



PRODUCT AND SERVICES.

- Rockwool Lightly Resin Bonded mattresses
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- Ceramic Fibre Blanket & Pad Insulation
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- PUF/PIR Insulation.
- Ceramic Fiber Cloth & Tape
- Ceramic Fiber Ropes
- Glass Fiber Cloth & Tape

Rockwool Lightly Resin Bonded mattresses

Rockwool Lightly Resin Bonded mattress (LRB) is made of fine fibers spun from selected rocks melted at high temperature and bonded with a thermosetting resin. Non combustible, They are faced on one side with galvanized wire mesh for easy installation

Standards:

Rockwool LRB Mattress is made from inorganic rock wool, defined as mineral wool in IS 8183, BS3533:1981 and is manufactured to a Quality Assurance system.

Thermal Performance:

The thermal conductivity of LRB Mattress is 0.034 W/mK at 25°C mean temperature.

Temperature Range:

LRB Mattress can be used at temperatures up to 750°C. Its melting point is 1000°C.

Compressive strength:

The products offer a unique combination of high resistance to compression and good recovery following deformation.

Fiber diameter and Length:

LRB Mattress has a fiber diameter between less than 7 microns and has fiber length of 30 to 4800 microns.



THERMAL CONDUCTIVITY CHART

Resin bonded Rockwool material offers the Lowest Thermal Conductivity to weight ratio among all industrial insulants thus minimizing the total load on the applied equipment.

Mean Temp. °C	50	100	150	200	250	300
K-Value in W/mK 100Kg/m ³	0.043	0.052	0.062	0.073	0.084	0.085
K-Value in W/mK 120-150Kg/m ³	0.043	0.052	0.062	0.073	0.080	0.090

TECHNICAL SPECIFICATIONS

Standard Densities : 100, 120 and 150 Kg/m³
 Application Temperatures : -100°C to + 800°C
 Standard Thickness* : 25, 40, 50, 60, 65, 75mm
 Standard Size : 1520 x 1220mm
 *Other thickness from 20 to 100mm in steps of 5mm can also be made available.

Application:

LRB Mattress is specifically designed for the thermal insulation of large vessels, boilers and high temperature plant. Under "vessels" we can include large and small rectangular, cylindrical and irregular pieces of equipment, high towers for chemical process plants, large storage tanks and spheres as well as

SALIENT FEATURES

- Higher Thermal Performance, as it is made out of Rockwool and not slagwool.
- Eliminates settling and sagging.
- Longer life, permitting reuse after removal during maintenance.
- Environment friendly, as there is no chicken feathering (which normally pollutes the environment), It is ECO friendly to personnel due to the chemistry of fibres.
- Uncontaminated, as manufacturing is totally a Dry Process.
- Application Friendly, as it permits very fast installation.
- Can feature resistance to capillary if needed.



Tank Insulation



Turbine Integral Insulation

Pipe Insulation



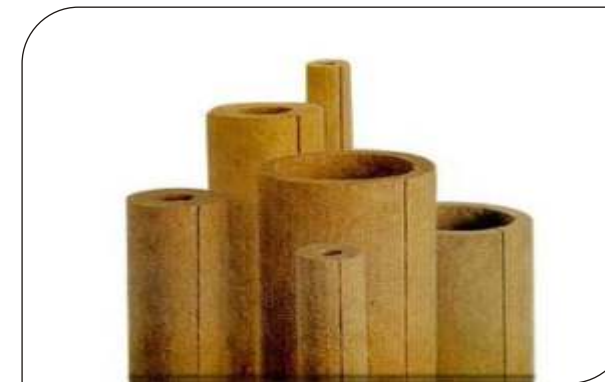
Preformed Rockwool Pipe Section

Rockwool Pipe Section

conforming ASTM- C547, IS- 9842: 1994 and equivalent BS 3958 Part 4 is intended for the thermoacoustic insulation and fire protection of pipe works operating at temperatures up to 750°C. The pipe insulation is manufactured from long non combustible rock fibers with a high performance binder.

Technical Specifications

- Standard Densities : 144, 150 & 160 Kg/M3
- Application Temperature :100°C to +800°C
- Standard Thickness* : 25, 40, 50, 60, 65, 75mm
- Diameter Range** : 12.2mm to 350mm NB
- Standard Length : 0.5, 0.75, 1.0 Mts.
- Facing (if specified) : Kraft paper, Scrim Cloth, Canvas or Aluminium Foil.
- *Other thicknesses from 20 to 100mm in steps of 5mm can also be made available
- **Outer Diameter of Pipe to be specified.



Thermal Resistance (R=T/K)

Rockloyd provides excellent 'R' value (hr. ft² Deg F/BTU)

Density (kg/m3)				
Mm	48	64	96	144
25	3.9	4.1	4.2	4.4
50	7.9	8.1	8.4	8.9
75	11.8	12.2	12.5	13.3
100	15.8	16.2	16.7	16.7





Rockwool LRB Slabs

Rockwool LRB Slabs are conforming to - IS 8183: 1993, ASTM C612, C553 and equivalent BS 39585 and are designed for thermal and acoustic insulation of flat or slightly curved surfaces operating at temperatures up to 750° C. The robust fibers combine high levels of thermal efficiency.



Fire Safety : In Combustible

Acoustical Properties : Suitable for acoustical insulation

Compatibility : Compatible with all form of Industrial Material

Moisture : Water Repellent, Non Hygroscopic

Rockwool LRB Slabs are aesthetically engineered for a wide range of applications at both high & low service temperatures and are preferred to use on both flat & slightly curved surfaces for economics and effective insulation on thermal, acoustical and fire protection. Rockwool LRB Slabs are widely used in industries for boilers, tanks, vessels, ovens, furnaces, bulkheads and ship deck etc. Due to its matchless performance it is widely used for thermal & acoustical insulation & with fire-protection.



Ceramic Fibre Blanket

Ceramic Fibre Blanket manufactured from spun ceramic fiber and is needed to provide exceptional handling strength for high-temperature insulation applications. Ceramic Insulation Blanket is typically offered in three standard grades referred to as commercial, High -Purity, light weight and thermally efficient resulting in a material that has the advantage of low heat storage and complete resistance to thermal shock. Blankets are produced in varying dimensions, temperature ratings, and for different applications



SPECIFICATION CHEMICAL COMPOSITION

	RT	RTZ	HTZ
Al ₂ O ₃ (%)	46 - 48	41 - 43	33 - 36
SiO ₂ (%)	52 - 54	50 - 54	44 - 48
ZrO ₂ (%)	-	4 - 6	16 - 19
Leachable Chlorides	< 10 ppm	< 10 ppm	< 10ppm

PHYSICAL PROPERTIES

	RT	RTZ	HTZ
Melting Temperature (°C)	1760	1700	> 1650
Specific heat (KJ/Kgk)	1.07	1.07	1.07
Fibre Diameter (mean)	2.8	2.8	2.8
Linear Shrinkage (%)	1000°C	1.5	-
	1100°C	2.2	-
after 24 hrs	1200°C	3.0	2.7
Firing / Soaking	1300°C	-	3.5
	1400°C	-	4.0
Max Service Temperature (°C)	1260	1260	1425

Applications

• Industrial furnace lining • High temperature pipes heat preserve • Heat resistant sealing gasket • Glass tank furnace thermal insulation • Power boiler and nuclear heat insulation • Ceramics kilns

thermal insulation • High temperature filter materials Technical Specification of Ceramic Fibre Wool Blankets

Application Temperature: maximum with standing Temperature 1200DegreeC.
Size: Width: 610mm, Length: 7300mm, Thickness: 25mm

CeramicFibre Jacket Insulation



Rockwool Turbine Spray Insulation.

Loose Mineral Wool Superfine Loose Mineral Wool

Collection of fine fibers drawn from molten of selected mineral rocks. The Loose Mineral Wool is an ideal material for most insulation applications because of its favourable handling and application characteristics. It is fire resistant, moisture resistant. Chemically inert neither reacts nor accelerates corrosion. It is durable, odourless, easy to handle and store.



Superfine Loose Mineral Wool conforms to IS:3677. The Loose Mineral Wool possesses low thermal conductivity and can be used in the temperatures of 50o C to 750oC. 'Loose Mineral Wool is of oil free available in 40 kg HDPE Bag.





PUF/PIR INSULATION PRODUCTS & SERVICES

Polyurethane (PUF) A polyurethane is typically produced by reacting an isocyanate with a polyol. Since a polyurethane contains two types of monomers, which polymerize one after the other, they are classed as alternating copolymers. Both the isocyanates and polyols used to make a polyurethane contain two or more functional groups per molecule. Which create rigid foam has outstanding insulation properties & suitable for application at temperature range between -180°C to +110°C.

Polyisocyanurate (PIR) A thermoset plastic typically produced as a foam and used as rigid thermal insulation. The starting materials are similar to those used in polyurethane (PUR) except that the proportion of methylene diphenyl diisocyanate (MDI) is higher and a polyester derived polyol is used in the reaction instead of a polyether polyol. The resulting chemical structure is significantly different, with the isocyanate groups on the MDI trimerizing to form isocyanate groups which the polyols link together, giving a complex polymeric structure, Which create rigid foam slabs, Pipe sections and Pipe supports Are suitable to withstand the temperature ranging between(-) 200°C to +150°C. It has low thermal conductivity and high resistance properties. It is one of the most suitable insulation material for cryogenic applications.



Key Features:-

- Easy to install
- Light Weight
- Low maintenance
- Water proof
- Excellent thermal insulation properties



CFC Free PUF / PIR PIPE SECTION & BOARDS



“SRV Foam” Rigid PU foam cored pipe sections manufactured and are available in varied sizes and density. Being CFC free polyurethane Foam, it is "Environment Friendly" and have excellent dimensional and thermal insulation

“SRV Foam” Rigid PU foam cored pipe sections manufactured and are available in varied sizes and density. Being CFC free polyurethane Foam, it is "Environment Friendly" and have excellent dimensional and thermal insulation properties together with compressive strength.

PIR has low smoke emission and will not melt or dip in a fire. PIR being Polyisocyanurate foam, has a higher hot surface performance upto 150°C compared to 110°C of normal Polyurethane foam.

Features :

- Tailor made and construction friendly
- Low Thermal Conductivity
- Available in varied densities and thickness
- Light Weight
- Fire Resistant
- Water Resistant
- Low Maintenance



TECHNICAL SPECIFICATIONS FOR PUF / PIR BOARDS & PIPE SECTIONS

PROPERTIES	Polyurethane (PUF)	Polyisocyanurate (PIR)
Temperature Limit	-180 C to +110 C	-200 C to +150 C
Density	36 + 2 Kg/m ³ Higher densities available if required.	36 + 2 Kg/m ³ Higher densities available if required.
Available Size	SLAB FOAM Pipe Section to suit 50 to 250 mm NB X 1METER in various sizes if required. Custom moulded shapes to suit Horton spheres & shiplap pipe -section. Thickness from 25 mm to 100 mm & Cast-in-Situ	Boards 1m x 0.5m Pipe Section to suit 50 to 250 mm NB x 1m long NB X 1METER in various sizes if required. Custom moulded shapes to suit Horton spheres & shiplap pipe -section. Thickness from 25 mm to 100 mm & Cast-in-Situ
Thermal Conductivity 'k' (initial) at 100 C	Max. 0.021 W/mk (0.15 BTUin/hr.sft.degF) CFC, HCFC FREE WITH '0' ODP FOAM INSULATION.	Max. 0.021 W/mk (0.15 BTUin/hr.sft.degF)

Fire Resistance Properties

Surface Spread Flame (BS:476 Part 7, 1987)	Class-I
Ignitability (BS:476 Part 6, 1968)	Class 'P' (Not Easily Ignitable)	Class 'P' (Not Easily Ignitable)
Mean Extent of Burn (BS: 4735 Part -7, 1971)	Less than 25 mm	Less than 25 mm
Water Vapour Transmission (BS:4370 Part-2, 1972)	5.84 x 10 mg-m/sN	5.84 x 10mg-m/sN
Closed Cell Content	90% (Min.)	90% (Min.)
Compression Strength in direction of rise	172 KN/m (1.75 Kgf/cm)	172 KN/m (1.75 Kgf/cm)



PUF Spray Insulation Services

We have dedicated team & state of art machine and equipment to look after PUF spray insulation





Ceramic Fiber Cloth & Tape

Ceramic Fiber Cloth is woven from ceramic fibre yarn on specialized looms. CFC is suitable for temperatures upto **1260°C** and typically used as Pad Insulation high temperature curtains, gaskets or simply a wrap to reduce heat loss from a high heat generating equipment.

CFC can be pre-inserted with SS 304 to improve its tensile strength at elevated temperatures and it can also be coated with vermiculite or silicon rubber to make it 100% non-permeable. This makes it suitable for application in expansion joints and food industry.

Base Material

Ceramic Fibre, which is used in weaving CFC majorly contains Aluminium Silicate

It is chemically composed of the following:
 Al_2O_3 (47-49%) & $Al_2O_3 + SiO_2$ (99%) - 85% (By Weight)

Other Components: Viscose Rayon, Fibreglass Yarn - 15% (By Weight)

Dimension & Customization

Standard Width ? 1000mm

Standard Thickness ? 2mm ~ 6mm



Ceramic Fiber Ropes

Ceramic FiberRope is braided or twisted from ceramic fibre yarn on specialized braiders and suitable for temperatures upto **1260°C**. A soft CFR is used in pipeline lagging and a hard CFR is used as an oven or a furnace door seal. It serves as a heat loss minimizing agent and also helps in providing protection to a person if he or she comes in contact with the hot surface unintentionally.

CFR can be made in round, square & rectangular shapes and in a variety of densities which is a measure for its hardness (or softness). It can be lubricated with graphite to make it suitable for application at the mouth of a rotary kiln. Silicon or PTFE coated CFR is used in chemically inert environments.



Glass Fiber Cloth & Tape

Glass Fiber Cloth is woven from texturized e-glass fiber yarn on specialized looms. GFC is suitable for temperatures upto 550°C , and typically used as high temperature Pad Insulation, curtains, gaskets or simply a wrap to reduce heat loss from a high heat generating equipment.



Glass Fibre, which is used in weaving GFC is chemically known as boro-silico-alumino-calcic glass. It is a texturized e-glass yarn with a filament diameter of 9 micron.

It is chemically composed of the following:
SiO₂ content (53-60%)
Al₂O₃ (11-15.5%)
Alkaline Terrous Oxides [CaO, MgO] (20-25%)
TiO₂ (0-3%), B₂O₃ (0-9%)
Alkaline Oxides [Na₂O, K₂O] (<2%)

Dimension & Customization

Standard Width ? 1000mm

Standard Thickness ? 2mm ~ 5mm





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