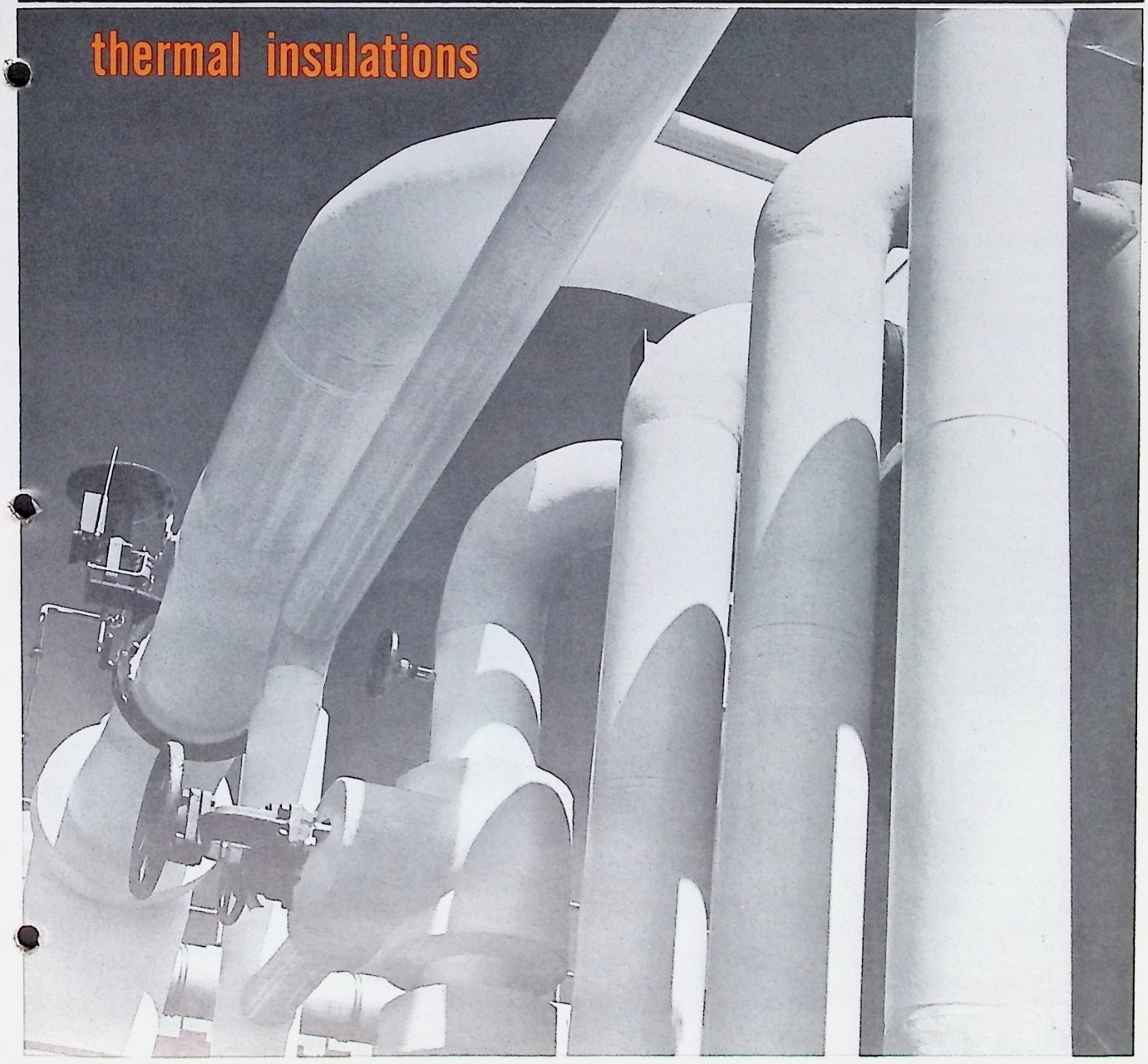
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RUBEROID

thermal insulations

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RUBEROID CALSILITE

an improved calcium silicate insulation for use on process and power steam piping and equipment

Calsilite offers distinct application advantages to the cost conscious user. Calsilite Insulations are quickly and easily applied, light and convenient to handle. Calsilite sections fit accurately on standard pipe sizes, finish smoothly and provide a fine, neat appearance with a minimum of labor cost. Calsilite—normally provided with standard weight canvas jackets—may also be finished with heavy canvas or other types of weatherproof jacketing.

Advantages:

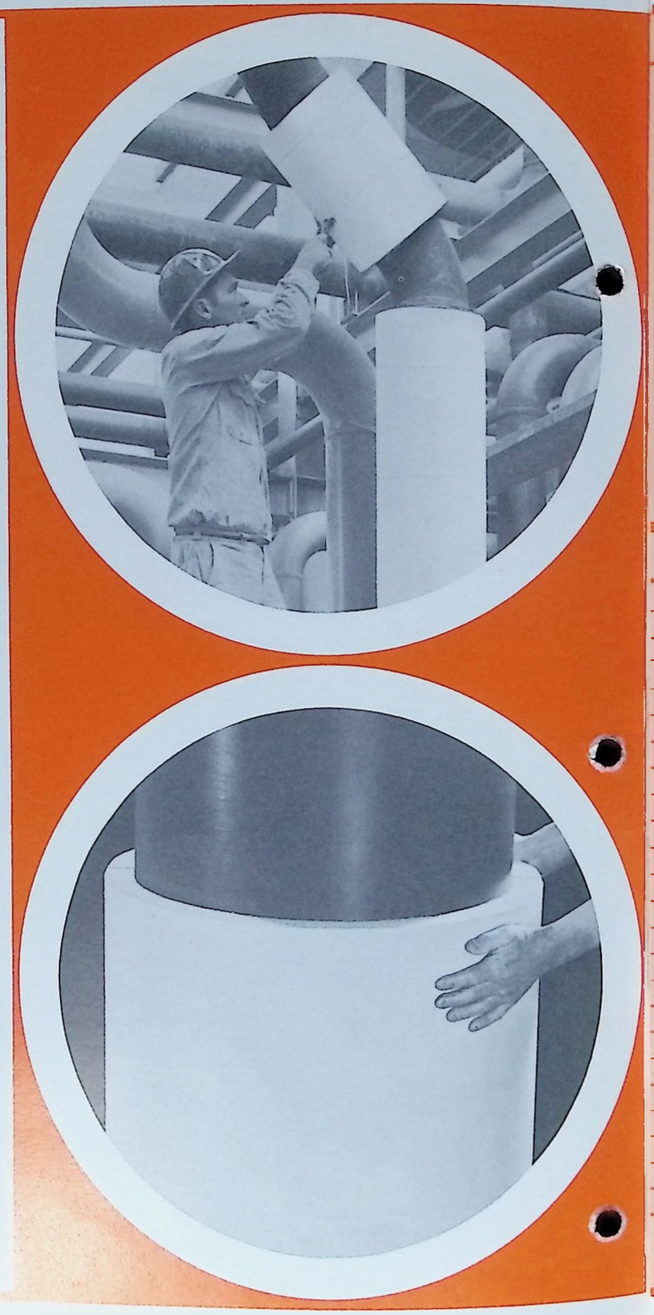
Improved thermal design: Radical new formulation of Calsilite means superior strength and durability under almost any exterior or interior industrial conditions. Calsilite is non-soluble in water and is not affected by most alkalis. It retains its shape under all conditions, including excessive condensation, high humidity . . . even complete saturation . . . yet returns to normal thermal efficiency when dried out.

New sectional design: Installation normally accounts for the major share of the total job cost. New Sectional Calsilite cuts job time and saves money by doing away with "piece by piece" installation. It is available in a complete size range to fit pipe and tubing sizes up to and including 24" I.P.S. One layer thickness from 1" up to 3". Segmental Calsilite above 24".

Improved texture: Texture of Calsilite is so fine that insulation can be easily cut for any application. Even the smallest segments can be mitred with a minimum of breakage or crumbling. Reduction in loss of material means increased savings.

Ease of application: Calsilite is easy to fabricate, even for the most involved or detailed application. No special equipment required. Compatible Ruberoid cements finish joints and fittings neatly and evenly.

Variety of shapes and sizes: Made in half-sectional and regular segmental shapes as well as block forms, Calsilite eliminates the need to stock a variety of different types of insulation. Sizes correspond to standard iron pipe and copper tubing.



Physical Characteristics

Thermal Conductivity (BTU/sq. ft./inch/hr./°F.)	at 200°F. (Mean) . . . . . 0.35 300°F. " . . . . . 0.40 400°F. " . . . . . 0.45 500°F. " . . . . . 0.50 600°F. " 0.55
Density	(Average) . . . . . 12.5 lbs./cu. ft.
Moisture Absorption (Volume)	After 6 hours exposure in atmosphere of 90% relative humidity at 120°F. dry bulb temperature 0.7%
Flexural Strength	Lbs./sq. in. (average) 100
Resistance to Abrasion	Loss in Weight (Max.) After 10 min. . . . . 10% Loss in Weight (Max.) After 20 min. 20%
Change under Soaking Heat	Loss of Weight 24 hrs. @ 1200°F. . . . . 8.5% 6 hrs. @ 1000°F. 7.0%
Linear Shrinkage	24 hrs. @ 1200°F. . . . . 1.5% 6 hrs. @ 1000°F. 0.8%
Compressive Strength	5% deformation after immersion in water for 16 hours while wet (Min.) . . . . . 120 psi

Recommended Thickness for Commercial and Industrial Design

Pipe Covering — temperature of pipe (°F)						
pipe size	200°	400°	600°	800°	1000°	1250°
½	1	1½	2	2½	3	3
¾	1	1½	2	2½	3	3
1	1	1½	2	2½	3	3
1¼	1	1½	2	2½	3	3½
1½	1	1½	2	2½	3	3½
2	1	1½	2	2½	3½	3½
2½	1	1½	2	3	3½	3½
3	1	1½	2½	3	3½	4
4	1	2	2½	3	3½	4
5	1½	2	2½	3	3½	4
6	1½	2	2½	3	3½	4
7	1½	2	2½	3	3½	4
8	1½	2	2½	3	3½	4
9	1½	2	2½	3	3½	4
10	1½	2	2½	3	4	4½
12	1½	2	2½	3½	4	4½
14	1½	2½	3	3½	4	4½
16	1½	2½	3	3½	4	4½
18	1½	2½	3	3½	4	4½
20	1½	2½	3	3½	4	4½
24	1½	2½	3	3½	4	4½

Block			
equip. temp. (°F)	commercial (110°F max. surface temp.)	power (130°F max. surface temp.)	process (150°F max. surface temp.)
200	1	1	1
300	1½	1	1
400	2½	1½	1
500	3½	2	1½
600	4½	2½	1½
700		3	2
800		4	2½
900		4½	3
1000		5½	3½
1100		6	4
1200		6½	4½

Note: It is recommended that double layer application with staggered joints be used on all installations of 600° up.

Tabulated thicknesses are optimum thicknesses calculated on an economic basis[3] for heat conservation under average operating conditions and assure adequate temperature control. Other conditions may warrant the use of other thicknesses.

[3]From "How to Determine Economic Thickness of Insulation"— National Insulation Manufacturers Association.

The Ruberoid Co.: Thermal Insulations (c. 1968)
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RUBEROID CALSILITE / Packaging Data

Calsilite Pipe Covering

	PIPE SIZE	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"	9"	10"	11"	12"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"
Nom. 1" Th.	Sections per Ctn.	45	45	25	25	21	18	16	15	9	9	8	8	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Av. Gross Wgt. per Ctn. (lbs.)	82	74	64	57	62	62	65	67	63	52	67	54	46	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ctn. Number	201	201	212	212	201	201	202	221	202	202	203	203	204	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Nom. 1½" Th.	Sections per Ctn.	21	21	18	12	12	9	9	9	5	8	6	6	4	4	2	2	2	2	2	1	1	1	1	1	–	–	–	–	–	–
	Av. Gross Wgt. per Ctn. (lbs.)	81	78	84	69	66	58	82	72	56	78	77	66	50	58	33	36	42	45	49	25	27	28	30	32	–	–	–	–	–	–
	Ctn. Number	201	201	201	212	212	211	202	202	213	203	204	204	205	206	207	208	209	210	203	211	212	213	205	202	–	–	–	–	–	–
Nom. 2" Th.	Sections per Ctn.	12	12	9	9	6	6	5	5	4	6	4	4	4	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
	Av. Gross Wgt. per Ctn. (lbs.)	74	72	67	64	62	57	65	59	61	82	70	63	73	42	46	53	56	60	34	34	36	38	40	42	44	46	48	51	53	55
	Ctn. Number	212	212	211	211	222	222	213	213	211	204	205	205	206	207	208	209	210	203	211	212	213	205	202	206	214	215	216	217	218	219
Nom. 2½" Th.	Sections per Ctn.	6	6	6	6	5	5	4	4	4	4	3	4	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	½
	Av. Gross Wgt. per Ctn. (lbs.)	64	65	64	62	71	67	68	64	78	75	70	85	48	53	62	67	71	39	42	43	45	48	50	53	56	58	63	64	66	35
	Ctn. Number	222	222	222	222	213	213	211	211	205	205	210	206	207	208	209	210	203	211	212	213	205	202	206	214	215	216	217	218	219	210
Nom. 3" Th.	Sections per Ctn.	5	5	5	5	4	4	3	4	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	½	½
	Av. Gross Wgt. per Ctn. (lbs.)	74	73	72	70	73	70	65	81	77	73	57	54	60	70	76	82	45	48	51	52	55	58	61	65	68	71	74	77	41	42
	Ctn. Number	213	213	213	213	211	211	201	205	210	210	207	207	208	209	210	203	211	212	213	205	202	206	214	215	216	217	218	219	210	210

Code Size of Cartons

102—18½" x 12½" I.D.
201—27½" x 14" I.D.
202—21¼" x 21¼" I.D.
203—32" x 16" I.D.
204—27" x 18" I.D.
205—20¼" x 20¼" I.D.
206—22¼" x 22¼" I.D.
207—24" x 12" I.D.
208—26" x 13" I.D.
209—28½" x 14¼" I.D.
210—30½" x 15¼" I.D.
211—17¼" x 17¼" I.D.
212—18¼" x 18¼" I.D.
213—19¼" x 19¼" I.D.
214—23¼" x 23¼" I.D.
215—24¼" x 24¼" I.D.
216—25¼" x 25¼" I.D.
217—26¼" x 26¼" I.D.
218—27¼" x 27¼" I.D.
219—28¼" x 28¼" I.D.
221—28¾" x 17¼" I.D.
222—20¼" x 13½" I.D.

Blocks 6" WIDE

Thickness Per Carton	¾"	⅞"	1"	1¼"	1½"	2"	2½"	3"	4"
Square Feet	72	60	54	42	36	27	21	18	13.5
Pieces	48	40	36	28	24	18	14	12	9

Average Gross Weight of Carton—71 lbs.
All Blocks are packaged in No. 102 Cartons.

CURVED BLOCKS — SEGMENTS

1½" thick 24 per carton
2" thick 18 per carton
2½" thick 14 per carton
3" thick 12 per carton
All Segments are packaged in No. 102 Cartons

Copper Tubing SECTIONS PER CARTON

	PIPE SIZE	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
Nom. 1" Th.	Sections per Ctn.	45	45	45	45	25	25	25	21	18	16	15	9
	Av. Gross Wgt. per Ctn. (lbs.)	75	74	71	68	60	57	53	70	70	70	70	65
	Ctn. Number	201	201	201	201	212	212	212	201	201	202	221	202

Segmental Pipe Covering

PIPE SIZE	NO. OF SEGMENTS PER SECTION	12"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	32"	33"	34"	35"	36"	38"	40"	42"	44"	46"	48"
Nominal 1½" Thick		9	9	10	10	11	11	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	22	23	24	25	26	27
Actual O.D. of Covering		16"	17"	18"	19"	20"	21"	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	32"	33"	34"	35"	36"	37"	38"	39"	41"	43"	45"	47"	49"	51"
Nominal 2" Thick		9	10	10	11	11	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	24	25	26	27	28
Actual O.D. of Covering		17"	18"	19"	20"	21"	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	32"	33"	34"	35"	36"	37"	38"	39"	40"	42"	44"	46"	48"	50"	52"
Nominal 2½" Thick		10	10	11	11	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	23	24	25	26	27	28
Actual O.D. of Covering		18"	19"	20"	21"	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	32"	33"	34"	35"	36"	37"	38"	39"	40"	41"	43"	45"	47"	49"	51"	53"
Nominal 3" Thick		10	11	11	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	24	25	26	27	28	29
Actual O.D. of Covering		19"	20"	21"	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	32"	33"	34"	35"	36"	37"	38"	39"	40"	41"	42"	44"	45"	48"	50"	52"	54"

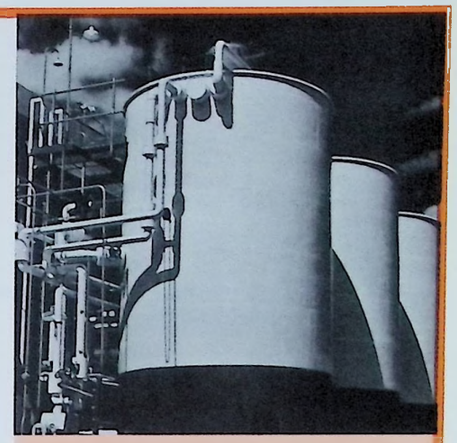
Calsilite Insulation meets ASTM Specification C-533-64T and Federal Specification HH-I-00523C for Block and Pipe Covering. Calsilite Pipe Covering meets Specification MIL-I-2781-D. Calsilite Block meets Specification MIL-I-2819D.

RUBEROID T/NA 100 multi-purpose insulation jacketing

superior in appearance . . . superior wherever atmospheric conditions present severe maintenance problems . . . no specialized installation

T/NA 100 is a truly unique insulation jacketing. It is fireproof, flexible, and offers unparalleled resistance to outdoor weathering. It is remarkably easy to apply and provides significant savings in installation costs. It never requires painting or weatherproofing.

T/NA 100 combines asbestos fibre, an inorganic material of established durability and flame resistance, with Tedlar,® a new PVF film of unique characteristics developed in the laboratories of Du Pont. The asbestos fibre is formed into a tough asbestos felt, using an elastomeric binder. "Tedlar" is permanently laminated to the asbestos felt with an elastomeric adhesive.



Features:

Tough and flexible over wide temperature range (—50° F to over 200° F).

Flame-resistant with flame spread rating of 25 by Underwriter's Laboratories.

Weather-resistant . . . will not craze, erode or corrode on exposure.

Chemical and solvent resistant, retaining form and strength even when boiled in strong acids and bases. Unaffected at ordinary temperatures by many classes of common solvent; impermeable to greases and oils; unaffected by soil bacteria.

Designed for multi-purpose use over large areas as well as narrow-diameter pipelines.

Resistant to puncture and abrasion . . . designed to take wear and tear.

Easy to repair by patching with T/NA 100 Finishing Tape.

Bright white surface . . . attractive and highly reflective.

® Du Pont's Registered Trademark

Material Specifications:

Width of Roll . . . . . 35.5 in.

Length . . . . . 166.7 lin. ft.

Area (Gross) . . . . . 500.0 sq. ft.

Approx. Shipping Weight . . . . . 60.0 lbs.

Note: Butt Strap Stock available in rolls, 4 inches wide x 166.7 lineal feet.

Substantial Savings in Installation

Flexible T/NA 100 wraps easily into position and may be secured with an ordinary staple gun. All joints are sealed with T/NA 100 Finishing Tape or recommended adhesives.







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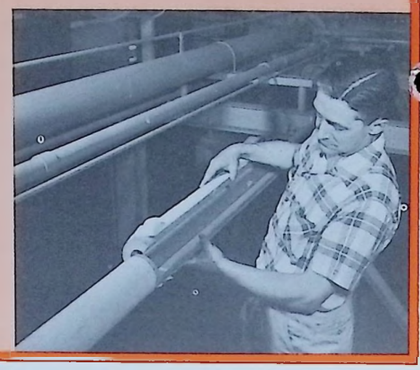
Fiber Glass Pipe Insulation

for use on hot, cold and chilled water lines; brine, refrigerant and special process lines; dual temperature, steam and other hot lines to 370°F.

This lightweight pipe insulation is made of long, fine glass fibers bonded together with a thermosetting resin. Lightweight and one-piece construction with "spring-hinge" full length opening and automatic closing feature speeds on-the-job handling. Resiliency of glass fibers prevents breaking and crumbling of edges, saves waste, makes tighter joints, saves patching costs.

Sizes

Available in three-foot sections, in standard wall thickness and sizes for iron pipe and copper tubing either bare or with factory-applied jackets.



JACKETING* INFORMATION

Canvas: 4 oz., 6 oz., and 8 oz., in addition to standard canvas.

GP General Purpose: white bleached kraft laminated to aluminum foil. Recommended for ½" and ¾" thicknesses in all pipe sizes.

Vapor Barriers

Dual Temperature:

WX White Vapor Barrier: three-ply with white bleached kraft; aluminum foil; and black asphalt-impregnated kraft.

FB Flame Bar: fire-resistant jacket; U.L. flame-spread rating: 25. Three-ply: outer ply white bleached embossed kraft bonded to aluminum foil with flame-extinguishing adhesive, reinforced with fiber glass both directions.

Weather Resistant: three weights of roofing felt available—35 lb., 45 lb., 55 lb. and premium quality D.C. Flexstone. For 1" thick and over pipe insulation, for all pipe sizes.

° Factory applied.

Fiber Glass Insulation . . . fine fibered

for use wherever the greatest thermal and acoustical efficiency in the smallest space is required

This low density, resilient, blanket-type thermal and acoustical insulation is made of long, extremely fine, glass fibers, bonded with a thermosetting phenolic resin. The insulation will easily conform to curved surfaces and angles . . . resists breakdown and sagging from vibration and bumps . . . yields under impact without damage.



Facing Information

Available on all densities and thicknesses either with no tabs or with 1 or 2 2-inch tabs

RKL	LIGHTWEIGHT VAPOR BARRIER PAPER (Reinforced Kraft, Light): Two layers of 30-lb. Kraft paper, reinforced with fiber glass yarn scrim (1" x 1" spacing) in asphalt lamination.	
.001 AL	Aluminum Foil	High degree of heat reflection. Foil adds its own insulating value through its excellent radiant heat reflectivity. Incombustible.
.002 ALX	Aluminum Foil (Recommended as vapor barrier)	
FSK	Reinforced Foil and Paper (Foil, Scrim, Kraft): A layer of aluminum foil, reinforced with fiber glass yarn mesh and laminated to 40 lb. fire-resistant Kraft. Very strong. Foil adds to insulating value.	
APV	Vinyl Plastic	
WPV	Aluminum white or green pigmented.	
GPV	Effective vapor barrier. Provides attractive finish.	
FSKL	Foil Skin Kraft, lightweight plastic coating, black.	

Dimensional Limitations, Standard Product

density	thickness	width	length
.6 & .75 lb.	½"	24", 36", 48", 72"	200'
	1", 1½", 2"	24", 36", 48", 72"	100'
	3"	24", 36", 72"	50'
1.0 lb.	½"	24", 36", 48", 72"	200'
	1", 1½"	24", 36", 48", 72"	100'
	2"	24", 36", 48", 72"	50'
1.5 lb.	½"	24", 36", 48", 72"	200'
	1"	24", 36", 48", 72"	100'
2.0 lb.	½"	24", 36", 48", 72"	100'
	1"	24", 36", 48", 72"	50'

Special Fiber Insulation

for insulating housings, plenum chambers, and air conditioning ducts in offices, factories, institutional and commercial buildings of all kinds

This insulation is felted from long, tough, super-springy siliceous fibers of unusual fineness. Extremely low in thermal conductivity, it has a temperature limit of 450°F. The fibers are non-absorptive, corrosion-resistant, moisture-resistant and incombustible. They have been treated to resist capillary action, will neither rot nor mildew.



Standard Sizes, Thicknesses and Available Facings

Type	Wt. per Cu. ft., lb.	Length	Width, inches	Thickness, inches	Facings
No. 411 (flexible)	3.00	48", 60"	30	1" to 5"°	VS, FSK, APV
No. 411 (flexible)	3.00	25' (rolls)	30	1" to 2"°	VS, FSK, APV
No. 412 (semi-rigid)	3.50	48", 60"	30	1" to 5"°	VS, FSK, APV, AP
No. 413 (semi-rigid)	4.25	48", 60"	30	1" to 5"°	VS, FSK, APV, AP
No. 414 (semi-rigid)	6.00	48", 60"	30	½", ¾" & 1" to 4"°	VS, FSK, APV, AP
No. 415 (semi-rigid)	8.00	48", 60"	30	½", ¾" & 1" to 3"°	VS, FSK, APV, AP
No. 416 (semi-rigid)	9.00	48", 60"	30	½", ¾" & 1" to 2"°	VS, FSK, APV, AP

° in ½" increments.

Facing Information

VS: Heavy asphalt-kraft paper. Applied with wrap around edge to 413, 414, 415 & 416. Applied with no edge wrapping to one surface of 411 and 412.

FSK: Foil scrim kraft, flame resistant.

APV: .004" aluminum pigmented vinyl film.

AP: Asbestos paper.

Fiber Glass Insulation . . . textile fibered

for use as a duct liner and duct wrap, for refrigerated trucks and trailers, air conditioning and heating equipment

This lightweight, resilient, semi-rigid blanket insulation is composed of fine glass fibers, reinforced with glass textile fiber and bonded with a thermosetting resin. It is especially effective as a liner for air conditioning and heating ducts . . . will absorb air-borne noises in the 250 to 4000 cps range and dampen vibration.



Facing Information

Available on all densities and thicknesses either with no tabs or with 1 or 2 2-inch tabs

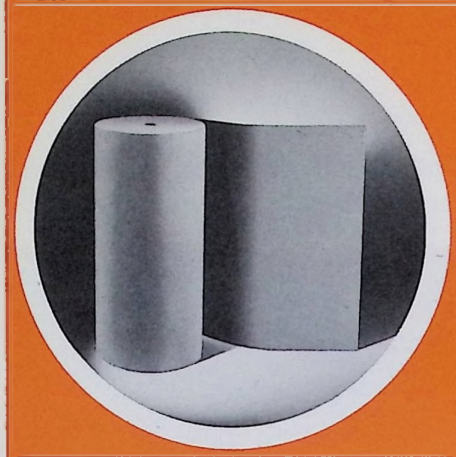
RKL	LIGHTWEIGHT VAPOR BARRIER PAPER (Reinforced Kraft, Light): Two layers of 30-lb. Kraft paper, reinforced with fiber glass yarn scrim (1" x 1" spacing) in asphalt lamination.	
.001 AL	Aluminum Foil	High degree of heat reflection. Foil adds its own insulating value through its excellent radiant heat reflectivity. Incombustible.
.002 ALX	Aluminum Foil (Recommended as vapor barrier)	
FSK	Reinforced Foil and Paper (Foil, Scrim, Kraft): A layer of aluminum foil, reinforced with fiber glass yarn mesh and laminated to 40 lb. fire-resistant Kraft. Very strong. Foil adds to insulating value.	
APV	Vinyl Plastic	
WPV	Aluminum white or green pigmented.	
GPV	Effective vapor barrier. Provides attractive finish.	
FSKL	Foil Skin Kraft, lightweight plastic coating, black.	

Dimensional Limitations, Standard Product

density	thickness	width	length
.6, .75 & 1.0 lb.	1", 1½"	24", 36", 48"	100'
	2", 3"	24", 36", 48"	50'
1.5 lb.	½"	24", 36", 48"	100'
	1", 1½", 2"	24", 36", 48"	50'
2.0 lb.	½"	24", 36", 48"	100'
	1", 1½"	24", 36", 48"	50'
3.0 lb.	½"	24", 36", 48"	100'
	1"	24", 36", 48"	50'

The Ruberoid Co.: Thermal Insulations (c. 1968)
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Other Insulation Products







Commercial Asbestos Paper

As a fire retardant with all the properties of a thin, pliable paper, Ruberoid Asbestos Paper has a multiplicity of uses in residential and general building work and in industrial applications. It can be used to wrap furnace pipes, air-conditioning ducts, furnaces, jackets and for the protection of wood partitions exposed to heat. This product is ideal for any application where paper is desired and a degree of fireproofing is required.

Asbestos Millboard

Asbestos Millboard is designed to be used wherever a lightweight, inexpensive fireproofing material is required. It is employed widely in insulating ovens and ranges and for lining grates, ceilings and walls. Its many residential and industrial uses are apparent when it is considered that the product is fire retardant, vermin proof and can be used as protection against acid fumes.

Insulation Cements

Ruberoid offers a cement for every temperature problem . . . for both insulating and finishing.

Product	Temp. Range
Grade 313 Mineral Wool Cement	2100°F
Calsilite Cement	1250°F
Grade 412 Single Coat Cement	1250°F
Grade 214 Asbestos Cement	1000°F
Grade 115 Asbestos Cement	1000°F

Asbestos Rollboard

Asbestos Rollboard is basically the same product as Ruberoid Asbestos Paper, except that it is made in thicknesses of 1/8" and 3/32". It is used for general fire proofing, and heat resisting purposes. It will withstand temperatures up to 350°F.

Asbestos Furnace Tape

Ruberoid Asbestos Paper in tape widths has been cut in convenient size small rolls, making it easy to handle in the furnace industry. This tape can be used for sealing joints in the application of cellular insulation on furnaces and pipes and air conditioning ducts.

Asbestos Electrolytic Paper

This special long fibre asbestos paper is specifically manufactured for chlorine manufacturers using electrolytic cell process. It is available only upon special order.

RUBEROID®

INDUSTRIAL PRODUCTS DIVISION
gaf The RUBEROID Co. a Division of General Aniline & Film Corporation / 733 Third Avenue, New York, N.Y. 10017

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