



Product:	ROCKWOOL Rockpipe™	PDS 10
Type:	FABRICATED PIPE INSULATION FOR LNG PLANTS	
Name:	TYPE 105 (for use at up to 650°C)	Page 1 of 4

Description

ROCKWOOL stone wool pipe insulation Type 105 are strong pipe sections, segments or lags fabricated from specially impregnated high quality ROCKWOOL stone wool. Applications for ROCKWOOL stone wool Type 105 pipe insulation include for industrial and process pipe work operating at temperature up to 650°C making it ideally suited for application to high pressure stream lines, turbines, boilers and integral pipework, control valves, steam heaters, turbine pumps etc.

With the addition of an aluminium foil-facing, Type 105 pipe sections are designed for thermal and acoustic insulation of heating, ventilation and air-conditioning pipe work services operating in the temperature range 0 - 650°C (80°C limiting the outer foil temperature). The highly water-repellent characteristics make Type 105 pipe insulation extremely suitable for applications in conditions where water can penetrate the insulation system.

Standard Sizes:

Length: Standard length 1000 mm
 Wall Thickness: 25, 30, 40, 50, 60, 70, 75, 80, 90, 100
 Outside Diameter: Pipe sizes to suit all standard BS 1387, BS 2871 and ASTM C 585 size pipes and other non-standard pipe sizes

Product Performance and Properties

Volumetric Mass: A base pipe block with a delivered density of 140kg/m3 (nominal) according to ASTM C612 – 93 to provide performance properties detailed below.

Service Temperature: Maximum service temperature use up to 650°C (1382°F).

Thermal Conductivity (typical data): Test results from ASTM C335 and ASTM C1045[1] as follows:

Mean Temp °C	100	150	200	250	300	350
K value^[2] W/m.K	0.049	0.056	0.065	0.077	0.090	0.105

[1] Test report No. AIS\335 available on request.

[2] The thermal conductivity performance at elevated temperatures of the pipe section, segments or lags cut from special ROCKWOOL Group pipe block Type 105 typically aligns with the requirements of ASTM C547 Type III B.

AUSTRALASIAN INSULATION SUPPLIES PTY LTD	PRODUCT DATA SHEET	REVISION: 7
		DATE OF ISSUE: Nov 15
		CHKD: IRS APPV: BAC



Product:	ROCKWOOL Rockpipe™	PDS 10
Type:	FABRICATED PIPE INSULATION FOR LNG PLANTS	
Name:	TYPE 105 (for use at up to 650°C)	Page 2 of 4

**Corrosion Resistance:
Chemical Neutrality:** ROCKWOOL stone wool Type 105 pipe insulation is chemically neutral and will neither cause nor promote corrosion.

**Corrosion Resistance:
Water Leachable Chlorides:** ROCKWOOL stone wool Type 105 pipe section have a very low content of water leachable chloride, approximately 4 ppm so it can be safely used on austenitic stainless steel. Meets the requirements for use over stainless steel in accordance with ASTM C795 and of "AS-Quality" of AGI Q135.

Fire: ROCKWOOL stone wool Type 105 pipe insulation is non-combustible when tested according to international standards e.g. ASTM E-136-82, DIN 4102, BS476 Pt4-1970, ISO 1182 and IMO A 799 (19).

Moisture Resistance Water: ROCKWOOL stone wool Type 105 pipe insulation is highly water repellent, non hygroscopic and non capillary. When tested to BS 2972 Section 12 ROCKWOOL stone wool absorbs approximately 1% by volume of moisture (complete immersion test).

Moisture Resistance Vapour Diffusion: Water vapour diffusion resistance factor of $\mu = 1.3$. This low value means that water can pass through and cool without condensing.

**Moisture Resistance:
Absorption from the air:** ROCKWOOL stone wool absorbs very little water from the air. Tests show at relative humidity of 90% for 30 days the hygroscopic water content is around .004 volume per cent. The water vapour absorption (vapor sorption) in accordance with ASTM C110 4/C 110 M is + 0.02% (vol).
Moisture Resistance Capillarity: ROCKWOOL stone wool fibres and fibre coating repels water and prevents capillarity.

Melting Point: Melting point of ROCKWOOL stone wool fibre is over 1000°C (1800°F).

AUSTRALASIAN INSULATION SUPPLIES PTY LTD	PRODUCT DATA SHEET	REVISION: 7
		DATE OF ISSUE: Nov 15
		CHKD: IRS APPV: BAC



Product:	ROCKWOOL Rockpipe™	PDS 10
Type:	FABRICATED PIPE INSULATION FOR LNG PLANTS	
Name:	TYPE 105 (for use at up to 650°C)	Page 3 of 4

Specific Heat: ROCKWOOL stone wool specific heat factor is 0.84 kJ/kg per degree centigrade.

Calorific Value: ROCKWOOL stone wool Type 105 pipe insulation has a low organic matter content giving a low calorific value of around 600 kJ/kg.

Biological Properties: ROCKWOOL stone wool Type 105 material contains no Nutrients and therefore provides no basis for growth of fungi, moulds or bacteria, nor does it attract insects, rodents or vermin.

Acoustic Properties: ROCKWOOL stone wool Type 105 material when measured according to ISO R 354 and applied directly to the wall surface at a thickness of 50mm gives the following sound absorption coefficient:-

H_z	125	250	500	2000
Coeff α S	0.22	0.66	0.92	0.89

Durability: ROCKWOOL stone wool mineral wool has been proven in services for over 50 years in all types of exposure and as such will give effective protection for the lifetime of the equipment they insulate.

Compatibility: ROCKWOOL stone wool mineral wool is compatible with all materials which it is likely to come into contact in normal industrial and building applications.

Environment: ROCKWOOL stone wool mineral wool presents a very effective ecological profile in all elements of manufacture, recycling use, service life and energy efficiency of material. No CFC's or HCFC's are used in its manufacture.

AUSTRALASIAN INSULATION SUPPLIES PTY LTD	PRODUCT DATA SHEET	REVISION: 7
		DATE OF ISSUE: Nov 15
		CHKD: IRS APPV: BAC



Product:	ROCKWOOL Rockpipe™	PDS 10
Type:	FABRICATED PIPE INSULATION FOR LNG PLANTS	
Name:	TYPE 105 (for use at up to 650°C)	Page 4 of 4

Health & Safety

ROCKWOOL materials are NOT CLASSIFIED as HAZARDOUS according to NOHSC criteria as a consequence of the following events and conclusions about the health effects of long term occupation exposure to mineral wool insulation products.

Under World Health Organisation (WHO) and its Monographs Programme of the International Agency for Research on Cancer (IARC) it has been concluded that, “rock (stone) wool” is now considered not classifiable as to carcinogenicity to humans (Group 3),

It is recommended that for the handling and installation of ROCKWOOL stone wool the internationally recognized Safety Data Sheet be followed. These are readily available from Australasian Insulation Supplies Pty Ltd.

Technical Advice and Thermal Calculation Service:

Heat transfer calculation for ROCKWOOL stone wool Type 105 pipe insulation systems in thermal design is readily available. AIS technical advisers are ready to give help and advice on any matter connected with insulation or products manufactured by ROCKWOOL.

For further information and technical advice on insulation contact:

AUSTRALASIAN INSULATION SUPPLIES PTY LTD

56 CUTLER ROAD, JANDAKOT, WA 6164

A.C.N: 0006 912 885

TELEPHONE: (08) 9417 9494

FACSIMILE: (08) 9417 9595

Email: sales@ais-group.com.au

website: www.ais-group.com.au

AUSTRALASIAN INSULATION SUPPLIES PTY LTD	PRODUCT DATA SHEET	REVISION: 7
		DATE OF ISSUE: Nov 15
		CHKD: IRS APPV: BAC