

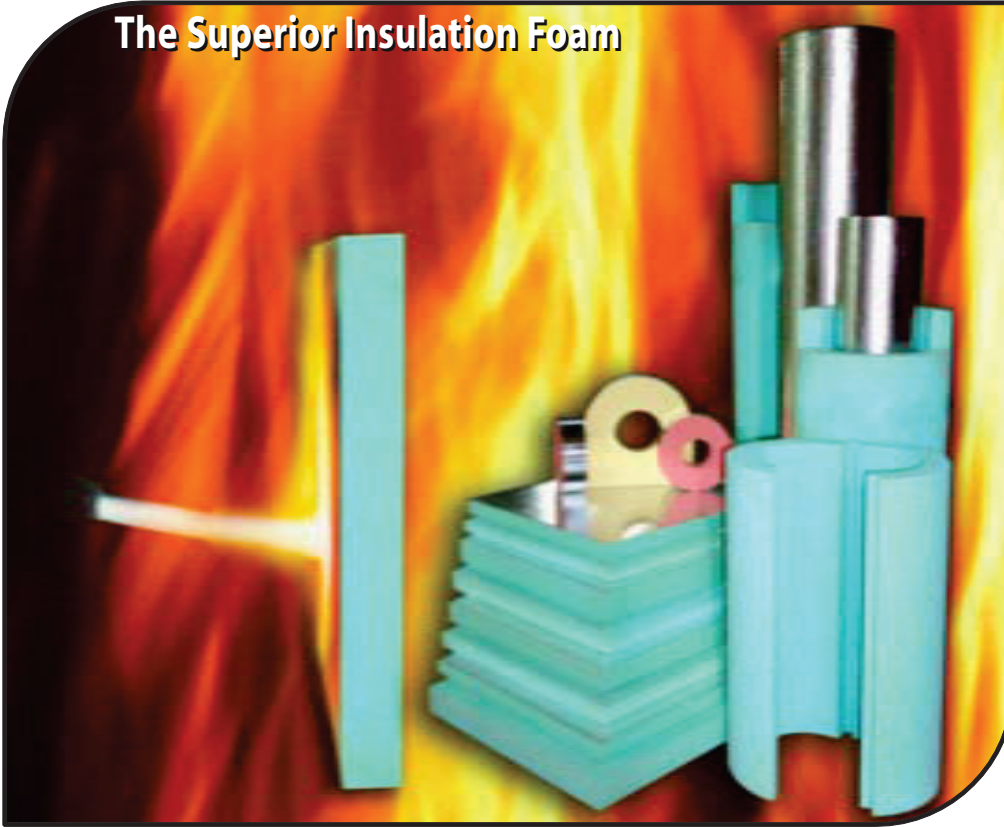


مصنع جلف كول ثيرم ذ.م.م.  
GULF COOL THERM FACTORY LLC

## Class 'O' CFC & HCFC Free Phenolic Foam (PF) Insulation

*The Quality Insulation  
Products for Many Diverse  
Application*

**The Superior Insulation Foam**



- Chilled Water Pipe and Duct Insulation
- Slab Insulation
- Roof and Wall Insulation



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# ABOUT US

We are pleased to introduce ourselves as a factory established in 1993, Sharjah – United Arab Emirates. Gulf Cool Therm Factory LLC is an ISO 9001:2008 Certified Company with Quality System certified by UKAS of United Kingdom.

Gulf Cool Therm Factory LLC, is a leading manufacturers and suppliers of high quality:

## **Thermal Insulation Materials**

- **Pre-insulated Pipes and Fittings for District Cooling Application**
- **Polyisocyanurate Pipe, Duct, Slab and Vessel/Equipment Insulation**
- **Polyurethane Pipe, Slab and Vessel/Equipment Insulation**
- **Class 'O' CFC & HCFC Free Phenolic Foam Pipe, Duct, Wall and Roof Insulation**
- **Continuous PIR/PUR Foam Block Production**
- **Cold Insulation Materials for LNG, Oil and Gas Industries**
- **Foam Glass Insulation**
- **Phenolic Foam / Polyisocyanurate Pre-insulated Air Duct Panels**
- **Roof and Wall Insulation**
- **Polyurethane Spray Applied Foam**
- **High Density Thermal Support Inserts for piping and Ducting**
- **Heat Exchanger Insulated Box and Tray**
- **Field Joint Insulation and Application**

With many CNC Foam cutting machineries and production process units in the field with quality material available, highly qualified technical and commercial staff. We are confident that our product will comply with all international standard and definitely will meet your requirements.

In order to facilitate our client with best service and respect to quality, prompt delivery, respective elements of production and marketing were provided and enhanced under a tight quality control.



## THE SUPERIOR INSULATION FOAM

**Gulf Cool Therm Phenolic Foam** is a rigid CFC and HCFC Free cellular foam insulation material with a substantially closed cell structure, whose polymer structure is made primarily from the poly-condensation of phenol, its homologues and/or derivatives with aldehydes and ketones.

**Gulf Cool Therm Phenolic Foam** has various distinct properties that make it better than any other conventional insulation materials.

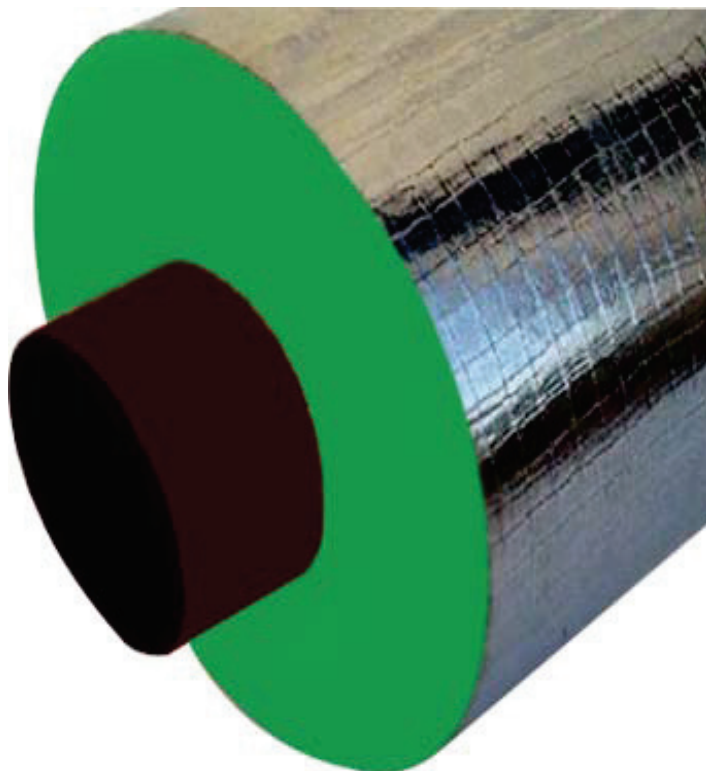
**Lower K Value** (K Value =  $0.018W/mk$ ) – that means exceptionally low thermal conductivity.

**Main application** **Gulf Cool Therm Phenolic Foam** are using for the application of Chilled Water Pipe and Duct Insulations.

**Wide service range** for diverse insulation applications.

**Coast-effective** because lower thermal conductivity facilitates usage of lesser thickness of **Gulf Cool Therm Phenolic Foam** for the same level of insulation.

**A Wide service temperature range** between  $-196^{\circ}C$  to  $+130^{\circ}C$  makes **Gulf Cool Therm Phenolic Foam** ideal for low temperature and cryogenic applications. It can be effectively used on LSHS, fuel oil and low pressure steam and hot water lines.



**Low water absorption** is a key feature of **Gulf Cool Therm Phenolic Foam**

A high closed cell content of up to 95% results in very low water vapour transmission and reduces condensation.

**Gulf Cool Therm Phenolic Foam** assures **longer life** as it is unaffected by most aromatic and aliphatic solvents.

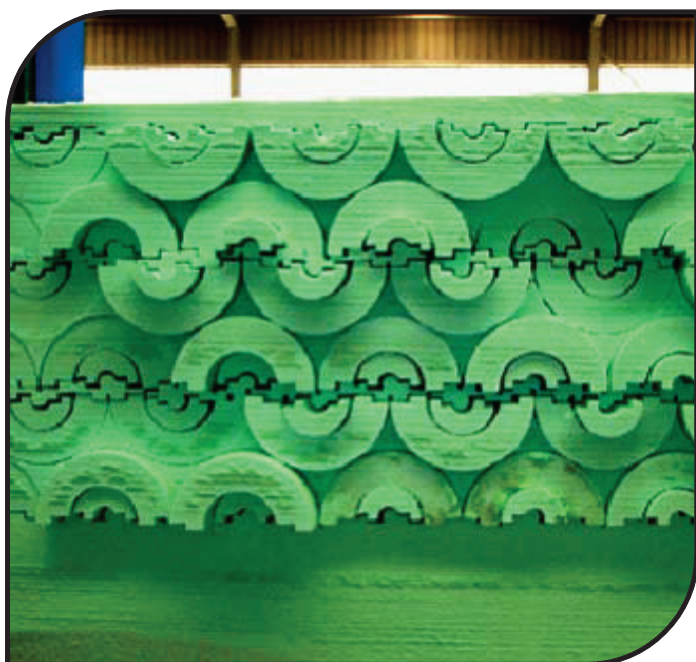
**Odourless** and does not absorb colour.

**Rodent/insect Proof** and being mildly antiseptic resists fungal and bacterial growth.

**Corrosion and chemical resistance** is another strength. **Gulf Cool Therm Phenolic Foam** resists organic solvents and chemicals. Being non-abrasive and hydrophobic, it does not corrode metal.

**Gulf Cool Therm Phenolic Foam** has **anti-static properties**. It is an electrical insulator and in case of friction does not generate static electricity or sparks.

**FIRE PERFORMANCE** The fire performance of **Gulf Cool Therm Phenolic Foam** is exceptional. It combines zero or very low flame spread with negligible smoke emission and a very low level of toxic gas emission.





**ENVIRONMENT** *Gulf Cool Therm Phenolic Foam* has very low embodied energy per unit thermal performance compared to other insulation materials.

Significant CO<sub>2</sub> savings can be achieved compared to other insulation materials.

*Gulf Cool Therm Phenolic Foam* is available in both CFC and HCFC free forms.

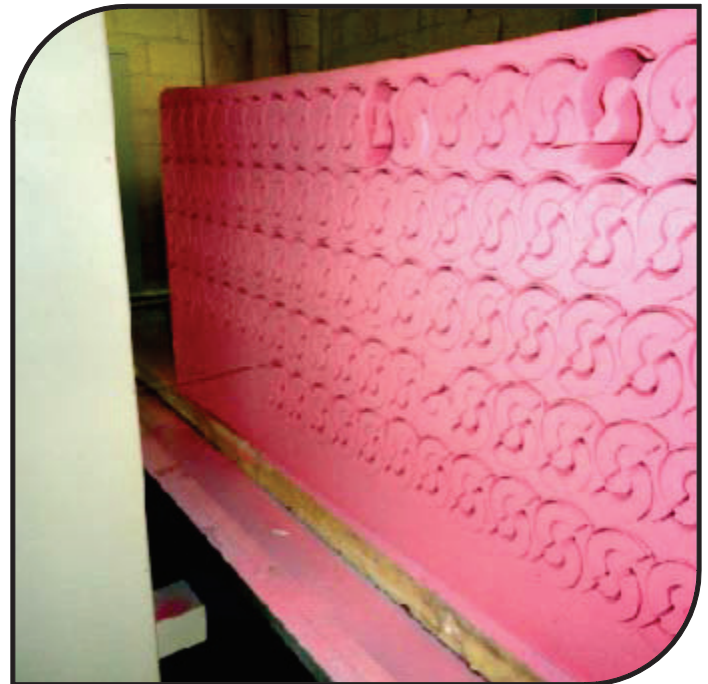
**MOISTURE RESISTANCE** *Gulf Cool Therm Phenolic Foam* has been used successfully in insulation systems where moisture resistance is a key issue.

The reasons for this excellent performance are:

*Gulf Cool Therm Phenolic Foam* has a low water vapour permeance and is therefore highly resistant to the passage of water vapour.

*Gulf Cool Therm Phenolic Foam* has low water absorption which takes place predominantly in the cut/broken surface cells of the foam.

*Gulf Cool Therm Phenolic Foam* is non-wicking. This means that if water enters the insulation system due to the vapour barrier becoming punctured, any moisture ingress is limited and confined to the punctured area. This ensures moisture does not build up and compromise the whole system.

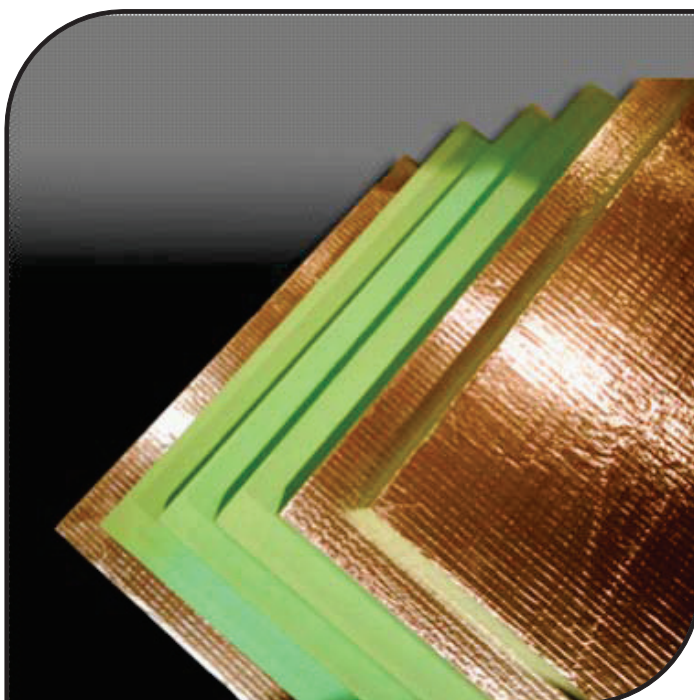


**THERMAL PERFORMANCE** *Gulf Cool Therm Phenolic Foam* offer a range of thermal conductivity performance. The closed cell type offers the lowest thermal conductivity available from any other conventional insulation material resulting from:

- Closed cell structure.
- Extremely small cell diameter.
- Low thermal conductivity gas permanently encapsulated in cells.

*Gulf Cool Therm Phenolic Foam* offers the following benefits:

- $\lambda$  values from 0.018 W/m.K depending on national certification requirements
- Excellent low thermal conductivity allows reduction in long term energy costs
- *Gulf Cool Therm Phenolic Foam* can be up 50% more thermally efficient than other common insulation materials
- Higher thermal efficiency allows reduced insulation thicknesses to be used thereby saving valuable space





## Gulf Cool Therm PHENOLIC FOAM (PF) PIPE, DUCT & SLAB INSULATION

Gulf Cool Therm Phenolic Foam is **workable, easy to install** and can be cut and shaped to any size with hand tools.

**AVAILABILITY** Pipe Sections, faced with reinforced (Class 'O') Aluminium foil, reinforced (Class '1') Aluminium Foil, Aluglass Foil (Aluminized Glass Cloth) OR un-faced.

**PIPE FITTINGS** including Elbows, Tees, Valve, Covers.. etc...

**PIPE SUPPORTS** faced with reinforced (Class 'O') Aluminium foil, reinforced (Class '1') Aluminium Foil, Aluglass Foil (Aluminized Glass Cloth) OR un-faced.

**DUCT BOARD** faced with one side reinforced (Class 'O') Aluminium foil, reinforced (Class '1') Aluminium Foil, Aluglass Foil (Aluminized Glass Cloth) OR un-faced.

**Factory Fabrication Standards:** ASTM C 450-08 and ASTM C 585-10

### DENSITIES

35Kg/m<sup>3</sup> to 50Kg/m<sup>3</sup> for Pipe Sections, Duct and Slabs.

65Kg/m<sup>3</sup> to 120Kg/m<sup>3</sup> for the use of Thermal Supports.



### DIVERSE APPLICATIONS

Under-deck and over-deck (roof) insulation.

Pipe and Duct Insulation.

Suspended ceilings and partitioning for commercial complexes, residential buildings and hospitals.

Insulation of Vessels, pipelines in petrochemical, fertilizer, chemical and pharmaceutical plants and in refineries.

Insulation of cold storage and refrigerated rooms.

Life-saving equipment such as life jackets, buoyancy block and other marine equipment.

Insulation of refrigerated rail, surface and marine equipment and containers.

Insulation of high-altitude shelters.

Ship insulation.





## TECHNICAL DATA SHEET

Properties	Test Method	Value	Value	Value	Value	Value	Value
Nominal Density: Kg/m <sup>3</sup>	( UNI 6349 – 68 ) ASTM D-1622	PF 35-40	PF 48-50	PF 65	TS 80	TS 100	TS 120
Closed cells content (%)	ASTM D-2856	96	96	96	96	96	96
Average Compressive Strength @ 10% Relative Deformation: kPa	ASTM D-1621 BS EN 826:1996	170	200	375	750	960	1150
Fire resistance	ASTM C 1126 BS 476 Part 6 & 7	Class 'O'	Class 'O'	Class 'O'	Class 'O'	Class 'O'	Class 'O'
Toxicity index	As per NES 713 testing procedure	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Oxygen index	As per BS 2782 part 1 method 141	Not Less than 45	Not Less than 45	Not Less than 45	Not Less than 45	Not Less than 45	Not Less than 45
Smoke obscuration	As per BS 5111 part 1	< 5%	< 5%	< 5%	< 5%	< 5%	< 5%
CFC and HCFC		Free	Free	Free	Free	Free	Free
Steam water transmission speed (Test conditions: 23 ° C, 85 % RH)							
- Steam transmission (g/mq. 24h)	ISO 1663	43.65	43.65	43.65	43.65	43.65	43.65
- Steam permeability ( nm/m.Pa.S.)		3.35	3.35	3.35	3.35	3.35	3.35
- u		58.7	58.7	58.7	58.7	58.7	58.7
Thermal conductivity ( W /m*K)	In accordance with ASTM C518/91, UNI 7891, BS 874, BS2972, MICA, ASTM C 680 (95) and fully aged with BS 3927 Appendix A						
-20°C Mean Temperature		0.018	0.018	0.021	0.022	0.024	0.026
-10°C Mean Temperature		0.018	0.018	0.021	0.022	0.024	0.026
0°C Mean Temperature		0.018	0.018	0.021	0.022	0.024	0.026
10°C Mean Temperature		0.018	0.018	0.021	0.022	0.024	0.026
50°C Mean Temperature		0.023	0.023	0.024	0.026	0.030	0.032
80°C Mean Temperature		0.025	0.025	0.028	0.030	0.032	0.034
Dimensions stability (Dimensional variations in % after conditioning)							
48 hours @ 70°C	ASTM 2126	-1.24	-1.24	-1.24	-1.24	-1.24	-1.24
48 hours @ 70°C; 95% U.R.		+0.276	+0.276	+0.276	+0.276	+0.276	+0.276
48 hours @ -25°C		-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
Water absorption (%) 96 hours @ 20°C							
Weight	ISO 2896	0.113	0.113	0.113	0.113	0.113	0.113
Volume		0.045	0.045	0.045	0.045	0.045	0.045

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**Inorganic material:** It is inherently proof against rotting mould, fungal growth and attack by vermin and is non-hygroscopic

**The material doesn't contain asbestos**

**Fire:** Test run with *Gulf Cool therm* Phenolic material in full view for sheathing of walls directly exposed to fire; Degree of reaction to fire: 1 (one)

**Smoke:** in conformity with the regulation NF F 16 – 101 table 4- For smokes, it is classified as **degree F1**, with smoke index " I.F." : 6,3.- (emissions of smoke, noxious or toxic fumes are almost inexistent)

**Corrosion of steel:** after 28 days of contact, no corrosion phenomenon is highlighted on

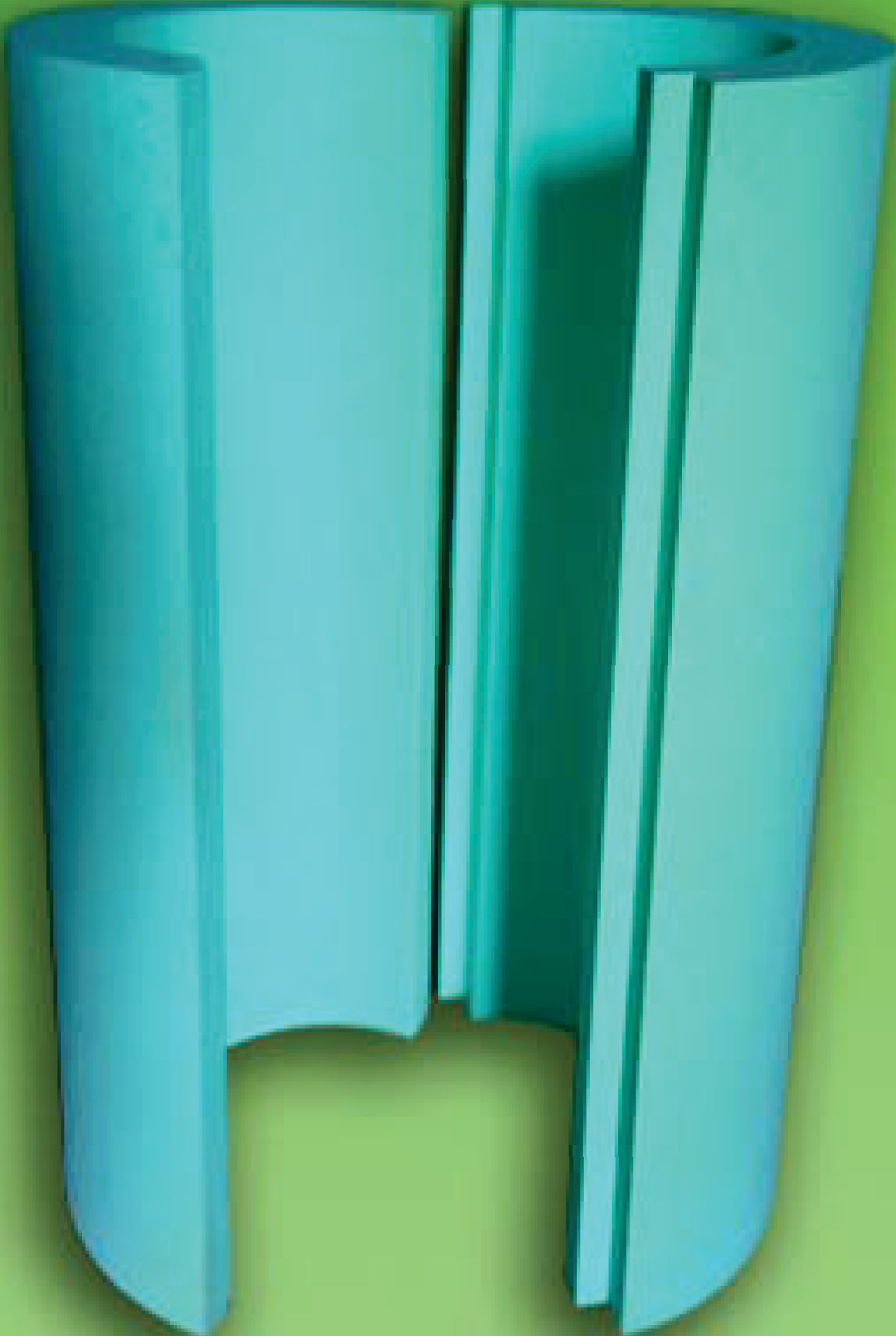
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**Environment Friendly**



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# Easy to Fit - Energy Saving

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Products for Many Diverse  
Application*

