

# FLEXWRAP®

The product is a mottled light yellow, uniformly textured thermal insulation blanket. It consists of bio soluble glass fibers bonded with a thermosetting resin especially oriented to obtain a very flexible system to be close installed on round surfaces. The outside surface of the rolls is faced with a foil reinforcement Kraft (FRK/FSK), polypropylene scrim Kraft (PSK) or (ASJ) All Service Jacket vapor barrier.



## END USE CHARACTERISTICS AND LIMITATIONS

The product is designed as thermal insulation at application temperatures up to 454°C (850°F), for indoor use. The product is designed to provide ease of installation and retention of performance properties.

Installed insulation thickness should be sufficient to limit the facing temperature to less than 60°C (140°F). For 454°C (850°F) application temperatures, the maximum insulation thickness should not exceed 4 in. Faced insulation should not be installed in multiple layers and the product may be used in normal conditions of humidity and temperature.

The special and uniform fiber orientation provides a close installation on round shapes such as pipes, tanks, ducts, vessels, and other similar round and irregular shapes, without reducing the thickness of insulation.

This product meets the **ASTM C1393** Type I, II, IIIA, IIIB, category 2. (Standard Specification for Perpendicularly Oriented Mineral Fiber Roll and Sheet Thermal Insulation for Pipes and Tanks)  
FLEXWRAP is a DBE FREE product as required by Oregon State.  
Product certified by LAPEM (Testing Laboratory Equipment and Materials, Mexico)

## PRODUCT SPECIFICATION

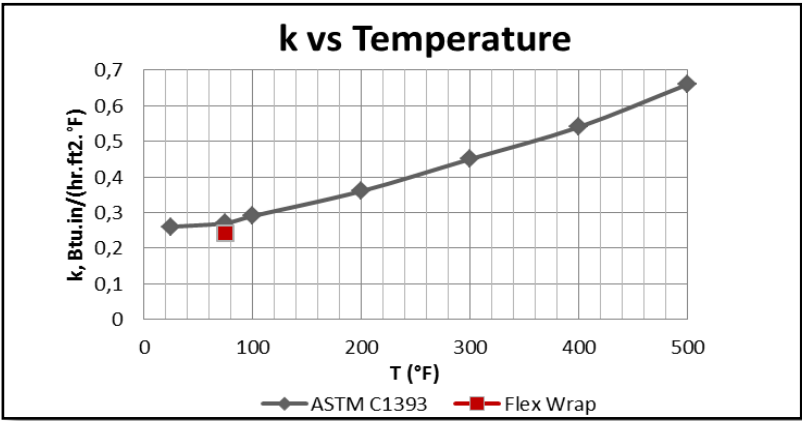
PRODUCT	LENGTH mm	WIDE mm	TICKNESS mm	NET WEIGHT ± 10% kg/m² (g/ft²)
360"x48"x1.1/2"	9144 ±152mm	1219 ±3mm	38 ±2mm	1.82 (169)
312"x48"*2.1/2"	7925 ±152mm	1219 ±3mm	51 ±2mm	2.5 (232)
240" x 48" x 2.1/2"	6096 ±152mm	1219 ±3mm	63 ±2mm	2.8 (260)
216" x 48" x 3"	5486 ±152mm	1219 ±3mm	76 ±2mm	3.04 (282)
180" x 48" x 3.5"	4572 ±152mm	1219 ±3mm	89 ±2mm	3.56 (331)
156" x 48" x 4"	3962 ±152mm	1219 ±3mm	102 ±2mm	4.07 (378)

Aluminum foil vapor barrier (**FRK**: Foil Reinforcement/Scrim kraft). Emissivity: 0.03.  
White vapor barrier (**PSK**: Polypropylene Scrim Kraft, **ASJ**: All service Jacket)

PROPERTIES	STANDARD	DESCRIPTION
Thermal Performance (Thermal conductivity)	ASTM C518	0.035 W/m.°C at 24°C Mean Temp. (0.24 BTU.in/hr.ft².°F at 75°F Mean Temp.)
Operating Limits	ASTM C411	Max. 454°C (850°F)
Compressive strength	ASTM C165	Min. 25 lbf/ft² (10% deformation) (1197 Pa)
Surface Burning Characteristics	ASTM E84	Meets requirements
Corrosiveness	ASTM C665	Meets requirements
Fungi Resistance	ASTM C1338	Meets requirements
Odor Emission	ASTM C1304	Meets requirements
Water Vapor Permeance	ASTM E96 Method A	FRK, PSK, ASJ: 0.02 Perms max. (1.15 ng/Ns)
FRK, PSK, ASJ Vapor barrier	ASTM C1136	Meets requirements
Thermal insulation to high temperatures in equipment, containers and pipe surfaces	NRF-034-PEMEX-2004	Meets requirements
Federal Electricity Commission. Thermal Insulation	CFE D4500-04	Meets requirements
Thermal insulation, high temperature	PEMEX 2.313.01791	Meets requirements
Efficiency energy of industrial thermal insulations	NOM 009-ENER 1995	Meets requirements
DBE Content	Oregon State	FREE, meets requirements

Data presented below are a guide for the thermal performance of the product, based on qualification requirements on ASTM C1393 Type IIIB compared with a point of thermal performance of the product in reference (FLEXWRAP)

ASTM C1393 Type IIIB			
TEMPERATURE		THERMAL CONDUCTIVITY	
°F	°C	BTU.in/hr.ft².°F	W/m.°C
25	-5,6	0,26	0,037
<b>75</b>	<b>22,2</b>	<b>0,27</b>	<b>0,039</b>
100	36,1	0,29	0,042
200	91,7	0,36	0,052
300	147,2	0,45	0,065
400	202,8	0,54	0,078
500	258,3	0,66	0,095



Apparent Thermal Conductivity Curve based on laboratory testing and subjected to normal testing variations. ASTM C411 Thermal Performance (850°F).

FLEX WRAP FGC			
TEMPERATURE		THERMAL CONDUCTIVITY	
°F	°C	BTU.in/hr.ft².°F	W/m.°C
<b>75</b>	<b>22,2</b>	<b>0,24</b>	<b>0,035</b>

This product could be a cost-effective substitute for pre-formed pipe insulation on different diameter pipes, as shown in the tablet that follows:

Nominal Pipe Size (NPS)	Pipe Outside Diameters	STRETCH - OUT LENGTH											
		Flex Wrap Thickness											
		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
in	in	in	in	in	in	in	in	in	in	in	in	in	in
6	6,6	29,3	745	33,4	850								
8	8,6	36,5	895	38,5	978	41,8	1062						
10	10,8	43,3	1058	46,4	1170	48,5	1238	51,6	1311				
12	12,8	49,5	1240	52,6	1317	55,8	1402	57,7	1468				
14	14	53,4	1338	56,5	1430	59,8	1503	61,7	1568				
16	16	59,8	1493	62,9	1578	66,0	1668	69,1	1773				
18	18	66,0	1676	69,1	1756	72,3	1835	75,4	1915	78,5	1995		
20	20	72,3	1835	75,4	1915	78,5	1995	81,6	2075	84,9	2155	88,0	2234
22	22	78,5	1195	81,6	2075	84,9	2155	88,0	2234	91,1	2314	94,3	2394
24	24	84,9	2155	88,0	2234	91,1	2314	94,3	2394	97,4	2474	100,5	2553
26	26	91,1	2314	94,3	2394	97,4	2474	100,5	2553	103,6	2633	106,9	2713
28	28	97,4	2474	100,5	2553	103,6	2633	106,9	2713	110,0	2793	113,1	2873
30	30	103,6	2633	106,9	2713	110,0	2973	113,1	2873	116,3	2952	119,4	3032
32	32	110,0	2793	113,1	2873	116,3	2952	119,4	3032	122,5	3112	125,6	3192
34	34	116,1	2952	119,4	3032	122,5	3112	125,6	3192	128,4	3272	132,0	3351
36	36	119,4	3112	125,6	3192	128,9	3272	132,0	3351	135,1	3431	138,3	3511

ASTM C 585 "Inner and Outer Diameters of Rigid Thermal Insulation for Normal Sizes of Pipe and Tubing"

VISUAL STANDARD

CHARACTERISTIC	ACCEPTANCE GUIDE
Color	The product color is yellow, from light yellow to dark yellow.
Facing and surface Appearance	Facing will be uniformly adhered to the wool. Evidence of generalized adhesion failure or air-bags is not accepted. Adhesive spots toward the roll sides or binder spots can be accepted if randomly.
	The facing vapor barrier, FRK, could show color variation as dark zones, which is a normal characteristic of the product specially in the last 2 m.
	In normal handling and storage conditions, the facing will not show damage as delamination, ripping, or free threads.
	Facing wide alignment accept $\pm 1/4"$ (6.35mm) deviation from insulation edge. The product may have facing splices with no more than one per roll and no greater than 10% of any lot. Wrinkles are accepted as a normal characteristic.
	Slight condensation, as frost, may temporary occur inside of the package with no detrimental effect on the product.
Telescopy	The rolls could show some conic shape in the extremes because of the rolling system. This condition is controlled at 3" maximum.
Packing	Packing is covering the roll surface but not the extremes. Correct handling and ware-housing must be provided.

PACKAGING

PRODUCT	m <sup>2</sup> /roll	TOTAL NET WEIGHT $\pm 10\%$ (kg/Package)
360"x48"x1.1/2"	11.14	20.3
312"x48"*2.1/2"	9.66	24.1
240" x 48" x 2.1/2"	7.43	20.8
216" x 48" x 3"	6.69	20.3
180" x 48" x 3.5"	5.57	19.8
156" x 48" x 4"	4.83	19.6

Polyethylene shrink-package roll extreme open and auto-adhesive label. 1 roll/package

RECYCLED CONTENT

- (1) PI Recycled Content: Post Industrial Recycled Content: Collected from manufacturers or industry.  
(2) PC Recycled Content: Post-Consumer Recycled Content: Collected from end uses.

PRODUCT	TOTAL RECYCLED CONTENT	POST INDUSTRIAL RECYCLED CONTENT (1)	POST CONSUMER RECYCLED CONTENT (2)
2 in - ASJ	65%	65%	0 %
2 in – FRK , PSK	68.6%	68.6%	0%

INSTALLATION RECOMMENDATIONS

Before Installation

Determine the stretch-out length of the FlexWrap® required by measuring the outside perimeter of the pipe or tank to be insulated. Add an allowance of 6.28 times the insulation thickness to the circumference to obtain the stretch-out dimension. For pipes and tanks of known diameters, the stretch-out (SO) can be calculated using the following formula:

$SO = 3.14 * (d + 2t).$

Where:

- d=Pipe or Tank diameter  
t= Product thickness

If a staple flap is required, an additional 3" (76 mm) should be added to the SO dimension.  
For common pipe sizes, select the stretch-out length recommended from the table (4<sup>th</sup> section).

During Installation

The Insulation should be butted and secured with staples and vapor barrier mastic or adhesive, or by applying staples and a pressure sensitive vapor retarder tape that is compatible with the facing.  
Adjacent sections should be butted together and sealed with the pressure sensitive tape. When service temperature is below ambient, special care must be given to seal all joints and facings penetrations.  
Take care to not cut the facing when removing the lap portion of the insulation.  
Use of bands or impalement pins for securement purposes is permitted but should be sealed as necessary with mastic.

After Installation

An inspection and preventative maintenance program for the Insulation and vapor retarder system is recommended to ensure optimum performance.



**Fiberglass Colombia S.A - Colombia**  
**Planta Mosquera**  
**Mineral Glass Wool AA1**

Certificate No.385 Bio soluble Mineral glass wool FGC.  
Note Q of the Regulation EC 1272/2008 of the European  
Parliament and of the Council as Currently in force.

European Certification Board for Mineral Wool Products



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de clase mundial*

**LAPEM®**

**LABORATORIO DE PRUEBAS DE EQUIPOS Y MATERIALES**

**FIBERGLASS COLOMBIA S.A PROVEEDOR AUTORIZADO**

**N° CO11/4442**

Sistema de Gestión de la Calidad para la producción y venta de membranas impermeabilizantes modificadas (mantos, con o sin recubrimiento autoprotector) y emulsiones asfálticas, Cielo rasos en fibra de vidrio con acabado decorativo. Láminas y rollos flexibles en fibra de vidrio para la fabricación y recubrimiento interno y externo de conductos para transporte de aire acondicionado. Aislamientos térmicos y acústicos rígidos, flexibles y preformados.



**Norma - ISO 9001:2015**

Producto fabricado bajo un sistema de administración de calidad certificado de conformidad con ISO 9001.

Reported values are typical of tests carried out on samples taken from standard production and may be update without notice.

The user is responsible for determining if the product is recommended for a particular surface and if it satisfies the application requirements. The user must make application testing and product testing required for that purpose.

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