

ASANTO
STANDARDS

GENERAL REVISION

COATINGS AND INSULATION MANUAL
THERMAL INSULATION SYSTEM SPECIFICATION 6XX

CALCIUM SILICATE SYSTEM

MAN SECT PART		
K11.2 STD 6		
ISSUE 3	DATE	1/85
PAGE 1	OF	4

1. SCOPE This materials specification is for insulating pipe, tubing, fittings, duct work, vessels and equipment. The specification includes insulation materials and barrier materials to form a complete insulation system. The system designation is 6XX. For complete designation, a barrier system must be selected. See Par. 4.

1.1 Service Temperature 100 to 1200 F (35 to 650 C).

2. MATERIALS

2.1 Insulation The insulating material is asbestos-free premolded reacted hydrous calcium silicate. Shapes include pipe covering, flat blocks and fittings. Pipe covering is available with factory applied jackets.

2.2 Acceptable Materials Select materials from those listed in the following tables. Substitution of materials not listed shall be authorized in writing by the Engineer.

MATERIAL	VENDOR
Calsilite Insulation	Harbison-Walker
Thermo-12 Insulation	Manville Corporation
Kaylo 10 AF Insulation	Owens Corning Fiberglas Corp.
Caltemp Insulation	Pabco Insulation

2.3 Insulating Cement Used to fill voids and insulate irregular surfaces.

MATERIAL	VENDOR
Supertemp 1900 Cement	Ramco Products
No. 375 Cement	Manville Corporation
MW-One Cement	Celotex Corporation

3. AUXILIARY MATERIALS

3.1 Description The following materials are used with the insulation and barrier materials to form a complete insulation system in accordance with installation details.

C 003933

SOURCE T.F. STANLEY (4-6942)

PLAINTIFF'S EXHIBIT

MON-2572

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COATINGS AND INSULATION MANUAL
THERMAL INSULATION DESIGN
INSULATION MATERIAL PROPERTIES
Design Data

MAN. SECT PART
K11.1 STD 3
ISSUE 3 DATE 1/85
PAGE 1 OF 9

1. SCOPE This standard lists materials properties data for thermal insulation and barrier materials used in the Thermal Insulation System Specifications. Additional data for other common materials is provided.

2. MATERIALS PROPERTIES DATA

2.1 Insulation Materials Properties Table I provides physical and thermal properties for materials shown in the Insulation System Specifications and a few additional materials of frequent use.

TABLE I. MATERIALS PROPERTIES

Insulation Characteristics	Type of Insulation			
	Fibrous Glass K11.2 STD 5	ASTM Test Method	Calcium Silicate K11.2 STD 6	ASTM Test Method
Material Description	Glass Fiber With Organic Binder		Reacted Hydrous Calcium Silicate	
Form	Sheet and Pipe Covering		Block and Pipe Covering	
Temperature Range (F)	0 to 450		100 to 1200	
Thermal Conductivity (BTU in. thk/hr ft ² ° F)	K	Temp	K	Temp
At Mean Temperature	.21	50	.38	100
	.24	100	.40	200
	.29	200	.47	400
	.35	300	.56	600
Linear Shrinkage				
% at Temp Limit	None		1.5	
Density lbs/Ft ³	4 - 9		12	
Tensile Strength PSI			20	
Compressive Strength PSI	3 at 10% Deformation		100 at 5% Deformation	
Tensile Strength PSI				
Modulus of Elasticity PSI				
Corrosion Resistance				
Loss by Tumbling			35 - 10 Min Run	
Exposure			Non-Combustible	
Smoke Spread Index	25			
Smoke Density Index	50			
Absorption				
24 hr. Immersion	90		90	
Wicks	None		Wicks	
Specific Gravity % Vol.	.2		10% by Weight	
Vapor Transmission				
in.				
Acidity Ph	9		10.2	
Fluoride Content (PPM)	Less than 30		200	
Acidity				
Thermal Diffusivity (Ft ² /Hr.)	.02		.16	
Specific Heat (BTU/lb ° F)	.20		.20	
Remarks			Good Strength. Absorbs Water.	