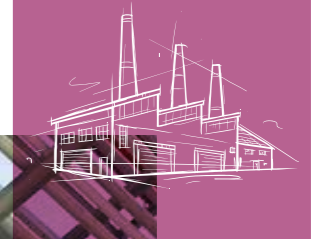


ROCKWOOL® is the registered trademark of ROCKWOOL Group.



ROCKWOOL RockTech



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Distributed by
TradeArk
38-42 Deans Court
Dandenong South
VIC 3175 Australia
Tel: +61 3 9791 2955
Email: reception@tradeark.com.au
Web: www.tradeark.com.au

The TradeArk logo, which consists of a yellow diamond shape containing the word 'TRADE' in black, and a black square containing a white stylized 'A' shape and the word 'ARK' in white.

ROCKWOOL Group

We are the world leading stone wool manufacturer, with innovative products and systems, committed to protecting the environment and improving people's life.

ROCKWOOL Group is a global leader in thermal insulation, providing world-class products and solutions to building structures. Our products help secure fire safety and reduce energy consumption of buildings, coupled with excellent performance in sound absorption, noise reduction and indoor comfort. ROCKWOOL provides green solutions for the horticulture industry, special engineered stone wool fiber for the manufacturing industry, as well as effective insulation solutions for refining and processing industries, marine and offshore industries and other areas. We also have acoustic and vibration reduction system for modern infrastructure construction.

ROCKWOOL Group has a major market share in Europe, but we have also actively expanded our market in Russia, North America, India and East Asia, with more production, sales and service activities operating locally. ROCKWOOL Group's global network helps promote our products and systems around the world.

In China, ROCKWOOL provides a wide range of products for building insulation and other industrial areas that cater to different applications. We have more than 20 years of exploration and operation in China. ROCKWOOL stone wool is integrated with several excellent strengths: fire resilience, thermal properties, acoustic capabilities, durability and sustainability etc. Our products can stand the test of time. They protect buildings and people in any environment while reducing the carbon footprint. ROCKWOOL protects the environment and makes our society develop with a more sustainable approach.

ROCKWOOL China has an annual stone wool production capacity of 110,000 tons in Guangzhou and Yangzhou, and subsidiaries located in Beijing, Guangzhou, Hong Kong, Taiwan, Philippines and other major cities at present.

46

Manufacturing facilities

100+

Countries sales coverage

11,000+

Employees globally

ROCKWOOL RockTech

Perfect solution for industrial insulation

ROCKWOOL RockTech industrial stone wool is made of natural stones. Raw material melts in the cupola furnace at a temperature of 1450°C after weighing. Then fibre is produced in the high-speed four-roller centrifugal machine, followed by adhesive spraying. The wool collected through pendulum system, cured and then cut into products of different specifications. RockTech series product has four benefits: strong temperature resistance, good water repellence, good thermal conductivity and high corrosion resistance. RockTech provides maximum protection to boilers, furnaces, distillation towers, valves, pipes and facilities in petrochemical plants, power plants and other industrial production sites. RockTech series product also helps prevent from fire, noise and other harmful effects, with less heat and energy losses.

Product Range

RockTech	Product Code
RockTech Slab	RT-S350
RockTech Slab	RT-S450
RockTech Slab	RT-S650.128
RockTech WM	RT-WM450
RockTech WM	RT-WM650 HD
RockTech SPI	RT-SPI
Loose Wool	LW



Stone wool has been classified by IARC as Group 3: not classifiable as to its carcinogenicity to humans. It is degradable and not toxic.

Product Recommend

Type	Product	Pipe	Tower	Container	Storage tank wall	Storage tank top	High-temperature furnace	Cold storage	Sound isolation and noise reduction	Fillings
RockTech SPI	RT-SPI	■							■	
RockTech Slab	RT-S350			■	■		■			
	RT-S450		■	■	■		■			
	RT-S650.128		■	■	■	■	■			
RockTech WM	RT-WM450	■	■	■	■		■		■	
	RT-WM650HD	■	■	■	■		■		■	
Loose Wool	LW							■		■

Aluminous foil, glass fibre and other finished could adhere to the surface of products.

Benefits



Service temperature up to 650°C

High temperature resistance

RockTech series products use special formula and matured manufacturing technique, with service temperature up to 650°C. RockTech has small shrinkage at a high temperature. Special fibre structure secures excellent insulation under mechanical vibration, preventing hot spot and over temperature from the surface of equipment. The application can avoid insulation degradation and eventual failure, reduce direct cost incurred by downtime maintenance, and improve manufacturing efficiency.

Excellent water repellence

RockTech series products use imported water repellent agent. Unique manufacturing technique empowers stone wool with remarkable water repellence that exceeds national standards. Insulation system is not subject to corrosion or collapse after a long service time, even in the humid environment, ensuring both safety and durability.



Remarkable water repellence that exceeds national standards



Excellent insulation performance in protecting places where thermal energy highly concentrates

Insulation is an energy-saving technology with easy access nowadays, but stone wool is the most economical and matured material in terms of energy consumption and fire prevention.

Perfect thermal conductivity

RockTech series products have evenly-distributed microporous structure and a very low shot content, which helps maintain a good thermal conductivity at high temperatures. Its superior insulation performance shows excellent effectiveness in protecting the parts of equipment where thermal energy highly concentrates. To save the same amount of energy, RockTech minimizes the thickness of insulation layer, further reducing the cost of production and operation.

High corrosion resistance

RockTech series products use high quality raw material and special formula, effectively stopping corrosive sulphur and other harmful ions. The pH value is strictly controlled between 7.0-10.5, soluble chloride ion content $\leq 10\text{ppm}$, no corrosion on metal-made equipment or pipeline. The cost incurred by follow-up maintenance and downtime can therefore be greatly reduced.



The pH value strictly controlled between 7.0-10.5

RockTech Slab

Product introduction

RockTech RT-S series are moderately rigid, with good dimensional stability and tensile strength. It is widely applied in the thermal insulation, fire protection and sound absorption of storage tanks, containers and boilers that have flat or largely curved surface.

Three standard products are available upon operating temperature:

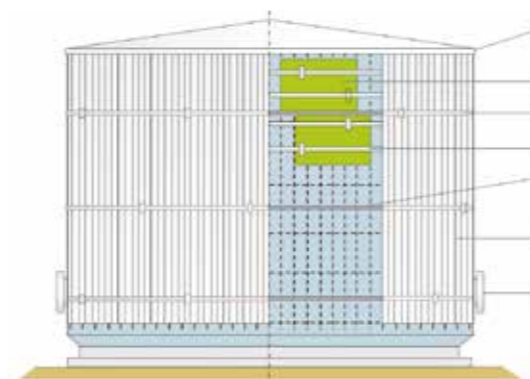
RT-S350	RT-S450	RT-S650.128
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Product Advantages

- Excellent performance in high temperature resistance, thermal insulation and sound absorption;
- Dimensional stability under heat load conditions;
- A wide range of thickness available;
- Asbestos-free, no irritating odour, without bacteria growth.

Packaging and storage

RockTech slab is wrapped by heat shrink film, for easier construction, transport, storage and recognition. Products shall be stored indoors or outdoors under waterproof covers.



1,RockTech Slab 2,Self-adhesive foil tape 3,Self-adhesive foil tape
4,Support ring 5,Valve 6,Coating 7,Connection to roof/wall

Installation

Stone wool slab must be seamlessly connected. Metal parts or equipment exposed in an environment subject to corrosion must be kept dry. Their surface must have had anti-corrosion treatment before the installation. In the industrial insulation, metal cladding must be protected by insulation such as aluminium or other metal materials that are unlikely to trigger chemical reactions like corrosion. Vertical and round joints shall be fixed by screws with metal plates or rivets. All joints should be sealed to waterproof by sealant. Aluminium foil is highly preferred. Vertical or cross joints shall be sealed by self-adhesive aluminium foil tape of which width is $\geq 75\text{mm}$. If equipment falls below environment temperature, there will be risk for condensation, which makes it necessary to equip with steam valve. Please contact our technical support team if you have any problem during the construction.



High temperature resistance and good dimensional stability and tensile strength

Technical Parameters

	RT-S350	RT-S450	RT-S650	Unit	Standard
Density	60	80	100	kg/m ³	GB/T 5480.3
Thickness	30-150			mm	GB/T 5480.3
Dimension	1200x600			mm	GB/T 5480.3
Thermal Conductivity					
70 °C	0.041	0.041	0.039	W/mK	GB/T 10294, GB/T 10296, ASTM C177
100 °C	0.047	0.047	0.043		
150 °C	0.057	0.056	0.05		
200 °C	0.066	0.065	0.058		
250 °C	0.078	0.077	0.066		
300 °C		0.082	0.074		
350 °C			0.083		
400 °C			0.093		
Maximum Service Temperature	450	550	750	°C	GB/T 17430, GB50264
Recommended Service Temperature	350	450	650	°C	ASTM C411-05, ASTM C447-03, GB50264
Service Burning Characteristic					
Fire Spread Index	0				ASTM E84-10
Smoke Development	≤ 25				ASTM E84-10
Fire Performance	Non-combustible, Class A				GB 8624, EN13501-1, BS 476 Part4
Water Vapour Sorption by Weight	$\leq 1\%$				ASTM C1104/1104M
Water Vapour Sorption by Volume	$\leq 1\%$				ASTM C1104/1104M
Chloride Content	≤ 10				GB/T 17393, ASTM C871-08
Water Repellence	99.50%				GB/T 10299
Shot Content (>0.25mm)	$\leq 5\%$				GB/T 5480
Fibre Diameter	≤ 6				GB/T 5480
Standard	GB 11835 «Stone wool, slag wool and its products for thermal insulation» ,GB 50264 «Code for design of industrial equipment and pipeline insulation engineering» ,ASTM C612 «Standard Speciation for Mineral Fibre Block and Board Thermal Insulation» ,JIS A9504 «Manmade mineral fibre thermal insulation materials» ,SH 3010 «Design code of equipment and piping insulation for petrochemical enterprises» ,DL/T 5072 «Code for designing insulation and painting of fossil fuel power plant»				

*Thermal conductivity is tested under mean temperature, comply with GB/T 10294, GB/T 10296

*Aluminous foil, glass fiber and other finishes could adhere to surface of RT-S.

*Recommended Service Temperature is based on maximum service temperature minus 100°C.

*Product with chloride content $\leq 10\text{ppm}$ is available. Please consult our local sales representative for more information.

RockTech WM

Product introduction

RockTech WM series are stone wool blankets of high tensile strength encased in chicken wire. Wire mesh is made of galvanized or stainless steel, lower risk to broken. It is suitable for thermal insulation, fire protection and sound absorption of large pipeline, storage tanks, containers, boilers and wind pipes, especially for places at high temperatures with vibration or places with high standards of fire safety.



Two standard products are available upon operating temperature:

RT-WM450

RT-WM650 HD



Product Advantages

- Suitable for heavy equipment
- High temperature resistance
- Excellent thermal and acoustic performance
- Good flexibility, with a wide range of thickness available
- Asbestos-free, no irritating odour, without bacteria growth

Packaging and storage

RockTech WM are wrapped by heat shrink film for easier construction, transport, storage and recognition; Products shall be stored indoors or outdoors under waterproof covers.

Installation

RockTech WM can be cut to any length needed, and then tightly wrapped around the equipment. The edge need to be tightly connected by wire, leaving no gap. Metal tapes or insulation nails can be used when installing RT-WM to the equipment. Please contact our technical support team if you have any problem during the construction.

Technical Parameters

	RT-WM450	RT-WM650	Units	Standard
Density	80	100	kg/m ³	GB/T 5480.3
Dimension (30-70mm thickness)	L×W: 5000X600	L×W: 5000X600	mm	
Dimension (75-100mm thickness)	L×W: 3000X600	L×W: 3000X600	mm	
Thermal Conductivity			W/mK	GB/T 10294,GB/T 10296
70°C	0.04	0.038		
100°C	0.046	0.042		
150°C	0.055	0.048		
200°C	0.064	0.056		
250°C	0.076	0.063		
300°C	0.08	0.07		
350°C		0.077		
400°C		0.085		
Maximum Service Temperature	550	750	°C	GB/T 17430, GB50264
Recommended Service Temperature	450	650	°C	ASTM C411-05, ASTM C447-03, GB50264
Service Burning Characteristic				
Fire Spread Index		0		ASTM E84-10
Smoke Development		≤25		ASTM E84-10
Fire Performance		Non-combustible, Class A1		GB 8624, EN13501-1, BS 476 Part4
Water Vapour Sorption by Weight		≤1%		ASTM C1104/1104M
Water Vapour Sorption by Volume		≤1%		ASTM C1104/1104M
Chloride Content		≤10	ppm	GB/T 17393, ASTM C871-08
Water Repellence		99.50%		GB/T 10299
Shot Content (>0.25mm)		≤5%		GB/T 5480
Fibre Diameter		≤6µm	µm	GB/T 5480
Standard	GB 11835 «Stone wool,slag wool and its products for thermal insulation» ,GB 50264 «Code for design of industrial equipment and pipeline insulation engineering» ,ASTM C612 «Standard Speciation for Mineral Fibre Block and Board Thermal Insulation» ,JIS A9504 «Manmade mineral fibre thermal insulation materials» ,SH 3010 «Design code of equipment and piping insulation for petrochemical enterprises» ,DL/T 5072 «Code for designing insulation and painting of fossil fuel power plant»			

*Thermal conductivity is tested under mean temperature, comply with GB/T 10294, GB/T 10296

*Aluminous foil, glass fiber and other finishes could adhere to surface of RT-S.

*Recommended Service Temperature is based on maximum service temperature minus 100°C.

*Product with chloride content ≤10ppm is available. Please consult our local sales representative for more information.

RockTech SPI

Product introduction

RockTech SPI series are manufactured by standard length with vertical openings. Pipes can be covered by products easily, a benefit for construction. Products are made into rolls by mould, matching to pipes. The surface is ground to the exact thickness for insulation. It is suitable to energy conservation of hot and cold pipeline, helping maintain a constant temperature, protecting people, preventing condensation and noise disruption.

Product Advantages

- Suitable for heavy equipment
- High temperature resistance
- Excellent thermal and acoustic performance
- Easy operation and installation
- High strength products - Available in a wide range of diameters and insulation thickness
- Asbestos-free, no irritating odour, without bacteria growth

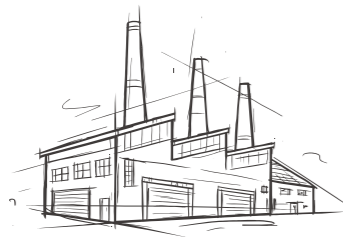


Packaging and storage

Standard packaging: hard cardboard box or plastic bag. The amount contained in each package depends on the size of pipe cover; Products shall be stored indoors or outdoors under waterproof covers.

Installation

RockTech SPI series are stone wool pipe covers manufactured by standard length. Vertical openings are made for easy construction where pipes can be covered by products with no difficulty. It is recommended that pipe covers are fixed in place by metal wire or metal tape. Metal cladding, mastic or other coating could be used to protect stone wool covers upon the request of customers. Please contact our technical support team if you have any problem during the construction.



Technical Parameters

	RT-SPI	Units	Standard
Density	120kg/m ³	kg/m ³	GB/T 5480.3
Dimension	22-612(1/2 "-24")	mm	
Thickness	30-150	mm	
Length	1000	mm	
Thermal Conductivity			
70°C	0.04	W/mK	GB/T 10294,GB/T 10296
100°C	0.044		
150°C	0.049		
200°C	0.054		
250°C	0.066		
300°C	0.069		
350°C	0.078		
400°C	0.088		
Maximum Service Temperature	750	°C	GB/T 17430, GB50264
Recommended Service Temperature	650	°C	ASTM C411-05, ASTM C447-03, GB50264
Service Burning Characteristic			
Fire Spread Index	0		ASTM E84-10
Smoke Development	≤25		ASTM E84-10
Fire Performance	Non-combustible, Class A1		GB 8624, EN13501-1, BS 476 Part4
Water Vapour Sorption by Weight	≤1%		ASTM C1104/1104M
Water Vapour Sorption by Volume	≤1%		ASTM C1104/1104M
Chloride Content	≤10	ppm	GB/T 17393, ASTM C871-08
Water Repellence	99.50%		GB/T 10299
Shot Content (>0.25mm)	≤5%		GB/T 5480
Fibre Diameter	≤6	µm	GB/T 5480
Standard	GB 11835 «Stone wool, slag wool and its products for thermal insulation» , GB 50264 «Code for design of industrial equipment and pipeline insulation engineering» , ASTM C612 «Standard Speciation for Mineral Fibre Block and Board Thermal Insulation» ,JIS A9504 «Manmade mineral fibre thermal insulation materials» , SH3010 «Design code of equipment and piping insulation for petrochemical enterprises» , DL/T 5072 «Code for designing insulation and painting of fossil fuel power plant»		

*Thermal conductivity is tested with 120kg/m³ SPI product and comply with GB/T 10294

*Recommended Service Temperature is based on maximum service temperature minus 100°C.

*Product with chloride content ≤10ppm is available. Please consult our local sales representative for more information.

RockTech Loose Wool

Product introduction

RockTech loose wool is made from melted natural stone with a small amount of dust suppressant, durable and reliable. Loose wool can be filled into irregular shapes for thermal insulation.



Product Advantages

- Easy to use;
- Flexible to work with;
- Especially suitable for cold box insulation.

Product specifications

Nominal weight: 12.5kg/Plastic Packaging

Standards

ROCKWOOL RockTech loose wool complies with ASTM, various test requirements met.

Installation

Fill with loose wool in irregular places where stone wool products may not fit after being cut.

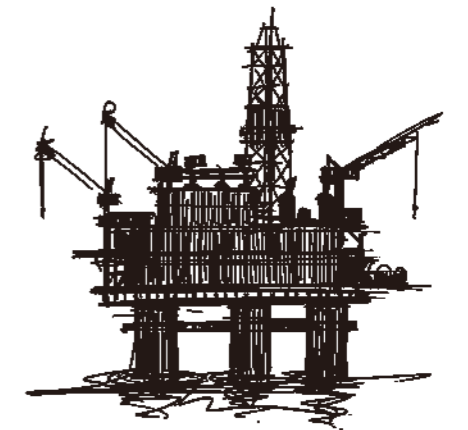


Loose wool can be filled into irregular shapes for thermal insulation.

ROCKWOOL Projects

Power industry

Project	Location	Time of delivery
YD Shajiao C Power Plant	Humen	1998
YD Shajiao C Power Plant	Guangzhou	1998
Jiangsu Gold Huasheng Paper mill	Suzhou	1998
Daya Bay Nuclear Power Plant	Shenzhen	1998
CHD Jiangsu Yangzhou Power Plant	Yangzhou	1999
Hefei Second Power plant	Hefei	1999
shanxi Hejin Power plant	Hejin	1999
Guangdong Lingao Nuclear Power Plant	Shenzhen	2001
Black Point Power Station	Hongkong	2001
Se Mawan Power Plant (5#,6#)	Shenzhen	2002
Sual Power Plant	Philippines	2003
Taichung Power Station	Taiwan	2003
Houshi Power PLant	Zhangzhou	2008
CLP Power Plant	Hongkong	2013-2014
DEC BTG India krishnapatnam2*660MW Thermal Power Plant	India	2014
Shouhang Resources Saving Dunhuang 100WM Molten Salt Tower Thermal Power Station	Gansu Dunhuang	2016-2018
Vietnam Thai Binh Province Power Plant	Vietnam	2016
Huayang Electric Power Zhangzhou 4x660MW Power Plant	Zhangzhou	2017
Vietnam Yongxin 2X660MW Power Plant	Vietnam	2017-2018
Lanzhou Dacheng Photothermal Project	Dunhuang	2019
Luneng Haixi Photothermal Project	Xining	2019



ROCKWOOL Projects

Chemical industry

Project	Location	Time of delivery
Worsley Project,Perth	Australia	1999
Lube Base Oil Project	Indonesia	2000
BP Amos (Zhuhai) PTA Project	Zhuhai	2002
LNG Project	Brunei	2002
Temasek Polytechnic Project	Singapore	2004
CNOOC and Shell Petrochemical Company	Huizhou	2006
Wagain Paper Factory	Xining	2007
Reliance Jamnager Oil Refinery	India	2007-2008
Formosa Plastics Group project in china(Zhangzhou,Ningbo,Kunshan,Nantong,etc)	Ningbo	2008
Ethylene Project in Guangzhou	Guangzhou	2008
Shell Oil Refinery Project	Singapore	2008
Borouge 3 Polyolefin Unit & OCU Project	The United Arab Emirates	2008
Nine Dragons Paper (Holdings) Tianjin production base	Tianjin	2009
Xiamen Cigarette Factory	Xiamen	2010
Formosa Plastics Group project in Vietnam	Vietnam	2012
Formosa Plastics Group Maoliao factory	Taiwan	2003-2013
New Construction Project of Formosa Plastics Group Fuxin Stainless Steel plant	Zhangzhou	2013
Bakersfield Oil Project	America	2004-2014
Alberta Oil Project	Canada	2005-2014
CNOOC oceaneering Ichthys LNG Modular Engineering	Qingdao	2014
CCP Zhangbin Plant	Taiwan	2015
SINOSTEEL Annual Maintenance Project	Taiwan	2015
CRRC	Changchun/Tangshan	2008-Today
YAMAL LING Project	YAMAL	2015-Today
Shenhua NingxiaCoal Industry Group Coal Chemical Project	Ningxia Ningdong	2015
Sinopec Petrochemical Maoming Maintenance Project	Maoming	2017
BP Chemical Industry (Zhuhai) PTA - Phrase 1 Maintenance Project	Zhuhai	2017
KNPC Kuwait National Petroleum	Kuwait	2017-Now
Yanchang Petroleum Energy Extension Project	Yan'an	2017-2018
Bayer Pharmaceuticals	Wuxi	2018
Changchun Petrochemical	Taiwan	2018
CNOOC Shell Petrochemical Huizhou Maintenance Project	Huizhou	2018
Sinopec Tianyuan Petrochemical Maoming New Built Project	Maoming	2018
Lubrizol Chemicla Industry (Zhuhai) Maintenance Project	Zhuhai	2019
GCGV Project	Qingdao	2019

ROCKWOOL Projects

