



FRF

مصنع الفجيرة للصوف الصخري
FUJAIRAH ROCKWOOL FACTORY
(Subsidiary of Fujairah Building Industries P.S.C.)

FRF BLANKET

WIRED BLANKET



ENERGY
SAVING



MOLD
RESISTANCE



SUSTAINABLE &
ECO FRIENDLY



ASSET
LONGEVITY



REDUCED CARBON
FOOTPRINT



CORROSION
PREVENTION



THERMAL
INSULATION



SIMPLE
APPLICATION



UV
RESISTANCE



ASSET
PROTECTION

DESCRIPTION

FRF BLANKET

Fujairah Rockwool Blanket, conforming to ASTM C-553, ASTM C-665 and BS EN 13162, is a lightly bonded insulating material available with or without facing. These products can be faced on one side or both sides to form a firm but flexible multi-purpose insulating material.

FRF WIRED BLANKET

Fujairah Rockwool Blanket is a lightly bonded insulating material faced with hexagonal G.I. or S.S. wire mesh on one or both sides to form a firm but flexible multi-purpose insulating material. It conforms to ASTM C-592 and equivalent BS 3958 Part 3 and BS EN 13162.

APPLICATION

FRF BLANKET

For thermal and acoustic insulation of applications, such as ducts or any other equipment used in heating, there is no better solution than FRF blanket. It is also perfect for ventilating and air conditioning applications as well. FRF blankets cater well to companies looking for thermal insulation for large vessels, valves, flange, small machinery, boilers and similar plants operating at high temperatures. It is commonly used to wrap high-curved surfaces and can even be cut to fit irregular shapes.

FRF WIRED BLANKET

FRF Wired blanket is an ideal insulation solution for large vessels, small machinery, ducts, valves, flange, and plants operating at high temperatures. Akin to a FRF Blanket, a wired blanket can also be cut to fit over irregular shapes, and thus proves viable for wrapping large curved surfaces.



STANDARD AVAILABLE PRODUCTS

FRF BLANKET

STANDARD SIZE [MTR]	STANDARD THICKNESS [MM]	STANDARD DENSITY [KG/M ³]
1.2 x 5.0	30,50	30,40,50,70
1.2 X 1.2	30,50,70,100	40,60,80,100,128

FRF WIRED BLANKET

STANDARD SIZE [MTR]	STANDARD THICKNESS [MM]	STANDARD DENSITY [KG/M ³]
1.2 x 4.0	30,50,75,100	80,100,128

NOMINAL THERMAL CONDUCTIVITY

Fujairah Rockwool products show remarkably low thermal conductivity values. Typical figures are shown in accordance with corresponding standards: ASTM C-177 / C-518.

MEAN TEMPERATURE °C	THERMAL CONDUCTIVITY (W/MK) FOR THE FOLLOWING DENSITIES IN KG/M ³				
	40	60	80	100	128
24	0.036	0.035	0.035	0.034	0.031
35	0.037	0.036	0.036	0.035	0.032
50	0.039	0.038	0.038	0.037	0.034
100	0.047	0.046	0.044	0.043	0.042
150	0.058	0.056	0.052	0.051	0.05
200	0.07	0.067	0.063	0.06	0.058
250	0.085	0.081	0.077	0.072	0.07
300			0.092	0.085	0.081

These are typical values subjected to normal manufacturing and testing variance.

FACING

FRF BLANKET

CODE	FACING
BXXX	Blanket without facing
B2XX	Blanket with Aluminum Foil Facing on One Side
B22X	Blanket with Aluminum Foil Facing on Both Side
BBXX	Blanket with Black Aluminum foil on One Side

FRF WIRED BLANKET

CODE	FACING
B5XX	Blanket with G.I Wiremesh Support on One side
B55X	Blanket with G.I Wiremesh Support on Both side
B6XX	Blanket with Stainless Steel Wiremesh Support on One side
B66X	Blanket with Stainless Steel Wiremesh Support on Both Side

THERMAL PERFORMANCE [R VALUE]

THICKNESS [mm]	THERMAL RESISTANCE [M ² ,W/MK] AT 24° MEAN TEMPERATURE FOR THE FOLLOWING DENSITIES IN KG/M ³				
	40	60	80	100	128
25	0.694	0.714	0.714	0.735	0.806
50	1.389	1.429	1.429	1.471	1.613
75	2.083	2.143	2.143	2.206	2.419
100	2.778	2.857	2.857	2.941	3.226
125	3.472	3.571	3.571	3.676	4.032
150	4.167	4.286	4.286	4.412	4.839
175	4.861	5.000	5.000	5.147	5.645
200	5.556	5.714	5.714	5.882	6.452

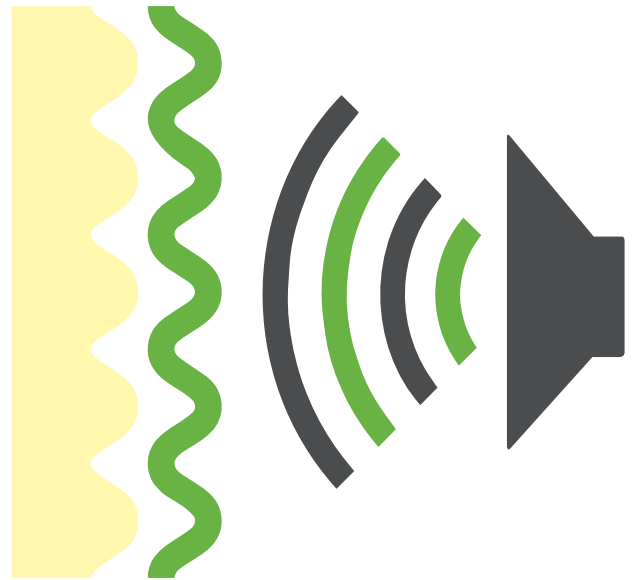
These are typical values subject to normal manufacturing and testing variances.

SOUND ABSORPTION COEFFICIENTS

Typical sound absorption figures are shown below in accordance with BS 3638 & ISO 0354 and equivalent ASTM C-423.

The table shows the test results for their raw density in accordance with the test report.

HZ	30 kg/m ³	50 kg/m ³	80 kg/m ³	100 kg/m ³	140 kg/m ³
125	0.22	0.22	0.23	0.23	0.22
250	0.6	0.62	0.64	0.66	0.66
500	0.86	0.88	0.98	1.05	1.05
1000	0.92	0.95	1.04	1.07	1.06
2000	0.99	1.02	1.03	1.05	1.01
4000	0.98	0.99	0.98	0.97	0.96
NRC	0.80	0.85	0.90	0.95	0.95



SERVICE TEMPERATURE

Rockwool Insulation has an operating temperature of 780°C when tested in accordance with DIN 52271 for 80mm thickness and 100 kg/m³ density.

However, there is a possible deviation at lower densities. The user is advised that it is possible that the maximum operating temperature of facings and adhesives is lower than the maximum operating temperature of the insulation. The user must ensure that sufficient thickness will be installed so none of these accessory items [facings and adhesives] are exposed to temperatures above their maximum operating temperature.

FRF rock wool can withstand more than 1000°C without melting.

FIRE PROPERTIES

Non-combustible when tested in accordance with BS-476 part 4, ASTM E-136 and BS EN ISO 1182. The products have been tested following BS EN ISO 1182 and BS EN ISO 1716 and shown a reaction to fire performance of Class A1 following BS EN 13501-1 and considered as non-combustible.

B.S. 476 PART 4 – Non-Combustible

B.S. 476 PART 6 – Fire Propagation

B.S. 476 PART 7 – Surface Spread of Flame

Class A, when tested in accordance with ASTM E-84

FRF Rockwool fibres can withstand more than 1000°C without melting. When the temperature rises above 250°C, the binder will evaporate in the zone which is exposed to 250°C or more. But the fibres will remain intact as their inbuilt cohesiveness and layering will keep them together, ensuring that the material will retain its rigidity and protect the material beneath it from being affected by the fire.



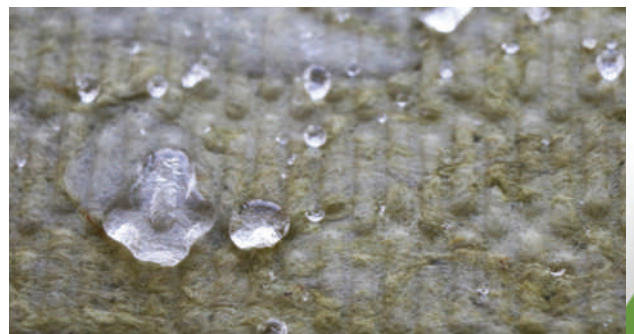
BIOLOGICAL PROPERTIES

Its rot-proof, non-hygroscopic quality ensures that will not only deter spreading of vermin and but also discourage growth of bacteria, mold and fungi. No fungi growth was observed when Fujairah Rookwool blanket was tested as per ASTM C1338.

WATER ABSORPTION

Fujairah Rookwool blanket is water repellent, non-hygroscopic, non-capillary, which means that it does not absorb any moisture from the air. Water absorption test certificates conducted under BS 2972: Section 12 ASTM C-209 is available upon request.

Water absorption <math><1 \text{ Kg/m}^2</math> as per BS 2972 Part 2
Water Vapor Sorption -1 % maximum



ENERGY EFFICIENCY & BUILDING SUSTAINABILITY

Our Green Building Concept is based on three chief elements, namely Building Sustainability, Energy Efficiency and ensuring Health & Safety. At FRF Rockwool, we strive to comply and support all such initiatives. Our expertise in this field enables credit point accumulation for our customers through LEED and Estidama, the two of the leading building accreditation systems in UAE.

- Green Star Compliant (VOC)
- No CFCs or HCFCs
- Zero Ozone Depletion Potential
- Low GWP
- Superior thermal insulation
- Resistance to Mould Growth
- Dubai Central Laboratories (DCL)



COMPATIBILITY

Compatible with all other forms of material with which it is likely to come in contact with normal industrial and building applications.

PHYSICAL PROPERTIES

Fujairah Rockwool Blanket is asbestos-free and its shot content is very low when tested as per ASTM C-1335 and BS 2972: Section 14.

CORROSIVENESS

Corrosiveness is in accordance with ASTM C665. FRF insulation material does not show corrosion when it comes in contact with steel, greater than that observed with comparative cotton.

CHEMICAL NEUTRALITY

Fujairah Rockwool Blanket is chemically neutral with a pH value of 7-8 when tested in accordance with BS 2972: Section 22. It will neither cause nor promote corrosion. It meets the requirements of ASTM C-795 the standard specification for thermal insulation for use in contact with austenitic stainless steel when measured according to standard methods of ASTM C - 692 (Corrosion Test) and ASTM C -871 (Chemical Analysis). It contains low level of chlorides when tested in accordance with BS 2972: Section 21, ASTM C-871 and AGI Q 135.



HVAC SMOKE EXTRACT & KITCHEN EXTRACT DUCTWORK APPLICATIONS

Preventing fire or containing it of any magnitude can be a daunting task for any building management and administration company. Many agencies which are involved in Fire Safety and Management of buildings use insulation materials that double up as fire prevention materials as well. If fire breaks out there will be lot of factors that will come into play like Fire protection requirements of the ventilations ducts, the materials used in building them, the source and behavior of the fire, the design function of the ducts etc.

Also the material should be capable of preventing the fire from spreading from one compartment to the other and along all areas and passages most frequented accessed by people. Therefore it is essential that the material chosen must have a common fire resistance and classification rating.

Therefore, the choice of the material used for thermal resistance and fire prevention play a very crucial role in the selection of the product.

FRF Rockwool's insulation provides both high degree of fire resistance & safety, excellent thermal and acoustic insulation as well. It is an ideal material for HVAC installations. Flexible and simple fixing options ensure hassle free and expedient installation for both horizontal and vertical ducts.

Some of the advantages of using FRF Rockwool for both vertical and horizontal duct systems are as follows.

- Superior Fire Resistance
- Excellent Thermal Resistance
- Less Maintenance costs
- Easy Installation Process



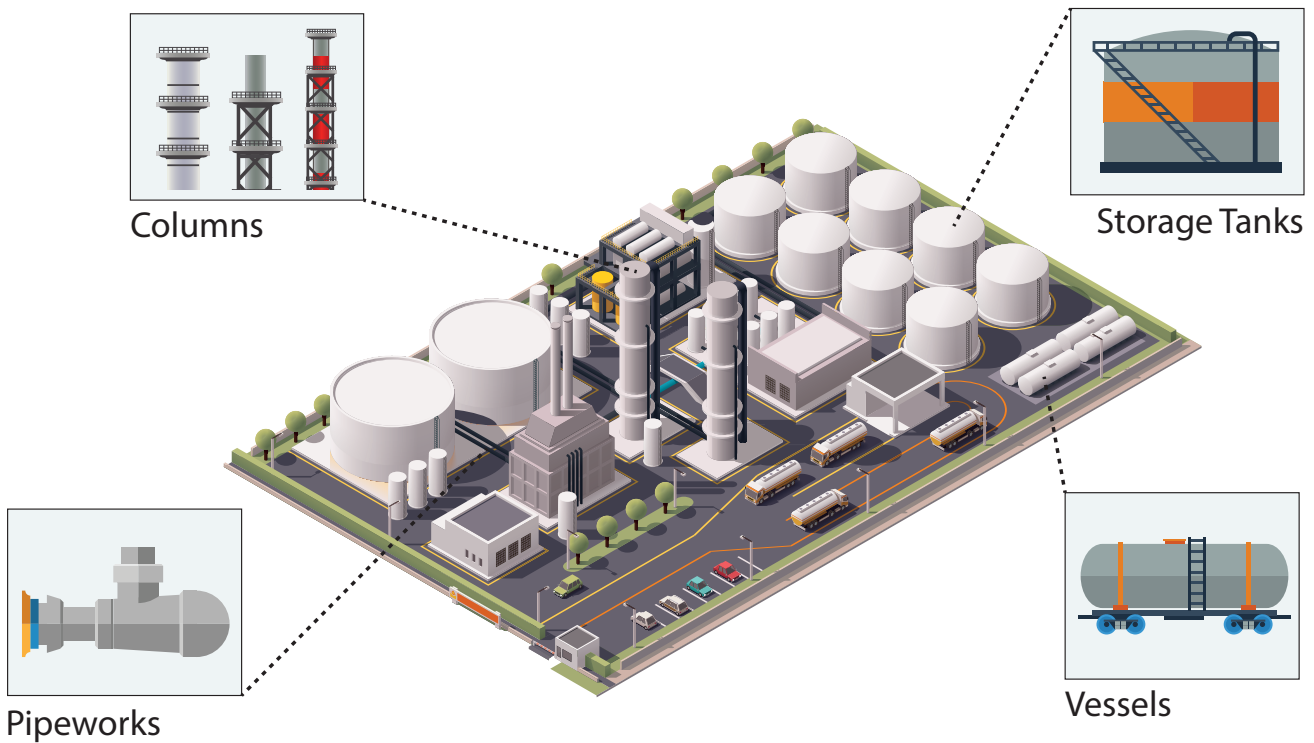
INDUSTRIAL APPLICATIONS

Fujairah Rockwool Factory manufactures Rockwool Blankets to meet the stringent process parameters & operating conditions of the diversified Industrial segments.

The Oil & Gas , Refining , Petrochemical , Power & other Industrial Plants across Middle East are catered by FRF Rockwool products for more than three decades and it made FRF earned the reputation as **The Industry's preferred choice**

Insulation of tank & equipment plays a key role in maintaining the constant temperature specific to the Industrial process.

FRF Rockwool Slabs & Blankets are the most suitable solution for the Insulation requirement of tanks & equipment.



1. Firesafe



2. Acoustical



3. Thermal



4. Durable



5. Sustainable

OEMS APPLICATIONS

Fujairah Rockwool is proud of its OEM products, which are diligently manufactured to withstand the rigors of fabrication. . You can peruse through our complete line of products below or allow us to create tailored solutions for your needs and applications. Regardless of what you are designing, you can benefit from the incredulous fire and sound performance properties of our products.



SANDWICH PANELS



CHIMNEYS/STACKS



INDUSTRIAL BOILERS



HEAT EXCHANGERS



CRYOGENIC TANKS



NUCLEAR POWER PLANTS

INSTALLATION RECOMMENDATION

Cut the wired blanket to length where necessary, so that the blanket fits the surface. The closing joints must be staggered at an angle of at least 30 degrees to each other. The closing joints of the blankets (lengthwise and circular) must be wired together using steel wire (min 0.5mm) or secured with hooks. Stainless steel pipes and pipes with a temperature <math><400^{\circ}\text{C}</math> should preferably be insulated with Blankets with SS wire mesh. When blankets are installed in multiple layers both the lengthwise and circular joints must be staggered. The insulation to be finished with metal cladding.

MAINTENANCE

No maintenance is required. FRF Blankets have a high resistance to accidental damage from knocks and handling during installation and maintenance. Dimensionally stable under varying conditions of temperature and humidity, rot-proof, odorless, non-hygroscopic and will not sustain vermin or fungus due to its inorganic and mineral compositions.

The product will maintain its thermal properties throughout the lifetime of the construction and will not age. FRF Rockwool is nontoxic and not hazardous to health.



STORAGE

To avoid moisture, FRF Rockwool insulation products stored outside must be kept dry.

We recommend products to be always stored in covered and dry areas.



WARRANTY

With no control over installation design, workmanship, conditions of application, or accessory materials, Fujairah Rockwool factory in no way warrants the results or performance of any installation containing their products. All implied warranties, including the merchantability and fitness or warranties for a particular purpose is also included in this warranty disclaimer. We reserve the right to change product specifications without prior notice as per our policy for continued research and development to improve our products.

We strongly urge our customers not to apply the installation methods described in this brochure without proper consultation according to your specific requirements. The final decision about the particular FRF material and installation methods should rest on the contractor, consultant, or specifier.

Fujairah Rockwool is not liable for the damage resulting from inadequate utilization, loading and offloading and mishandling of its products.

AVAILABILITY

Manufactured by Fujairah Rockwool Factory [FRF], a subsidiary of Fujairah Building Industries [FBI] with headquarters and production facilities located in Al Hayl, Fujairah, United Arab Emirates.

FRF products are available directly from FRF as well as through a vast and reliable network of local distributors.

Special products are manufactured on request.

PRICING & TECHNICAL ADVICE

For further details of information on technical data, specialist product information, applications, heat loss calculations or optimum thickness, our Sales Office can be approached.

For details on price, our Sales Office can be contacted.

Call/Mail to Inquire:

Tel: +971 9 222 2297, Email: sales@frf.ae

PACKING

Supplied in shrink wrapped polyethylene sheet.





مجلس أبوظبي للجودة والمطابقة
ABU DHABI QUALITY & CONFORMITY COUNCIL



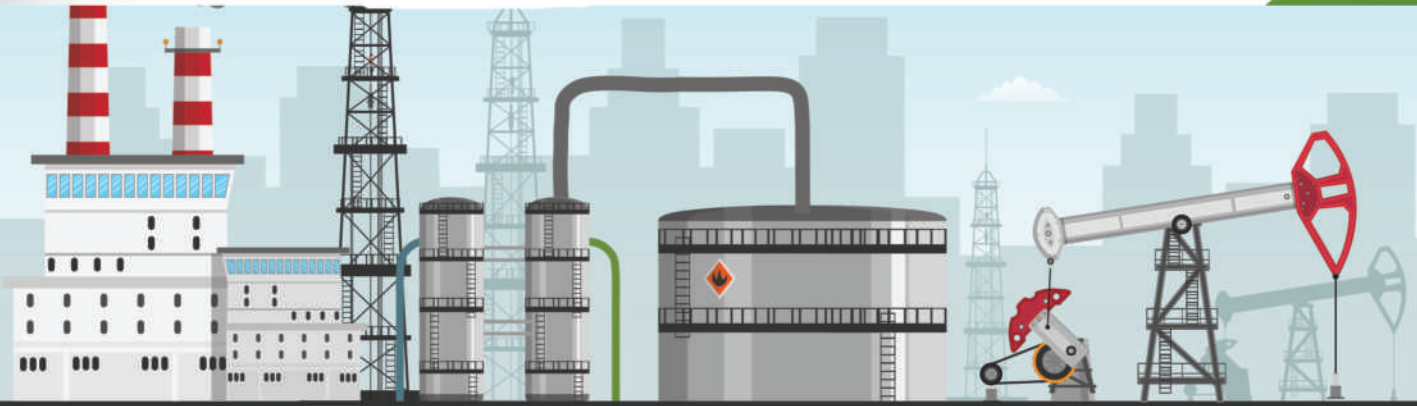
الإدارة العامة للطاقة والمياه - عجمان



بلدية دبي
DUBAI MUNICIPALITY



Lloyd's Register



INSULATION FOR SECURING OUR FUTURE



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