

## The Ultimate in Thermal Protection Custom Tank Wrap Insulation Water Heaters/Water Tanks cuts energy loss and labor costs

R-12.5 Meets ASHRAE/IES Standard 90.1b



**CEM-FLEX®** is made from high-insulating, low-density, flame-retardant polyurethane foam and PVC vinyl jacket **CEM-FLEX** can have a thermal rating of R-20, well above conventional insulations.

**CEM-FLEX's** superior insulating capability is nearly double cellular glass insulation. The thickness of the foam can be manufactured from 1" to 5" to obtain R-factors from 4 to 20.

Each jacket is custom tailored for horizontal or vertical tank designs. Rugged vinyl construction makes **CEM-FLEX** jackets suitable for indoor or outdoor use. Custom crafted and delivered three to four weeks from the receipt of your order.

### CEMLINE CORPORATION

P.O. BOX 55 CHESWICK, PENNSYLVANIA 15024  
Phone: (724) 274-5430 FAX: (724) 274-5448

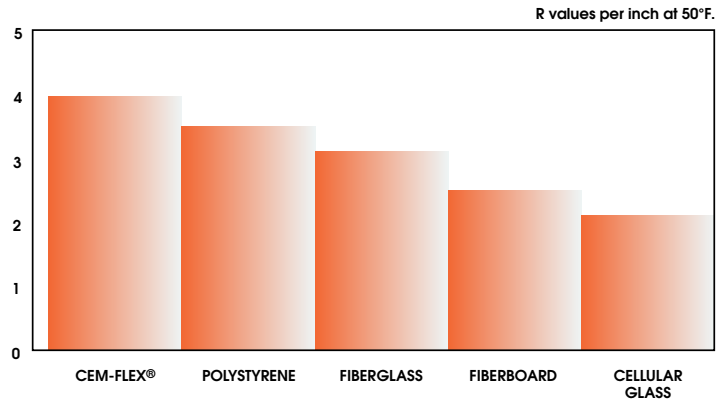
[www.cemline.com](http://www.cemline.com)

# CEM-FLEX® Advantage

- *PAYBACK in as little as 6 Months*
- *EASY to Install On-site*
- *CUSTOM Fitted*
- *EASY Clean Finish*
- *REMOVABLE in Minutes*



## Compared with other Materials



## Foam Physical Properties

PROPERTY	SPECIFICATION	TEST METHOD
DENSITY	1.45+/- .05	A.S.T.M. 3574-86
ILD @25%	42 +/- 3 lbs.	A.S.T.M. 3574-86
TEAR RESISTANCE	9 LBS./SQ. INCH	A.S.T.M. 3574-86
ELONGATION	150% MIN.	A.S.T.M. 3574-86
RESISTANCE	40% MIN.	A.S.T.M. 3574-86

## Heat Loss with Other Materials - BTU/HRS

DIFFERENCE OF TEMP.	INIFLEX	POLYSTYRENE	FIBERGLASS	FIBERBOARD	CELLULAR GLASS
10°F	9.5	10.9	11.9	13.6	15.2
20°F	19.1	21.7	23.8	27.2	30.5
30°F	28.6	32.6	35.7	40.8	45.7
40°F	38.1	43.5	47.6	54.4	60.9
50°F	47.6	54.4	59.5	68.0	76.2
60°F	57.2	65.3	71.4	81.6	91.4
70°F	66.7	76.2	83.3	95.2	106.6
80°F	76.2	87.4	95.2	108.8	121.9

## FLAMMABILITY (Foam)

MVSS (Less than 4" a minute or self-extinguishing)  
California Technical Bulletin #117.

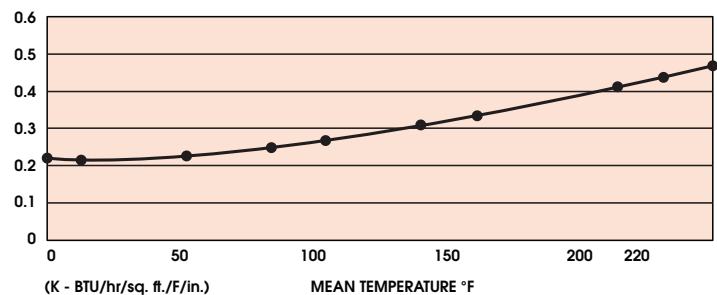
## Recommended Thickness for Your Tank:

The minimum insulation requirements are set forth by ASHRAE/IES Standard 90-1 and by Federal Public Law 102-486, "Energy Policy Act of 1992" (Subtitle C, Section 342a,5,G). As of January 1, 1994, storage water heaters and hot water storage tanks having more than 140 gallons of storage capacity must meet more rigid thermal energy standards. These standards can meet standby loss or heat loss requirements if the tank surface area is thermally insulated to R -12.5 and if a standing pilot light is not used.

R Values for thickness of foam		
1" = R 4	2¾" = R 11	4" = R 16
2" = R 8	3½" = R 12.5	5" = R 20

## K Factor Versus Temperature

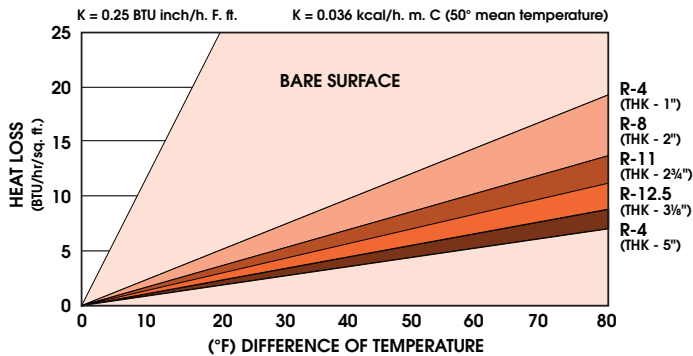
The K Factor of foam changes with the temperature of the foam. The chart below was obtained by Test Method C 117-87 which allows a better precision than other tests and which also allows measuring the K Factor for the temperature range the foam can withstand.



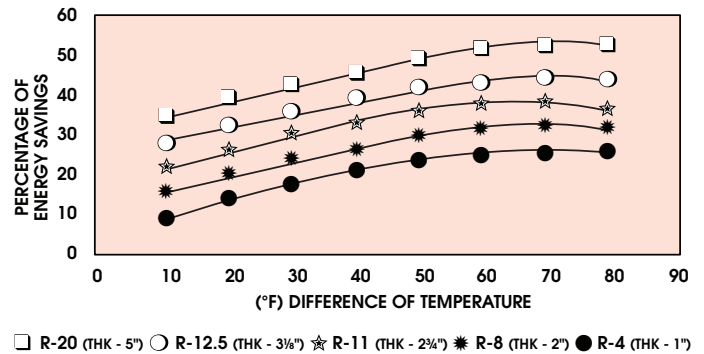
# CEM-FLEX® is the answer

- for horizontal, vertical and custom tank designs
- velcro attach allows easy access to wiring bow on electrical heaters
- fits over flange nozzles and pipe fittings
- suitable for retrofit
- repairs easily with vinyl tape

## Heat Loss



## Energy Savings



## Test Methods

### California Technical Bulletin #117

**Materials:** Resilient cellular materials.

**Use:** Testing flame retardation of resilient materials used in upholstered furniture.

**Procedure:** Vertical sample is ignited from the bottom by a bunsen burner flame for 12 seconds. The char length shall not exceed 6". The after flame shall exceed 15 seconds.

### MVSS-302 Horizontal Burn Test

**Materials:** All

**Use:** Adopted by Department of Transportation for all materials used in automotive interiors.

**Procedure:** Horizontal specimen is ignited by a 15 second application of a bunsen burner flame. When flame has burned 1" to 1-1/2" of the sample, time is measured until material ceases to burn or until burning has progressed 10". The rate must not exceed 4" per minute and there must be no flashing across surface for self-extinguishing rating.

### ASTM 0-1692, (UL SUBJECT 94)

**Materials:** Plastic foams.

**Use:** Testing foams for building and furniture applications.

**Procedure:** Horizontal sample is exposed to bunsen burner flame for 60 seconds in UL 94, cotton is placed under sample. Burn rate is measured and flaming droplets must not ignite cotton.

# CEM-FLEX® Installation



CEM-FLEX custom insulation jacket can be installed in five easy steps:

1. First unroll the jacket and fit the foam around the tank. Move back and forth to compensate for the foam's tendency to stick to the tank walls.
2. Fit the jacket around the tank and fasten. Attach the caps onto the shell. If it is a vertical tank, pull the draw string at the bottom to fit the jacket snugly.
3. After the insulation is completely attached, tap around the edges of the tank openings with a mallet to imprint them on the jacket surface.
4. With a sharp knife, cut holes in the jacket along the opening imprints.
5. Connect all valves, instruments, caps, pipes and other fittings through the openings.

**CAUTION:**  
**DO NOT SLIDE HORIZONTAL TANK ON ITS SKIDS AFTER JACKET INSTALLATION.**

## CEM-FLEX® Easy Care

Each CEM-FLEX jacket has a durable PVC vinyl shell tested to withstand over 300 hours of continuous sunlight without fading. It is easily cleaned with mild, non-abrasive soap and water.

### VELCRO® TANK INSULATION

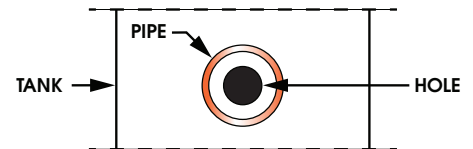
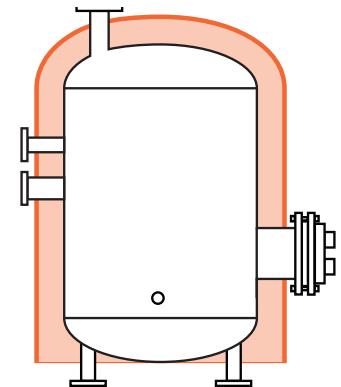
CEM-FLEX design features a rectangle-shaped section which is attached around the cylindrical part of the tank, and circular caps, one for vertical and two for horizontal tanks.

Each CEM-FLEX jacket is custom manufactured to your exact tank dimensions, shipped to your job site, and then fastened in minutes.

While not necessary, for better insulation, place insulation between the pipe and jacket with silicon caulking or tape around the pipe.

### FOR OUTDOOR INSTALLATION

Place tape on the velcro seams to protect from rain or snow. Holes for the pipes must be caulked or taped for protection.



Make a hole in the jacket at the exact place of the pipe. The diameter of the hole should be 1" smaller than the diameter of the pipe (the vinyl and foam will stretch).

## Available Cemline Brochures

- STONESTEEL®
  - Water Storage Tanks
  - Jacketed Storage Tanks
  - Commercial Electric and Packaged Copper Coil Water Heaters
- Submerged Heating Coils
- Replacement Tube Bundles
- Steel Tanks
- Chilled Water Buffer Tanks
- System Efficiency Buffer Tanks
- Electric Boilers
- Stainless Compact Packaged Copper Coil Water Heaters - Semi-instantaneous, Instantaneous
- Unfired Steam Generators
- Condensed Catalog

*Cemline is represented in all major cities.*

*Please contact your local representative or call Cemline Corporation.*



[www.cemline.com](http://www.cemline.com)

- Product Sizing Programs
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- Drawings & Specifications
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- Plant Tour

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# CEM-FLEX<sup>®</sup> Quotation/Order Form



Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

Email \_\_\_\_\_

Tank manufacturer

Manufacturers' Rep

Distributor / Wholesaler

Contractor

Other \_\_\_\_\_

## Please complete #1 - #3 below:

### 1. Tank Specifications:

Tank Manufacturer: \_\_\_\_\_

Diameter: \_\_\_\_\_ inches

Overall Length: \_\_\_\_\_ inches

### 2. The tank will be installed in: (Check one)

Vertical Position

Horizontal Position

### 3. R-Factor Required: R12.5 or R\_\_\_\_\_

**Note:** We will quote an insulation R-Factor of 12.5 to meet ASHRAE Standard 90 lb. and the insulation will be 3.125" thick. If other than R12.5 required, please specify.

I would like to talk to a sales person about the CEM-FLEX<sup>®</sup> jacket.