HIGH PERFORMANCE INSULATION MATERIAL

DOMESTIC, COMMERCIAL, INDUSTRIAL

PRODUCT BROCHURE

ims
insulation machining services
Part of SIG plc

INTRODUCTION

1. IMS SOUTHPORT

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2. IMS BROMBOROUGH

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3. IMS MIDLANDS

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4. IMS CHESTERFIELD

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5. CENTRAL REFRACTORIES

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Stirlingshire,
FK1 1RP
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IMS IS THE UK'S LARGEST DISTRIBUTOR OF HIGH PERFORMANCE INSULATION MATERIALS AND HAS AN UNRIVALED PORTFOLIO OF EQUIPMENT FOR DIE CUTTING AND MACHINING PARTS.

NATIONAL SUPPORT

The IMS Group operate through five sites ensuring they can supply materials and technical support when and where the client requires.

CREDENTIALS

Part of SIG plc with over forty years' service to the industry, IMS is well placed to offer a vast product range for all applications supported by highly experienced personnel. The machine shops are fully equipped with the latest state of the art CNC machinery, including machining centres, mills, routers, lathes, saws, presses and sanders.

CUSTOMER COMMITMENT

IMS is committed to our customers and our ability to rapidly respond to customer requirements will always remain our priority – it is a key factor in the success of our company. The outstanding growth of IMS is testament to the belief our customers have in our company, its products and the service we provide.

MACHINING

WITH LOCATIONS ACROSS THE UK AND OUTLETS THROUGHOUT THE WORLD IMS CAN ENSURE WE PROVIDE THE MOST COMPREHENSIVE RANGE OF INSULATION MATERIALS AND TECHNICAL SUPPORT TO OUR CUSTOMERS.

With over forty years service to industry, we have products that serve all industrial sectors.

CAPACITY

Our UK factories are equipped with the latest CNC machine centres, lathes, presses and saws. We produce bespoke, intricately machined parts in small quantities all the way up to large contract call off orders.

Supported by experienced and time served manufacturing staff across the group, our ability to offer complete engineering solutions from concept and design through to installation, ensures that we deliver the most comprehensive insulation packages and products to suit your needs.

VACUUM FORMING

IMS manufacture a full range of vacuum formed ceramic and RCF free (body soluble) products.

Our ranges include board, tubes, cones, mastics, adhesives and special shapes in materials able to withstand up to 1600°C. IMS also produce a full range of sewn textile and filtration products.

MACHINING AND FABRICATION

Our facilities include the latest CNC machining centres with CAD-CAM links, Beam saws, CNC mills and lathes. This provides us with the ability to accurately produce high tolerance machined parts.

In addition we also have hydraulic presses for gasket manufacture as well as cutting, grinding and sanding services. Both sites also offer a full assembly and fabrication service so that your machined parts can be incorporated into your finished product.

MACHINERY

Arrow C38	Material sizing upto 3000 x 3000 x 100mm high temperature engineering sheets
Sicar Superior 3200	Material sizing upto 2440 x 1220 x 100mm high temperature engineering sheets
Morbidelli Universal 3612	CNC routing of high temperature engineering sheets up to 3000 x 1220 x 80mm
DMC Unisand 3000	Material sizing upto 2400 x 1220 x 80mm high temperature engineering sheets
KRV 2000	CNC machining of engineering materials upto a size of 750 x 380 x 80mm
KRVB3 (XYZ3000)	CNC machining of engineering materials upto a size of 1000 x 596 x 200mm
KRVB3 (XYZ5000)	CNC machining of engineering materials upto a size of 1524 x 596 x 300mm
YANG EAGLE SMV 1000	CNC machining of engineering materials upto a size of 1000 x 510 x 200mm
SAMCO MAV 12	Die cutting of high temperature paper blanket and engineering materials upto 600 x 600 x 50mm
Hawkes Atom T25	Die cutting of high temperature paper blanket and engineering materials upto 1000 x 300 x 50mm
Colchester Multiturn 2000	CNC turning or engineering materials upto 400mm diameter x 1000mm long
Colchester Triumph 2000	Conventional turning of engineering materials upto 380mm diameter x 1000mm long
KRV 2000	Conventional machining of engineering materials upto 750 x 380 x 80mm

Vacuum Forming Tanks x 3	Vacuum forming of ceramic fobre and body soluble shapes and boards upto a size of 600 x 600 x 600mm
Bridgemaster Bed Mill	Conventional machining of vacuum formed materials upto 750 x 380 x 80mm – Board 1000 x 1000 x 150mm
Wadkin Bursgreen Bandsaw	Cutting of vacuum formed material upto 500 x 600 x 1000mm
Colchester Mastiff 1400	Convential turning of vacuum formed materials upto 550mm diameter x 1000mm long
Jet DDS 225 Drum Sander	Material thickness upto 1000 x 635 x 133mm vacuum formed materials
Hobart M802	Mixing of high temperature ceramic fibre and bodysoluable moldable mastic

DOMESTIC HEATING

1. EXTERNAL INSULATION

Skamotec 225

Supalux

Calcium Silicate

2. SEALS

Ultra Fire Cements

Ropes

Ultra Gaskets

3. FLUE INSULATION

Ultra Flue Wrap

Vermiculite Granules

H&V Pipe Section

Ultra Flexi Wrap

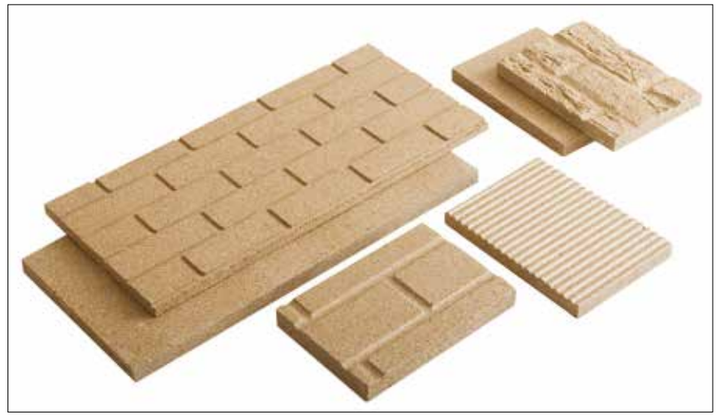
4. INTERNAL INSULATION

Ultra Firebricks

Vermiculite

VERMICULITE LINERS

VERMICULITE IS SUPPLIED IN BOARDS, BRICKS AND GRANULES. VERMICULITE PRODUCTS EXHIBIT GOOD INSULATION PROPERTIES, HIGH MECHANICAL STRENGTH AND EXCELLENT TEMPERATURE RESISTANCE.



Vermiculite boards are available in various brick effects through to a ribbed design.

The options avilable provide the customer with more flexibility regarding design and expression of their stove. The panels are produced with a moulding tool that provides a pressed skin surface improving the integrity of the board against general wear and tear.

Using Vermiculite to insulate your stove optimises the burning temperatures within. The higher burning temperature guarantees complete combustion of the firewood resulting in cleaner waste gas and less fuel consumption. The high thermal resistance of the panels also eliminates cracking when exposed to extreme temperatures whilst the low specific heat requirement allows the liners in the stove to reach temperature enabling the stove to heat very quickly.

The non-combustible and low thermal conductivity of these panels make Vermiculite the perfect choice to line woodburning stoves and to achieve a high performing stove.

ADVANTAGES

- Can be ordered in a wide variety of designs
- Pressed skin surface that is strong and reduces wear and tear
- Easy to cut and handle using common wood working tools
- Non combustible
- Highly insulating- low thermal conductivity
- Low specific heat
- 1100 Max Temp
- Moldable
- Easily machined

TYPICAL APPLICATIONS

- Liners, (gas fires, wood burning stoves, fire place chamber) Boilers
- Vessels and Tanks Night Storage Heater
- An all round multi purpose product

IMS Vermiculite panels are very easy to cut and handle, which makes a quick and easy installation possible. It only requires common wood working tools, the measurements of the stove and the cutting and installation can begin.

FOR HOT-FACE AND BACK-UP INSULATION UPTO 1100°C (2012°F)

GRADE			V-1100 (700)
Maximum service temperature		°C	1100
Bulk density, dry		kg/m^3	700
Cold crushing strength		MPa	4.5
Modulus of rupture		MPa	2.0
Linear reheat shrinkage 12h @ 1000°C (1832°F)		%	1.0
Total porosity		%	174
Specific heat		kJ/(kg×K)	0.94
Coefficient of reversible thermal expansion @ 20 - 750°C (68 - 1382°F)		$x10^{-6}\ K^{-1}$	11.0
Resistance to thermal shock		Cycles	>30
Pyrometric cone equivalent		°C	1300
Thermal conductivity (ASTM C-182)	**Mean Temp.**		
	@ 200°C	W/(m×K)	0.19
	@ 400°C		0.20
	@ 600°C		0.21
	@ 800°C		0.22

CHEMICAL ANALYSIS, TYPICAL	%	
Silica	SiO_2	46
Titanium dioxide	TiO_2	0.7
Ferric oxide	Fe_2O_3	5.5
Alumina	Al_2O_3	7.0
Magnesium oxide	MgO	19.0
Calcium oxide	CaO	3.5
Sodium oxide	Na_2O	0.2
Potassium oxide	K_2O	10.0
Loss on ignition @ 1025°C (1877°F)	LOI	7.0

SKAMOLEX GOLD

SKAMOLEX GOLD IS A 1ST CLASS LINING SOLUTION FOR STOVES AND FIREPLACES. IT HAS BEEN DEVELOPED FOR ANYONE WHO REFUSES TO COMPROMISE ON QUALITY AND WHO DEMANDS NOTHING LESS THAN A PERFECT FINISH.

Its unique, high strength makes it the ideal lining panel, as it is very easy to work with. At the same time, it provides a unique and durable solution that maintains its high strength through countless firings.

If further processed, it opens up a whole world of design possibilities- leaving completely clean-cut edges and a non-crumbling surface.

A FLEXIBLE SOLUTION

Skamolex Gold not only offers great flexibility within the product itself, the high degree of flexibility is also evident in the delivery phase. Skamolex Gold can be ordered as standard boards, to specific measurement or as processed boards with customer specific designs and ready for use.

ADVANTAGES

- Firm and non-crumbling finish with sharp edges
- Allows for a great degree of detail in the finished design
- Can be ordered in a wide variety of dimensions & in customer bespoke design
- Easy to process
- Improves combustion of the stove.

FOR STOVES AND FIREPLACES UPTO 1100°C (2012°F)

GRADE			SKAMOLEX™ GOLD
Maximum service temperature		°C	1100
Cold crushing strength		MPa	5.3
Modulus of rupture		MPa	2.2
Coefficient of reversible thermal expansion @ 20 - 750°C (68 - 1382°F)		$x10^{-6}\ K^{-1}$	9.3
Resistance to thermal shock		Cycles	16
Thermal conductivity	**Mean Temp.**		
	@ 200°C	W/(m×K)	0.20
	@ 400°C		0.21
	@ 600°C		0.22
	@ 800°C		0.23
	@ 900°C		0.24

ULTRA LIFESTYLE GAS FIRE LINING RANGE

WE HAVE STATE OF THE ART MACHINERY FOR CUTTING AND MACHINING CERAMIC BOARD LINERS FOR USE WITHIN DOMESTIC GAS FIRES.

The boards are available in various thicknesses and we have the ability to cut specific shapes, meeting exact tolerances and create various patterns such as brick or ribbed as required.

We have purpose built spray equipment allowing us to stain the board to specific requirements and ensure the best finish possible.

TECHNICAL DATA

		STD RCF BOARD	HZ RCF BOARD
Density	Kg/m³	280 / 300 / 320	280 / 300 / 320
Classification Temperature	°C	1260	1430
Maximum Operating Temperature	°C	1100	1350
Water Content	%	≤1	≤1
Linear Shrinkage after Heating	%	1000°C *24h<2.5	1350°C *24h<2.5
	W/m.k		
	200°C	0.074	0.078
Thermal Conductivity	400°C	0.092	0.102
	500°C	0.103	0.116
	600°C	0.127	0.135
Cold Crushing Strength	MPa	0.2	0.12
Loss of Ignition	Wt%	≤7	≤7

All data represents typical results of standard tests conducted under controlled conditions. As such the information is intended only as a general guide for specifications and design estimates.

SKAMOTEC 225

SKAMOTEC 225 HAS INTRODUCED AN INNOVATIVE NEW WAY OF BUILDING FIREPLACE ENCLOSURES.

Skamotec 225 allows you to greatly reduce your construction time for the individual fireplace enclosure and maximize your business.

Due to the strength of Skamotec 225 installers are able to apply various finishing materials e.g. stones or tiles meaning that multiple types of fireplaces can be built using just the one base product.

PRODUCT CHARACTERISTICS

- Light weight material providing several advantages
- Excellent R-value
- High Mechanical Strength
- Low Thermal Conductivity
- Maximum service temp of 1000°C
- Heat resistance make it able to withstand heat cycles to full service temperature limit and the low thermal conductivity provides maximum insulation throughout the temperature range

Skamotec 225 is a light-weight, non-combustible board that simplifies the construction process by eliminating the need for steel or wood frame constructions. The result is a complete one product solution for your fireplace enclosure with multiple design solutions and finishing options.

ADVANTAGES

Skamotec is listed on the Non-combustible insulating materials in Class A1 in Europe. Resists temperatures up to 1000°C. These boards protect against the development of fire and do not contribute to harmful smoke expansion and do not release damanging substances during fire. The heat resistant properties of the boards also prevents the formation of cracks.

The lightweight nature of these boards make the product easy to handle and install. Its around 50% lighter than other non-combustible boards on the market today. Skamotec 225 is easy to install, using common wood working tools and fasteners to cut, shape and combine the material as you desire, leaving very little excess material.

FOR HOT-FACE AND BACK-UP INSULATION UPTO 1100°C (2012°F)

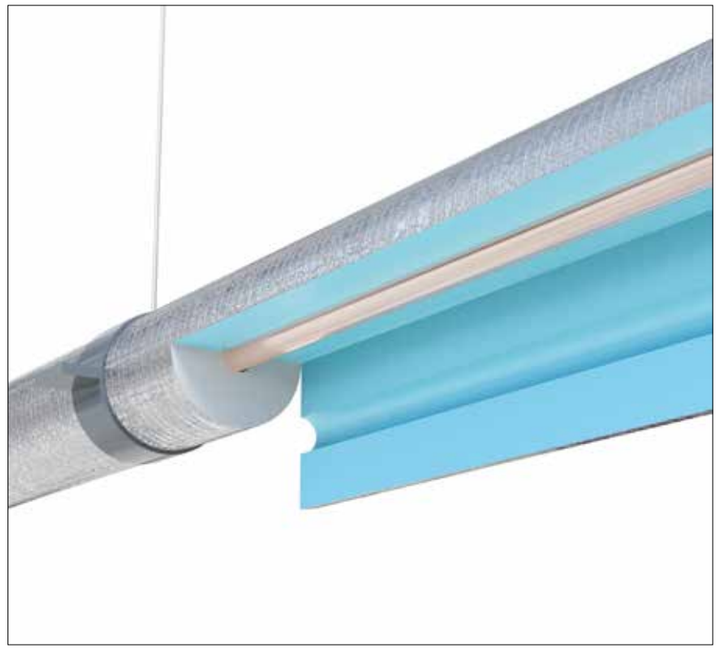
GRADE			
Maximum service temperature		°C	1000
Bulk density, dry		kg/m³	225
Cold crushing strength		MPa	2.8
Modulus of rupture		MPa	1.4
Linear reheat shrinkage		%	1.0
Total porosity		%	91
Tensile strength		kPa	610
Thermal conductivity λ 10	@ 10°C	W/(m×K)	0.061
Thermal conductivity	**Mean Temp.**		
	@ 200°C	W/(m×K)	0.07
	@ 400°C		0.09
	@ 600°C		0.12

CHEMICAL ANALYSIS, TYPICAL	%	
Silica	SiO_2	47
Alumina	Al_2O_3	0.2
Ferric oxide	Fe_2O_3	0.1
Magnesium oxide	MgO	0.4
Calcium oxide	CaO	42
Sodium oxide	Na_2O	0.1
Potassium oxide	K_2O	0.1
Loss on ignition @ 1025°C (1877°F)	LOI	9

Non-combustibility tests (EN 13501-1:2007 + A1:2009)	Class A1

SNAP ON H&V PIPE SECTIONS

OUR RANGE OF IMS 'SNAP ON' H&V PIPE SECTIONS ARE FORMED USING DURABLE LENGTHS OR PREFORMED INSULATION, SURROUNDED EXTERNALLY WITH FOIL COMPLETE WITH A SELF-ADHESIVE LAP.



The integral lap aids a fast and efficient installation - simply snap the pipe section around the pipe, remove the backing tape and press into place for a completely sealed joint.

BENEFITS

- Time Saving - Our fast and simple installation process reduces time on site
- Cost Effective - Integral lap reduces the need for tape
- Class 0 - Limited Combustability Product
- Durable - One piece complete unit

TYPICAL DATA

PROPERTIES	DATA
Length	1000mm
Internal Diameter	17-610mm
Thickness	20-100mm
Density	120g/m^3
Thermal Conductivity	0.033 – 0.034 W/mK
Fire Properties	A2l-s1,d0
Specific Heat Capacity	0.84 kJ/kgK
Operating Temperature	0-250°C
Standards	BS EN 14303, ISO 14001:2004

ULTRA FLUE WRAP

ULTRA FLUE WRAP HAS BEEN SPECIFICALLY DEVELOPED AND DESIGNED BY IMS.

Working with stove and chimney installers IMS developed the Ultra Flue Wrap.

With an overall thickness of approximately 12mm, it provides a clean, quick and easy method to insulate flexi flue liners in the most awkward of chimneys.

Ultra Flue Wrap has a silicone coated glass cloth outer shell to repel moisture and unlike other products on the market, completely encloses the inner felt with glass cloth to minimise irritating fibres.

It has a secure fixing method incorporating a Velcro strip along its length together with two effective straps secured by stainless 'D' rings preventing snagging in the chimney. To aid installation further it has connecting straps to eliminate the challenge of sections becoming separated.

The Ultra Flue Wrap is a bespoke product depending on flue size and is available in 1, 2 and 3 metre lengths.

With a maximum operating temperature of 550°C, and a non-combustible product, this is the perfect insulation solution.

TYPICAL THERMAL PROPERTIES

Temperture	50	100	150	200	250	300	350	400
"K" Value	.044	.048	.054	.062	.071	.082	.094	.108

NEEDLED MAT (INFILL)

CHARACTERISTIC	DATA
Weight g/m^2 (1)	
Nominal value	1500
Tolerance %	+/– 10
Thickness mm (2)	
Mean value	10 +/– 1
Single values	7 – 12
Type of Glass	100% E-Glass
Binding	Non
Temperature	
Resistance	600°C
Combustibility	Non-combustible
Width nom cm (3)	100
Tolerance cm	+/– 1

PRODUCT DATA SHEET (INNER SLEEVE)

CHARACTERISTIC	DATA
Product Identification Reference	EKC402
Description	Filament FORTAGLAS™ "E" glass fabric
Weight	
(k/m^2)	437 nominal
Thickness	
(mm)	0.34 nominal
Tensile Strength (base fabric)	
Warp (N / 50mm)	3840 nominal
Weft (N/50mm)	2240 nominal

PRODUCT DATA SHEET (OUTER SLEEVE)

CHARACTERISTIC	DATA
Product Identification Reference	EKSS409S
Description	Filiment FORTAGLAS™ "E" Glass fabric coated on both sides with fully cured Flame Retardant Grey Solvent free Silicone Polymer
Weight	
(k/m^2)	520 nominal
Thickness	
(mm)	0.36 nominal
Tensile Strength (base fabric)	
Warp (N / 50mm)	6500 nominal
Weft (N/50mm)	3000 nominal
Temperature resistance	260 Continuous
(°C)	350 Short term
Building Regulations, Fire Propagation Test (indicative)	
BS476 Part 6	Class "0" Rating
Surface Spread of Flame (indicative)	
BS476 Part y	Certification to "Class 1" pass

ULTRA FLEXI WRAP

SUITABLE FOR INSULATING 125MM AND 150MM DIAMETER FLUES IN A QUICK AND EASY METHOD, ENSURING FLUE WARMTH AND IMPROVED STOVE PERFORMANCE.

This product is available in 600mm wide x 10 metre long and with a thickness of 12mm provides an easy solution for tight chimneys.

By simply wrapping around the flexi flue liner and securely fixing with aluminium banding and adhesive backed aluminium foil tape this will successfully insulate a complete flue length.

NEEDLED MAT

CHARACTERISTIC	AF 1500 – 10
Weight g/m² (1)	
Nominal value	1500
Tolerance %	+/– 10
Thickness mm (2)	
Mean value	10 +/– 1
Single values	7 – 12
Type of Glass	100% E-Glass
Binding	Non
Temperature	
Resistance	600°C
Combustibility	Non-combustible
Width nom cm (3)	100
Tolerance cm	+/– 1

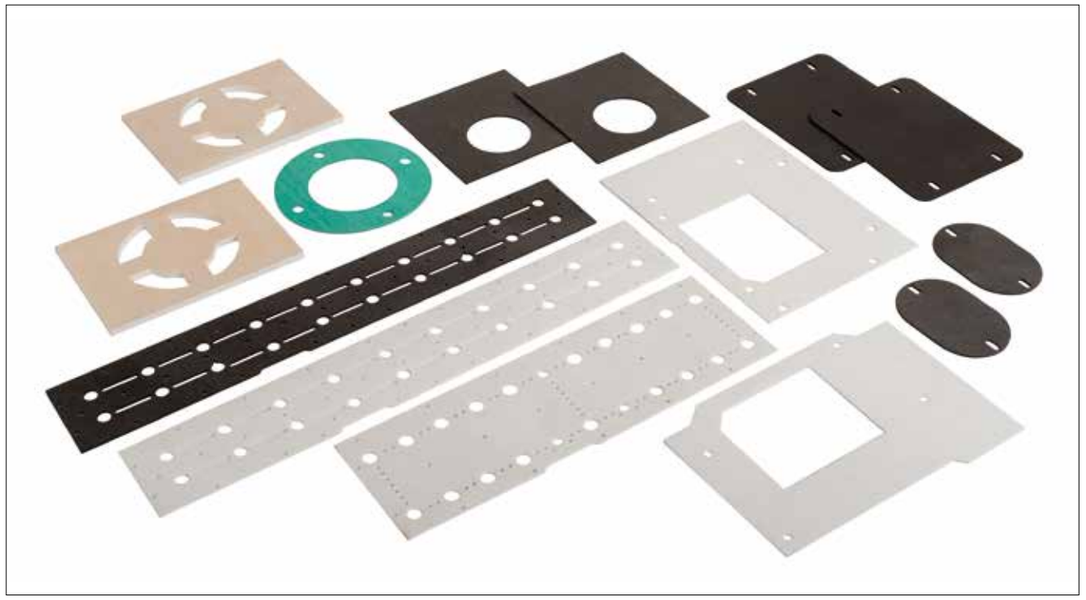
ULTRA GASKETS

IMS LEAD THE WAY IN GASKET FABRICATION WITH A DIVERSE MATERIAL BASE IN STOCK AND THE LATEST TECHNOLOGY FOR GASKET DESIGN AND MANUFACTURE.

We work closely with our customers to develop the right product for their needs and have a wealth of experience in specifying the right materials and tools for the job.

TYPICAL APPLICATIONS

Domestic/Commercial Cookers and Ranges Gaskets are available in a number of formats including Paper, Felt and Blanket, Klingersil, Millboard.



ACCESSORIES

PEBBLES / COALS / LOGS

With years of research and development invested, we are able to produce pebbles, coals and logs for the domestic fire market. This unique formulation enables us to produce an odourless product capable of withstanding 1400°C and are available in various sizes.

Our expertise and manufacturing process enables us to effectively capture and recreate the textures of coal, stone and bark to suit all designs and makes of fire.

GLUES

High temperature Rope Glues are available in black or white in convenient 50ml bottles or 300ml cartridges with excellent fixing properties. With operating temperatures of up to 700°C the glue will easily withstand temperatures generated by Woodburning stoves.

Thermafix is specially formulated for bonding glass fibre rope seals to stove metal-work

* Easy application bottle
* Good thermal stability
* Available in white or black

SKAMOLEX GLUE

Skamolex Glue is suitable for binding inorganic and organic material. The active components are inorganic, highly reactive, waterborne and based on the silicate chemistry.

This glue was developed to suit the needs for high temperature bonding, excellent adhesion characteristics and to meet the specifications of structural high strength adhesives.

BENEFITS

- Inorganic and waterbourne
- Non-cementitious
- Excellent adhesion to mineral substrates
- Tolerant to temperatures up to 1000ºC
- Storage stability

TYPICAL CHARACTERISTICS

Density (g/m³, 20ºC)	1.50
pH	11.5
Solid content (w%)	67
Appearance	Glue

GLASS ROPES, TAPES AND TEXTILES

We provide a range of High Temperature Glass Fibre Seals.

Our glass seals are suitable for operation in temperatures of up to 600C. Compression and density can be varied to suit the high temperature applications.

Typical Applications:

- Wood-Burning
- Multi-fuel
- Pellet Stoves
- Gas Fires
- Boiler casings
- Heat exchanges
- Flue systems
- Ash pans
- Burner Mounting assemblies.

Glass fibres are supplier on reels, fabricated to make 'o'rings or cut to customer specific lengths. All ropes are available in both Black and White.

GLASS TAPES AND LADDER TAPES

We offer a full range of high temperature glass tapes and ladder tapes. they are available in a variety of widths and thicknesses and come in white or grey/black and with out without self-adhesive backings, plain glass tape or ladder tape section.

All our glass tapes and ladder tapes are suitable for operation in high temperature up to 600°C.

Used in applications such as:

- Flange sealing on hot air and gas ducting
- Boiler access and inspection doors
- Heat Exchangers
- Primary and secondary insulation of pipework
- Heating appliance glass window seals

Glass tapes and ladder tapes are supplied on reels or cut to customer specific lengths.

CERAMIC ROPES, TAPES AND TEXTILES

A wide variety of textiles are produced either by converting ceramic blanket or by processing ceramic fibre yarn into woven products - a variety of product forms can be created.

Ceramic fibre textiles are suitable for use at elevated temperatures approaching 1400°C, maintaining flexibility for use in thermal sealing and filling applications in areas such as door seals, expansion joints and gland packings.

YARN

Yarn is manufactured from ceramic fibre. This yarn is the base of all the ceramic textile range of products. The yarn is reinforced with either a glass filament or a fine inconel wire.

CLOTH

Cloth is woven from a glass or inconel wire reinforced yarn.

WEBBING

Webbing is woven from either glass or inconel wire reinforced ceramic yarn.

CABLED ROPE

Low density cabled roving rope is manufactured from ceramic rope which is glass filament reinforced. It is composed of 3 pre-twisted strands each containing a predetermined multiple of ceramic yarns which are twisted together to form a flexible, low density rope.

TWISTED ROPE

Twisted Rope consists of a multiple of ceramic yarn strands which can be either glass filament or inconel wire reinforced. They are twisted together to give the required final product diameter. This gives a soft rope product that is relatively easily compressed and is particularly suitable as a seal between uneven surfaces.

LADDER TAPE

Ladder Tape is woven from either glass or inconel wire reinforced ceramic yarn. It has a similar weave to cloth on the outer edges, but an open weave in the centre allowing for ease of installation over studs. It is ideal as a gasketing material.

ROPE LAGGING

Rope Lagging consists of a strip of ceramic blanket that is overbraided with a glass yarn.

This produces a highly insulating rope product of medium density, which is also compressible and flexible. As an alternative, this product could also be overbraided with either a cotton yarn or a fine inconel wire.

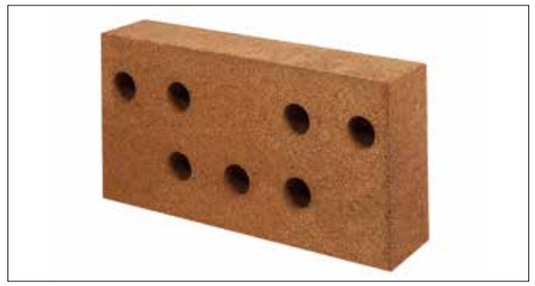
ULTRA REFRACTORY FIREBRICKS

IMS SUPPLY A COMPREHENSIVE RANGE OF REFRACTORY FIREBRICKS WITH ALUMINA CONTENTS OF 40 - 95% - ALL OF WHICH EXHIBIT EXCELLENT MECHANICAL STRENGTH.

Ultra Fire Bricks are available in a variety of low iron and alkali contents. The high Alumina range utilises various minerals to give 60% and 80% Alumina materials, for the highest Alumina contents tabular and fused Alumina is used.

Refractory bricks are available in many shapes and sizes please check with us for price and availability.

TECHNICAL DATA- AVERAGE DATA							
Alumina- $Al2O^3$ %	40-42	45	50	60	KAB 60%	80	95
Silica Si^2O	52.0	52.0	42.0	32.0	32	5.0	3.0
Iron Fe^2O^3	1.80	0.80	1.90	1.70	1.0	1.0	0.3
Bulk Density g/cu.cm	2.2	2.2	2.3	2.3	2.5	2.5	3.02
Apparent porosity %	22	18	21	22	18	19	19
Cold crushing Mpa	30	35	35	50	75	55	63



MACHINED ELEMENT HOLDERS

IMS OFFER SEVERAL ALTERNATIVE BOARDS SUITABLE FOR THE MANUFACTURE OF ELEMENT HOLDERS.

All are strong rigid materials which provide excellent performance at high temperatures with good impact resistance and all round toughness.

TYPICAL APPLICATIONS

- Coil plates
- Electrical terminal blocks
- Heating element supports
- Insulation plates
- Terminal blocks
- Insulators

FEATURES

- Asbestos free
- Non-combustible
- Retained strength at elevated temperatures
- Good impact resistance
- Good flexural strength
- Good arc resisting, anti tracking and electrical insulating properties
- Moisture resistant coating available
- Able to withstand temperatures up to 1260C
- Format - Sheet / Machinable

DIMENSIONS

Lengths: 610, 915, 1220mm
Width: 610, 915mm
Thickness: 3-75mm

TECHNICAL DATA			
Grade	-	1000	750
Density	kg/m^3	1350	1400
Strength			
Flexural	MPa	18	23
Compressive	MPa	31	55
Maximum Service Temperature	°C	1000	1000
ARC Resistance	ST273A	-	Cat 1
Electrical Strength	kV/m	4700	7300
Comparative Tracking Index	-	600	>500

MILLBOARD

High Temperature Millboard is made by blending together different fibres, binders and additives, creating a millboard that has high tensile strength and resist or contain heat up to 1200°C.

Millboard is designed with performance in mind. It has been specially formulated for the gasket cutting market. Other suitable appliactions include electical, thermal, chemical and pharmaceutical.

DIMENSIONS

Lengths: 1000, 1500, 2000mm
Width: 1000mm
Thickness: 2-12mm

TYPICAL APPLICATIONS

- Electrical Applications
- Thermal Applications
- Gasket Applications
- Domestic Heating Markets

FEATURES

- Thermal Shields
- Fire Protection
- 850 - 1100 Temp Range
- Format - Sheet / Gasket / Cut Pieces

TECHNICAL DATA

Colour		Grey/Beige	Yellow	Blue	Yellow/Beige	White
Density	Kg/M^3	850	1100	1100	950	1000
Max Service Temp	°C	850	1100	1200	1000	1200
Thermal @ 400°C	W/mK	0.10	0.12	0.12	0.15	0.12
Conductivity						
Heat @ 800°C	%	15	13	15	14	12
Treatment Loss Tensile Strength						
Longitudinal Fibres	Kg/cm^2	40	40	50	40	40
Transversal Fibres	Kg/cm^2	40	30	40	30	30
@ 750°C	%	–	–	–	<2	–
@ 800°C	%	<2	–	–	–	–
@ 1000°C	%	–	<1	–	–	–
@ 1150°C	%	–	–	–	–	<4

ULTRA PAPER

ULTRA CERAMIC PAPER

Ceramic fibre paper, is a lightweight refractory material processed from a blend of high purity alumina-silica fibres into a highly flexible, uniform sheet. It is recommended for continuous use at temperatures up to 1260°C (2300°F).

Ceramic fibre paper, has low shrinkage, good handling strength, and low thermal conductivity.

ULTRA SOLUBLE PAPER

Ultra Soluble Fibre is a lightweight refractory material processed from soluble fibres into a highly flexible, uniform sheet. It is recommended for continuous use at temperature up to 1000°C.

TYPICAL APPLICATIONS

- Asbestos paper replacement
- One-time consumable insulating applications
- Hot top lining
- Applications where low binder content is required
- Thermal and electrical insulation
- Upgrade for fibreglass paper and blanket products
- Domestic Heating

FEATURES

- Easy to cut, wrap or form
- Temperature stability
- Low thermal conductivity
- Low heat storage
- Resilient
- Lightweight
- Thermal shock resistant
- Good dielectric strength
- High fired tensile strength
- Good flame resistance

ULTRA SOLUBLE FIBRE PAPER DATA

TECHNICAL DATA

Colour	White				
Density	190-210 kg/m^3				
Tensile Strength	(EN 1094-1) (MPa) >0.65				
High Temperature Performance					
Loss of Ignition	% 8				
Linear Shrinkage @ 1000°C	% <2				
Thermal Conductivity (ASTM C-201					
Mean Temperature	200ºC	400ºC	600ºC	800ºC	1000ºC
W/m.k	0.05	0.07	0.11	0.16	0.23

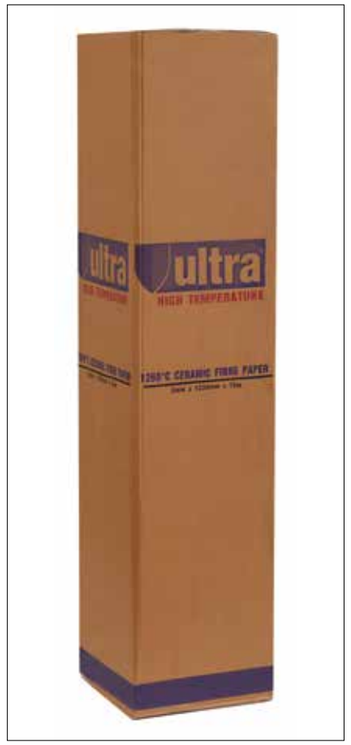
All data represents typical results of standard tests conducted under controlled conditions. As such, the information is intended only as a general guide for specifications and design estimates.

ULTRA CERAMIC FIBRE DATA

TECHNICAL DATA

		%
Chemical Analysis	Al_2O_3	47
	SiO_2	52
	Fe_2O_3	≤ 0.5
	SiO_2	52
	Na_2O	≤ 0.2
Density	Kg/m^3	200
Classification Temperature	°C	1260
Maximum operating temperature	°C	1000
Organic Content	%	≤ 9
Colour		White
Loss of ignition	%	≤ 10
Tensile Strength	MPa	≤ 0.3

The test data shown are based on average results on control tests and are subject to normal variation on individual tests. These results cannot be taken as maximum or minimum requirements for specification or guarantee purposes.



CF FELT

CERAMIC FELT PRODUCTS EXCELLENT STRENGTH, HIGH FLEXIBILITY AND IS EASY TO HANDLE.

BENEFITS

- Good Resistance to tearing
- High flexibility
- Low shot content
- Precise thickness
- Resistant to thermal shock
- Very low thermal conductivity
- Low Thermal Mass

TYPICAL APPLICATIONS

- Expansion Joints for furnaces, kilns and boiler linings
- Die cut shapes for domestic applications
- Insulating thermal break
- High temperature gaskets

PROPERTY	1260 GRADE
Colour	White
Density (kg/m³)	130-190
Melting Point (minimum) C	1760
Tensile Strength (kN/M2)	>550
Mean fibre diameter (microns)	2-3
Thickness measurement pressure (kPa)	10

BS FELT

BS FELT IS MADE OF A HIGH-TEMPERATURE INSULATING WOOL COMPOSED OF MAN- MADE VITREOUS SILICATE FIBRES, DEVELOPED TO SHOW IMPROVED HIGH TEMPERATURE CHARACTERISTICS REQUIRED TO ACT AS AN ALTERNATIVE TO CF.

BENEFITS

- High temperature resistance with low thermal conductivity
- Particularly suited to cutting operations
- Flexible or semi-rigid, depending on density selected
- Precise thickness
- Resistant to thermal shock
- Low heat storage

TYPICAL APPLICATIONS

- Die cut shapes for domestic appliances
- Thermal barrier media
- Insulating thermal break
- High temperature gaskets

PROPERTY	1300 GRADE
Colour	Yellow
Density (kg/m³)	64-288
Loss of Ignition (dependant on grade) %	4-12
Permanent linear shrinkage (after 24 hours isothermal heating %) @ 1300˚C	<12
Chemical Composition SiO2 on calcined products	70-80
CaO + MgO	18-25
Others	<3

ULTRA CF BLANKET

CERAMIC FIBRE BLANKET IS COMPOSED OF LONG, FLEXIBLE, INTERWOVEN FIBRES MANUFACTURED BY THE "BLOWN"AND THE "SPUN"PROCESS YIELDING A STRONG, LIGHTWEIGHT YET DURABLE BLANKET FOR APPLICATIONS IN A TEMPERATURE RANGE FROM 538C (1000F) TO 1480C (2700F).

TYPICAL APPLICATIONS

- Insulation of commercial dryers and ovens
- Stress relieving insulation
- Fire protection
- Domestic Heating

FEATURES

- Low Thermal Conductivity
- Very low heat storage
- Very high tensile strength
- Thermal shock resistance
- Sound absorption
- Quick repairs
- Containers no binder, no fumes
- Contains no asbestos

FORMAT

- Cut sizes
- Roll

TECHNICAL DATA

Description	STD RCF Blanket		HZ RCF Blanket		
Chemical Composition (%)					
Al_2O_3	≥44		≥34		
SiO_2	≥52		≥50		
$Fe_2O_3+TiO_2$	≤1.0		≤0.10		
ZrO^2	-		≥15		
K_2O+Na_2O	≤1.0		≤0.2		
Physical Properties					
Density (Kg/m³)	96	128	40	128	160
Classification Temperature (°C)	1260		1430		
Fiber Diameter (um)	3.5		3.5		
Shot Content (%)	≤15		≤12		
Linear Shrinkage after Heating (%)	1000°C ˚24hs 2.5		1000°C ˚24hs 3.5		
Thermal Conductivity (W/m.k)					
400°C	0.090	0.095	0.136	0.122	0.116
500°C	0.119	0.123	0.179	0.153	0.149
600°C	0.152	0.158	0.233	0.184	0.172
Tensile Strength (MPa)	0.040	0.050	0.050	0.060	0.075

ULTRA SOLUBLE FIBRE BLANKET

ULTRA SOLUBLE FIBRE BLANKET IS A HIGH TEMPERATURE BLANKET THAT UTILISES A UNIQUE SPINNING TECHNOLOGY TO CREATE A SPECIAL FIBRE WITH SUPERIOR THERMAL AND MECHANICAL PROPERTIES.

FEATURES/BENEFITS

- Low thermal conductivity
- Very Low heat storage
- Very high tensile strength
- Thermal shock resistance
- Low weight
- Excellent corrosion resistance

TECHNICAL DATA			
Colour		White	
Average Density	Kg/M^3	64, 96, 128, 160	
Thickness	mm	13, 19, 25, 38, 50	
Melting Point	°C	1275	
Maximum Use Termp	°C	1260	
Continuous Use Limit	°C	1200	
Shot; Fibre Index (by Weight)	%	50%>	
Linear Tensile Strength	MPA	96kg/m^3 128kg/m^3	- 57Pa
Filament Diameter	micrometers	3.0 average	
Filament Length	in (mm)	8	

TYPICAL CHEMICAL ANALYSIS	
Al2O3	0.5-0.8%
SiO2	58-65%
CaO	29-34%
MgO	3-5%
Fe2O3	0.3-0.5%

THERMAL CONDUCTIVITY, W/MK	
Mean temperature, 128kgm^3	
400°C	0.11
600°C	0.18
800°C	0.27
1000°C	0.39

ULTRA CERAMIC BOARD

PRODUCT DESCRIPTION

Our Ceramic Fibre Board is lightweight, refractory material processed with alumina silica fibres for applications at temperatures up to 1650°C. It is a vacuum formed product that resists higher gas velocities than ceramic fibre blanket. It is ideal for furnace, boiler duct and stack lining due to its low thermal conductivity and low head storage allowing shorter cycle times and quicker access for maintenance.

TYPICAL APPLICATIONS

- Refractory linings for industrial furnaces in walls, roofs, doors, stacks etc.
- Combustion chamber linings, boilers and heaters
- Back-up insulation for brick and monolithic refractories
- Transfer of molton aluminium and other non ferrous metals
- Expansion joint boards
- Barrier against flame of heat
- Hot-face layer for high velocity or abrasive furnace atmosphere

FEATURES/BENEFITS

- Low thermal conductivity, saves fuel
- Low heat storage, faster heat and cool-down reducing cycle times
- Light weight, replaces heavy back-up insulations, less steel required
- Excellent thermal shock resistance
- Resistant to hot gas erosion
- Resists most chemical attacks
- Easy to cut, handle and install
- Low sound transmission
- Resists penetration by molton aluminium and other non ferrous metals
- Contains no asbestos

FORMAT/DIMENSIONS		
Cut sizes	Y	Thickness: 10mm I 12mm I 25mm I 38mm I 50mm Width: 610mm I 1220mm Length: 1000mm I 1200mm
13mm	Y	

TECHNICAL DATA				
Maximum Operating Temperature	1100°C			
Classification Temperature	1260°C			
Bulk Densitiy	280	300		320
Water Content (%)		≤1		
Linear Shrinkage after Heating (%)	1000°C *25 <2.5			
Thermal Conductivity	200°C	400°C	500°C	600°C
	0.074	0.092	0.103	0.127
Cold Crushing Strength (MPa)		0.2		
Loss of Ignition (wt%)		≤7		

CALCIUM SILICATE 1000, 1100

CALCIUM SILICATE INSULATION HAS EXCELLENT THERMAL CONDUCTIVITY, MECHANICAL CHARACTERISTICS, HIGH TEMPERATURE STABILITY AND WORKABILITY AND CAN BE PROVIDED IN A VARIETY OF SIZES AND THICKNESSES AS WELL AS BEING PROVIDED IN BESPOKE SHAPES

GRADE			1000C	1100C
Maximum service temperature				
	°C		1000	1000
Bulk density, dry				
	kg/m³		270	270
	lbs/cu.ft.		17	17
Compressive strength				
@ room temperature	MPa		2.6	2.6
	lbs/sq.in.		377	377
Modulus of rupture				
	MPa		1.8	1.8
	lbs/sq.in.		262	262
Total porosity				
	%		70	70
Permeability to air				
	nPm		0.7	0.7
Creep in compression				
50 h at 900°C, load 0.1 MPa (14.5)	%		0.5	0.5
lbs/sq.in.) Specific heat				
	kJ/(kg×K)		0.84	0.84
	BTU (lb×°F)		0.20	0.20
Coefficient of reversible thermal expansion				
@ 20°C-750°C	K-1		5.5x10-6	5.5x10-6
Linear reheat shrinkage				
h at 50°C below max. service temp.	%		0	0
Pyrometric cone equivalent				
	°C		1345	1345
Thermal conductivity				
mean temp	@ 200°C	W/(m×K)	0.072	0.056
	@ 400°C		0.098	0.089
	@ 600°C		0.12	0.10
	@ 800°C		0.14	0.13
Chemical analysis, typical		%		
Silica		SiO2	47	47
Alumina		Al2 O3	1	1
Ferric oxide		Fe^2O^3	0.3	0.3
Calcium oxide		CaO	45	45
Loss on ignition 1025°C		LOI	5.7	5.7
Non-combustibility tests				
Classification			Class A1-GB/T8624	Class A1-GB/T8624
HS Tariff number				
(Harmonized Commodity Description and Coding System)			6806.00.00	6806.00.00
Colour			White	White

CALCIUM SILICATE 1000C

A tougher, higher temperature product for efficient fibre free back-up insulation

CALCIUM SILICATE 1100C

introduced for the higher temperature furnace use in the aluminium industry. It combines the efficiency, thermal ability and health safe issues of calcium silicate for replacing fibrous back up insulation

FEATURES

- Formulated without asbestos or ceramic fibres
- Lightweight
- Low thermal conductivity @ 0.054W/mk
- Up to 1100°C operating temperature

TYPICAL APPLICATIONS

- Domestic Heating
- Heat shields
- Thermal breaks
- Pipe-sections
- Insulating boxing

FORMAT

- Sheet
- Moulded
- Tube
- Machinable

DIMENSIONS

Lengths: 1000mm
Width: 500, 610, 1000, 1220mm
Thickness: 20 - 75, 100mm
*Other sizes / dimensions available on request

ROCKWOOL

STANDARDS AND APPROVALS

All Rockwool Roll products conform to BS EN 13162:2012 'Specification for factory-made mineral wool products.'

FIRE CLASSIFICATIONS

All Rockwool Roll products achieve a reaction to fire classification of A1 as defined in BS EN 13501-1.

TWIN ROLL

Twin Roll is manufactured as one 200mm roll, which has been pre-cut down the middle to create the option of 2 x 100mm rolls in one package.

ADVANTAGES

- Multi-application products
- Provides superb fit
- Outstanding thermal and acoustic properties
- Exceptional fire resistance

ROCKWOOL SLAB

Versatile insulation slabs for a wide range of applications available in a wide range of thicknesses and densities to suit most requirements and are CE marked to EN13162.

ADVANTAGES

- Excellent thermal, acoustic and fire insulation
- Easy to handle and install
- Non-hygroscopic
- No maintenance
- Black or white tissue and aluminium foil facings available

Slab Type	Slab Thickness (mm)					
	30	40	50	60	75	100
RWA45	425	500	700	900	1200	1800
RW3	425	500	700	1000	1350	1900
RW5	550	700	1000	1500	2250	2500

PYROGEL® XT, XTF

PYROGEL®XT

Service Temperature Range
-40°F (-40°C) to 1200°F (650°C)

Thermal Performance
Pyrogel®XT is one of the most efficient industrial insulations in the world. Its required thicknesses are 50% - 80% less than other insulation materials.

Moisture Resistance
Moisture is a problem in insulation at temperatures up to 200°C. It can form within the insulation and cause corrosion under insulation (CUI). Pyrogel®XT is hydrophobic (resistant to liquid water) through the entire matrix of the material (not just on the surface) and provides excellent resistance to moisture. Otherinsulations tend to absorb moisture overtime, potentially coroding the substrate. Pyrogel®XT also meets all specifications for stress crack corrosion of stainless steel.

Logistics
From procurement through installation, Pyrogel®XT simplifies logostics because of it's decreased volume requirements. These advantages include freight savings, storage space, simplified inventory, and the fact that it doesn't break in transit.

Installation
Pyrogel®XT is quickly and easily installed by wrapping it onto piping and equipment. In contrast, rigid insulation materials are installed piece by piece in sections, which is very labour intensive. Pyrogel®XT aslo is applied in longer lengths at a faster rate than other insulation materials, which shortens the project schedule.

PYROGEL®XF

Advantages

Superior Thermal Performance
Up to five times better thermal performance than competting insulation products.

Reduced Thickness and Profile
Equal thermal resistance at a fraction of the thickness.

Less time and Labout to Install
Easily cut and conformed to complex shapes, tight curvatures, and spaces with restricted access.

Physically Robust
Soft and flexible but with excellent springback, Pyrogel®XTF recovers its thermal performance even after compression events as high as 100 psi.

Shipping and Warehousing Savings
Reduced material volume, high packing density, and low scrap rates can reduce logistics costs by a factor of five or more compared to rigid, pre-formed insulations.

Simplified Inventory
Unlike rigid Pre-forms such as pipe cover or board, the same Pyrogel®XTF blanket can be kitted to fit any shape or design.

Hydrophobic Yet Breatable
Pyrogel®XTF repels liquid water but allows vapour to pass through, helping to prevent corrosion under insulation.

Environmentally Safe
Landfill disposable, shot-free, with no resirable fiber content.

Pyrogel XT is the most effective high temperature insulation material in the industrial market. Typically 2-5 times thinner than competing products

It is efficient, durable and more productive to install, its water resistance offersa level of protection against corrosion under insulation (CUI). It is also available in a fire-protection grade (Pyrogel®XTF) that is specially formulated to provide exceptional performance against the UL 1709 standard.

Pyrogel® XTF is a high-temperature insulation blanket formed of silica areogel and reinforced with non-woven, high-temperature batting. Similar to Pyrogel® XT in composition, Pyrogel® XTF has been specially formulated to provide exceptional protection against fire.

Silica aerogels posses the lowest thermal conductivity of any known solid. Pyrogel® XTF achieves this industry-leading thermal performance in a flexible, environmentally safe, and easy-to-use product. Ideal for insulating piping, vessels, tanks and equipment, Pyrogel® XTF is an essential material for those seeking the ultimate in thermal efficiency.

PHYSICAL PROPERTIES	
Thickness*	0.40 in (10mm)
Material Form*	60 in (1,500mm) wide x 155 ft (47m) long rolls
Max. Use Temp.	1200°F (650°C)
Colour	Grey
Density*	11lb/ft^3 (0.18 g/cc)
Hydrophobic	Yes

WOOD FIRED OVENS

IMS CAN SUPPLY ALL THE COMPONENTS TO BUILD YOUR OWN WOOD FIRED OVEN.

IMS can supply all the components to build your own wood fired oven.
If you are looking to build your own pizza oven from scratch, we can supply all of the components. Whether it is a small pizza oven for personal use or occasional entertaining to a large pizza oven for more regular use then IMS can assist. Please contact our team to find out more about the Pizza Oven supplies on offer.

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V1 – 2016