



**Rigid Polyurethane /
Polyisocyanurate Foam Pipe Sections/
Pipe Supports and Slabs**

RIGID POLYURETHANE FOAM, POLYISOCYANURATE PIPE SECTIONS, PIPE SUPPORTS AND SLABS

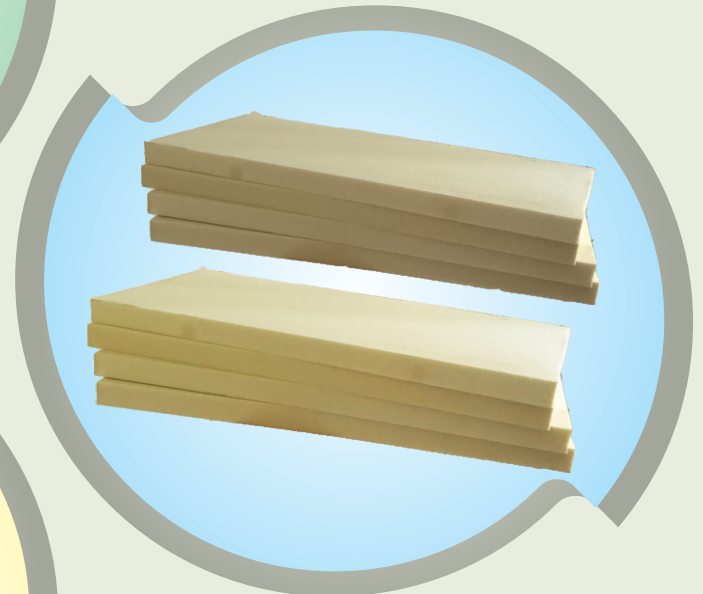
The growing need of quality insulation is the result of PUF insulation for pipes in Air Conditioning, Processing and Pharmaceutical and allied chemical industries.

Shree Venus Energy Systems manufactures Rigid Polyurethane foam pipe sections/Pipe supports of various diameters and thickness and also Rigid Polyurethane foam slabs for Chilled Water / Hot water applications / Under deck insulation / Overdeck insulation / air conditioning Duct insulations. These foams are manufactured using the state of the art CNC P.U. Dispensing Machine imported from SAIP, Italy.

The pipe sections and are cut with CNC programmed high speed wire cutting machine which gives accuracy in thickness and size also the delivery time make faster and quicker compared to Moulded sections.



Pipe sections



Polyurethane foam slabs



Pipe Supports

The advantages of using Polyurethane foam pipe sections are:

- [1] Rigid Polyurethane insulation products are suitable for use at a temperature of [-] 180 deg. C to + 110 deg.C.
- [2] Rigid Polyurethane foam products are manufactured in the densities ranging from 40 to 300 Kgs./M3
- [3] Having lowest Thermal Conductivity amongst all the foam based insulation material . Superior strength allows for saving on metal consumption over insulation. No deformation of shape in case of people walking/climbing over the pipes after insulation. Retains the shape and no damage to insulation in spite of regular foot traffic over the insulation. Hence, maintenance cost is less compared to conventional systems.
- [4] The thickness of insulation can be lowered due to low thermal conductivity and hence the overall cost shall be cheaper than conventional type of insulation materials.
- [5] Due to high compressive strength, the same material can be used for pipes supports with higher densities ranging from 140 Kg. to 300 Kg. /M3
- [6] Polyurethane foam has got very high durability compared to conventional material and hence replacement of material not needed over period of time.
- [7] Since the materials are cut with CNC Profile cutting machine, any thickness can be offered according to the customer choice and hence it is economical
- [8] Easy maintenance and repairing to insulation becomes easy as it is monolithic in nature.
- [9] The material is un-affected by moisture, water and it has excellent resistance, as the products are Petroleum based .
- [10] As the materials are of closed cell in nature, no separate vapour is required over PUF pipe sections for chilled water application
- [11] Aluminium Foil faced material can be offered as per the Customer choice.
- [12] Our materials are already in use at the following projects:

[1] Chennai Metro Rail Ltd.	[4] Shriram Gateway
[2] IGCAR, Kalpakkam	[5] CTS – IT Park
[3] Apollo Tyres	[6] HCL – IT Park and many more.

We have tested our material for fire performance and the certificate is enclosed.

bre

Shree Venus Energy System Pvt. Ltd.
No. 135, Burma Colony
Old Mahabalipuram Road
Perungudi
Chennai-600 096
India

20 July 2015
Your Ref. email 12/05/2015
Our Ref. P100851-1000-3

Dear Sir

CLASS 0 CLASSIFICATION

We are writing to provide a classification on your sample as described in Table 1 below against the performance criteria for Class 0 as given in The Building Regulations 2010, Fire Safety, Approved Document B, 2006 Edition incorporating 2010 and 2013 amendments and the reports referenced in Table 2 should be read in conjunction with this letter.

The product was stated to be:

Table 1

Test sponsor	Shree Venus Energy System Pvt. Ltd. No. 135, Burma Colony Old Mahabalipuram Road Perungudi Chennai-600 096 India
Manufacturer of sample	As above
Sample name/reference	Pre Insulated Pipes
Sample description (as provided by test sponsor/manufacturer)	Details of the sample as given by the sponsor are given in Appendix A

SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH
(A UNIT OF SHRIRAM SCIENTIFIC & INDUSTRIAL RESEARCH FOUNDATION)

TEST CERTIFICATE
NO BG/ 127758

14-10, Basavanagara Industrial Area, Whitefield Road, Bangalore - 560040
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ISO/IEC 17025 ACCREDITED LABORATORY
ISO 9001:2008 and ISO/IEC 17025

Issued To: M/s. SHREE VENUS ENERGY SYSTEM PVT. LTD.
No. 135, BURMA COLONY
OLD MAHABALIPURAM ROAD, PERUNGUDI
CHENNAI - 600 096.

Job Order No. : 1502-141-2187
Date of issue : 11-03-2015
Customer's Ref. : E-MAIL

KIND ATTN.: Mr. C. PALANIAPPAN - DIRECTOR
Dated : 29-01-2015

Sample Particulars: Sample described as "POLYURETHANE FOAM" was received.

TEST RESULTS

SL. NO.	TESTS	RESULTS	PROTOCOL
01.	Water vapour Transmission, ng/m ² , Pas	4.9	IS 11239(Part.4):1985
02.	Thermal Conductivity, W/m.K (At mean temperature : 50°C)	0.02	As per Guidelines of IS 3346:1980

NOTE : This is the supplementary report to our earlier Test Report/Certificate No.BG/127057 Dated 17-02-2015.

Date of Receipt : 11-02-2015
Date of Completion : 11-03-2015

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ADHESSED SIGNATORY
(EMPLOYEE CODE NO. 74733)

TECHNICAL SPECIFICATIONS OF POLYURETHANE FOAM

Polyurethane Pipe Sections are factory laminated on one side with Polymeric Membrane and reinforced Aluminium Foil which will have the

PROPERTY	VALUE
Nominal density	40+/-2 Kg per M3
Compressive Strength (at 10% deformation)	2.1 kg / CM2
Tensile Strength	3.7 Kg/CM2
Bending Strength	4 Kg / CM2
Elongation at break	6.9-7.0%
Adhesion strength (Foam to steel)	2.9 Kg/CM2
<u>Dimensional Stability</u>	
-25 deg. C	0.1 %
+38 deg.C and at 90% RH	0.1 %
+100 deg.C	0.4 %
Thermal Conductivity at 0 deg. C:	0.018 Kcal / hr.m. deg.C
Closed cell content	90-95 %
Temperature range	-180 deg.C to + 110 deg.C
Horizontal extend of burn BS 4735	< 125
Self extinguishing ASTM D 1692: (Fire retardant Foam Chemicals)	Passes
Water absorption	0.2 % @ 100 % RH
Permeability to water vapour	0.08-0.12 gms. / hr.M2
Resistance to chemical:	Excellent



Manufactured by:

Shree Venus Energy System Pvt.Ltd.

135, Burma Colony, Perungudi, Chennai-96.

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