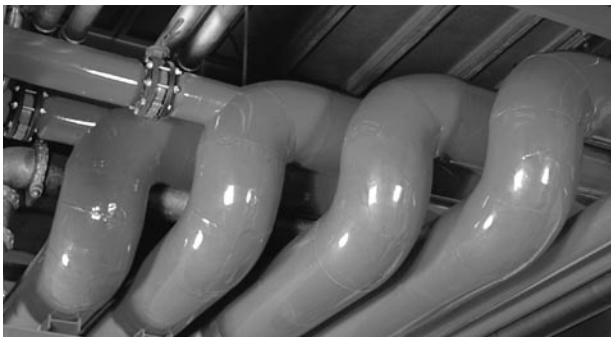




Pipe and Equipment Insulations



Zeston[®]
PVC Insulated Fitting Covers



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Zeston 2000 PVC System

*White, Gloss; UV Resistant; 25/50 Rated;
Meets USDA Requirements*

Introduction

Zeston 2000 Series PVC insulated fitting covers, Zeston PVC jacketing, the Zeston PVC/Perma-Weld® system, and Zeston installation accessories combine to meet an extensive range of piping and equipment requirements for commercial, institutional, and industrial applications—both indoors and outdoors.

The Zeston PVC/Perma-Weld system is ideal for use in food, pharmaceutical, beverage, chemical processing and similar plants where cleanliness and appearance of insulated pipe are a maintenance concern. When the Zeston 2000 PVC insulated fitting covers are installed using Zeston Perma-Weld solvent welding adhesive and 20 or 30 mil (0.5 or 0.8 mm) System 2000 PVC jacketing, the result is a totally sealed system that meets USDA and FDA hygiene requirements for food processing facilities.

Zeston PVC Cut & Curled™ jacketing is a rugged, high-impact, UV-resistant polyvinyl chloride material designed to provide an inherent vapor retarder and protection to insulated pipes. It will withstand water and most chemical and low-solvency washdowns.

The Zeston system is characterized by fast, simplified installation that results in lower overall costs, high insulating efficiency, long-lasting protection, and an attractive finished appearance.

Background

Zeston insulated fitting covers were developed by insulation engineers who had years of experience in the contracting and industrial supply business. Their purpose was to meet the need for a low-cost insulated fitting cover that combines neatness and good looks with simple installation and maintenance.

In a pipe insulation system the weakest point and, conversely, the most expensive, is the fittings. Conventional methods of insulating fittings include molded halves, mitered segments, cement and wrappings. The many individual handforming operations required to complete a fitting by using any of the conventional methods can build in weaknesses. The Zeston method provides a pre-engineered standard so that each fitting can be insulated to specifications.

The Zeston insulated fitting cover system is a complete, factory-supplied system. It consists of two major components, a PVC fitting cover and a fiber glass insert pre-cut to a specific size, shape and thickness. Accessories to mechanically fasten the system to the adjacent pipe covering are part of the system. A fitting, insulated to the most rigid specifications, including a vapor retarder, can be produced in less time, yet last longer than conventionally insulated fittings.



Zeston insulated fitting covers need only your hands to apply. No tools or extra help are required. They are truly the answer to the need for an effective, neat insulation that can be applied quickly and easily with tidy results.

The Zeston system is set apart from competitive products and systems by the high degree of control which Johns Manville exerts over the manufacturing process from PVC compound formulation to extruding, and from thermoforming to packaging. The result of this total production control is a finished product that exhibits exceptional uniformity and consistent quality.

Zeston 2000 Series PVC

Insulated Fitting Covers and Jacketing



Operating Temperature Limits: PVC: 0°F to +150°F (-18°C to +66°C)
Insert: 0°F to 450°F (-18°C to +232°C)

Flame Spread: 25 or less (up to 30 mil [0.8 mm])

Smoke Developed: 50 or less (up to 30 mil [0.8 mm])

Grade: Weatherable **Color:** White **Finish:** Gloss

Description

Zeston 2000 PVC fitting covers come in many shapes and sizes with a Hi-Lo® Temp fiber glass insulation insert, all of which fit snugly over a variety of fittings. The insulation and the cover provide insulation, plus a vapor retarder, in a simple, quickly applied system.

Zeston 2000 PVC jacketing is a high-impact, UV-resistant polyvinyl chloride covering designed for bare metal or insulated pipe. Easy to install and maintain, it is white in color to match Zeston 2000 PVC insulated fitting covers. The rugged, pliable PVC jacketing provides an inherent vapor retarder and will withstand water and most chemical and low-solveny washdowns.

Available shapes and sizes

Fitting covers. Shapes available for 45° and 90° (0.8 and 1.6 rad.) short and long radius elbows, tees and valves plus a wide variety of other fittings; flanges, reducers, end caps, soil pipe hubs, traps and mechanical line fittings. IPS sizes from ½" through 24" (13 mm through 610 mm); CT sizes from ⅝" through 6⅞" (16 mm through 156 mm).

Rolls. Zeston PVC jacketing is available in standard thicknesses of 10, 15, 20 and 30 mil (0.3, 0.4, 0.5 and 0.8 mm), and in standard widths as shown below. Non-standard sizes are available on special request.

Thickness		Width		Length		Area	
mil	mm	in.	mm	ft.	m	sq. ft.	m²
10	0.3	35½	902	203	62	600	56
15	0.4	35½	902	135	41	400	37
20	0.5	35½	902	102	31	300	28
20	0.5	48	1219	100	31	400	37
30	0.8	35½	902	67½	21	200	19
30	0.8	48	1219	67½	21	270	25

Cut & Curled. Zeston PVC Cut & Curled jacketing in thicknesses of 20 mil or 30 mil (0.5 mm or 0.8 mm) (30 mil [0.8 mm] recommended for outdoor applications) is available in factory-cut sizes to fit up to 30" (762 mm) O.D. All sections of Zeston PVC Cut & Curled jacketing are 48" (1219 mm) in length and are factory curled to fit snugly.

Applications

For insulating chilled water, hot water, steam and other piping systems in commercial, institutional, industrial construction on indoor or outdoor piping systems. Outdoor covers need not be coated or painted. For use with Micro-Lok® HP fiber glass pipe insulation and a variety of other pipe insulations. The fitting covers, combined with Zeston PVC jacketing and Perma-Weld adhesive form a completely sealed system for USDA and FDA applications in food, beverage, and pharmaceutical facilities. Zeston 2000 PVC jacketing meets the hygiene requirements of USDA and FDA for use in the food processing, beverage and pharmaceutical industries.



Specification compliance

USDA, Agriculture Canada

New York City MEA #7-87

ICBO

SBCCI

BOCA

ASTM D 1784, Class 16354-C

L-P-535E*, Composition A,
Type II, Grade GU

L-P-1035A*, Composition A,
Type II, Grade GU

Canada: CAN/ULC S102-M88

CGSB 51-GP-53M

*Impact strength determined by Gardner-SPI test method rather than Izod, since Gardner is more appropriate for PVC sheeting materials.

Advantages

Code compliance/fire safety. Meets code requirements of flame spread rating of 25 or less and a smoke developed rating of 50 or less according to ASTM E 84.

Weatherability. When used outdoors, jacketing and fitting covers need not be painted or coated.

Ease of maintenance. The jacketing and fitting covers are easily washed down with soap and water and most commercial cleaners. The ability to be easily cleaned, combined with the non-toxic, odorless and tasteless properties of the material and its attractive appearance, make it especially suitable for food, beverage, and pharmaceutical applications.

Zeston 2000 Series PVC

Insulated Fitting Covers and Jacketing

Simple, fast installation. Requires no special tools. Just wrap the fiber glass insert around the fitting and tuck it in as necessary; pop on the fitting cover and smooth it into position; secure with tacks, or tape as required. Over insulation, jacketing is secured with tacks, tape or adhesive. Where the jacketing is applied over bare pipe, it is quickly banded, taped, or solvent welded.

Neat appearance, paintable. Attractive, white Zeston 2000 PVC provides excellent appearance. The smooth finish may be painted if desired. Use pastel-colored, high quality acrylic latex paints outdoors.

Exceptional durability. The tough, durable Zeston 2000 PVC resists damage from impact and will withstand humidity, salt water, adverse weather conditions, and most industrial fumes.

Corrosion resistance. Unlike aluminum or most stainless steel jacketing materials, Zeston 2000 PVC is immune to galvanic or electrolytic corrosion.

Physical Properties of Zeston 2000 PVC

Property	Value	ASTM Test Method
Specific Gravity	1.48	D 792
Tensile Strength at Yield, psi (kPa)	6,000 (41,370)	D 638
Elongation at Yield (MD), %	3.0	D 638
Tensile Modulus, psi (kPa)	470,000 (3,240,650)	D 638
Flexural Strength, psi (kPa)	11,600 (79,982)	D 638 (min. 0.125" [3 mm] thick specimen)
Flexural Modulus, psi (kPa)	460,000 (3,171,700)	D 790
Flame Spread	25 or less (up to 30 mil [0.8 mm])	E 84
Smoke Developed	50 or less (up to 30 mil [0.8 mm])	E 84
Electrical Conductance	Non-Conductor	D 257
Gardner-SPI Impact, in lb/mil by Ductile Failure	10 mil (0.3 mm) 1.3 15 mil (0.4 mm) 1.4 20 mil (0.5 mm) 1.5 30 mil (0.8 mm) 1.6	D 3679 (4 lb. [1.8 kg] weight; 8 lb. [3.6 kg] for 30 mil [0.8 mm])

Note: Data on chemical resistance is available on request.

Ease of system testing. Jobs can be completed more quickly because with the Zeston method the fitting is done last. There is no waiting for the piping system to be completed and pressure tested. Straight runs of insulation can be applied leaving fittings and joints exposed. After pressure testing, fitting covers can be installed.

Economical. Can be easily removed and reused to lower maintenance costs.

Wide temperature range. Applications from 0°F to 450°F (-18°C to 232°C). The temperature to which the PVC is exposed should be within the range of 0°F to +150°F (-18°C to +66°C).

High thermal efficiency. Insulation value of Hi-Lo Temp insert with a thermal conductivity of .28 (0.040) at 75°F (24°C) mean temperature assures you a more efficient insulation installation than an insulating cement system.

Finish. White color blends with present pipe covering jackets. Smooth finish can be painted with a high quality, acrylic latex paint. Pastel colors are recommended for outdoor applications.

Clean. Simple to clean using soap and water. Zeston 2000 PVC products are excellent for use in food and pharmaceutical plants where hygiene requires cleanable materials.

Chemically resistant. Will withstand water, acids, alkalis, or chemical washdowns. Resists alcohols, aliphatic hydrocarbons and oils. Soluble in ketones and esters; swells in aromatic hydrocarbons.

No mixing. Eliminates the need for buckets, hoses, trowels, etc.

Hi-Lo Temp fiber glass insert

Handling comfort. The fitting covers are supplied with Hi-Lo Temp Formaldehyde-free™ fiber glass insulation inserts for a "friendlier feel" during installation.

Conformability. Excellent molding and forming properties—improved workability.

Vapor and moisture resistant. Fibers cannot adsorb moisture. Resistance to moisture facilitates rapid drying out.



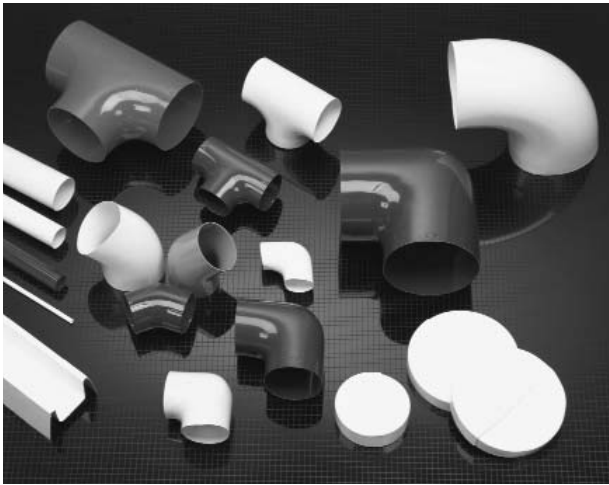
Hi-Lo Temp fiber glass insulation insert

Physical properties

Thermal conductivity	Mean Temp.		"k"	
	°F	°C	Btu·in/(hr·ft²·°F)	W/m·°C
	75	24	.28	.040
	150	66	.34	.049
	300	149	.45	.065
Temperature limits	0°F to 450°F (-18°C to +232°C)			

Zeston 300 Series PVC

Fitting Covers, Jacketing and Structural Coverings for Industrial Applications



Operating Temperature Limits: PVC: 0°F to +150°F (-18°C to +66°C)
Flame Spread: 25 or less (up to 30 mil [0.8 mm])
Smoke Developed: 50 or less (up to 30 mil [0.8 mm])
Grade: Weatherable **Color:** White & Colors (for indoor use only)
Finish: Gloss

Description

Zeston 300 Series PVC heavy-duty fitting covers and jacketing are specifically designed for industrial and commercial use.

Because of their added thickness and improved thickness distribution, they exhibit excellent impact resistance, increased durability, superior UV resistance and reduced chance of “burn through” when solvent welding.

Zeston 300 Series PVC fitting covers are produced from a white, glossy, high impact, UV-resistant polyvinyl chloride compound. Available in many shapes and sizes, they fit quickly and snugly over a variety of pipe fittings.

Made from the same rugged, pliable PVC material, Zeston 300 Series PVC jacketing is designed to match the Zeston 300 Series fitting covers. For use over insulated pipe and bare metal, the PVC jacketing is easy to install and maintain, provides an inherent vapor retarder, and will withstand water and most chemical and low-solvency washdowns.

Available shapes and sizes

Fitting covers. Zeston 300 Series heavy-duty PVC fitting covers are available in many shapes and sizes. Its two piece or two-piece welded construction provides ease of fabrication in the field not available in a traditional one-piece fitting cover. This construction is engineered to accommodate various types of fabricated insulation fittings and an improved “matched” fit in the fitting throat area when solvent welding.

Zeston 300 Series is available in shapes for 90° and 45° (1.6 and 0.8 rad.) short and long radius elbows, tees, and valves plus a wide variety of other fittings, flanges, reducers, end caps, soil pipe hubs, traps, and mechanical line fittings. IPS sizes are available from ½” through 24” (13 mm through 610 mm); CT sizes from ⅝” through 6⅛” (16 mm through 156 mm).

A variety of fitting covers and jacketing are available, in color, on a special order basis. They are recommended for indoor use only and are not UV resistant or 25/50 rated.

Rolls. Zeston PVC jacketing is available in standard thicknesses of 10, 15, 20, 30 and 40 mil (0.3, 0.4, 0.5, 0.8 and 1.0 mm), and in standard widths as shown on the next page. Non-standard sizes are available on request.

Cut & Curled Jacketing. Zeston 300 Series heavy-duty fitting covers may be used with Zeston PVC Cut & Curled jacketing for perfect fit and color match. Zeston PVC jacketing is available in both white and colors for 300 Series fitting applications.

The 30 mil (0.8 mm) thickness is recommended for outdoor applications.

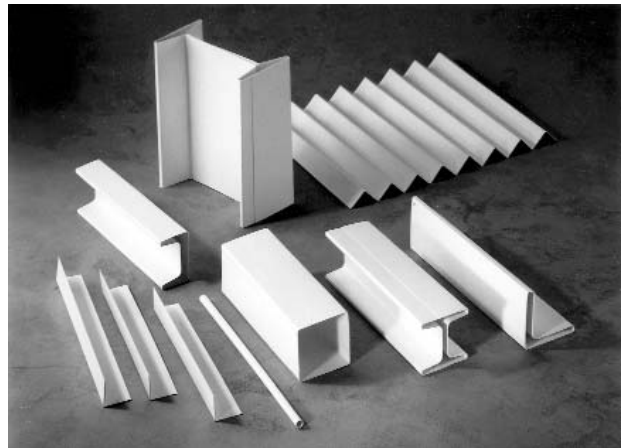
Custom shapes and sizes

For fitting covers and Cut & Curled jacketing sizes larger than 20” (508 mm), and custom shapes and sizes, call for availability.

Advantages

Zeston 300 Series PVC fitting covers and jacketing exhibit the following important advantages:

- Exceptional durability
- Weatherability
- Corrosion resistance
- Ease of maintenance
- Simple, fast installation



Structural Coverings

Structural coverings and custom moldings are designed to fit and protect structural members in industrial applications where protective coatings are necessary or scaling is a concern. They provide an excellent alternative to painting and offer long-term savings. Zeston 300 structural coverings can be used indoors and outdoors.

Structural coverings and moldings are available for I-beams, right angles, roof drains, rod, pipe, conduit, sprinkler systems and tank fluted panels.

Specification compliance

USDA, Agriculture Canada	L-P-535E*, Composition A,
New York City MEA #7-87	Type II, Grade GU
ICBO	L-P-1035A*, Composition A,
SBCCI	Type II, Grade GU
BOCA	Canada: CAN/ULC S102-M88
ASTM D 1784, Class 16354-C	CGSB 51-GP-53M

*Impact strength determined by Gardner-SPI test method rather than Izod, since Gardner is more appropriate for PVC sheeting materials.

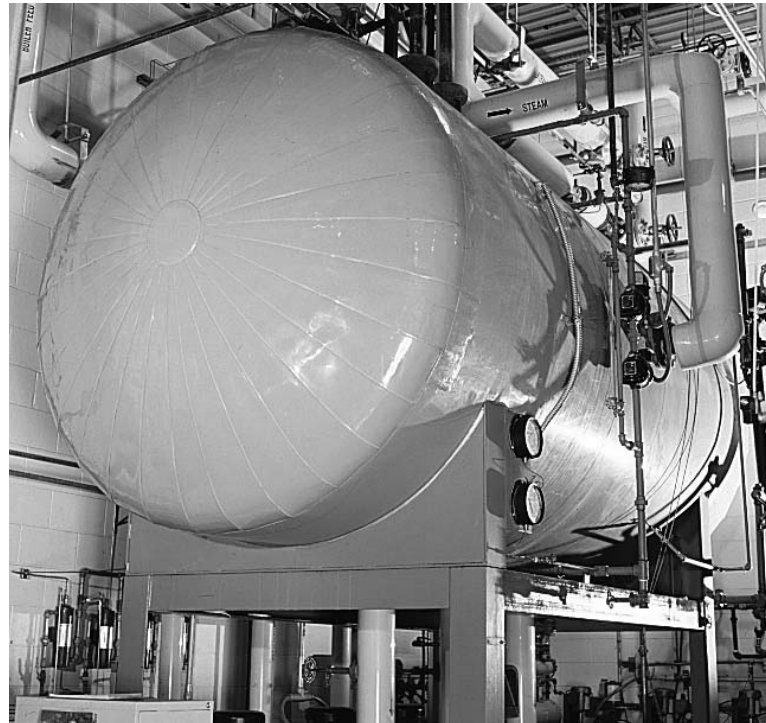
Standard stock dimensions of jacketing rolls

Thickness mil	mm	Width		Length		Area	
		in.	mm	ft.	m	sq. ft.	m ²
10	0.3	35½	902	203	62	600	56
10	0.3	48	1219	200	61	800	74
10	0.3	48	1219	100	31	200	19
15	0.4	35½	902	135	41	400	37
15	0.4	48	1219	100	31	400	37
15	0.4	48	1219	50	15	200	19
20	0.5	35½	902	102	31	300	28
20	0.5	48	1219	100	31	400	37
20	0.5	48	1219	50	15	200	19
30	0.8	35½	902	102	31	300	28
30	0.8	48	1219	100	31	400	37
30	0.8	48	1219	50	15	200	19

Physical properties

Property	Value	ASTM Test Method
Specific Gravity	1.48	D 792
Tensile Strength at Yield, psi (kPa)	6,000 (41,370)	D 638
Elongation at Yield (MD), %	3.0	D 638
Tensile Modulus, psi (kPa)	470,000 (3,240,650)	D 638
Flexural Strength, psi (kPa)	11,600 (79,982)	D 638 (min. 0.125" [3 mm] thick specimen)
Flexural Modulus, psi (kPa)	460,000 (3,171,700)	D 790
Flame Spread	25 or less (up to 30 mil [0.8 mm])	E 84
Smoke Developed	50 or less (up to 30 mil [0.8 mm])	E 84
Electrical Conductance	Non-Conductor	D 257
Gardner-SPI Impact, in lb/mil by Ductile Failure	10 mil (0.3 mm) 1.3 15 mil (0.4 mm) 1.4 20 mil (0.5 mm) 1.5 30 mil (0.8 mm) 1.6	D 3679 (4 lb. [1.8 kg] weight; 8 lb. [3.6 kg] for 30 mil [0.8 mm])

Note: Data on chemical resistance is available on request.



Zeston PVC Installation Accessories



Zeston installation accessories offer outstanding compatibility and performance in the systems for which they are designed. When used in conjunction with the various Zeston products, they complete a systems package which features ease of installation, uniform appearance, and optimum, long-term insulation and protection.

A complete Zeston system, using components and accessories which are fully integrated, will give you an easy-to-install, professional job which offers peak performance in a neat, uniform installation.

Perma-Weld solvent welding system adhesive

Perma-Weld solvent welding system adhesive is applied with a standard applicator gun and forms a permanent chemical bond between the PVC members. It takes an initial set in 10 minutes with complete adhesive curing in 8 to 10 hours. Perma-Weld adhesive can be used on 20 and 30 mil (0.5 and 0.8 mm) jacketing and most Zeston

2000/300 PVC insulated fitting covers where a totally sealed system is required, such as in the USDA market. Perma-Weld adhesive is available in one quart (0.95 liter) and one gallon (3.78 liter) containers.

Note: It is recommended that Perma-Weld adhesive be applied at temperatures above 40°F (4°C).

White, stainless steel thumb tacks

Annular serrated stainless steel thumb tacks, 500 to a box, help speed the installation of Zeston PVC insulated fitting covers on hot work where a vapor retarder is not required.

PVC Z-Tape

Z-Tape was developed to provide excellent adhesion, even when applied during cold or humid weather. It is flexible polyvinyl chloride film, coated with a specially formulated adhesive. Z-Tape is available in thicknesses of 5 mils (0.13 mm) and 10 mils (0.25 mm) and can be applied indoors and outdoors* at temperatures as low as 40°F (4°C) to achieve a strong, permanent bond. It has an effective installed temperature range of -40°F to +175°F (-40°C to +80°C).

Z-Tape has excellent resistance to chemicals, acids, alkalis, oils, greases, bacteria, and fungus. It can bridge gaps and cover almost any contour or shape for a complete seal.

Perma-Weld adhesive applicator

Pump-type gun for application of Perma-Weld adhesive. Holds 6 ounces (177 ml).

Specification Data

Property	Z-Tape II*	Z-Tape*
Gauge, mils (mm)	5 ± 0.5 (0.13 ± 0.013)	10 ± 1 (0.25 ± 0.025)
Available color	White	White
Upper temperature limit	+175°F (80°C), constant	+175°F (80°C), constant
Lower temperature limit	-40°F (-40°C), constant	-40°F (-40°C), constant
Surface Burning Characteristics per ASTM E 84	Flame spread: 5 Smoke developed: 0	Flame spread: 10 Smoke developed: 0
Adhesion to backing, oz./in. (kg/mm)	14 (0.02)	30 (0.033)
Tensile strength lbs./in. width (kN/m)	15 (2.6)	27 (4.7)
Elongation (%)	150	200
Finish	Smooth	Smooth
Dimensions	Available in 1", 1½" and 2" (25 mm, 38 mm and 51 mm) widths Standard lengths: 108' (33 m)	Available in 1", 1½" and 2" (25 mm, 38 mm and 51 mm) widths Standard lengths: 100' (31 m)
Conforms to MIL-I-7798-C standard packaging	1" (25 mm) size 12 per ctn. 1½" (38 mm) size 8 per ctn. 2" (51 mm) size 6 per ctn.	1" (25 mm) size 12 per ctn. 1½" (38 mm) size 8 per ctn. 2" (51 mm) size 6 per ctn.

*Tests are conducted in accordance with ASTM D 1000. Values indicated are typical.

Tape width recommended and approximate number of covers sealed per roll of tape (includes 2" [51 mm] tape overlap)

Tape width to use	Zeston cover size	No. of covers per roll*		Long radius 90° (1.6 rad.) sizes		No. of covers per roll*	Long radius 90° (1.6 rad.) sizes		No. of covers per roll*	
		90's & 45's	Tees	in.	mm		in.	mm		
1	25	1	84	56	2 x 1	51 x 25	36	14 x 1	356 x 25	11
		2	80	53	2½ x 1½	67 x 38	30	14 x 1½	356 x 38	11
		3	73	49	3 x ½	76 x 13	36	14 x 2	356 x 51	10
		4	67	44	3 x 1	76 x 25	30	14 x 3	356 x 76	9
		5	61	41	4 x ½	102 x 13	30	16 x 1	406 x 25	10
		6	56	38	4 x 1	102 x 25	26	16 x 1½	406 x 38	10
		7	53	35	5 x ½	127 x 13	26	16 x 2	406 x 51	9
		8	48	32	5 x 1	127 x 25	23	16 x 3	406 x 76	8
1½	38	9	44	29	6 x ½	152 x 13	23	18 x 1	457 x 25	9
		10	40	27	6 x 1	152 x 25	20	18 x 1½	457 x 38	9
		11	36	24	6 x 1½	152 x 38	18	18 x 2	457 x 51	8
		12	32	22	8 x ½	203 x 13	18	18 x 3	457 x 76	8
		13	30	20	8 x 1	203 x 25	17	20 x 1	508 x 25	8
		14	28	19	8 x 1½	203 x 38	15	20 x 1½	508 x 38	8
		15	26	17	8 x 2	203 x 51	14	20 x 2	508 x 51	8
		16	24	16	10 x 1	254 x 25	14	20 x 3	508 x 76	7
2	51	21	15	10	10 x 1½	254 x 38	13	24 x 1	610 x 25	7
		22	14	9	10 x 2	254 x 51	12	24 x 2	610 x 51	6
		23	13	9	12 x 1	305 x 25	12	24 x 3	610 x 76	6
		24	12	8	12 x 1½	305 x 38	11			
		25	11	8	12 x 2	305 x 51	11			
		26	11	7	12 x 3	305 x 76	10			
		27	10	7						
		28	10	6						
29	9	6								
30	9	—								
32	8	—								

*Use 2" (51 mm) tape only.

*Z-Tape II is recommended for indoor use only.

Zeston 2000/300 PVC Perma-Weld Jacketing System



Surface Temperature Limits: -20°F to +150°F (-29°C to +66°C)

Description

The Zeston PVC/Perma-Weld protective jacketing system consists of pre-molded Zeston 2000/300 PVC insulated fitting covers, Zeston 2000/300 PVC jacketing, and Perma-Weld solvent welding adhesive which creates a permanent chemical bond between the PVC members. Used in combination, these components form a completely sealed, monolithic system that provides an effective vapor retarder and a readily cleanable surface while meeting USDA hygiene requirements.

Available forms

As part of the Zeston PVC/Perma-Weld System, Zeston 2000/300 PVC insulated fitting covers are available in an extensive range of sizes and configurations for 45°, 90° (0.8, 1.6 rad.) short and long radius elbows, humped tees, valves, and other pipe fittings. Both rolls and Cut & Curled sections of Zeston 2000/300 PVC jacketing are furnished in 20 and 30 mil (0.5 and 0.8 mm) thicknesses for the Zeston PVC/Perma-Weld System. Perma-Weld adhesive is available in one quart (0.95 liter) and one gallon (3.78 liter) containers, and can be applied with a Perma-Weld adhesive applicator gun.

Adhesive coverage

Approximately 1 quart (0.95 liters) of adhesive is required to seal 100 linear feet (30.5 m) of fitting covers and pipe jacketing.

Applications

The Zeston PVC/Perma-Weld System provides protective covering for bare and insulated systems, vessels, tanks, and equipment in commercial, institutional, and industrial applications. For excellent insulating efficiency, the Zeston PVC/Perma-Weld System can be installed in conjunction with Micro-Lok *HP* fiber glass pipe insulation from Johns Manville or with other pipe insulations. In these installations, pre-cut fiber glass inserts for insulating the fittings are available as part of the Zeston 2000/300 PVC insulated fitting cover package.

Because the system is completely sealed, it is particularly well suited for food and beverage, pharmaceutical, and chemical processing applications. In addition, the Zeston PVC/Perma-Weld System can also be used to encapsulate existing pipe systems that have the potential of introducing contaminants into the environment. This application can be more cost effective than the alternatives which include removing or replacing the existing insulation.

Advantages

Simple, fast installation. The system is quickly installed over piping systems and equipment. An initial set should occur in approximately 10 minutes with complete adhesive curing in 8 to 10 hours.

Completely sealed system. The Zeston PVC/Perma-Weld System provides an inherent vapor retarder and an effective seal against fungus, mold, mildew, corrosion, and contaminants. In addition, the PVC material is non-toxic, odorless, and tasteless.

Attractive appearance. The completed system provides a neat, finished look that enhances the overall appearance of the installation.

Ease of cleaning. The positive seal between the Perma-Weld adhesive and the PVC members, along with the cleanability of the PVC material itself, results in a protective jacketing system that readily withstands repeated washdowns.

Total piping system capabilities. By offering the Zeston PVC/Perma-Weld System with Micro-Lok *HP* fiber glass pipe insulation, Johns Manville represents a single source of supply for a complete system—insulation and protective covering.

Applicable standards

Zeston 2000/300 PVC insulated fitting covers and jacketing meet the requirements of most federal, state, and local codes. The Zeston PVC/Perma-Weld System is accepted by the USDA for use in the food processing and beverage industries.

Zeston 2000 PVC

Insulated Fitting Covers

Application: 90° (1.6 rad.) Short & Long Radius Elbows, 45° (0.8 rad.) Elbows, Tees and Valves



90° (1.6 rad.) short radius and 45° (0.8 rad.) elbow covers

These covers are designed to accept short radius 90° (1.6 rad.) elbows, some long radius 90° (1.6 rad.) elbows and 45° (0.8 rad.) elbows.

Stocking problems are minimized by the wide range of universal sizes. Hi-Lo Temp fiber glass insulation inserts are included with sizes #2 through #19. However, these sizes may be ordered without inserts. Inserts must be ordered separately for sizes above #19.

Ordering information. When ordering 90° (1.6 rad.) short radius or 45° (0.8 rad.) elbow covers, designate the cover number selected followed by “-90” or “-45” as required. Check availability per Table A on page 14.

For example, to insulate a fitting on a 2 inch (51 mm) IPS pipe using 1 inch (25 mm) thick fiber glass pipe insulation, (see Sizing Table 2A), the necessary Zeston fitting cover should be ordered as follows:

for a 90° (1.6 rad.) elbow – #11-90
for a 45° (0.8 rad.) elbow – #11-45

Use Sizing Table 1 or 2A for 90° (1.6 rad.) short radius and 45° (0.8 rad.) elbow covers for iron pipe elbow fittings.

Use Sizing Table 1 or 2B for 90° (1.6 rad.) short radius and 45° (0.8 rad.) elbow covers for copper tubing elbow fittings.

90° (1.6 rad.) long radius elbow covers

Fitting covers for 90° (1.6 rad.) long radius elbows are available as listed in Sizing Table 3A and 3B. Several applications use standard short radius covers as noted in the table. When using Hi-Lo Temp insulation inserts on long radius elbows, it is essential that a few turns of fiber glass yarn be made around the inserts to prevent voids or hot spots. Hi-Lo Temp inserts are not included in sizes over 6" x 1½" (152 mm x 38 mm).

Use Sizing Table 1, 3A or 3B for long radius elbow covers for 90° (1.6 rad.) long radius elbow fittings.

Ordering information. When ordering long radius 90° (1.6 rad.) elbow covers, designate the cover size selected followed by LR90.



Tee and valve covers

Tee and valve fitting covers are sold with the Hi-Lo Temp fiber glass insulation inserts precut to shape. Valve covers are supplied on all orders. When tees are needed, simply cut the end off of the valve cover.

While the correct size may be selected from the Sizing Tables, the most accurate method is to measure the circumference of the pipe insulation, then compare the size with the Sizing Tables. Tee or valve insulation inserts require a few turns of fiber glass yarn to prevent voids or hot spots.

The tee and valve number is marked on one end of the cover. This marked end of the one-piece cover is slightly larger than the other end. When applied, it is lapped over the other end to give a tight joint.

Use Sizing Table 1, 2A or 2B.

Ordering information. When ordering tee and valve covers, designate the cover number selected followed by “-TV.” Check availability according to Table A.

Zeston 2000 PVC

Insulated Fitting Covers

Application: Screwed Fittings, 90° (1.6 rad.) Ells, 45° (0.8 rad.) Ells, Tees

Humped fitting covers*

PVC humped fitting covers are molded to provide a slight clamping action to make the application fast and easy over the Hi-Lo Temp insulation insert.

Humped PVC insulated fitting covers in 90° (1.6 rad.) and 45° (0.8 rad.) elbows and tees are designed to give proper insulation thickness and a neat finish over screwed fittings or socket weld connections.

In many cases, with standard covers, the adjacent pipe insulation thickness is insufficient to allow the screwed pipe fitting to be properly insulated causing hot and cold spots. Humped fitting covers solve this problem.

Use Sizing Table 1 or 2A.

Humped covers do not fit all screwed and socket weld elbows and tees. Check the dimensions of the fitting and the PVC cover. (Contact the Regional Sales Office nearest you for assistance.)

Ordering information. When ordering humped covers, designate the cover number selected, followed by the fitting type. Examples: H45, H90, HT, as applicable. Check availability according to Table A.



Zeston 2000 PVC

Insulated Fitting Covers

Application: Pipe Terminations, Pipe Size Transitions, P-Traps, Y-Branches



End caps†

These covers provide an easy method of capping off pipes neatly. Zeston 2000 PVC insulated end caps can be used on all insulated cold and hot water plumbing or chilled lines, wherever the pipe insulation terminates, to seal or conceal edges of the pipe insulation.

Use Sizing Table 1, 2A or 2B.

Ordering information. When ordering end cap covers, designate the cover number selected, followed by “- EC.” Check availability according to Table A.



Cone reducers†

Cone reducers are a simple means to accommodate changes of insulation sizes. Cone reducers are available in two sizes, #17-2 and #10-2. For example, #10-2 reducer will reduce sizes 10 or less down to size 2 or more by field cutting.



Standard P-Trap



1¼”-1½” (32 mm-38 mm)
Handicap Swivel P-Trap



Y-Branch

Standard P-Traps, Deep Seal P-Traps, Y-Branches†

These covers are designed specifically for soil pipe. These items are shipped with Hi-Lo Temp inserts.

Availability

Sizes	in.	mm	Standard P-Trap*	Deep Seal P-Trap**	Handicap Swivel	
					P-Trap	Y-Branch
1¼x1½x1		32x38x25	X	—	X	—
3x1		76x25	X	—	—	—
4x1		102x25	X	X	—	—
5x2		127x51	X	—	—	—
6x2		152x51	X	—	—	—
4x4x1		102x102x25	—	—	—	X
6x6x1		152x152x25	—	—	—	X

Former industry fitting name: *½ S-Trap **P-Trap

Zeston 2000 PVC

Insulated Fitting Covers

Application: Mechanical Line & Line Flange Couplings, Soil Pipe Hubs



Mechanical line coupling covers*

The rapid acceptance of groove type fittings in lieu of welding has posed a problem to the insulation contractor, causing insulation contract prices to increase. These covers are designed to reduce these costs.

Groove type fittings are usually insulated by multiple wrappings of insulation, finished off with molded or sculptured insulating cement and coated, lightweight muslin. This time-consuming, non-uniform and, at times, unsightly method of insulation can be eliminated with Zeston 2000 PVC mechanical line coupling fitting covers.

Use Sizing Table 1 or 2A.

Ordering information. When ordering mechanical line coupling covers, designate the cover number selected followed by “-MLC.” Check availability according to Table A.



Line flange coupling covers*

Zeston 2000 PVC insulated line flange covers provide efficient and removable insulation for line flanges and butterfly valves. Having been designed for extra heavy flanges, they have considerable versatility, fitting standard and extra heavy line flanges. Butterfly valves and worm gear butterfly valves can be easily insulated by minor field cutting of line flange covers.

Use Sizing Table 1 or 2A.

Ordering information. When ordering line flange coupling covers, designate the cover number selected followed by “-LFC.” Check availability according to Table A.



Soil pipe hub covers*

These covers are designed to allow up to 1” (25 mm) insulation thickness over hub area and are sold including Hi-Lo Temp insert.

Use Sizing Table 1 or 2A.

Ordering information. When ordering soil pipe hub covers, designate the cover number selected followed by “-SPH.” Check availability according to Table A.

Zeston 2000/300 PVC

Insulated Fitting Covers

Application: Victaulic*, Gruvlok†, Mechanical Groove Type (MGT), 90° (1.6 rad.) & 45° (0.8 rad.) Ells, Tees



Mechanical Groove Type (MGT) 90° (1.6 rad.), 45° (0.8 rad.) Ells or tees

The picture shows the groove type mechanical line fitting covers which encase the clamps and the body within the PVC cover. Mechanical groove type covers are available with and without Hi-Lo Temp fiber glass inserts.

MGT type fittings are not covered by ANSI/ASTM/ASME specifications. Selection information provided is for fittings of major manufacturers only and are subject to change without notice.

Ordering information. When ordering MGT type covers, designate the pipe size, followed by MGT, followed by -90, -45 or T for the type of cover desired (e.g., 6" MGT-90).

Sizing Tables

General Information

General instructions

The following tables are designed to aid in quickly determining the correct Zeston 2000 PVC insulated fitting cover size for iron pipe, copper tubing and soil pipe applications.

Table A

Availability by size for all types of Zeston 2000 PVC insulated fitting covers except for long radius 90° (1.6 rad.) welded iron pipe and copper tubing elbows, P-traps, Y-branches, cone reducers, and MGT fitting covers. Depending upon the type of fitting to be insulated, and the information available, select one of the following tables:

Table 1

Fitting cover selection by insulation outer diameter or circumference. Use whenever pipe or tubing size or insulation thickness is not known or does not conform to ASTM C 585 Specifications.

Table 2A

Iron pipe fitting cover selection by pipe size and insulation thickness. Use for all iron pipe fittings listed in Table A except for some screwed fittings.

Table 2B

Copper tubing fitting cover selection by tubing O.D. size and insulation thickness. Use for copper tubing fittings listed in Table A.

Table 3A

Long radius 90° (1.6 rad.) elbow fitting cover selection by pipe size and insulation thickness. Use for long radius 90° (1.6 rad.) welded iron pipe elbows.

Table 3B

Long radius 90° (1.6 rad.) elbow fitting covers by copper tubing O.D. size and insulation thickness. Use for long radius 90° (1.6 rad.) copper tubing elbows.

Table 4

Standard P-Traps, Deep Seal P-Traps, Handicap Swivel P-Traps and Y-Branches.

Table 5

Flanged gate valve fitting covers.

Tables 6A and 6B

Mechanical Groove Type 90° (1.6 rad.), 45° (0.8 rad.) ells and tees. Use for MGT ells and tees.

Table 7

Zeston PVC Cut & Curled jacketing selection chart.

Important note:

All Zeston 2000 PVC insulated fitting covers are sized to fit Micro-Lok *HP* fiber glass pipe insulation as well as other pipe insulations manufactured in accordance with ASTM C 585 on applicable sizes.

When pipe insulations are used which are not manufactured in accordance with ASTM C 585, determine the Zeston size required by measuring the outer diameter or circumference of the pipe insulation and referring to Table 1.

Hi-Lo Temp insulation insert information

Zeston supplies one precut, tailored fiber glass insert with each fitting up to #19 (approx. 6" [152 mm] IPS). Inserts can be ordered for larger sizes, or when more thickness is required due to operating conditions.

Note: Where pipe insulation thickness is greater than 1½" (38 mm), or pipe temperature is below 45°F (7°C), or above 250°F (121°C), additional inserts may be required. (A "rule of thumb" for temperatures over 250°F [121°C], or below 45°F [7°C], is to use one Hi-Lo Temp insert for each additional 1" [25 mm] of pipe insulation).

Ordering information

When ordering Zeston 2000 PVC insulated fitting covers, designate the size of the Zeston fitting cover selected from the applicable table followed by the abbreviation for the type of Zeston fitting cover desired.

Example:

#12-90; #15 TV; 3x1 LR 90.



Zeston Table A

Available Types of PVC Insulated Fitting Covers

90 — 90° (1.6 rad.) Short Radius Elbow
 45 — 45° (0.8 rad.) Elbow
 TV — Tee or Valve
 H90 — Humped 90° (1.6 rad.) Short Radius Elbow
 H45 — Humped 45° (0.8 rad.) Elbow
 HT — Humped Tee
 EC — End Cap

MLC — Mechanical Line Coupling
 LFC — Line Flange Coupling
 SPH — Soil Pipe Hub

Long radius sizes are available as shown in Tables 3A and 3B.

Table A. Availability of Zeston 2000 PVC insulated fitting covers

Fitting cover size	Fitting cover type									
	90	45	TV	H90	H45	HT	EC	MLC	LFC	SPH
1	X	X		X	X		X			
2	X	X	X	X	X		X			
3	X	X	X				X			
4	X	X	X	X	X	X	X			
5	X	X	X	X	X	X	X			
6	X	X	X	X	X	X	X		[X]	
7	X	X	X	X	X	X	X		[X]	
8	X	X	X	X	X	X	X		[X]	
9	X	X	X	X	X	X	X		[X]	
9A	X									
10	X	X	X	X	X	X	X		[X]	
11	X	X	X	X	X	X	X	X	[X]	X
11A	X									
12	X	X	X	X	X	X	X	X	[X]	
13	X	X	X	X	X	X	X	X	[X]	X
14	X	X	X				X		[X]	
15	X	X	X	X	X		X	X	[X]	X
16	X	X	X				X	[X]	[X]	
17	X	X	X				X	[X]	[X]	X
17A	X									
18	X	X	X	X			X	X	X	[X]
19	X	X	X				X	[X]	[X]	[X]
20	X	X	X				X	[X]	[X]	[X]
21	X	X	X				X	[X]	[X]	[X]
22	X	X	X				X	[X]	[X]	X
23	X	X	X				X	[X]	[X]	[X]
24	X	X	X				X	[X]	[X]	[X]
25	X	X	X				X	[X]	[X]	
26	X	X	X				X	[X]	[X]	[X]
27	X	X	X				X	X		[X]
28	X	X	X				X	[X]		[X]
29	X	X	X					[X]		
30	X	X					X	X		
31		X					X	X		
32	X	X						[X]		
33		X					X	[X]		
35		X								

The fitting covers listed above can be selected by using Tables 1, 2A or 2B, along with the abbreviation or the type of Zeston insulated fitting cover.

Items that are grouped together as [X] are designed to fit more than one size as indicated in the table. For example, 6/7 LFC will fit Line Flange Coupling applications listed for #6 and #7.



Zeston Sizing Table 1

Insulated Fitting Cover Selection by Insulation Outside Diameter or Circumference

Use for fittings where pipe, or tube size, or insulation thickness is not known, or when the outside diameter does not conform to ASTM C 585 Specifications. Johns Manville cannot be responsible for the proper fit of covers for non-standard applications unless dimensioned drawings are submitted for review by Johns Manville.

Do not use for mechanical groove type fittings.

Determine the outer diameter or circumference of the insulation (include any jacketing or overwrapping) and select the Zeston insulated fitting cover number or size from the table below.

Refer to Tables 2A, 2B, 3A and 3B for guidance in selecting the proper cover by pipe size and thickness.

Refer to general instructions for ordering information.

Zeston Sizing Table 1

Fitting Cover Size (Per Table A)	Pipe insulation				Zeston 2000 PVC insulated fitting cover size for long radius 90° (1.6 rad.) ells	mm
	Outer Diameter (maximum)		Circumference (maximum)			
	in.	mm	in.	mm		
1	1½	41	5½	140		
2	1¾	44	5½	140	2	
3	2	51	6¼	159	3	
4	2¼	57	7	178	4	
5	2½	64	7¾	200	5	
6	2¾	70	8½	219	6	
7	3	76	9¾	238	7	
8	3¾	86	10½	270	8	
9	3¾	95	11¾	298	9; 9A	
10	4½	105	13	330	10	
11	4¾	121	14¾	378	11; 11A; 2x1; 3x½	51x25; 76x13
12	5¼	133	16½	419	12	
13	5¾	146	18	457	13; 2½x1½; 3x1; 4x½	67x38; 76x25; 102x13
14	6¼	159	19½	498	14	
15	6¾	171	21¼	540	15; 15A; 3x1½; 4x1; 5x½	76x38; 102x25; 127x13
16	7¼	184	22¾	578	16	
17	7¾	197	24¾	619	17; 17A; 3x2; 4x1½; 5x1; 6x½	76x51; 102x38; 127x25; 152x13
18	8¾	222	27½	699	18; 4x2; 5x1½; 6x1	102x51; 127x38; 152x25
19	9¾	248	30½	778	19; 5x2; 6x1½; 8x½	127x51; 152x38; 203x13
20	10¾	276	34¼	870	20; 6x2; 8x1	152x51; 203x25
21	11¾	302	37¼	946	21; 8x1½	203x38
22	12¾	327	40½	1029	22; 8x2; 10x1	203x51; 254x25
23	14½	359	44½	1130	23; 10x1½	254x38
24	15½	384	47½	1207	24; 10x2; 12x1	254x51; 305x25
25	16½	410	50½	1283	25; 12x1½; 14x1	305x38; 356x25
26	17½	435	54	1372	26; 12x2; 14x1½	305x51; 356x38
27	18½	460	57	1448	14x2; 16x1	356x51; 406x25
28	19½	486	60	1524	12x3; 16x1½	305x76; 406x38
29	20½	511	63	1600	14x3; 16x2; 18x1	356x76; 406x51; 457x25
30	21½	537	66½	1689	18x1½	457x38
31	22½	562	69½	1765	16x3; 18x2; 20x1	406x76; 457x51; 508x25
32	23¼	591	73	1854	20x1½	508x38
33	24¼	616	76	1930	18x3; 20x2	457x76; 508x51
35	26¼	667	82½	2096	20x3; 24x1	508x76; 610x25
	28¼	718	89	2261	24x2	610x51
	30¼	768	95	2413	24x3	610x76



Zeston Sizing Table 2A

Iron Pipe Fitting Covers

By pipe size and insulation thickness

Use for all iron pipe fittings listed in Table A except for some screwed fittings.

When using Zeston insulated fitting covers on screwed pipe, note the thickness of the metal on the screwed fitting. If not enough space is allowed for adequate insulation under the Zeston insulated fitting cover, a humped fitting cover must be used.

Refer to general instructions for ordering information.

Note: When using Zeston fitting covers on some screwed pipe, note the thickness of the metal on the screwed fitting. If there is not enough space for adequate insulation under the Zeston fitting cover, a humped fitting cover must be used.

Zeston PVC insulated fitting covers are sized to fit Micro-Lok *HP* fiber glass pipe insulation and all other types of pipe insulation manufactured in accordance with ASTM C 585. Note that thicknesses for rubber and other products vary from fiber glass. Please measure to verify sizing.

Zeston Sizing Table 2A

Iron Pipe Size		Insulation thickness—in. (mm)					
in.	mm	½ (13)	1 (25)	1½ (38)	2 (51)	2½ (64)	3 (76)
½	13	3	7	10	12	15	17
¾	19	4	7	10	12	15	17
1	25	5	9	11	13	15	17
1¼	32	6	9	12	13	15	17
1½	38	7	10	12	15	17	18
2	51	9	11	13	15	17	18
2½	64	10	12	15	17	18	19
3	76	11	13	15	17	18	19
3½	89	12	15	17	18	19	20
4	102	13	15	17	18	19	20
5	127	15	17	18	19	20	21
6	152	17	18	19	20	21	22
8	203	19	20	21	22	23	24
10	254	21	22	23	24	25	26
12	305	23	24	25	26	27	28
14	356	24	25	26	27	28	29
16	406	26	27	28	29	30*	31**
18	457	28	29	30*	31**	32*	33**
20	508	30*	31**	32*	33**	—	35**
22	559	32*	33**	—	35**	—	—
24	610	—	35**	—	—	—	—

*No tees or valves available. **No short radius 90° ells, tees or valves available.

Zeston Sizing Table 2B

Copper Tubing Fitting Covers

By copper tubing O.D. size and insulation thickness

Use for all copper tube fittings listed in Table A.

Note: Dimensions given for copper tubing sizes are outer diameter (O.D.). DO NOT confuse with normal sizes which are inside diameter (I.D.).

Refer to general instructions for ordering information.

The covers for the following copper tubing sizes should be ordered with an "A" suffix to the size.

Short Radius 90° (1.6 rad.) Fitting

Application		
in.	mm	Order
2½ x ½	67x13	9A—90
3½ x ½	92x13	11A—90
5½ x 1	130x25	17A—90

Zeston PVC insulated fitting covers are sized to fit Micro-Lok *HP* fiber glass pipe insulation and all other types of pipe insulation manufactured in accordance with ASTM C 585. Note that thicknesses for rubber and other products vary from fiber glass. Please measure to verify sizing.

Zeston Sizing Table 2B

Copper Tubing Size (O.D.)		Insulation thickness—in. (mm)					
in.	mm	½ (13)	1 (25)	1½ (38)	2 (51)	2½ (64)	3 (76)
⅝	16	2	7	9	11	13	15
¾	22	3	7	10	12	15	17
1⅛	29	4	7	10	12	15	17
1⅜	35	5	9	11	13	15	17
1⅝	41	6	9	12	13	15	17
2⅛	54	8	10	12	15	17	18
2⅝	67	9†	11	13	15	17	18
3⅛	79	10	12	15	17	18	19
3⅝	92	11†	13	15	17	18	19
4⅛	105	12	15	17	18	19	20
5⅛	130	14	17†	18	19	20	21
6⅛	156	16	18	19	20	21	22

†Add suffix "A" when short radius 90° ell is required, e.g. 9A.



Zeston Sizing Table 3A

Iron Pipe Fitting Covers

Long Radius 90° (1.6 rad.) Ells

By pipe size and insulation thickness

Use for long radius 90° (1.6 rad.) welded iron pipe elbows where listed.

Zeston Sizing Table 3A

Iron Pipe Size		Insulation thickness—in. (mm)											
in.	mm	½	(13)	1	(25)	1½	(38)	2	(51)	2½	(64)	3	(76)
½	13	3		7		10		12		15		17	
¾	19	4		7		10		12		15		17	
1	25	5		9		11		13		15		17	
1¼	32	6		9		12		13		15		17	
1½	38	7		10		12		15		17		18	
2	51	9		2x1	51x25	13		15		17		18	
2½	64	10		12		15		17		18		19	
3	76	3x½	76x13	3x1	76x25	15 or 3x1½	15 or 76x38	17 or 3x2	17 or 76x51	18		19	
3½	89	4x½	102x13	15		17		18		19		20	
4	102	4x½	102x13	4x1	102x25	17 or 4x1½	17 or 102x38	18 or 4x2	18 or 102x51	19		20	
5	127	5x½	127x13	5x1	127x25	18 or 5x1½	18 or 127x38	19 or 5x2	19 or 127x51	20		21	
6	152	6x½	152x13	6x1	152x25	6x1½	152x38	20 or 6x2	20 or 152x51	21		22	
8	203	8x½	203x13	8x1	203x25	8x1½	203x38	8x2	203x51	23		24	
10	254	10x1	254x25	10x1	254x25	10x1½	254x38	10x2	254x51	25		26	
12	305	12x1	305x25	12x1	305x25	12x1½	305x38	12x2	305x51	12x3	305x76	12x3	305x76
14	356	14x1	356x25	14x1	356x25	14x1½	356x38	14x2	356x51	14x3	356x76	14x3	356x76
16	406	16x1	406x25	16x1	406x25	16x1½	406x38	16x2	406x51	16x3	406x76	16x3	406x76
18	457	18x1	457x25	18x1	457x25	18x1½	457x38	18x2	457x51	18x3	457x76	18x3	457x76
20	508	20x1	508x25	20x1	508x25	20x1½	508x38	20x2	508x51	20x3	508x76	20x3	508x76
24	610	24x1	610x25	24x1	610x25	24x2	610x51	24x2	610x51	24x3	610x76	24x3	610x76

Zeston PVC insulated fitting covers are sized to fit Micro-Lok HP fiber glass pipe insulation and all other types of pipe insulation manufactured in accordance with ASTM C 585. Note that thicknesses for rubber and other products vary from fiber glass. Please measure to verify sizing.

Note: The sizes numbered 2 through 26 fit both short and long radius 90° (1.6 rad.) ells for the given pipe size and thickness. For a few applications, such as 3x2 (76x51), either short or long radius 90° (1.6 rad.) ells will fit and each size of fitting cover is shown in the table.

To order, place “– 90” behind the numbers listed in the chart.

Example:

Application	Order
¾" x 1" (10 mm x 25 mm) insulation	#7 – 90
6" x 1" (152 mm x 25 mm) insulation	6x1 – 90



Zeston Sizing Table 3B

Copper Tubing Fitting Covers
Long Radius 90° (1.6 rad.) Ells

By copper tubing O.D. size and insulation thickness

Use for long radius 90° (1.6 rad.) copper tubing elbows where listed.

Zeston Sizing Table 3B

Copper Tubing Size (O.D.)		Insulation thickness—in. (mm)											
in.	mm	½ (13)	1 (25)	1½ (38)	2 (51)	2½ (64)	3 (76)						
⅝	16	2	7	9	11	13	15						
⅞	22	3	7	10	12	15	17						
1⅛	29	—	7	10	12	15	17						
1⅜	35	—	9	11	13	15	17						
1⅝	41	—	9A	11	13	15	17						
2⅛	54	—	2x1	51x25	12	15	17	18					
2⅜	67	—	11A	2⅝x1½	67x38	15	17	18					
3⅛	79	3x½	76x13	3x1	76x25	15A	17A	18	19				
3⅝	92	—	4x½	102x13	15A	17A	18	19					
4⅛	105	4x½	102x13	4x1	102x25	17A	18	19	20				

Zeston PVC insulated fitting covers are sized to fit Micro-Lok HP fiber glass pipe insulation and all other types of pipe insulation manufactured in accordance with ASTM C 585. Note that thicknesses for rubber and other products vary from fiber glass. Please measure to verify sizing.

Note: The sizes numbered 2 through 20 (without A) fit both short and long radius 90° (1.6 rad.) ells for the given tubing O.D. and thickness.

Zeston Sizing Table 4

P-Traps: Standard, Deep Seal & Handicap Swivel;
Y-Branched

These covers are designed specifically for soil pipe.

Zeston Sizing Table 4

Sizes		Standard P-Trap*	Deep Seal P-Trap**	Handicap Swivel P-Trap*	Y-Branch
in.	mm				
1¼x1½x1	32x38x25	X	—	X	—
3x1	76x25	X	—	—	—
4x1	102x25	X	X	—	—
5x2	127x51	X	—	—	—
6x2	152x51	X	—	—	—
4x4x1	102x102x25	—	—	—	X
6x6x1	152x152x25	—	—	—	X

Former industry fitting name: *½ S-Trap **P-Trap

Zeston Sizing Table 5

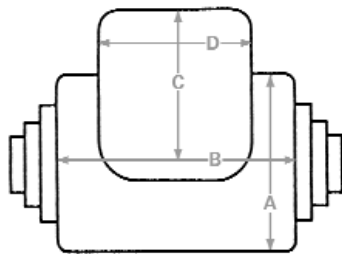
Flanged Gate Valve Fitting Covers

Zeston Sizing Table 5

Valve size and insulation thickness		(A) Outside diameter		(B) Fitting width		(C) Bonnet height		(D) Bonnet width	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
2x1½, 1, ½	51x38, 25, 13	8⅝	219	11½	292	8¼	210	7⅝	184
2½x2, 1½, 1, ½	64x51, 38, 25, 13	9⅝	244	13½	343	7½	191	8½	216
3x1, ½	76x25, 13	9⅝	244	13½	343	7½	191	8½	216
3x2, 1½, 1	76x51, 38, 25	10¾	273	15	381	6¾	171	9½	241
4x1, ½	102x25, 13	10¾	273	15	381	9	229	9½	241
4x2, 1½, 1, ½	102x51, 38, 25, 13	12¾	324	16	406	9	229	10⅝	264
5x1½, 1, ½	127x38, 25, 13	12¾	324	16	406	10	254	10⅝	264
5x2, 1½, 1	127x51, 38, 25	14	356	14	356	10¾	273	11⅞	298
6x1, ½	152x25, 13	12¾	324	16	406	11⅝	292	10⅝	264
6x1½, 1, ½	152x38, 25, 13	14	356	17	432	12¼	311	11⅞	298
6x2, 1½, 1	152x51, 38, 25	15	381	18	457	12¼	311	12⅝	311
8x2, 1½, 1, ½	203x51, 38, 25, 13	18	457	19⅝	495	16	406	13½	343
10x2, 1½, 1	254x51, 38, 25	20	508	20⅝	521	17	432	13½	343
12x2, 1½, 1	305x51, 38, 25	23	584	22	559	21	533	16	406

Due to variations in valve bonnets, measuring the actual valve is recommended. Some fitting covers are identical except for bonnet height. Choose the smallest cover that will properly fit with fiber glass insert applied.

If necessary, bonnet height may be reduced by field trimming and tacking, taping or solvent welding the bonnet cap in the new position.



Zeston Sizing Tables 6A and 6B

Victaulic, Gruvlok Mechanical Groove Type (MGT) Fitting Covers

By cover size

Use for sizing and ordering factory trimmed MGT fitting covers.

Zeston Sizing Table 6A

Iron Pipe Size		Insulation thickness – in. (mm)			
in.	mm	½ (13)	1 (25)	1½ (38)	2 (51)
2*	51*	✓	✓	✓	—
2½	64	✓	✓	✓	—
3*	76*	✓	✓	✓	✓
3½	89	✓	✓	✓	✓
4*	102*	✓	✓	✓	✓
5	127	✓	✓	✓	✓
6*	152*	✓	✓	✓	✓
8*	203*	✓	✓	✓	✓
10*	254*	✓	✓	✓	✓
12*	305*	✓	✓	✓	✓
14*	356*	✓	✓	✓	✓
16*	406*	✓	✓	✓	✓
18*	457*	✓	✓	✓	✓

✓ = Indicates availability. *Available in long or short radius.

All MGT fitting covers have step-down reducer ends to accommodate multiple insulation thicknesses. The above tables indicate the insulation thickness available for each of the step-down sizes listed. Covers can be easily field trimmed to permit the required insulation thickness.

Use for sizing and ordering 90° (1.6 rad.), 45° (0.8 rad.) and Tee MGT fitting covers.

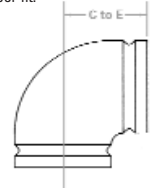
Zeston Sizing Table 6B

Copper Tubing Size (O.D.)		Insulation Thickness – in. (mm)			
in.	mm	½ (13)	1 (25)	1½ (38)	2 (51)
2½*	54	✓	✓	✓	✓
2⅝	67	✓	✓	✓	✓
3⅜	79	✓	✓	✓	✓
4½	105	✓	✓	✓	✓

✓ = Indicates availability. *Also fits 1½" (38 mm) Iron Pipe Size.



Long radius fitting "C to E" dimension, approximately 1.5X fitting diameter. Measure "C to E" dimension (as illustrated) before ordering to ensure proper fit.



Zeston Sizing Table 7

Zeston PVC Cut & Curled Jacketing



The following table is designed to aid in quickly determining the correct Zeston PVC Cut & Curled jacketing size for iron pipe or copper tubing insulated with Micro-Lok HP fiber glass pipe insulation or other pipe insulations manufactured in accordance with ASTM C 585.

Zeston PVC Cut & Curled sizes correspond to Zeston 2000/300 fitting cover sizes. For example, number 6-7 fits applications requiring number 6, or number 7 fitting covers. If unsure of

Zeston 2000/300 Sizing Table 7

300 O.D. Size			2000 Fitting Size		
in.	mm	Size	in.	mm	Size
2.0	51	2-3	9.5	241	19
2.5	64	4-5	10.0	254	20
3.0	76	6-7	10.5	267	20
3.5	89	8-9	11.0	279	21
4.0	102	10	11.5	292	21
4.5	114	11	12.0	305	22
5.0	127	12	12.5	318	22
5.5	140	13	13.0	330	23
6.0	152	14	14.0	356	23
6.5	165	15	15.0	381	24
7.0	178	16	16.0	406	25
7.5	191	17	17.0	432	26
8.0	203	18	18.0	457	27
8.5	216	17	19.0	483	28
9.0	229	19	20.0	508	29

fitting size, or for covering bare pipe, simply measure and order by Zeston 300 O.D. size.

30 mil (0.8 mm) recommended for outdoor applications. Also available in colors (indoor only) to match 300 Series color fittings.



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The physical and chemical properties of Zeston® PVC Insulated Fitting Covers represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you to assure current information. **All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions including Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions, Limited Warranty and Limitation of Remedy, and information on other Johns Manville thermal insulations and systems, call (800) 654-3103.**