ProRox®
400 Series

Fabricated
Industrial Solutions

ROXUL®
The Better Insulation™

ROXUL® Fabricated Insulation Solutions

The ProRox® 400 Series fabricated product line offers board (slab) insulation solutions that can be fabricated into pipe sections and wraps (mats) with excellent fire, water and thermal properties. Images throughout this brochure show what can be created using the SL 400 lineup.

Fire Resistant

The stone wool and recycled content combination in ROXUL's pipe insulations makes these products non-combustible and fire resistant. These products are designed for operating temperatures up to 1200 °F (650 °C), with a melting point of 2150 °F (1177 °C). ROXUL pipe insulations are excellent barriers to flame spread and critical lines of defense in fire control for personnel and equipment in plants and pipelines.

Water Repellent

The ROXUL pipe product line does not absorb water or hold moisture. The dense stone wool based material naturally repels and drains water away from pipes without compromising R-value. These products do not promote fungi, mildew, or bacteria growth and are chemically inert to eliminate corrosion.

Thermal Performance

The low thermal conductivity of ROXUL products result in energy savings in areas where it's needed most. ROXUL's ProRox 400 Series products deliver consistent thermal performance across the board, from petrochemical plants to power generation industries. In many applications, less product can be used and greater energy efficiency achieved with reduced insulated diameter and overall jacketing costs.

Easy Fabrication

ROXUL products are produced of the highest quality and available in variety of dimensions. The product's higher densities make them easy to fabricate and provides a better fit at point of installation.

Technical Expertise

ROXUL insulation is able to draw on in-depth expertise to ensure that end users are given the best and most advanced insulation solution. ROXUL stone wool products offer the best possible protection against heat along with energy loss, fire, noise and other unwanted influences. Our team will be delighted to assist you in developing technical and project specifications.

ProRox® 400 Series

NEW PRODUCTS

The ProRox 400 Series product line is a comprehensive offering that is designed to be fabricated to insulate equipment that requires long lasting thermal performance in industrial environments, such as large diameter pipes, vessels, boilers, tanks and furnaces.

Benefits:

- Fire resistance properties, non-combustible
- Designed for high temperature applications
- Melting point of approximately 2150°F (1177°C)
- Service temperature of 1200°F (650°C)
- Lightweight and flexible
- Can be easily fabricated and laminated
- Excellent thermal resistance
- Water repellent yet vapor permeable material

Compliance and Applications

Applications

Product	Actual Density	Applications
ProRox® SL 430NA	3.5 lb/ft³ - (56 kg/m³)	Recommended for fabrication of pipe and tank lamella wrap
ProRox® SL 450NA	9.0 lb/ft³ - (144 kg/m³)	Recommended for fabrication of v-groove pipe sections, fittings and high density pipe sections
ProRox® SL 460NA	6.5 lb/ft³ - (105 kg/m³)	Recommended for fabrication of precision cut pipe sections and v-groove pipe sections

Compliance

Product	ASTM C612	CAN/ULC S102 and ASTM E84 (UL 723) (Surface Burning)	ASTM C165 (Compressive Strength)	ASTM C1104 (Moisture Resistance)
ProRox® SL 430NA	IVA	Pass	Pass	< 1 % weight
ProRox® SL 450NA	IVB	Pass	Pass	< 1 % weight
ProRox® SL 460NA	IVB	Pass	Pass	< 1 % weight

Thermal Performance - λ (BTU.in/hr.ft².°F)

Product	75°F	100°F	200°F	300°F	400°F	500°F	600°F	700°F
ProRox® SL 430NA	0.24	0.26	0.29	0.35	0.39	0.49	0.56	0.71
ProRox® SL 450NA	-	0.27	0.29	0.34	0.40	0.45	0.52	0.61
ProRox® SL 460NA	-	0.24	0.30	0.35	0.38	0.46	0.55	0.66

Glossary of Fabrication Terms

Pre-Formed – Items that are factory formed from raw / loose mineral wool (stone wool); often used synonymously with mandrel wound pipe.

Cut-Pipe - Pipe insulation cut directly from boards (slabs) or blocks of mineral wool (stone wool); as a result the fiber orientation varies around the circumference of the the pipe with some fibers parallel to the pipe surface and some fibers perpendicular, which may affect compressive strength and thermal performance in different areas.

V-Groove – Pipe insulation formed from boards (slabs) or blocks of faced mineral wool (stone wool) with long v-shaped grooves cut in the board (slab) parallel to the direction of the pipe. These grooves allow the sections to be "rolled" around the pipe.

Precision V-Groove - A term implying v-groove pipe cut precisely to requirements with tight tolerances on very accurate, often computer controlled, machinery.

Mandrel Wound – Pipe insulation created from raw / loose mineral wool (stone wool) wound around a spindle (mandrel), with fiber orientation parallel to the pipe, which results in consistent compressive strength and thermal performance all all around the circumference of the pipe.

Board Insulation - Insulation formed in flat boards (slabs) offered in a variety of dimensions, often 2ft x 4ft as a standard size.

Industrial Pipe and Tank Wrap - A flexible blanket made from mineral wool (stone wool) that is wrapped around items such as large diameter pipe or tanks and secured with straps and clamps.

Fiber-Orientation - The predominant direction of fibers within the insulation. Fiber orientation affects compressive strength and thermal performance; perpendicular fiber orientation typically increases compressive strength whilst reducing thermal performance.

Material Property - Property of the stone wool fibers

- Melting Point
- Fiber Density
- Corrosion Potential
- Fungi Resistance
- Moisture Resistance
- Reaction to Fire

Product Property - Property of the mineral wool (stone wool) fibers in their combined / altered form as a finished product (varies with mandrel wound, cut-pipe, v-groove)

- Thermal Conductivity
- (Board/Pipe) Density
- Maximum Service Temperature
- Linear Shrinkage
- Compressive Strength
- Compliance

ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation

ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation

What is stone wool?

Stone wool (mineral wool) was discovered on the islands of Hawaii at the beginning of the century. It occurs there naturally as a byproduct of volcanic activity. In its manufactured state, stone wool combines the power of rock with the characteristics of typical insulation wool. In addition, thanks to its non-directional fiber orientation, it also exhibits some unique and valuable. The production process for stone wool begins with the fusion of volcanic rock at a temperature of 2732 °F.

Why choose ROXUL® stone wool?

ROXUL products have been proven in service for over 25 years by offering innovative insulation with a world of green features. These products provide superior thermal properties, sound absorbency, fire resistance, water repellency making them ideal for high temperature applications.

By using ROXUL, companies will receive a superior product along with the technical expertise of the ROXUL team to help provide you with Performance Driven Solutions.

Thermal Insulation

Stone wool is an excellent insulator and a vital component of an energy efficient building. In fact Insulation saves 12 times as much energy per pound in its first year in place as the energy used to produce it.

Sound Absorption

The non-directional fiber orientation of the stone wool helps the absorption of acoustic waves and can reduce the intensity and propagation of noise.

Fire Resistant

Stone wool can withstand temperatures up to 2150 °F (1177 °C). Consequently it does not contribute either to the development and spread of fire or the release of toxic gases.

Water Repellent

Stone wool is water repellent yet vapor permeable. This means that the insulation cannot absorb water so the R-value is not affected. Additionally it is completely resistant to rot, mildew, mold and bacterial growth, contributing to a safer indoor environment.

Dimensional stability

Stone wool retains its characteristics unaltered over time. It undergoes only minimal changes in size or performance to the changing conditions of temperature and humidity.

A Global Leader

ROXUL Inc. is part of ROCKWOOL International, the largest producer of stone wool insulation, which is made from natural basalt rock and recycled material. ROCKWOOL International was founded in 1909 and today operates worldwide with more than 9,800 employees, with 28 factories across three continents.

ROCKWOOL has over 75 years in the insulation business and for 25 years ROXUL® has been serving the North American market, manufacturing stone wool insulation products for residential, commercial, industrial and OEM applications.

ROXUL is the Better Insulation

ROXUL is an innovative insulation offering a world of green features. When ROXUL is the specified insulation, companies will receive a superior product along with the technical expertise of the ROXUL team to meet all insulation requirements.

Surface Burning Characteristics: ULC Listed to Canada Standard CAN/ULC S102; UL Classified to UL 723

Environmentally Sustainable

Our stone wool production process utilizes some of the most advanced technology available. The last decade has seen a new generation of ROXUL manufacturing facilities that are designed to lower our environmental footprint. These endeavors have included the capture and recycle rainwater, reduction in energy consumption, and zero waste to landfill by the recycling of raw materials back into the production process. ROXUL facilities also use natural lighting and re-purpose water used during the manufacturing process to minimize the impact on the environment and surrounding community resources.

ROXUL insulation is created using naturally occurring, inorganic raw materials and reuses waste from other manufacturers as well as from our plants. Stone wool insulation is noncombustible and achieves its thermal performance without the use of blowing agents. The products therefore do not off-gas over time, contributing to a sustainable environment.

Each ROXUL plant uses a varying combination of new and recycled content in order to remain efficient and environmentally friendly. ROXUL is committed to improving our overall efficiencies which further solidifies our commitment to environmental stewardship within the organization.

For further details contact your ROXUL sales representative. Please visit **www.roxul.com** for the latest information.

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Fire Resistant | Water Repellent | Sound Absorbent | Saves Energy | Made from Stone

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