatible with standard valves and most existing interface connections. And ASHcore ceramic-lined products weigh approximately half of what comparably thick steel pipe weighs, decreasing overall system weight to further ease installation.



ASHcore ceramic-lined tee



ASHcore ceramic-lined elbow

Superior performance

The lining used in ASHcore pipe and fittings is an ultra fine-grain, high-grade alumina. ASHcore products maintain a minimum half-inch thickness throughout the interior of the steel piping. This allows for optimum wear performance and significantly extends service life when used for pneumatic and hydraulic conveying applications. High-temperature mortar assures adherence of the ceramic tile to the steel pipe shell. Thanks to the combination of our engineered ceramic lining, custom fit and superior bonding, you'll get the highest assurance that the tile lining will maintain its integrity and provide the performance you need.

Features

- Handles ash particles up to 3/4 in. (1.9 cm) in diameter
- Tapered design eliminates open gaps and provides full surface contact between adjoining tiles.
- Self-locking tiles provide a self-supporting arch arrangement.
- Red oxide primer finish prevents premature oxidation
- Dimensionally compatible with many traditional styles of A-S-H elbows, laterals and tees.

Availability

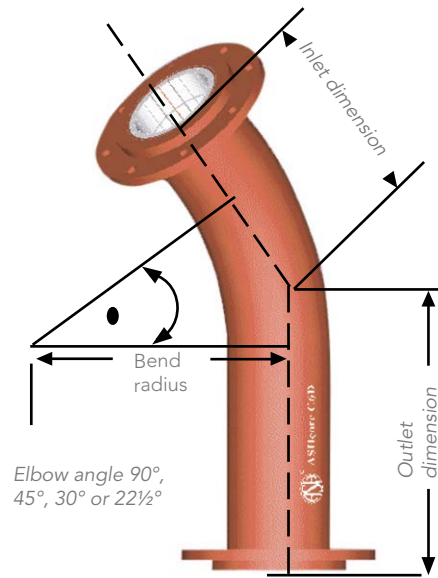
Available for new equipment and for retrofit.

Applications

For systems with fine particle abrasion problems. Well-suited for wet applications with small particulate sizes. Not suitable for dry pyrites removal, bottom ash systems or other applications with large particle sizes (3/4 in [1.9 cm] or above) or in applications where rapid thermal changes in excess of 500F (260C) are anticipated

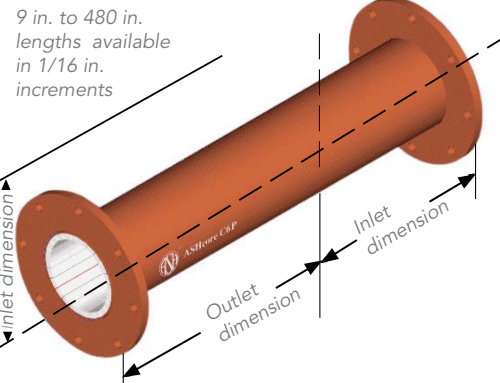
- Ceramic lining
 - Ultra fine-grain, high-grade (90 percent) alumina; Hardness factor of 9 on the Mohs scale
- Pipe and fittings (outer casings)
 - ASTM A139-00 steel
- Pipe sizes
 - 5, 6, 7, 8, 9, 10 or 12 in.; spool lengths up to 40 ft
- Temperature parameters
 - Wet applications up to 400F (204C);
 - dry applications up to 2000F (1093C)

ASHcore® ceramic-lined elbow



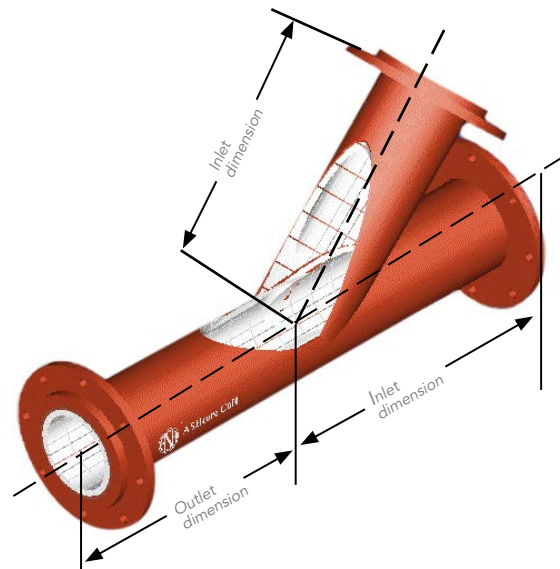
Elbow angle 90°, 45°, 30° or 22½°

ASHcore® ceramic-lined spool piece



9 in. to 480 in. lengths available in 1/16 in. increments

ASHcore® ceramic-lined 45° lateral



ASHcore® ceramic-lined tee



ASHcore® ceramic-lined fittings

* Pipe Dia. (matches Ceramic I.D.)	Fitting Type	Fixed Flange Part Numbers		Rotating Flange Part Numbers		Inlet Dimension	Outlet Dimension	Centerline Bend Radius	Flange Bolt Circle Diameter/# Bolts
		Low Temp	High Temp	Low Temp	High Temp				
5 in.	90 Elbow	C5B-1	CHT5B-1	C5B	CHT5B	21 1/4	28 3/4	15	Fixed Flange 9.50 Dia. / 8 Bolts
	45 Elbow	C5D-1	CHT5D-1	C5D	CHT5D	12 1/2	20	15	
	30 Elbow	C5N-1	CHT5N-1	C5N	CHT5N	10 1/4	18 3/4	15	
	22 1/2 Elbow	C5K-1	CHT5K-1	C5K	CHT5K	9 1/4	16 3/4	15	Rotating Flange 11.75 Dia. / 8 Bolts
	90 Tee	C5M-1	CHT5M-1	C5M	CHT5M	11 1/2	16 1/2	N/A	
45 Lateral	C5H-1	CHT5H-1	C5H	CHT5H	19 3/4	19 3/4	N/A		
6 in.	90 Elbow	C6B-1	CHT6B-1	C6B	CHT6B	24 1/4	33 1/4	18	Fixed Flange 9.50 Dia. / 8 Bolts
	45 Elbow	C6D-1	CHT6D-1	C6D	CHT6D	13 11/16	22 11/16	18	
	30 Elbow	C6N-1	CHT6N-1	C6N	CHT6N	11 1/6	20 7/16	18	
	22 1/2 Elbow	C6K-1	CHT6K-1	C6K	CHT6K	9 13/16	18 13/16	18	Rotating Flange 11.75 Dia. / 8 Bolts
	90 Tee	C6M-1	CHT6M-1	C6M	CHT6M	12 1/2	18 1/2	N/A	
45 Lateral	C6H-1	CHT6H-1	C6H	CHT6H	21 1/4	21 1/4	N/A		
7 in.	90 Elbow	C7B-1	CHT7B-1	C7B	CHT7B	27 1/4	37 3/4	21	Fixed Flange 11.75 Dia. / 8 Bolts
	45 Elbow	C7D-1	CHT7D-1	C7D	CHT7D	14 15/16	25 7/16	21	
	30 Elbow	C7N-1	CHT7N-1	C7N	CHT7N	11 7/8	22 3/8	21	
	22 1/2 Elbow	C7K-1	CHT7K-1	C7K	CHT7K	10 7/16	21	21	Rotating Flange 14.25 Dia. / 12 Bolts
	90 Tee	C7M-1	CHT7M-1	C7M	CHT7M	13 1/2	20 1/2	N/A	
45 Lateral	C7H-1	CHT7H-1	C7H	CHT7H	22 1/4	22 1/4	N/A		
8 in.	90 Elbow	C8B-1	CHT8B-1	C8B	CHT8B	30 1/4	42 1/4	24	Fixed Flange 11.75 Dia. / 8 Bolts
	45 Elbow	C8D-1	CHT8D-1	C8D	CHT8D	16 3/16	28 3/16	24	
	30 Elbow	C8N-1	CHT8N-1	C8N	CHT8N	16 3/16	28 3/16	24	
	22 1/2 Elbow	C8K-1	CHT8K-1	C8K	CHT8K	11	23	24	Rotating Flange 14.25 Dia. / 12 Bolts
	90 Tee	C8M-1	CHT8M-1	C8M	CHT8M	14 1/2	22 1/2	N/A	
45 Lateral	C8H-1	CHT8H-1	C8H	CHT8H	23 1/4	23 1/4	N/A		
9 in.	90 Elbow	C9B-1	CHT9B-1	C9B	CHT9B	33 1/4	46 3/4	27	Fixed Flange 14.25 Dia. / 12 Bolts
	45 Elbow	C9D-1	CHT9D-1	C9D	CHT9D	17 7/16	30 15/16	27	
	30 Elbow	C9N-1	CHT9N-1	C9N	CHT9N	13 1/2	27	27	
	22 1/2 Elbow	C9K-1	CHT9K-1	C9K	CHT9K	11 5/8	25 1/8	27	Rotating Flange 17.00 Dia. / 12 Bolts
	90 Tee	C9M-1	CHT9M-1	C9M	CHT9M	16 1/2	25 1/2	N/A	
45 Lateral	C9H-1	CHT9H-1	C9H	CHT9H	26 3/4	26 3/4	N/A		
10 in.	90 Elbow	C10B-1	CHT10B-1	C10B	CHT10B	38 1/4	53 1/4	30	Fixed Flange 14.25 Dia. / 12 Bolts
	45 Elbow	C10D-1	CHT10D-1	C10D	CHT10D	20 11/16	35 11/16	30	
	30 Elbow	C10N-1	CHT10N-1	C10N	CHT10N	20 11/16	35 11/16	30	
	22 1/2 Elbow	C10K-1	CHT10K-1	C10K	CHT10K	14 3/16	29 3/16	30	Rotating Flange 17.00 Dia. / 12 Bolts
	90 Tee	C10M-1	CHT10M-1	C10M	CHT10M	18 1/2	28 1/2	N/A	
45 Lateral	C10H-1	CHT10H-1	C10H	CHT10H	30 1/4	30 1/4	N/A		
12 in.	90 Elbow	C12B-1	CHT12B-1	C12B	CHT12B	44 1/4	62 1/4	36	Fixed Flange 17.00 Dia. / 12 Bolts
	45 Elbow	C12D-1	CHT12D-1	C12D	CHT12D	23 3/16	39 11/16	36	
	30 Elbow	C12N-1	CHT12N-1	C12N	CHT12N	17 7/8	35 7/8	36	
	22 1/2 Elbow	C12K-1	CHT12K-1	C12K	CHT12K	15 7/16	33 7/16	36	Rotating Flange 18.75 Dia. / 12 Bolts
	90 Tee	C12M-1	CHT12M-1	C12M	CHT12M	20 1/2	32 1/2	N/A	
45 Lateral	C12H-1	CHT12H-1	C12H	CHT12H	33 1/4	33 1/4	N/A		

* Note: All above dimensions are in inches.

ASHcore® ceramic-lined pipe

* Pipe Dia. (matches Ceramic I.D.)		For Use w/Fixed Flange Fittings		For Use w/Rotating Flange Fittings		Instructions for Ordering Specific Lengths of Pipe
		Low Temp	High Temp	Low Temp	High Temp	
5 in.	Spool Piece	C5PA	CHT5PA	C5P	CHT5P	To specify a particular length of piping, the following convention should be followed: C*P(Length of pipe, in inches) Example: An 8 in. diameter 215 1/16 in. long low-temperature spool piece for use with fixed flange fittings would be denoted by C8PA215-1/16.
6 in.	Spool Piece	C6PA	CHT6PA	C6P	CHT6P	
7 in.	Spool Piece	C7PA	CHT7PA	C7P	CHT7P	
8 in.	Spool Piece	C8PA	CHT8PA	C8P	CHT8P	
9 in.	Spool Piece	C9PA	CHT9PA	C9P	CHT9P	
10 in.	Spool Piece	C10PA	CHT10PA	C10P	CHT10P	
12 in.	Spool Piece	C12PA	CHT12PA	C12P	CHT12P	

* Pipe wall thickness is 0.634 inches

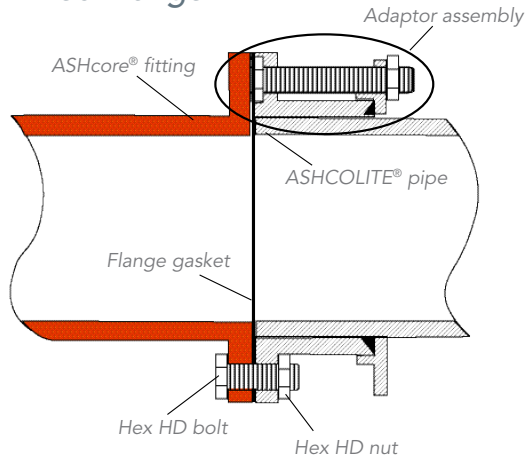
ASHCOLITE™ adaptors for fixed ASHcore® fitting flanges		
Pipe Size	Assembly #	Flange Size
5 in.	A-8204-6*	5 in. Pipe w/ 6 in. ANSI
6 in.	A-4978-5*	6 in. Pipe w/ 6 in. ANSI
7 in.	A-15425-7*	7 in. Pipe w/ 8 in. ANSI
8 in.	A-4979-2*	8 in. Pipe w/ 8 in. ANSI
9 in.	A-15378-7*	9 in. Pipe w/ 10 in. ANSI
10 in.	A-5167-5*	10 in. Pipe w/ 10 in. ANSI
12 in.	A-5170-2*	12 in. Pipe w/ 12 in. ANSI

ASHCOLITE™ adaptors for rotating ASHcore® fitting flanges		
Pipe Size	Assembly #	Flange Size
5 in.	A-8204-2*	5 in. Pipe w/ 8 in. ANSI
6 in.	A-4978-2*	6 in. Pipe w/ 8 in. ANSI
7 in.	A-15425-8*	7 in. Pipe w/ 10 in. ANSI
8 in.	A-4979-3*	8 in. Pipe w/ 10 in. ANSI
9 in.	A-15378-2*	9 in. Pipe w/ 12 in. ANSI
10 in.	A-5167-3*	10 in. Pipe w/ 12 in. ANSI
12 in.	A-5170-10*	12 in. Pipe w/ 14 in. ANSI

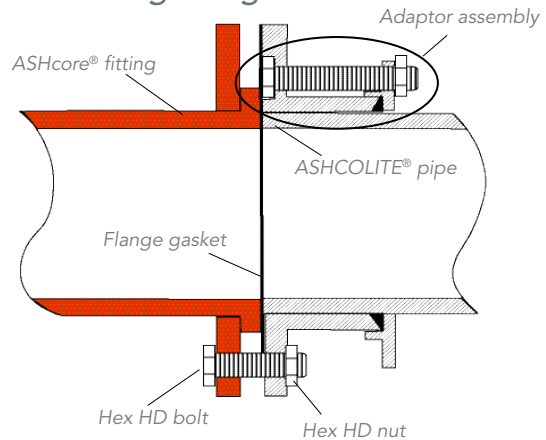
*Assembly number followed by W denotes wet service with rubber gasket 200F max. temp. Assembly number followed by D denotes dry service with non-ASB gasket 1200F max. temp.

Note: The above mentioned adaptor assemblies do not include the flange attachment hardware and gasket. Refer to chart below for proper hardware and gasket selection.

Fixed Flange



Rotating Flange



Fixed Flange				
Pipe Size	Hardware		Gasket (Qty 1)	
	Qty	Bolt/Nut	Wet	Dry
5 in.	8	101363 / 100468	106336	106852
6 in.	8	101386 / 100468	106336	106852
7 in.	8	101386 / 100468	100256	214976
8 in.	8	101386 / 100468	100256	214976
9 in.	12	101805 / 100479	100257	106854
10 in.	12	101805 / 100479	100257	106854
12 in.	12	101805 / 100479	100264	106855

Rotating Flange				
Pipe Size	Hardware		Gasket (Qty 1)	
	Qty	Bolt/Nut	Wet	Dry
5 in.	8	101363 / 100468	216240	216240
6 in.	8	101539 / 100468	219528	219528
7 in.	12	102370 / 100479	216241	216241
8 in.	12	102370 / 100479	219529	219529
9 in.	12	104149 / 100479	216242	216242
10 in.	12	104149 / 100479	219530	219530
12 in.	12	108729 / 100454	219531	219531

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