



**imperial**  
World Trade Pvt. Ltd.

**HYSiL**

REVOLUTIONIZING HIGH TEMPERATURE INSULATION  
THROUGH INNOVATION



**Marketed & Exported By :-**

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CE Certified



ISO 9001:2008 Certified

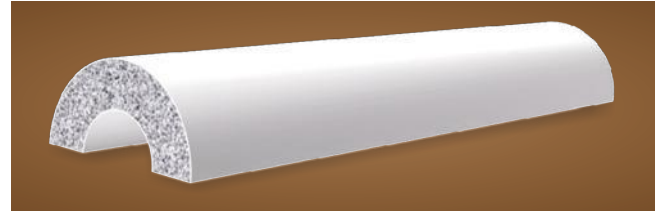


## Major Applications

Power Plants	Boilers, Steam Pipelines, Turbines and Chimneys
Fertilizer, Refinery and Petrochemical Industry	Reformer, Gas Crackers, Heaters, Boilers, Steam and Process Pipelines and Fuel Oil Lines
Iron and Steel Industry	Blast Furnace Stoves, Bustle Pipes, Reheat & Annealing Furnaces, Waste Heat Boiler, Roof Tops, Regenerators, Flue Gas Ducts, Doors of Coke Oven Batteries, Lime Kilns, After Burning and Dust Settling Chambers of Sponge Iron Plants
Aluminium Industry	Reduction Cells (Pots), Homogenizing and Holding Furnaces, Alumina Calcinators
Cement Industry	Preheater Cyclones, Precalcinators, Kiln Riser Ducts, Firing Hood, Grate Coolers, Tertiary Air Ducts and Flue Gas Ducts
Furnaces	Heat Treatment, Reheating and Annealing
Ceramic and Glassware	Tunnel Kilns, Glass Melting Furnaces, Regenerators and Annealing Lehrs
Sugar Industry	Boiler and Steam Pipelines
Passive Fire Protection	Core Material for Fire Doors, Heat Protection, Shielding around Fire Places and Stoves



## Pipe Sections



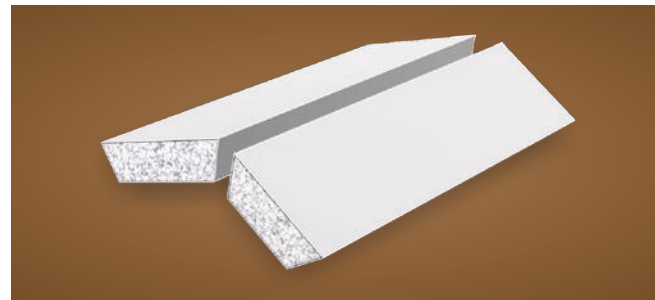
Pipe Covering (Half Round)

- Available for pipe sizes 1/2" to 14"
- Standard length: 600 & 450 mm
- Thickness: 25, 40, 50, 65, & 75 mm



Pipe Covering (Curved Segments)

- Available for pipe sizes 8" to 22"
- Standard length: 900, 600 & 450 mm
- Thickness: 25, 40, 50, 65, & 75 mm



Pipe Covering (Bevelled Lags)

- Available for pipe sizes 24" and above
- Standard length: 600 mm
- Thickness: 25, 40, 50, 65, & 75 mm

Special sizes and thickness are available on request.

## Technical Specifications (Pipe Sections)

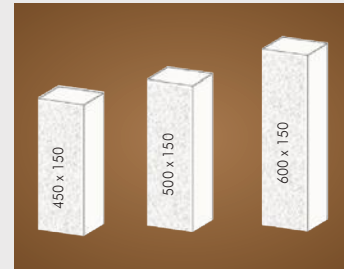
S.No.	Property	Units	H-800 Grade
			Typical Values
1	Temperature, max service	Deg C	800
2	Average Bulk Density, dry	Kg/m <sup>3</sup>	220 - 280
3	Flexural strength, (min.)	KN/m <sup>2</sup>	300
4**	Compressive Strength, reduction in thickness not to exceed under a load of: I) 415 KN/m <sup>2</sup> , dry II) 170 KN/m <sup>2</sup> , after 18 hrs immersion in water	% %	5.0 5.0
5	Heat Resistance, under soaking I ) Linear Reheating Shrinkage (max.)- 12 Hours II) Loss In Mass (max.) III) Compressive Strength, reduction in thickness not to exceed under a load of 345 KN/m <sup>2</sup> (max.)	% % %	2 at 800 °C 14.0 5.0
6*	Thermal Conductivity at mean temperature (max.) 300 °C 400 °C 500 °C 550 °C		0.078 0.097 - -
7	Moisture contents, by weight, (max.)	%	5.0
8	Alkalinity	pH	8 -11

\*\* Testing shall be carried out on Flat Blocks in case of Pipe Sections.

\* Tested in accordance with BS-874 Cold Face 40 deg. C. Also as per IS 9490, water calorimeter apparatus.

HYSIL products exceed the performance requirements of IS 9428 / 8154, as well as BS-3958 Part II & ASTM C-533. The values quoted are from laboratory tests on typical samples and represent averages. They should not be used as maxima or minima in specifications.

## Preformed Rigid Shapes Available



## Blocks

### Grades

H-800

H-1000

H-1100

### Sizes

Standard Size (in mm)

1000 x 500

900 x 600

500 x 150

600 x 150

450 x 150

Max. Recommended Operating Temperature (°C)

800

1000

1100

Thickness (in mm)

25, 40, 50, 65, 75 & 100

Special sizes and thickness are available on request.

## Technical Specifications (Blocks):

S.No.	Property	Units	H-800 Grade	H-1000 Grade	H-1100 Grade
			Typical Values	Typical Values	Typical Values
1	Temperature, max service	Deg C	800	1000	1100
2	Average Bulk Density, dry	Kg/m <sup>3</sup>	220 - 280	240 - 280	260 - 300
3	Flexural strength, (min.)	KN/m <sup>2</sup>	300	350	600
4	Compressive Strength, reduction in thickness not to exceed under a load of: I) 415 KN/m <sup>2</sup> , dry II) 170 KN/m <sup>2</sup> , after 18 hrs immersion in water	% %	5.0 5.0	5.0 5.0	5.0 5.0
5	Heat Resistance, under soaking I ) Linear Reheating Shrinkage (max.)- 12 Hours II) Loss In Mass (max.) III) Compressive Strength, reduction in thickness not to exceed under a load of 345 KN/m <sup>2</sup> (max.)	% % %	2 at 800 °C 14.0 5.0	2 at 950 °C 12.0 5.0	1.5 at 1050 °C 10.0 5.0
6*	Thermal Conductivity at mean temperature (max.) 300 °C 400 °C 500 °C 550 °C	W/m-K	0.078 0.097 - -	0.078 0.097 0.118 -	0.076 0.090 0.110 0.114
7	Moisture contents, by weight, (max.)	%	5.0	5.0	5.0
8	Alkalinity	pH	8 -11	8 -11	8 - 11

\* Tested in accordance with BS-874 Cold Face 40 deg. C. Also as per IS 9490, water calorimeter apparatus.

HYSIL products exceed the performance requirements of IS 9428 / 8154, as well as BS-3958 Part II & ASTM C-533. The values quoted are from laboratory tests on typical samples and represent averages. They should not be used as maxima or minima in specifications.



## Fire Safety

IWTPL is **non combustible** when tested in accordance with BS-476 Part 4. When tested for surface spread of flame test (Large Scale) as per BS-476 part 7 IWTPL is classified as Class One.



Fire Rated



TÜV SÜD PSB

## Quality Management

CE Certified |   | ISO 9001:2008 Certified

Imprial is internationally recognized for high and consistent product quality. We aim to maintain a value-adding quality management system. We stay ahead because of our:

- Accurate identification of present and future demands and expectations from customers, as well as our post-sale follow-ups regarding product performance and customer satisfaction
- Value-adding processes management. This includes determination and follow-up on operational targets, based on analysis of data and information received from the processes and the market
- Development of product properties based on demands and specific applications of the customers
- Maintenance of necessary support processes in order to meet product demands
- Continuous improvement of the effectiveness of quality management



## Our Prestigious Clients

CEMENT	      
STEEL	    
ALUMINIUM	   
POWER	   
REFINING/PETROCHEMICAL	   
GLASS AND CERAMICS	  
FERTILIZER	   
SUGAR	 
FOOD	

## Material Safety Data Sheet

### Chemical Product and Company Identification

Product Name: Calcium Silicate Insulation  
Generic Name: Insulation (Calcium Silicate)



### Chemical Composition

#### Composition / Information on Ingredients:

General : Hydrothermal Calcium Silicate with Mineral Silicate fibres and reinforcing fibres. The material is completely asbestos free.

Typical Composition :

Natural Calcium/ Aluminium Silicate	: 5 - 10%
Cellulose Fibres	: 2 - 5 %
Hydrothermal Calcium Silicate	: Balance

#### Physical and Chemical Properties:

Boiling Point	: N/A
Vapour Pressure	: N/A (solid at high temperature)
Water Solubility	: Insoluble (less than 0.1 g/L)
Ph	: 9.0 - 9.5
Evaporation rate	: N/A
Melting Point	: >1400°C



### Hazards Identification

#### Emergency Overview

#### Appearance and Odor:

Odorless, Off White pipe or block insulation with opaque coloring throughout as a visual marker to indicate this is an **asbestos-free product**.

This product under normal conditions of use, is not expected to create any unusual emergency hazards. However, cutting, sawing, or abrading may increase the risk of personnel exposure.

Inhalation of excessive amounts of dust created when fabricating, cutting, or other mechanical alterations of the product may cause temporary upper respiratory irritation and/or congestion - remove affected individuals to fresh air.

Skin irritation may be treated by gently washing affected area with soap and warm water.

Eye irritation may be treated by flushing eyes with large amounts of water. If irritation persists, contact a physician.

#### Potential Health Effects Summary

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing.

Getting dust or fibers on the skin, or in the eyes may cause itching, rash, or redness.

**Inhalation:** Irritation of the upper respiratory tract (scratchy throat), coughing, and congestion may occur in extreme exposure.

**Skin:** Temporary irritation (itching) or redness may occur.

**Absorption:** Not applicable.

**Ingestion:** This product is not intended to be ingested or eaten under normal conditions of use. If ingested, it may cause temporary irritation to the gastrointestinal (GI) tract, especially the stomach.

**Eyes:** Temporary irritation (itching) or redness may occur.

**Primary Routes of Entry (Exposure):** Inhalation (breathing dust), skin, and eye contact.



### First Aid Measures

#### First Aid: Inhalation

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

#### First Aid: Skin

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the rest room.

#### First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water then drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

### First Aid: Eyes

Do not rub or scratch your eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

### First Aid: Notes to Physician

This product is a mechanical irritant, and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.



### Fire Fighting Measures

Flash Point:	Not applicable	Method Used:	Not applicable
Upper Flammable Limit (UFL):	Not applicable	Lower Flammable Limit (LFL):	Not applicable
Auto Ignition:	Not determined	Flammability Classification:	Non combustible
Rate of Burning:	Non combustible		

### General Fire Hazard:

There is no potential for fire or explosion.

### Extinguishing Media:

Use any extinguishing media appropriate for the surrounding fires.

### Fire Fighting Equipment/Instructions:

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases produced by other materials.



### Accidental Release Measures

### Containment Procedures:

Pick up large pieces. Vacuum dust. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean-up. These procedures will help to minimize potential exposures.

### Clean-Up Procedures:

Wastes are not hazards as defined by the RCRA (40 CFR 261). Comply with state and local regulations for disposal of these products.



### Storage

#### Storage Procedures:

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from the elements.



### Personal Protection

#### Personal Protective Equipment:

General loose-fitting, long sleeved clothing along with hand gloves should be worn to protect the skin from irritation. Exposed skin areas should be washed with soap and warm water after handling.



### Chemical Stability & Reactivity Information

**Chemical Stability:** This is a stable material. This product is not reactive.

**Hazardous Decomposition:** None.

**Hazardous Polymerization:** Will not occur.



### Regulatory Information

No special labelling is required for this material under any current legislation.



### Toxicological Information

#### Acute Toxicity

**General Product Information:** The primary acute health effects of this product include mechanical irritation of the skin and eyes and skin dryness as a result of contact with dust and fiber.

#### Carcinogenicity

**General Product Information:** OSHA, NTP, IARC, and ACGIH have not classified this product in its entirety as a carcinogen.