

179

REV. JAN 1958 SUP. BY

MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954 REVISED APRIL 1957	SN 100 M Page 1 of 12
Code	101*	102*	103
Material	85% Magnesia	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Stable, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bar clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F = 0.33 max.	500°F = 0.54 max.	500°F = 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications:			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge.	85% Mag. Phillis Carey Mfg. Co.	Calcilite The Ruberoid Co.	High Temp. No. 19 Phillis Carey Mfg. Co.
	Thermalite 85% Ehrer Mag. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Endura Hi-Temp. Ehrer Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	J/M Super Johns-Manville Sales Corp.
		Keytherm Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
** New Simplified Dimensional System sponsored by ASTM	Featherweight Keesby & Morrison Co.	Tricaline Mander Clark Corp.	
	85% Mag. Mander Clark Corp.	Caltemp Pebas Ind. Ins. Div.***	
	Precision-molded Pebas Ind. Ins. Div.***		
*** Fiber Board Paper Products Corp.			

Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority instituting the use of this Specification.

D-211

DUP 0990041

848866

Case	104	106
Material	Inorganic silicas	Asbestos and diatomaceous earth molded
Material Description	Inorganic silicas and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Binder		
Temperature Range	100°F to 1600°F	200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.54 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	18 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mach. cut on die.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams.	<u>Alkapp</u> Phillip Carey Co.	<u>Unabeslas</u> Union Asbestos & Rubber Co.
DUP 0990042		

REV. 4
SUP. BY

2-B-37 JV

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REV. JAN 1958 SUP. BY

MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SN 100 M Page 1 of 12
		REVISED APRIL 1957	
Code	101*	102*	103
Material	85% Magnesia	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Stable, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bond clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1200°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mech. cut on diameter.	Machine extruded. Pipe mech. cut on diameter.	Machine molded. Pipe mech. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge.	85% Mag. Philip Carey Mfg. Co.	Calcisile The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermasile 85% Ehret Mag. Mfg. Co., Inc.	Kayle Quens-Illinois Glass Co.	Enduro Hi-Temp. Ehret Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermabestos Johns-Manville Sales Corp.	J/M Superes Johns-Manville Sales Corp.
** New Simplified Dimensional System sponsored by ASTM		Keychem Keesby & Harrison Co.	High Temp. Keesby & Harrison Co.
	Featherweight Keesby & Harrison Co.	Insulite Mundt Cork Corp.	
	85% Mag. Mundt Cork Corp.	Celltemp Pebec Ind. Ins. Div.***	
*** Fiber Board Paper Products Corp.	Precision-molded Pebec Ind. Ins. Div.***		
Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority instituting the use of this Specification.			
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DUP 0990170

048195

SM 100 M		OCTOBER 1954	
Page 2		Rev. July 1957	
MATERIAL SPECIFICATION - SERIES 100			
Code	104		106
Material	Inorganic silicas		Asbestos and diatomaceous earth molded
Material Description	Inorganic silicas and asbestos fibers		Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler			
Binder			
Temperature Range	100°F to 1600°F		200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.54 max. Block - 500°F - 0.58 max.		500°F - 0.54 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.		18 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation		
Manufacturing Process	Filter moulding process		Formed and comp. on mandril. Pipe mach. cut on dia.
Resistance to Breakage in Handling	Good		Good
Dimensions			
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F		Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Available for field mixing to repair joints and seams.	Alamp		Unibestos
	Phillip Carey Co.		Union Asbestos & Rubber Co.



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J-B-37 EE

MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SN 100 M
		REVISED APRIL 1957	Page 1 of 12
Code -	101*	102*	103
Material	85% Magnesia	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 90% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bon. clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge.	85% Mag. Phillip Carey Mfg. Co.	Calcisil The Rubensoid Co.	High Temp. No. 19 Phillip Carey Mfg. Co.
	Thermasite 85% Ehret Mag. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Enduro Hi-Temp. Ehret Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	1/4 Super Johns-Manville Sales Corp.
** New Simplified Dimensional System sponsored by ASTM		Keytherm Keesby & Mattison Co.	High Temp. Keesby & Mattison Co.
	Featherweight Keesby & Mattison Co.	Incasil Mundt Clark Corp.	
	85% Mag. Mundt Clark Corp.	Calisil Pabco Ind. Ins. Div.***	
*** Fiber Board Paper Products Corp.	Precision-molded Pabco Ind. Ins. Div.***		

Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.

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MATERIAL SPECIFICATION - SERIES 100

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Page 2

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Code	104		106
Material	Inorganic silicas		Asbestos and diatomaceous earth molded
Material Description	Inorganic silicas and asbestos fibers		Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler			
Binder			
Temperature Range	100°F to 1600°F		700°F to 1000°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.		500°F - 0.58 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.		14 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation		
Manufacturing Process	Filter moulding process		Formed and comp. on mandril. Pipe mech. cut on die.
Resistance to Breakage in Handling	Good		Good
Dimensions			
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F		Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Available for field mixing to repair joints and seams.	Altemp		Unabestos
	Philip Carey Co.		Union Asbestos & Rubber Co.

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REV. JAN 1958 SUP. BY

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MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION:	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954 REVISED APRIL 1957	SH 100 M Page 1 of 12
Code	101*	102*	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bo clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied or extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge.	85% Mag. Phillips Carey Mfg. Co. Thermalite 85% Ehrst Mag. Mfg. Co., Inc. 85% Mag. Johns-Manville Sales Corp. Featherweight Keesby & Morrison Co. 85% Mag. Mander Clark Corp. Pressurized-molded Pebax Ind. Ins. Div.***	Calcilite The Rubenoid Co. Kaylo Quincy-Williams Glass Co. Thermalite Johns-Manville Sales Corp. Raytherm Keesby & Morrison Co. Incalite Mander Clark Corp. Caltemp Pebax Ind. Ins. Div.***	High Temp. No. 19 Phillips Carey Mfg. Co. Enduro Hi-Temp. Ehrst Mag. Mfg. Co., Inc. 1/4" Square Johns-Manville Sales Corp. High Temp. Keesby & Morrison Co.
** New Simplified Dimensional System sponsored by ASTM			
*** Fiber Board Paper Products Corp.			
Vendors and merchandise designations are given to describe material and may not include all acceptable products. Substitutions are to be made only on approval of the authority instituting the use of this Specification.			

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DUP 0990287

MATERIAL SPECIFICATION - SERIES 100

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Code	104	106
Material	Inorganic silicates	Asbestos and diatomaceous earth molded
Material Description	Inorganic silicates and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Blender		
Temperature Range	100°F to 1600°F**	200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.54 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	18 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	11 PSI at 50% deformation - Dry
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mach. cut on dia.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams. ** Max. temp. of Rayle 20 is 1800°F	Alcamp Phillip Carey Co.	Unabestos Union Asbestos & Rubber Co.
	Rayle 20 Owens-Illinois Glass Co.	



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MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SH 100 M Page 1 of 12
		REVISED APRIL 1957	
Code	101*	102*	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bar clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 300°F	100°F to 1200°F	300°F to 1800°F
K Factor	300°F - 0.55 max.	300°F - 0.54 max.	300°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Phillip Carey Mfg. Co.	Calcisil The Rubensid Co.	High Temp. No. 19 Phillip Carey Mfg. Co.
	Thermalize 85% Ehrer Mag. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Enduro Hi-Temp. Ehrer Mag. Mfg. Co., Inc.
	85% Mag. John-Maryville Sales Corp.	Thermobestos John-Maryville Sales Corp.	J/M Superon John-Maryville Sales Corp.
		Keychem Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
	Featherweight Keesby & Morrison Co.	Trisolite Munder Carb Corp.	
	85% Mag. Munder Carb Corp.	Cellamp Pabco Ind. Ins. Div.,***	
	Premason-molded Pabco Ind. Ins. Div.,***		
Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority maintaining the use of this Specification.			

MATERIAL SPECIFICATION - SERIES 100

OCTOBER 1954

Page 2

Rev. July 1957

Code	104	106
Material	Inorganic silicas	Asbestos and diatomaceous earth matted
Material Description	Inorganic silicas and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Binder		
Temperature Range	100°F to 1600°F	200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.54 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	12 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mach. cut on die.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams.	Alusimp Phillip Carey Co.	Unibestos Union Asbestos & Rubber Co.



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REV. JAN 1958 SUP. BY

MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954 REVISED APRIL 1957	SN 100 M Page 1 of 12
Code	101°	102°	103
Material	85% Magnesia	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Stable, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with a clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.35 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extruded. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied on extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philly Caroy Mfg. Co.	Calcilite The Ruberoid Co.	High Temp. No. 19 Philly Caroy Mfg. Co.
	Thermalite 85% Ehren Mag. Mfg. Co., Inc.	Keylo Owens-Illinois Glass Co.	Enduro H-Temp. Ehren Mag. Mfg. Co., Inc.
	85% Mag. John-Manville Sales Corp.	Thermobestos John-Manville Sales Corp.	J/M Super John-Manville Sales Corp.
		Keychem Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
	Firebricks Keesby & Morrison Co.	Incalite Morton Carb. Corp.	
	85% Mag. Morton Carb. Corp.	Calcilite Pabco Ind. Ins. Div.***	
	Precision-molded Pabco Ind. Ins. Div.***		
Vendors and merchandise designations are given to describe material and may not include all acceptable products. Substitutions are to be made only on approval of the authority instituting the use of this Specification.			

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Page 2		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954	13
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Case	104		106		
Material	Inorganic silicas		Asbestos and diatomaceous earth mixed		
Material Description	Inorganic silicas and asbestos fibers		Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*		
Filler					
Binder					
Temperature Range	100°F to 1600°F		200°F to 1200°F		
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.		300°F - 0.54 max.		
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.		18 lbs. per cu. ft.		
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation				
Manufacturing Process	Filter moulding process		Formed and comp. on mandril. Pipe mach. cut on die.		
Resistance to Breakage in Handling	Good		Good		
Dimensions					
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F		Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.		
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.					
* Available for field mixing to repair joints and seams.	Alcamp		Unabestos		
	Phillip Carey Co.		Union Asbestos & Rubber Co.		

REPLY TO: SUP. BR

DUP 0990375



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MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1984	SN 100 M
		REVISED APRIL 1987	Page 1 of 12
Code	101*	102*	103
Material	85% Magnesia	Calcium silicate	Diatomaceous ear
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bar clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extruded. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philip Carey Mfg. Co.	Calcium The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalux 85% Ehrer Mag. Mfg. Co., Inc.	Kaylo Quana-Illinois Glass Co.	Enduro Hi-Temp. Ehrer Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermalux Johns-Manville Sales Corp.	J/M Super Johns-Manville Sales Corp.
		Kaytherm Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
	Featherweight Keesby & Morrison Co.	Thermalux Mander Clark Corp.	
	85% Mag. Mander Clark Corp.	Calcium Pabco Ind. Ins. Div.***	
	Premaco-molded Pabco Ind. Ins. Div.***		
Vendors and merchandise designations are given to describe material and may not include all acceptable products. Substitutions are to be made only on approval of the authority instituting the use of this Specification.			

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MATERIAL SPECIFICATION - SERIES 100

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Rev. Apr. 1957

Code	104		104
Material	Inorganic silices		Asbestos and diatomaceous earth molded
Material Description	Inorganic silices and asbestos fibers		Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler			
Binder			
Temperature Range	100°F to 1600°F		700°F to 1000°F
X Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.		500°F - 0.58 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.		14 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation		
Manufacturing Process	Filter moulding process		Formed and comp. on mandril. Pipe mach. cut on die.
Resistance to Breakage in Handling	Good		Good
Dimensions			
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F		Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Available for field mixing to repair joints and seams.	Alamp Philip Carey Co.		Unabestos Union Asbestos & Rubber Co.

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REV. 1050 SUP. BY

MATERIALS		THERMAL INSULATION	
MATERIAL SPECIFICATION		STANDARD ENGINEERING SPECIFICATION	
SERIES 100		ISSUED OCT 1954	SN 100 M
PREFORMED BLOCK AND PIPE		REVISED APRIL 1957	Page 1 of 12
Code	101*	102*	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Stable, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with sand clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied or extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge.	85% Mag. Philip Carey Mfg. Co.	Calcisil The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalite 85% Ehrst Mag. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Enduro H.T. Temp. Ehrst Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermalite Johns-Manville Sales Corp.	J/M Super Johns-Manville Sales Corp.
		Kaychem Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
	Featherweight Keesby & Morrison Co.	Tricalite Munder Clark Corp.	
	85% Mag. Munder Clark Corp.	Calcomp Pebax Ind. Ins. Div.***	
** New Simplified Dimensional System sponsored by ASTM	Precision-molded Pebax Ind. Ins. Div.***		
*** Fiber Board Paper Products Corp.			

Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.

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DUP 0990458

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MATERIAL SPECIFICATION - SERIES 100

OCTOBER 1954

Page 2

Rev. Jan. 1953

Code	104	106
Material	Inorganic silicates	Asbestos and diatomaceous earth molded
Material Description	Inorganic silicas and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Binder		
Temperature Range	100°F to 1600°F**	200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.54 max.
Density	Pipe covering - 13 lb. per cu. ft. Block - 14 lb. per cu. ft.	18 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	11 PSI at 50% deformation - Dry
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mach. cut on die.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams. ** Max. temp. of Raylo 20 is 1800°F	Alcamp Phillip Carey Co.	Unabestos Union Asbestos & Rubber Co.
	Raylo 20 Owens-Illinois Glass Co.	



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MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SN 100 M
		REVISED APRIL 1957	Page 1 of 12
Code	101*	102*	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bon clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied or extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philip Carey Mfg. Co.	Calcisil The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalite 85% Ehrer Mag. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Enduro Hi-Temp. Ehrer Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	1/4 Super Johns-Manville Sales Corp.
		Kaytherm Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
	Featherweight Keesby & Morrison Co.	Thermalite Mundt Cork Corp.	
	85% Mag. Mundt Cork Corp.	Calisil Peters Ind. Ins. Div.***	
	Precision-molded Peters Ind. Ins. Div.***		
Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.			

DUP 0990460

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Page 2		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954
				Rev. July 1957
Code	104		106	
Material	Inorganic silicas		Asbestos and diatomaceous earth matted	
Material Description	Inorganic silicas and asbestos fibers		Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*	
Filler				
Binder				
Temperature Range	100°F to 1600°F		200°F to 1200°F	
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.		500°F - 0.54 max.	
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.		18 lbs. per cu. ft.	
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation			
Manufacturing Process	Filter moulding process		Formed and comp. on mandril. Pipe mach. cut on die.	
Resistance to Breakage in Handling	Good		Good	
Dimensions				
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F		Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
* Available for field mixing to repair joints and seams.	Altemp		Unabestos	
	Philip Carey Co.		Union Asbestos & Rubber Co.	



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REV. JAN 1952 SUP. BY

MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SN 100 M Page 1 of 12
		REVISED APRIL 1957	
Code	101°	102°	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 30% by weight minimum	Stable, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bon clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe ma ch cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge.	85% Mag. Phillip Carey Mfg. Co.	Calcisil The Ruberoid Co.	High Temp. No. 19 Phillip Carey Mfg. Co.
	Thermalite 85% Ehrst Mag. Mfg. Co., Inc.	Kaylo Quincy-Illinois Glass Co.	Enduro H-Temp. Ehrst Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	J/M Superex Johns-Manville Sales Corp.
		Keytherm Keesby & Morrison Co.	High Temp. Keesby & Morrison Co.
** New Simplified Dimensional System sponsored by ASTM	Featherweight Keesby & Morrison Co.	Insulite Mander Cart Corp.	
	85% Mag. Mander Cart Corp.	Caltemp Pebes Ind. Ins. Div.***	
	Precision-molded Pebes Ind. Ins. Div.***		
*** Fiber Board Paper Products Corp.			
Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.			

DUP 0990543

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Code	104	106
Material	Inorganic silicas	Asbestos and diatomaceous earth mixed
Material Description	Inorganic silicas and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Binder		
Temperature Range	100°F to 1600°F	200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.54 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	18 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mach. cut on die.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams.	Alamp Phillip Carey Co.	Unabestos Union Asbestos & Rubber Co.

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MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SN 100 M
		REVISED APRIL 1957	Page 1 of 12
Code	101*	102*	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Steele, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bon clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.53 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Sands are supplied at extra cost. Order must state "without sands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philip Carey Mfg. Co.	Calcisil The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalite 85% Ehren Mfg. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Enduro Hi-Temp. Ehren Mfg. Mfg. Co., Inc.
	85% Mag. John-Merrville Sales Corp.	Thermobestos John-Merrville Sales Corp.	11M Super John-Merrville Sales Corp.
		Kaychem Kearby & Morrison Co.	High Temp. Kearby & Morrison Co.
	Fenchems Kearby & Morrison Co.	Tricel Mander Clark Corp.	
	85% Mag. Mander Clark Corp.	Cellamp Pabco Ind. Ins. Div.***	
	Precision-molded Pabco Ind. Ins. Div.***		
Vendors and merchandising designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority authorizing the use of this Specification.			

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Code	104	106
Material	Inorganic silices	Asbestos and diatomaceous earth molded
Material Description	Inorganic silices and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Binder		
Temperature Range	100°F to 1600°F	700°F to 1000°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.58 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	14 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mech. cut on die.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams.	Alamp Phillis Carey Co.	Unibesias Union Asbestos & Rubber Co.



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REV. JAN 1957 SUP. BY

MATERIALS		THERMAL INSULATION	
MATERIAL SPECIFICATION		STANDARD ENGINEERING SPECIFICATION	
SERIES 100		ISSUED OCT 1954	SN 100 M
PREFORMED BLOCK AND PIPE		REVISED APRIL 1957	Page 1 of 12
Code	101°	102°	103
Material	85% Magnesia	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bonding clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philip Carey Mfg. Co.	Calcilite The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalite 85% Ehret Mag. Mfg. Co., Inc.	Kaylo Owens-Illinois Glass Co.	Enduro Hi-Temp. Ehret Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	J/M Superex Johns-Manville Sales Corp.
		Kaytherm Keasby & Mattison Co.	High Temp. Keasby & Mattison Co.
	Featherweight Keasby & Mattison Co.	Tricalite Mundt Clark Corp.	
	85% Mag. Mundt Clark Corp.	Caltemp Pabco Ind. Ins. Div.***	
	Precision-molded Pabco Ind. Ins. Div.***		

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Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.



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SM 100 M
 Page 2

MATERIAL SPECIFICATION - SERIES 100

OCTOBER 1954
 Rev. July 1957

Code	104	106
Material	Inorganic silicas	Asbestos and diatomaceous earth molded
Material Description	Inorganic silicas and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*
Filler		
Binder		
Temperature Range	100°F to 1600°F	200°F to 1200°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.54 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	18 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mach. cut on dia.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
* Available for field mixing to repair joints and seams.	Altemp Philip Carey Co.	Unabestos Union Asbestos & Rubber Co.

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 SUPPLY

DUP 0990761

090347

OCTOBER 1954

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MATERIAL SPECIFICATION - SERIES 100

SM 100 M

Page 3

Code	107	108	109
Material	Asbestos sponge		Corrugated asbestos preshrunk
Material Description	Asbestos sheets separated by finely ground sponged material bonded with adhesive strips.		Alternate layers of plain and corrugated asbestos sheets. Outer covering asbestos felt.
Filler			
Binder			
Temperature Range	100°F to 700°F		100°F to 400°F
K Factor	500°F - 0.60 max.		200°F - 0.58 max.
Density	30 lb. max.		
Compressive Strength			
Manufacturing Process	Laminated - 38 to 42 layers per in. of thick.		3-ply laminate
Resistance to Breakage in Handling	Very good		Good
Dimensions	To Specification		
Other Qualifications	Must be a flexible product		Preshrunk
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Aircell -4-ply Excel -6-ply Cavacel-8-ply	Asbestos Sponge Johns-Manville Sales Corp.		Preshrunk Asbestos Johns-Manville Sales Corp.
	Asbestos Sponge Philip Carey Mfg. Co.		Aircell * Philip Carey Mfg. Co.
	Sponge Felt The Ruberoid Co.		K & M - Aircell Kearby & Mattison Co.
	Sponge Felt Ehrst Mfg. Mfg. Co., Inc.		B-H Aircell Baldwin-Hill Co.
	Sponge Felt Smith and Kanzler Corp.		

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OCTOBER 1954		MATERIAL SPECIFICATION - SERIES 100		SM 100 M
Rev. Oct. 1954				Page 3
Code	112.01	112.02		
Material	Glass fiber	See Code 112.01		
Material Description	Textile type fine glass fiber pipe insulation, plain, with medium-temperature binder.			
Filler				
Binder	Phenol-formaldehyde or Di-Cy			
Temperature Range	80°F to 350°F			
K Factor	100°F - 0.25			
Density	3" and 6" lb. per cu. ft.			
Compressive Strength				
Manufacturing Process	Machine molded			
Resistance to Breakage in Handling	Very good			
Dimensions				
Other Qualifications	Specify whether for iron pipe or copper tubing			
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.			
	*Monocover Baldwin-Hill			
	*Thermoglas Philip Cory Mfg. Co.			
	**Fiberglas P F Pipe Ins. Owens-Corning Corp.			
	**Armoglas P F Pipe Ins. Armstrong Cork Co.			
	*Aerogel Johns-Manville Sales Corp.			

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MATERIAL SPECIFICATION - SERIES 100

OCTOBER 1954

Rev Dec 1957

Code	112.11	112.12	
Material	Glass fiber	Glass fiber	
Material Description	Textile type fine glass fiber bonded pipe insulation with 30-lb. factory-applied roofing felt finish. Sizes 6" OD insulation and below.	Textile type fine glass fiber bonded pipe insulation with 45-lb. factory-applied roofing felt finish. Sizes over 6" OD insulation.	
Filler			
Bladder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	80°F to 350°F	80°F to 350°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing, 30-lb. felt used up to 6" OD of insulation	Specify whether for iron pipe or copper tubing, 45-lb. felt used where OD of insulation is 6" or greater	

The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.

*Ultrafine Snap-on Gustin-Bacon Mfg. Co. *Monocover Baldwin-Hill *Thermoglas Philip Carey Mfg. Co. **Fiberglas PF Pipe Insu. Owens-Corning Corp. **Armoglas PF Pipe Insu. Armstrong Cork Co. *Aeroglas Johns-Manville Sales Corp.	*Ultrafine Snap-on Gustin-Bacon Mfg. Co. *Monocover Baldwin-Hill *Thermoglas Philip Carey Mfg. Co. **Fiberglas PF Pipe Insu. Owens-Corning Corp. **Armoglas PF Pipe Insu. Armstrong Cork Co. *Aeroglas Johns-Manville Sales Corp.

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REV. 8-59

OCTOBER 1954		MATERIAL SPECIFICATION - SERIES 100		SM 100 M
Rev. Oct. 1954				Page 7
Code	112.16	112.17		
Material	Glass fiber	Glass fiber		
Material Description	Textile type fine glass fiber bonded pipe insulation with 4-oz. factory-applied canvas finish.	Textile type fine glass fiber bonded pipe insulation with 8-oz. factory-applied canvas finish.		
Filler				
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy		
Temperature Range	80°F to 300°F	80°F to 300°F		
K Factor	100°F = 0.25	100°F = 0.25		
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.		
Compressive Strength				
Manufacturing Process	Machine molded	Machine molded		
Resistance to Breakage in Handling	Very good	Very good		
Dimensions				
Other Qualifications	Specify whether for iron pipe or copper tubing	Specify whether for iron pipe or copper tubing		
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.		
	*Monocover Baldwin-Hill	*Monocover Baldwin-Hill		
	*Thermoglas Philip Carey Mfg. Co.	*Thermoglas Philip Carey Mfg. Co.		
	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	**Fiberglas PF Pipe Insu. Owens-Corning Corp.		
	**Armoglas PF Pipe Insu. Armstrong Cork Co.	**Armoglas PF Pipe Insu. Armstrong Cork Co.		
	• Aerolag Johns-Manville Sales Corp.	• Aerolag Johns-Manville Sales Corp.		
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SN 100 M		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954	
Page 8		Rev. Oct. 1954			
Code		112.21		112.22	
Material		Glass fiber		Glass fiber	
Material Description		Textile type fine glass fiber bonded pipe insulation with black factory-applied aluminum laminate vapor-barrier finish.		Textile type fine glass fiber bonded pipe insulation with white factory-applied aluminum laminate vapor-barrier finish.	
Filler					
Binder		Phenol-formaldehyde or Di-Cy		Phenol-formaldehyde or Di-Cy	
Temperature Range		40°F to 200°F		40°F to 200°F	
K Factor		100°F - 0.25		100°F - 0.25	
Density		3" and 6" lb. per cu. ft.		3" and 6" lb. per cu. ft.	
Compressive Strength					
Manufacturing Process		Machine molded		Machine molded	
Resistance to Breakage in Handling		Very good		Very good	
Dimensions					
Other Qualifications		Specify whether for iron pipe or copper tubing. Weather protection is required for outside service.		Specify whether for iron pipe or copper tubing. Weather protection is required for outside service.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.					
		*Ultrafine Snap-on Gustin-Bacon Mfg. Co.		*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
		*Monocover Baldwin-Mill		*Monocover Baldwin-Mill	
		*Thermoglas Philip Carey Mfg. Co.		*Thermoglas Philip Carey Mfg. Co.	
		**Fiberglas PF Pipe Insu. Owens-Corning Corp.		**Fiberglas PF Pipe Insu. Owens-Corning Corp.	
		**Armoglas PF Pipe Insu. Armstrong Cork Co.		**Armoglas PF Pipe Insu. Armstrong Cork Co.	
		*Aerolag Johns-Manville Sales Corp.		*Aerolag Johns-Manville Sales Corp.	

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090353

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OCTOBER 1954

MATERIAL SPECIFICATION - SERIES 100

SM 100 M

Rev. Nov. 1956

Page 9

Code	112.61		112.66
Material	Glass fiber		Glass fiber
Material Description	Textile type fine glass fiber bonded board insulation.		Textile type fine glass fiber insulation cut to lagging sizes and sanded on one side to form insulation blocks.
Filler			
Binder	Phenol-formaldehyde		Phenol-formaldehyde
Temperature Range	40°F to 350°F		40°F to 350°F
K Factor	100°F - 0.25 to 0.30		100°F - 0.25
Density	2 1/2 to 9 lb. per cu. ft.*		9 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded		Machine molded
Resistance to Breakage in Handling	Very good		Very good
Dimensions	Std. 24" x 48"		Length - 36" Width - 6" or 12"
Other Qualifications			
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
*Density must be specified.	Fiberglas PF Insulation Owens-Corning Corp.		Fiberglas PF617 Insulation Owens-Corning Corp.
	Armoglas PF Insulation Armstrong Cork Co.		Armoglas PF617 Insulation Armstrong Cork Co.

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DUP 0990768

090354

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H. J. LYNCH

SN 100 M		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954
Page 10				Rev. April 1956
Code	112.71		112.81	
Material	Glass fiber		Glass fiber	
Material Description	Textile type fine glass fiber bonded board insulation with asphalt and kraft paper vapor-barrier finish.		Textile type fine glass fiber bonded acoustical board with fire-resistant coating.	
Filler				
Binder	Phenol-formaldehyde		Phenol-formaldehyde	
Temperature Range	40°F to 150°F		40°F to 150°F	
K Factor	100°F - 0.26		100°F - 0.26	
Density	6 lb. per cu. ft.		6 lb. per cu. ft.	
Compressive Strength				
Manufacturing Process	Machine molded		Machine molded	
Resistance to Breakage Handling	Very good		Very good	
Dimensions	24" x 48" boards 3/4" to 2" thickness		24" x 48" boards 3/8" to 2" thickness	
Other Qualifications			Neoprene coating on side of board exposed to air flow	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
	Fiberglas Vapor Seal Duct Insu. Owens-Corning Corp.		Fiberglas Coated Duct Insu. Owens-Corning Corp.	
	Armoglas Vapor Seal Duct Insu. Armstrong Cork Co.		Armoglas Coated Duct Insu. Armstrong Cork Co.	

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DUP 0990769



I J K L M N =

SN 100 M		OCTOBER 1954	
Page 12		Rev. June 1954	
MATERIAL SPECIFICATION - SERIES 100			
Code			116
Material			Flexible foamed plastic
Material Description			Flexible aerated resin with a closed cellular structure. Pipe and tubing only.
Filler			
Grinder			
Temperature Range			32°F to 200°F
K Factor			0.28 at 75°F
Density			
Compressive Strength			
Manufacturing Process			Medium molded
Resistance to breakage in handling			Nonbreakable
Dimensions			
Other Qualifications			Chemically inert and nontoxic
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
			Armaflex Armstrong Cork Co.

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DUP 0990771

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REV. JUN 1957 SUP. BY

MATERIALS		THERMAL INSULATION	
MATERIAL SPECIFICATION		STANDARD ENGINEERING SPECIFICATION	
SERIES 100		ISSUED OCT 1954	SN 100 M
PREFORMED BLOCK AND PIPE		REVISED APRIL 1957	Page 1 of 12
Code	101*	102*	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bonding clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded. Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications:			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philip Carey Mfg. Co.	Calcalise The Rubensoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalize 85% Ehret Mag. Mfg. Co., Inc.	Keylo Owens-Illinois Glass Co.	Enduro H-Temp. Ehret Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	J/M Superex Johns-Manville Sales Corp.
		Keytherm Keasby & Mattison Co.	High Temp. Keasby & Mattison Co.
	Featherweight Keasby & Mattison Co.	Tricalise Mundet Cork Corp.	
	85% Mag. Mundet Cork Corp.	Caltemp Pabco Ind. Ins. Div.***	
	Precision-molded Pabco Ind. Ins. Div.***		

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Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.

SUBCOMMITTEE NO 29



DUP 0990748

090334

P. 2

SM 100 M		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954	
Page 2				Rev. July 1957	
Code	104		106		
Material	Inorganic silicas		Asbestos and diatomaceous earth molded		
Material Description	Inorganic silicas and asbestos fibers		Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating*		
Filler					
Binder					
Temperature Range	100°F to 1600°F		200°F to 1200°F		
K Factor	Pipe covering - 500°F - 0.54 max. Block - 500°F - 0.58 max.		500°F - 0.54 max.		
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.		18 lbs. per cu. ft.		
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation				
Manufacturing Process	Filter moulding process		Formed and comp. on mandril. Pipe mach. cut on dia.		
Resistance to Breakage in Handling	Good		Good		
Dimensions					
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F		Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.		
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.					
* Available for field mixing to repair joints and seams.	Attemp Philip Carey Co.		Unibestos Union Asbestos & Rubber Co.		
311					

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REV. 10-54

DUP 0990749

090335

H. J. KLEINCOF

120

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SN 100 M		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954	
Page 4				Rev. April 1954	
Code	110	111	112		
Material	Vegetable cork	Cellular glass	Glass fiber		
Material Description	Vegetable cork, granulated and compressed into cork-board or molded forms, from material of vegetable origin for low and medium temperature insulation.	Cellular glass foamed and fused into unicellular form.	See codes 112.01 through 112.81		
Filler					
Binder	Natural resin in cork				
Temperature Range	-200°F to 100°F	-200°F to 100°F (+300°F for dual temp.)			
K Factor	100°F - 0.29 max.	100°F - 0.43 max.			
Density		10 - 11 lb. per cu. ft.			
Compressive Strength	15 lb. per sq. in. min.	35 lb. per sq. in. min.			
Manufacturing Process	Machine comp. or molded. Baked at moderate temp.				
Resistance to Breakage in Handling	Good				
Dimensions					
Other Qualifications	Pipe covering shall be coated on the outside with heavy mastic				
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.					
	Cork	Foamglas			
	Armstrong Cork Co.	Pittsburgh Corning Corp.			
	Cork				
	Mundet Cork Co.				
313					

DUP 0990751

090337

L M N C F G

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OCTOBER 1954		MATERIAL SPECIFICATION - SERIES 100		SM 100 M
Rev. Oct. 1954				Page 5
Code	112.01	112.02		
Material	Glass fiber	See Code 112.01		
Material Description	Textile type fine glass fiber pipe insulation, plain, with medium-temperature binder.			
Filler				
Binder	Phenol-formaldehyde or Di-Cy			
Temperature Range	80°F to 350°F			
K Factor	100°F = 0.25			
Density	3" and 6" lb. per cu. ft.			
Compressive Strength				
Manufacturing Process	Machine molded			
Resistance to Breakage in Handling	Very good			
Dimensions				
Other Qualifications	Specify whether for iron pipe or copper tubing			
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.			
	*Monocover Baldwin-Hill			
	*Thermaglas Philip Cory Mfg. Co.			
	**Fiberglas PF Pipe Ins. Owens-Corning Corp.			
	**Armoglas PF Pipe Ins. Armstrong Cork Co.			
	*Aerolag Johns-Manville Sales Corp.			

DUP 0990752

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090338

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SM 100 M		OCTOBER 1954	
Page 6		Rev. April 1957	
MATERIAL SPECIFICATION - SERIES 100			
Code	112.11	112.12	
Material	Glass fiber *	Glass fiber	
Material Description	Textile type fine glass fiber bonded pipe insulation with 30-lb. factory-applied roofing felt finish. Sizes 6" OD insulation and below.	Textile type fine glass fiber bonded pipe insulation with 45-lb. factory-applied roofing felt finish. Sizes over 6" OD insulation.	
Filler			
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	80°F to 350°F	80°F to 350°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing 30 lb. felt used up to 6" OD of insulation	Specify whether for iron pipe or copper tubing 45 lb. felt used where OD of insulation is 6" or greater	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Not manufactured with factory-applied jackets in sizes 2" and below by Owens-Corning and Armstrong Cork Co.	* Ultrafine Snap-on Gustin-Bacon Mfg. Co.	* Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
	* Monocover Baldwin-Hill	* Monocover Baldwin-Hill	
	* Thermoglas Philip Carey Mfg. Co.	* Thermoglas Philip Carey Mfg. Co.	
	** Fiberglas PF Pipe Insu. Owens-Corning Corp.	** Fiberglas PF Pipe Insu. Owens-Corning Corp.	
	** Armaglas PF Pipe Insu. Armstrong Cork Co.	** Armaglas PF Pipe Insu. Armstrong Cork Co.	
	* Aerogel Johns-Manville Sales Corp.	* Aerogel Johns-Manville Sales Corp.	
315			

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DUP. 0990753



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REV. SUP. 137

OCTOBER 1954			
MATERIAL SPECIFICATION - SERIES 100			
Rev. Oct. 1954			
SN 100 M			
Page 7			
Code	112.16	112.17	
Material	Glass fiber	Glass fiber	
Material Description	Textile type fine glass fiber bonded pipe insulation with 4-oz. factory-applied canvas finish.	Textile type fine glass fiber bonded pipe insulation with 8-oz. factory-applied canvas finish.	
Filler			
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	80°F to 300°F	80°F to 300°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing	Specify whether for iron pipe or copper tubing	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
	*Monocover Baldwin-Hill	*Monocover Baldwin-Hill	
	*Thermoglas Philip Carey Mfg. Co.	*Thermoglas Philip Carey Mfg. Co.	
	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	
	**Armoglas PF Pipe Insu. Armstrong Cork Co.	**Armoglas PF Pipe Insu. Armstrong Cork Co.	
	*Aerolag Johns-Manville Sales Corp.	*Aerolag Johns-Manville Sales Corp.	

DUP 0990754



LM110PG115

SN 100 M		OCTOBER 1954	
Page 8		Rev. Oct. 1954	
MATERIAL SPECIFICATION - SERIES 100			
Code	112.21	112.22	
Material	Glass fiber	Glass fiber	
Material Description	Textile type fine glass fiber banded pipe insulation with black factory-applied aluminum laminate vapor-barrier finish.	Textile type fine glass fiber banded pipe insulation with white factory-applied aluminum laminate vapor-barrier finish.	
Filler			
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	40°F to 200°F	40°F to 200°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing. Weather protection is required for outside service.	Specify whether for iron pipe or copper tubing. Weather protection is required for outside service.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
	*Monocover Baldwin-Hill	*Monocover Baldwin-Hill	
	*Thermoglas Philip Carey Mfg. Co.	*Thermoglas Philip Carey Mfg. Co.	
	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	
	**Armoglas PF Pipe Insu. Armstrong Cork Co.	**Armoglas PF Pipe Insu. Armstrong Cork Co.	
	*Aerolag Johns-Manville Sales Corp.	*Aerolag Johns-Manville Sales Corp.	
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REV. SLP

DUP 0990755

090341

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 OCT 1954
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OCTOBER 1954		MATERIAL SPECIFICATION - SERIES 100		SN 100 M
Rev. Nov. 1954				Page 9
Code	112.61		112.66	
Material	Glass fiber		Glass fiber	
Material Description	Textile type fine glass fiber bonded board insulation.		Textile type fine glass fiber insulation cut to lagging sizes and sanded on one side to form insulation blocks.	
Filler				
Binder	Phenol-formaldehyde		Phenol-formaldehyde	
Temperature Range	40°F to 350°F		40°F to 350°F	
K Factor	100°F - 0.25 to 0.30		100°F - 0.25	
Density	2 1/2 to 9 lb. per cu. ft.*		9 lb. per cu. ft.	
Compressive Strength				
Manufacturing Process	Machine matted		Machine matted	
Resistance to Breakage in Handling	Very good		Very good	
Dimensions	Std. 24" x 48"		Length - 36" Width - 6" or 12"	
Other Qualifications				
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers met their product meets the above specifications.				
*Density must be specified.	Fiberglas PF Insulation Owens-Corning Corp.		Fiberglas PF617 Insulation Owens-Corning Corp.	
	Armoglas PF Insulation Armstrong Cork Co.		Armoglas PF617 Insulation Armstrong Cork Co.	

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 0990756

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090342

H I J - L M N O P

SN 100 M		OCTOBER 1954	
Page 10		Rev. April 1954	
MATERIAL SPECIFICATION - SERIES 100			
Code	112.71		112.81
Material	Glass fiber		Glass fiber
Material Description	Textile type fine glass fiber bonded board insulation with asphalt and kraft paper vapor-barrier finish.		Textile type fine glass fiber bonded acoustical board with fire-resistant coating.
Filler			
Binder	Phenol-formaldehyde		Phenol-formaldehyde
Temperature Range	40°F to 150°F		40°F to 150°F
K Factor	100°F - 0.26		100°F - 0.26
Density	6 lb. per cu. ft.		6 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded		Machine molded
Resistance to Breakage Handling	Very good		Very good
Dimensions	24" x 48" boards 3/4" to 2" thickness		24" x 48" boards 3/8" to 2" thickness
Other Qualifications			Neoprene coating on side of board exposed to air flow
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
	Fiberglas Vapor Seal Duct Insu. Owens-Corning Corp.		Fiberglas Coated Duct Insu. Owens-Corning Corp.
	Armoglas Vapor Seal Duct Insu. Armstrong Cork Co.		Armoglas Coated Duct Insu. Armstrong Cork Co.

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DUP 0990757

090343

OCTOBER 1954		MATERIAL SPECIFICATION - SERIES 100		SN 100 M
Rev. Oct. 1954				Page 11
Code	113	114	115	
Material	See Code 112.81	Mineral wool (Block only)	Mineral wool - asphalt impregnated	
Material Description		Mineral slag wool	Mineral wool fibers homogeneously impregnated with an asphalt binder.	
Filler				
Binder		High temp. binder	Asphalt	
Temperature Range		500°F to 1700°F	-200°F to 100°F	
K Factor		500°F - 0.45 max.	100°F - 0.34 max.	
Density		19.2 lb. per cu. ft.		
Compressive Strength		12 lb. per sq. in.		
Manufacturing Process		Machine molded	Machine molded	
Resistance to Breakage, in Handling		Good	Good	
Dimensions				
Other Qualifications				
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
		PV Supersamp Eagle-Picher	Rock Cork Johns-Manville Sales Corp.	
		Mono-Block Baldwin Hill Co.	Mineral Wool Board Armstrong Cork Co.	
		Armatsamp Armstrong Cork Co.	Koldboard Baldwin Hill Co.	
		M W Block M. H. Detrick Co.		

DUP 0990758

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DUP 0990758

I J K L M N O P

SN 100 M		OCTOBER 1954	
Page 12		Rev. June 1956	
MATERIAL SPECIFICATION - SERIES 100			
Code			116
Material			Flexible foamed plastic
Material Description			Flexible aerated resin with a closed cellular structure. Pipe and tubing only.
Filler			
Binder			
Temperature Range			32°F to 200°F
K Factor			0.28 at 75°F
Density			
Compressive Strength			
Manufacturing Process			Medium molded
Resistance to breakage in handling			Nonbreakable
Dimensions			
Other Qualifications			Chemically inert and nontoxic
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
			Armaflex Armstrong Cork Co.
321			

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DUP 0990759

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REV. 101 SUP. BY

MATERIALS		THERMAL INSULATION STANDARD ENGINEERING SPECIFICATION	
MATERIAL SPECIFICATION SERIES 100 PREFORMED BLOCK AND PIPE		ISSUED OCT 1954	SN 100 M Page 1 of 12
		REVISED APRIL 1957	
Code	101"	102"	103
Material	85% Magnesite	Calcium silicate	Diatomaceous earth
Material Description	Hydrated basic magnesium carbonate 80% by weight minimum	Staple, cellular, calcined fire clay base	Diatomaceous earth, asbestos fiber, with bonding clay and cementing materials
Filler	Asbestos or glass fiber		
Binder	Clay or other cementing materials 5% by weight		
Temperature Range	100°F to 500°F	100°F to 1200°F	500°F to 1800°F
K Factor	500°F - 0.55 max.	500°F - 0.54 max.	500°F - 0.77 max.
Density	11-14 lb. per cu. ft.	11 lb. per cu. ft.	24-27 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded or extru. Pipe mach. cut on diameter.	Machine extruded: Pipe mach. cut on diameter.	Machine molded. Pipe mach. cut on diameter.
Resistance to Breakage in Handling	Good	Good	Good
Dimensions	ASTM **	ASTM **	To Specification
Other Qualifications		Good mechanical strength with low shrinkage.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Bands are supplied at extra cost. Order must state "without bands" if not required. For 11" IPS and larger there is an additional charge for 2-oz. canvas cover. Material should be specified "without 2-oz. canvas" to avoid extra charge. ** New Simplified Dimensional System sponsored by ASTM *** Fiber Board Paper Products Corp.	85% Mag. Philip Carey Mfg. Co.	Calcisite The Ruberoid Co.	High Temp. No. 19 Philip Carey Mfg. Co.
	Thermalite 85% Ehret Mag. Mfg. Co., Inc.	Kaylo Queens-Illinois Glass Co.	Enduro H-Temp. Ehret Mag. Mfg. Co., Inc.
	85% Mag. Johns-Manville Sales Corp.	Thermobestos Johns-Manville Sales Corp.	J/M Superes Johns-Manville Sales Corp.
		Kaytherm Keesby & Mattison Co.	High Temp. Keesby & Mattison Co.
	Featherweight Keesby & Mattison Co.	Tricalite Mundt Cork Corp.	
	85% Mag. Mundt Cork Corp.	Caltemp Pabco Ind. Ins. Div.***	
	Precision-molded Pabco Ind. Ins. Div.***		
Vendors and merchandise designations are given to describe materials and may not include all acceptable products. Substitutions are to be made only on approval of the authority initiating the use of this Specification.			

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SUBCOMMITTEE NO 28



DUP 0990736

090322

Code	104	106
Material	Inorganic silicas	Asbestos and diatomaceous earth molded
Material Description	Inorganic silicas and asbestos fibers	Compressed fluffy asbestos sprayed with sodium silicate and diatomaceous earth sprinkled on the asbestos mat. External finish consists of an integral refractory coating.
Filler		
Binder		
Temperature Range	100°F to 1600°F	700°F to 1000°F
K Factor	Pipe covering - 500°F - 0.64 max. Block - 500°F - 0.58 max.	500°F - 0.58 max.
Density	Pipe covering - 15 lb. per cu. ft. Block - 14 lb. per cu. ft.	14 lbs. per cu. ft.
Compressive Strength	65 lbs. per sq. in. min. at 5% deformation	
Manufacturing Process	Filter moulding process	Formed and comp. on mandril. Pipe mech. cut on die.
Resistance to Breakage in Handling	Good	Good
Dimensions		
Other Qualifications	Good mechanical strength. Shrinkage less than 2% at 1600°F	Formed on a mandril to a predetermined wt. Pressed to obtain the desired density, and baked.
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.		
• Available for field mixing to repair joints and seams.	Attemp Philip Carey Co.	Unibestos Union Asbestos & Rubber Co.

H. J. KLMNO

SM 100 M		OCTOBER 1954	
Page 4		Rev. April 1954	
MATERIAL SPECIFICATION - SERIES 100			
Code	110	111	112
Material	Vegetable cork	Cellular glass	Glass fiber
Material Description	Vegetable cork, granulated and compressed into cork-board or molded forms, from material of vegetable origin for low and medium temperature insulation.	Cellular glass foamed and fused into unicellular form.	See codes 112.01 through 112.81
Filler			
Binder	Natural resin in cork		
Temperature Range	-200°F to 100°F	-200°F to 100°F (+300°F for dual temp.)	
K Factor	100°F - 0.29 max.	100°F - 0.43 max.	
Density		10 - 11 lb. per cu. ft.	
Compressive Strength	15 lb. per sq. in. min.	35 lb. per sq. in. min.	
Manufacturing Process	Machine comp. or molded. Baked at moderate temp.		
Resistance to Breakage in Handling	Good		
Dimensions			
Other Qualifications	Pipe covering shall be coated on the outside with heavy mastic		
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
	Cork Armstrong Cork Co.	Foamglas Pittsburgh Corning Corp.	
	Cork Mundet Cork Co.		
301			

120 E

DUP 0990739

090325

L M N O P Q :

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OCTOBER 1954		MATERIAL SPECIFICATION - SERIES 100		SM 100 M
Rev. Oct. 1956				Page 5
Code	112.01	112.02		
Material	Glass fiber	See Code 112.01		
Material Description	Textile type fine glass fiber pipe insulation, plain, with medium-temperature binder.			
Filler				
Binder	Phenol-formaldehyde or Di-Cy			
Temperature Range	80°F to 330°F			
K Factor	100°F - 0.25			
Density	3" and 6" lb. per cu. ft.			
Compressive Strength				
Manufacturing Process	Machine molded			
Resistance to Breakage in Handling	Very good			
Dimensions				
Other Qualifications	Specify whether for iron pipe or copper tubing			
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.			DUP 090740
	*Monocover Baldwin-Hill			
	*Thermoglas Philip Cory Mfg. Co.			
	**Fiberglas PF Pipe Ins. Owens-Corning Corp.			
	**Armoglas PF Pipe Ins. Armstrong Cork Co.			
	*Aerolag Johns-Manville Sales Corp.			

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OP

SN 100 M		OCTOBER 1954	
Page 6		Rev. April 1957	
MATERIAL SPECIFICATION - SERIES 100			
Code	112.11	112.12	
Material	Glass fiber *	Glass fiber	
Material Description	Textile type fine glass fiber bonded pipe insulation with 30-lb. factory-applied roofing felt finish. Sizes 6" OD insulation and below.	Textile type fine glass fiber bonded pipe insulation with 45-lb. factory-applied roofing felt finish. Sizes over 6" OD insulation.	
Filler			
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	80°F to 350°F	80°F to 350°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing 30 lb. felt used up to 6" OD of insulation	Specify whether for iron pipe or copper tubing 45 lb. felt used where OD of insulation is 6" or greater	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
* Not manufactured with factory-applied jackets in sizes 2" and below by Owens-Corning and Armstrong Cork Co.	* Ultrafine Snap-on Gustin-Bacon Mfg. Co.	* Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
	* Monocover Baldwin-Hill	* Monocover Baldwin-Hill	
	* Thermoglas Philip Carey Mfg. Co.	* Thermoglas Philip Carey Mfg. Co.	
	** Fiberglas PF Pipe Insu. Owens-Corning Corp.	** Fiberglas PF Pipe Insu. Owens-Corning Corp.	
	** Armaglas PF Pipe Insu. Armstrong Cork Co.	** Armaglas PF Pipe Insu. Armstrong Cork Co.	
	* Aerolag Johns-Manville Sales Corp.	* Aerolag Johns-Manville Sales Corp.	
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OCTOBER 1954			
MATERIAL SPECIFICATION - SERIES 100			
Rev. Oct. 1954			
SM 100 M			
Page 7			
Code	112.16	112.17	
Material	Glass fiber	Glass fiber	
Material Description	Textile type fine glass fiber bonded pipe insulation with 4-oz. factory-applied canvas finish.	Textile type fine glass fiber bonded pipe insulation with 8-oz. factory-applied canvas finish.	
Filler			
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	80°F to 300°F	80°F to 300°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing	Specify whether for iron pipe or copper tubing	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
	*Monocover Baldwin-Hill	*Monocover Baldwin-Hill	
	*Thermoglas Philip Carey Mfg. Co.	*Thermoglas Philip Carey Mfg. Co.	
	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	
	**Armoglas PF Pipe Insu. Armstrong Cork Co.	**Armoglas PF Pipe Insu. Armstrong Cork Co.	
	*Aerolag Johns-Manville Sales Corp.	*Aerolag Johns-Manville Sales Corp.	

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DUP 0990742

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SN 100 M		OCTOBER 1954	
Page 3		MATERIAL SPECIFICATION - SERIES 100	
		Rev. Oct. 1954	
Code	112.21	112.22	
Material	Glass fiber	Glass fiber	
Material Description	Textile type fine glass fiber banded pipe insulation with black factory-applied aluminum laminate vapor-barrier finish.	Textile type fine glass fiber banded pipe insulation with white factory-applied aluminum laminate vapor-barrier finish.	
Filler			
Binder	Phenol-formaldehyde or Di-Cy	Phenol-formaldehyde or Di-Cy	
Temperature Range	40°F to 200°F	40°F to 200°F	
K Factor	100°F - 0.25	100°F - 0.25	
Density	3" and 6" lb. per cu. ft.	3" and 6" lb. per cu. ft.	
Compressive Strength			
Manufacturing Process	Machine molded	Machine molded	
Resistance to Breakage in Handling	Very good	Very good	
Dimensions			
Other Qualifications	Specify whether for iron pipe or copper tubing. Weather protection is required for outside service.	Specify whether for iron pipe or copper tubing. Weather protection is required for outside service.	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	*Ultrafine Snap-on Gustin-Bacon Mfg. Co.	
	*Monocover Baldwin-Hill	*Monocover Baldwin-Hill	
	*Thermoglas Philip Carey Mfg. Co.	*Thermoglas Philip Carey Mfg. Co.	
	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	**Fiberglas PF Pipe Insu. Owens-Corning Corp.	
	**Armoglas PF Pipe Insu. Armstrong Cork Co.	**Armoglas PF Pipe Insu. Armstrong Cork Co.	
	*Aerolag Johns-Manville Sales Corp.	*Aerolag Johns-Manville Sales Corp.	
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MATERIAL SPECIFICATION - SERIES 100

SN 100 M

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Code	112.61		112.66
Material	Glass fiber		Glass fiber
Material Description	Textile type fine glass fiber bonded board insulation.		Textile type fine glass fiber insulation cut to lagging sizes and sanded on one side to form insulation blocks.
Filler			
Binder	Phenol-formaldehyde		Phenol-formaldehyde
Temperature Range	40°F to 350°F		40°F to 350°F
K Factor	100°F - 0.25 to 0.30		100°F - 0.25
Density	2 1/2 to 9 lb. per cu. ft.*		9 lb. per cu. ft.
Compressive Strength			
Manufacturing Process	Machine molded.		Machine molded
Resistance to Breakage in Handling	Very good		Very good
Dimensions	Std. 24" x 48"		Length - 36" Width - 6" or 12"
Other Qualifications			

The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.

*Density must be specified.	Fiberglas PF Insulation Owens-Corning Corp.		Fiberglas PF617 Insulation Owens-Corning Corp.
	Armoglas PF Insulation Armstrong Cork Co.		Armoglas PF617 Insulation Armstrong Cork Co.

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SN 100 M		MATERIAL SPECIFICATION - SERIES 100		OCTOBER 1954
Page 10				Rev. April 1954
Code	112.71		112.81	
Material	Glass fiber		Glass fiber	
Material Description	Textile type fine glass fiber bonded board insulation with asphalt and kraft paper vapor-barrier finish.		Textile type fine glass fiber bonded acoustical board with fire-resistant coating.	
Filler				
Binder	Phenol-formaldehyde		Phenol-formaldehyde	
Temperature Range	40°F to 150°F		40°F to 150°F	
K Factor	100°F - 0.26		100°F - 0.26	
Density	6 lb. per cu. ft.		6 lb. per cu. ft.	
Compressive Strength				
Manufacturing Process	Machine molded		Machine molded	
Resistance to Breakage Handling	Very good		Very good	
Dimensions	24" x 48" boards 3/4" to 2" thickness		24" x 48" boards 3/8" to 2" thickness	
Other Qualifications			Neoprene coating on side of board exposed to air flow	
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.				
	Fiberglas Vapor Seal Duct Insu. Owens-Corning Corp.		Fiberglas Coated Duct Insu. Owens-Corning Corp.	
	Armoglas Vapor Seal Duct Insu. Armstrong Cork Co.		Armoglas Coated Duct Insu. Armstrong Cork Co.	

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SN 100 M		OCTOBER 1954	
Page 12		Rev. June 1954	
MATERIAL SPECIFICATION - SERIES 100		116	
Code			
Material			Flexible foamed plastic
Material Description			Flexible aerated resin with a closed cellular structure. Pipe and tubing only.
Filler			
Binder			
Temperature Range			32°F to 200°F
K Factor			0.28 at 75°F
Density			
Compressive Strength			
Manufacturing Process			Medium molded
Resistance to breakage in handling			Nonbreakable
Dimensions			
Other Qualifications			Chemically inert and nontoxic
The following materials have proven satisfactory in field tests and proof has been furnished by the manufacturers that their product meets the above specifications.			
			Armaflex
			Armstrong Cork Co.

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DUP 0990747

