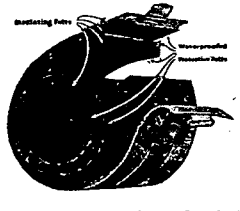
Johns-Manville Asbesto-Sponge Felted Insulation

High Pressure Steam Lines in Manufacturing Buildings—All high pressure steam piping and high pressure drip piping used in connection with distribution of steam for manufacturing purposes shall be insulated with Asbesto-Sponge Felted Sectional Insulation of the following thicknesses:

Steam Pressure or Condition	Temperature Deg. Fahr.	Thickness of Insulation		
		Pipes Larger than 4 in.	Pipes 2 in. to 4 in.	Pipes Smaller than 2 in.
0 to 25 lb.	212 to 267	1"	1"	1"
25 to 100 lb.	267 to 338	1½"	1½"	1"
100 to 200 lb.	338 to 388	2"	1½"	1"
Low Superheat	388 to 500	2½"	2"	1½"
Superheat	500 to 600	3"	2½"	2"
High Superheat	600 to 700	3½"	3"	2"

Fittings, Valves and Flanges—All pipe fittings, valves and flanges shall be insulated with block and plastic insulation to the same thickness as the adjacent pipe insulation. Block insulation shall be of the same material as the adjacent pipe insulation and plastic material used shall be hard finish Asbestos Cement. Block insulation may be omitted on pipe sizes smaller than 4 in., or where total thickness of insulation is less than 1½ in. and the entire thickness of insulation in such cases may be made up of hard finish Asbestos Cement.

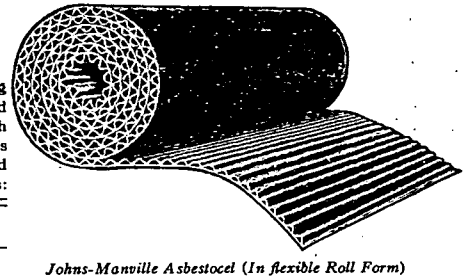


Johns-Manville Anti-Sweat Insulation

Cold Water Piping—All cold service water piping, including risers and concealed fixture connections or exposed soil or waste lines, shall be insulated with Anti-Sweat Insulation 1 in. thick applied in two layers with all joints broken, fittings with Hair Felt and hard finish Asbestos Cement to the same thickness.

Finish of Insulation—All insulation on pipes, fittings, valves and flanges which is exposed to view shall be enclosed in an extra jacket of 8-oz. canvas sewed over rosin sized paper.

Where insulation is concealed the light canvas furnished in manufacture is to be pasted down over the joints and the insulation additionally secured by means of brass lacquered bands applied at least two to a section.



Johns-Manville Asbestocel (In flexible Roll Form)

Warm Air Ducts—All warm air ducts, flues, heater casings and fan housings in the ventilating system shall be insulated with 4-ply Improved Asbestocel sheet insulation finished with hard finish Asbestos Cement ⅛ inch thick, applied over hexagonal wire reinforcement. The cement finish shall be troweled to a smooth and uniform surface. Where this insulation is exposed to view it shall be finished with a jacket of 8-oz. canvas, glued to the insulation and sewed in place.

Painting—All insulation exposed to view and enclosed in a jacket of 8-oz. canvas is to be painted with one coat of glue sizing and two coats of first quality lead and oil paint of a color selected by the architect.

Underground Lines—All high and low pressure steam lines and hot water lines running under ground outside of buildings shall be installed in Johns-Manville System of Underground Insulation. This system shall be installed in accordance with the manufacturer's specifications.

All of the above insulation is to be furnished and applied by the manufacturer of the materials used, or by his approved contractor, in accordance with the manufacturer's standard specifications.

Johns-Manville is prepared to furnish detailed standard specifications on any of the above items, as well as on the following and many others:

Boilers,
Boiler Settings,
Tube Doors,
Breechings and Smoke Flues,
Stack Lining, Stack Insulation,
Feed Water Heaters,
Pump Cylinders,
Hot Water Piping,
Ice Water Piping,
Refrigeration Piping,
Pipes Exposed to Freezing.

Space limitations do not permit the insertion of complete efficiency tables, pipe sizes, insulation thickness, etc. If you do not find the size you want, write to the nearest Johns-Manville Division sales office.

JOHNS-MANVILLE 85 PER CENT MAGNESIA INSULATION

An efficient insulation for steam lines to 600 deg. fahr.

EFFICIENCIES

Pipe Size Inches	Nominal Insulation Thickness Inches		Temperature Difference Between Pipe and Surrounding Air, Deg. Fahr. 100° / Temperature of Pipe, Deg. Fahr. (Temperature of Surrounding Air, 75 Deg.) 175°	200° / 275°	300° / 375°	400° / 475°	500° / 575°
			Heat losses per linear foot of bare pipe per hour and Efficiencies of insulation				
1	0	Bare Pipe Loss, B.t.u.	74.0	183.4	337.4	555.2	891.0
	Std.	Efficiency %	68.7	73.7	77.7	81.1	84.0
	2	" %	78.4	82.0	84.8	87.3	89.5
	3	" %	81.4	84.6	87.0	89.1	90.9
2	0	Bare Pipe Loss, B.t.u.	133.9	331.5	608.3	1003.9	1611.0
	Std.	Efficiency %	76.7	80.5	83.3	85.7	88.2
	2	" %	83.3	85.9	88.2	90.2	91.7
	3	" %	86.2	88.5	90.2	91.9	93.3
3	0	Bare Pipe Loss, B.t.u.	197.3	488.8	896.8	1480.0	2375.0
	Std.	Efficiency %	78.8	82.3	84.8	87.1	89.3
	2	" %	85.2	87.7	89.6	91.4	92.9
	3	" %	88.2	90.2	91.7	93.0	94.2
4	0	Bare Pipe Loss, B.t.u.	253.5	627.9	1152.1	1901.3	3051.0
	Std.	Efficiency %	81.7	84.5	86.9	89.1	90.8
	2	" %	86.4	88.7	90.5	92.1	93.4
	3	" %	89.3	91.1	92.4	93.7	94.8
6	0	Bare Pipe Loss, B.t.u.	371.9	923.7	1694.9	2797.1	4488.5
	Std.	Efficiency %	82.7	85.4	87.6	89.7	91.3
	2	" %	87.8	89.8	91.3	92.8	94.0
	3	" %	90.4	92.1	93.3	94.4	95.3
8	0	Bare Pipe Loss, B.t.u.	485.7	1203.0	2207.3	3642.8	5845.6
	Std.	Efficiency %	83.7	86.2	88.4	90.2	91.9
	2	" %	88.4	90.3	91.8	93.1	94.3
	3	" %	91.1	92.7	93.7	94.8	95.6
Flat Surface	0	(Bare Surface) B.t.u.	215.2	533.0	978.0	1614.0	2590.0
	1	Efficiency %	82.36	85.20	87.60	89.64	91.48
	2	" %	90.16	91.85	93.12	94.27	95.31
	3	" %	93.22	94.37	95.25	96.06	96.75

JOHNS-MANVILLE ASBESTO-SPONGE FELTED INSULATION

For insulating high pressure and superheated steam lines to 750 deg. fahr.

EFFICIENCIES

Pipe Size Inches	Nominal Insulation Thickness Inches		Temperature Difference Between Pipe and Surrounding Air, Deg. Fahr. 100° / Temperature of Pipe, Deg. Fahr. (Temperature of Surrounding Air, 75 Deg.) 175°	200° / 275°	300° / 375°	400° / 475°	500° / 575°
			Heat losses per linear foot of bare pipe per hour and Efficiencies of insulation				
1	0	Bare Pipe Loss, B.t.u.	74.0	183.4	337.4	555.2	891.0
	1	Efficiency %	76.5	79.9	82.6	85.2	87.4
	2	" %	80.7	83.6	85.8	87.8	90.0
	3	" %	83.5	86.1	88.0	89.8	91.5
2	0	Bare Pipe Loss, B.t.u.	133.9	331.5	608.3	1003.9	1611.0
	1	Efficiency %	80.4	83.3	85.5	87.6	89.3
	2	" %	85.1	87.2	89.0	90.6	92.1
	3	" %	87.7	89.6	91.0	92.4	93.7
3	0	Bare Pipe Loss, B.t.u.	197.3	488.8	896.8	1480.0	2375.0
	1	Efficiency %	82.2	84.9	86.8	88.8	90.3
	2	" %	86.8	88.8	90.3	91.7	93.2
	3	" %	89.5	91.2	92.3	93.5	94.6
4	0	Bare Pipe Loss, B.t.u.	253.5	627.9	1152.1	1901.3	3051.0
	1	Efficiency %	83.3	85.8	87.6	89.5	90.9
	2	" %	87.9	89.7	91.1	92.4	93.7
	3	" %	90.5	92.0	93.0	94.1	95.1
6	0	Bare Pipe Loss, B.t.u.	371.9	923.7	1694.9	2797.1	4488.5
	1	Efficiency %	84.2	86.5	88.3	90.1	91.4
	2	" %	89.1	90.7	91.9	93.1	94.3
	3	" %	91.5	92.9	93.8	94.8	95.6
8	0	Bare Pipe Loss, B.t.u.	485.7	1203.0	2207.3	3642.8	5845.6
	1	Efficiency %	84.8	87.0	88.7	90.4	91.7
	2	" %	89.6	91.2	92.4	93.4	94.6
	3	" %	92.1	93.4	94.2	95.1	95.9
Flat Surface	0	(Bare Surface) B.t.u.	215.2	533.0	978.0	1614.0	2590.0
	1	Efficiency %	84.17	86.50	88.38	90.10	91.73
	2	" %	91.32	92.61	93.61	94.55	95.44
	3	" %	94.02	94.90	95.59	96.23	96.85