



### Product Introduction

Huali aluminum pipe fittings ( elbow, tee, cap ) are made in two or four precision formed matching halves to cover and weatherproof pipe elbow, tee and caps. Performed aluminum pipe fittings are a premier protective outer surface for mechanical insulation systems on pipe and are an excellent performing and critical accessory to complement the aluminum jacketing, to protect the insulation and underlying pipe from physical damage, UV exposure, corrosive atmospheres, and water and reduce the labor necessary to install the metal jacketing system.

Huali performed aluminum pipe fittings are made from 0.024 inch (0.6mm) thick 1060 or 3003 aluminum alloy with a smooth (mill) or embossed surface finish, have a epoxy coating on the interior surface, comply with the ASTM B209.



## Specification

Aluminum pipe fitting used in the pipe insulation industry are numbered to correspond with the various sizes available to fit on certain combinations of pipe size (NPS) and insulation thickness. See the following table to determine the numeric identifier associated with each pipe size.

### Aluminum elbow (45°)

NPS	Insulation thickness						
	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
1/2"	#1	#3	#5	#7	#8	#9	#10
3/4"	#1	#3	#5	#7	#8	#9	#10
1"	#2	#4	#6	#7	#8	#9	#10
1 1/4"	#2	#5	#6	#7	#8	#9	#10
1 1/2"	#3	#5	#7	#8	#9	#10	#11
2"	#4	#6	#7	#8	#9	#10	#11
2 1/2"	#5	#7	#8	#9	#10	#11	#12
3"	#6	#7	#8	#9	#10	#11	#12
4"	#7	#8	#9	#10	#11	#12	#13
6"	#9	#10	#11	#12	#13	#14	#15
8"	#11	#12	#13	#14	#15	#16	#17
10"	#13	#14	#15	#16	#17	#18	#19
12"	#15	#16	#17	#18	#19	#20	#21
14"	#16	#17	#18	#19	#20	#21	#22
16"	#18	#19	#20	#21	#22	#23	#24
18"	#20	#21	#22	#23	#24	#25	#26
20"	#22	#23	#24	#25	#26	#27	#28
24"	#26	#27	#28	#29	#30		

### Aluminum elbow (90°)

NPS	Insulation thickness																		
	1/2"	1"	1.5"	2"	2.5"	3"	3.5"	4"	4.33"	4.72"	5.12"	5.51"	5.91"	6.3"	6.7"	7.09"	7.49"	7.87"	8.46"
1/2"	#1	#2	#5	#8	#12	#23	#15	#25											
3/4"	#1	#2	#5	#8	#12	#23	#15	#25											
1"	N/A	#3	#6	#11	#12	#23	#15	#25											
1-1/4"	N/A	#3	#9	#11	#12	#23	#15	#25											
1-1/2"	N/A	#4	#9	#18	#23	#15	#25	#26											
2"	N/A	#7	#10	#18	#20	#24	#25	#26											
2-1/2"	N/A	#13	#16	#20	#24	#25	#26	#31	#58	#59			#S11	#S12		#S15	#S16	#S17	
3"	N/A	#14	#19	#22	#24	#25	#26	#31	#59			#S11	#S12	#S13	#S15	#S16	#S17		
3-1/2"	N/A	#17	#21	#27	#30	#33	#31	#34	#60		#S11	#S12	#S13		#S16	#S17		#S24	#S25
4"	N/A	#17	#21	#27	#30	#33	#31	#34			#S12	#S13		#S18			#S24	#S25	
4-1/2"	N/A	#28	#27	#30	#38	#31	#34	#40		#S4	#S13	#S14	#S22	#S19	#S20	#S24	#S25	#S26	
5"	N/A	#28	#29	#36	#38	#39	#34	#40	#S4	#S6	#S14	#S22	#S19	#S20	#S21	#S25	#S26		#S32
6"	N/A	#32	#35	#37	#39	#44	#45	#57	#S6	#S14	#S22	#S19	#S20	#S21	#S25	#S26		#S32	#S33
7"	N/A	#35	#37	#39	#44	#45	#57	#52		#S22	#S23	#S20		#S29	#S30	#S31	#S32	#S33	
8"	N/A	#41	#42	#43	#47	#49	#52	#53	#S22	#S23		#S28	#S29	#S30		#S32	#S33		
9"	N/A	#42	#43	#47	#49	#52	#53	#S1	#S23	#S27	#S28	#S29				#S33			
10"	N/A	#46	#50	#51	#55	#54	#S1	#S3	#S27	#S28	#S29			#S38	#S39	#S40	#S41		
11"	N/A	#50	#51	#55	#56	#S1	#S3	N/A	#S28	#S29	#S35			#S39	#S40				
12"	N/A	#48	#55	#56	#S1	#S3	#S5	#S28	#S34	#S35	#S36	#S37		#S40				#S51	#S52
14"	N/A	N/A	N/A	S1	#S3	#S5	#S7	S34	#S35	#S36	#S37	#S44				#S50	#S51	#S52	
15"	N/A	N/A	#S2	#S3	#S5	#S7	#S9	N/A	#S42	#S43	#S44	#S45			#S50	#S51	#S52		
16"	N/A	S2	#S4	#S5	#S7	#S9	#S10	#S42	#S43	#S44				#S50	#S51	#S52			#S54
17"	N/A	N/A	N/A	N/A	#S9	#S10	#S42	#S43	#S44	#S47	#S48						#S53	#S54	#S55
18"	N/A	#S5	#S8	#S9	#S10	N/A	N/A	N/A	#S47	#S48	#S49					#S53	#S54	#S55	
20"	N/A	#S8	#S9	#S10	N/A	N/A	#S46	#S47	#S48						#S53	#S54	#S55		
Note	#S is 4 pcs/set, others are 2 halves.																		



## Aluminum tee

NPS	Insulation thickness						
	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
1/2"	#1	#3	#5	#7	#8	#9	#10
3/4"	#1	#3	#5	#7	#8	#9	#10
1"	#2	#4	#6	#7	#8	#9	#10
1 1/4"	#2	#5	#6	#7	#8	#9	#10
1 1/2"	#3	#5	#7	#8	#9	#10	#11
2"	#4	#6	#7	#8	#9	#10	#11
2 1/2"	#5	#7	#8	#9	#10	#11	#12
3"	#6	#7	#8	#9	#10	#11	#12
4"	#7	#8	#9	#10	#11	#12	#13
6"	#9	#10	#11	#12	#13	#14	#15
8"	#11	#12	#13	#14	#15	#16	#17
10"	#13	#14	#15	#16	#17	#18	#19
12"	#15	#16	#17	#18	#19	#20	#21
14"	#16	#17	#18	#19	#20	#21	#22
16"	#18	#19	#20	#21	#22	#23	#24
18"	#20	#21	#22	#23	#24		
20"	#22	#23	#24				

## Aluminum cap

NPS	Insulation thickness						
	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
1/2"	#1	#3	#5	#7	#8	#9	#10
3/4"	#1	#3	#5	#7	#8	#9	#10
1"	#2	#4	#6	#7	#8	#9	#10
1 1/4"	#2	#5	#6	#7	#8	#9	#10
1 1/2"	#3	#5	#7	#8	#9	#10	#11
2"	#4	#6	#7	#8	#9	#10	#11
2 1/2"	#5	#7	#8	#9	#10	#11	#12
3"	#6	#7	#8	#9	#10	#11	#12
4"	#7	#8	#9	#10	#11	#12	#13
6"	#9	#10	#11	#12	#13	#14	#15
8"	#11	#12	#13	#14	#15	#16	#17
10"	#13	#14	#15	#16	#17	#18	#19
12"	#15	#16	#17	#18	#19	#20	#21
14"	#16	#17	#18	#19	#20	#21	#22
16"	#18	#19	#20	#21	#22	#23	#24
18"	#20	#21	#22	#23	#24	#25	#26
20"	#22	#23	#24	#25	#26	#27	#28
24"	#26	#27	#28	#29	#30	#31	#32

## Securement

The matching halves are secured together and to the neighboring straight pipe metal jacketing using screws or rivets for hot applications and banding for cold applications. Screws and rivets are not used in cold applications as these will likely pierce the critically important vapor retarder that is on the surface of the insulation and directly under the metal jacketing.

In hot applications, the screws or rivets used to secure the fittings are spaced about three inches apart so the total number of screws will vary with the size of the elbow. The first screw is installed at the center of the elbow cover heel with subsequent screws installed working outwards from this point toward the ends of the fittings. The same process is used to apply the screws to the throat of the fittings. Screws or strapping to secure the overlap of the fittings and the neighboring straight pipe metal jacketing should be used if needed.

In cold applications, the banding used to secure the fittings is applied between the raised "fingers", tightened, and secured using a wing seal. Bands to secure the overlap of the fittings and the neighboring straight pipe metal jacketing should be used if needed. For best insulation system performance and resistance to water infiltration, Huali recommends that all joints in fittings be sealed with an appropriate joint sealant. This should be applied between the overlapping pieces of metal in the joint and not as a caulking bead on the exterior lip of the joint.







### Accessories

Banding for aluminum jacketing and aluminum pipe fittings can be aluminum or stainless steel. Due to the tensile strength characteristics, Huali recommends stainless steel band and clip in most applications, which is manufactured in compliance with ASTM B209.

Band and clip width: 12mm, 15mm, 19mm, 25mm

Band and clip thickness: 0.4-1.0mm

Stainless steel band is manufactured from type 304 in a special soft annealed temper to facilitate handling. Stainless steel strapping offers the greatest strength and corrosion resistance. Type 316 Stainless Steel available upon request.

Stainless steel clip have two types of wing seal and closed seal, are manufactured from heavy duty 304 annealed stainless steel. SS316 available upon request.

