TIDL
insulation solutions

TIDL HT CALCIUM SILICATE PIPE SUPPORTS

TIDL PROMASIL®-1000

HIGH PERFORMANCE CALCIUM SILICATES

PROMASIL®–1000 is a lightweight calcium silicate insulation.

PROMASIL® materials are produced as boards, pipe sections, segments and
cut sections.

TECHNICAL DATA

Grade		-1000
Colour		white
Classification temperature	°C	1000
Bulk density	kg/m^3	245
Cold compressive strength	N/mm^2	> 1.5
Linear Shrinkage 1000 °C - 12h 1050 °C - 12h	 % %	 1.3 -
Thermal conductivity 200 °C 400 °C 600 °C 800 °C	 W/m K W/m K W/m K W/m K	 0.075 0.105 0.145 0.175
Specific heat capacity	kJ/kg K	1.03
Reversible thermal expansion	K^{-1}	5.4x10^{-6}
Protective gas-resistance		CO, NH3, H2, CH4, N2 atmosphere
Moisture content (air-dry)	%	ca. 3-8

DELIVERY SIZES

Made to order to customers requirements

PRODUCTION TOLERANCES

Length and width	mm	± 2
Thickness	mm	± 1

PROMASIL®-1000 PIPE SECTIONS + PIPE SUPPORTS

Inner diameter (min.)	mm	10
Outer diameter (max.)	mm	330
Pipe length	mm	500

TIDL PROMASIL®–1000

PROPERTIES & ADVANTAGES

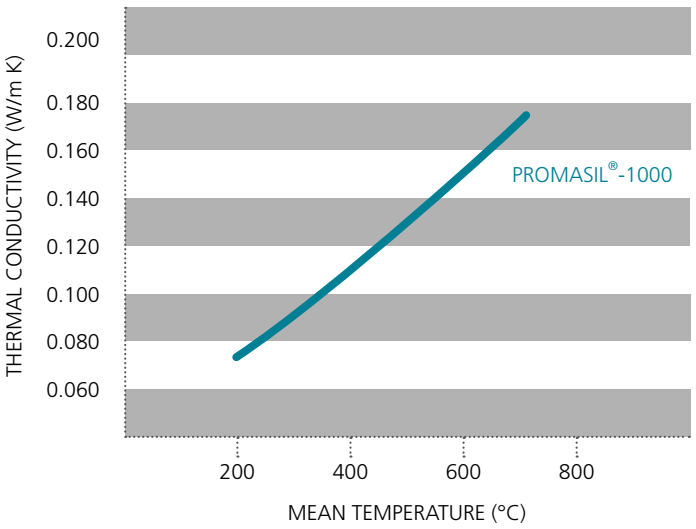
- low thermal conductivity
- low shrinkage
- low bulk density, low heat storage
- good mechanical strength
- excellent resistance to corrosion under insulation (according to ASTM C795 and ASTM C1617)
- resisitant to reduction gases CO, NH3, H2 and CH4
- free of sulphur, low iron
- good workability
- flexible size format, thickness up to 150 mm
- shaped parts available including pipe sections and segments
- product quality meets the ASTM and EN standards (CE mark)
- low assembly costs
- water repellent surface treatments
- antidust treatment
- chemical resistance improvement

APPLICATION AREAS

PROMASIL® materials are used in various industrial applications.

Pipe insulation, pipe support (suitable according to ASTM 1617 and 795)

THERMAL CONDUCTIVITY



DENSITY

- **High density** calcium silicates used as structural shaped parts in many industrial markets (1000 to 1800 kg/m^3)

For calcium silicates, a general rule is that **the lower the density, the lower the thermal conductivity and mechanical strength.** Low density materials form the basis of low thermal mass linings which reduce energy consumption, weight and the need for expensive steel support structures.

CLASSIFICATION TEMPERATURE & SHRINKAGE

Depending on the hydrothermal synthesis conditions, **different calcium silicate phases can be synthesised.** These products can differ on crystalline structure and chemically bonded water ((OH)2 groups and or H2O molecules).

- Tobermorite $Ca_5Si_6O_{16}(OH)_2.4H_2O$
- Xonotlite $Ca_6Si_6O_{17}(OH)_2$
- Wollastonite $CaSiO_3$

The dehydration of these minerals during temperature increase leads to changes in the mineral structure and consequently to thermal shrinkage of the product.

As with all insulation materials, a small amount of irreversible shrinkage will occur during exposure to heat. It is a result of dehydration which occurs with structural changes. With Promat calcium silicate products this **shrinkage is extremely slight and rarely has any influence on the effective performance.**

Over 1100 °C calcium silicates begin to sinter, therefore the calcium silicates are **limited to 1100 °C**.
Promat calcium silicate products have a range of classifi cation temperatures according to their density, chemical composition, and structure, making them suitable for a wide range of applications. The best performing products **are capable of withstanding continuous exposure to 1000 °C.**

PROMASIL® 1100 SUPER represents the very latest in calcium silicate technology offering superior performance with high structural integrity and high thermal stability over **a wide temperature range up to 1050 °C.**

MECHANICAL STRENGTH

The density range of our calcium silicate products extends up to 1800 kg/m³. This ensures **good mechanical properties and high mechanical strength**.

The mechanical strength of calcium silicates depends on the material compositive and the density over a wide range for both compressive strength and bending strength.

The excellent structural integrity of the calcium silicate gives **good machinability characteristics** and **enables the machining of complex structures.**

TIDL PROMASIL® –1000

DECLARATION OF PERFORMANCE

Unique identification code of the product-type:	**PROMASIL®–1000**
Type and batch numbers	**as given on the backside of each high temperature insulation board PROMASIL®-1000L.** **as given on the packaging of the high temperature insulation board PROMASIL®-1000L.**
Intended uses as given in the EN 14306.	**PROMASIL®-1000L is used in thermal insulation of building equipment and industrial installations (ThIBEII).**
Name and contact address of the manufacturer:	**Promat International N.V.** **Bormstraat 24 - B-2830 Tisselt - Belgium** **Plant: 1 - www.promat-international.com**
Authorised representative	**not applicable.**
System or systems of Assessment and Verification of Constancy of Performance (AVCP): The construction product is covered by a harmonised standard: EN 14306.	**see table**

ESSENTIAL CHARACTERISTICS	AVCP SYSTEMS	PERFORMANCE	HARMONISED TECHNICAL SPECIFICATION
BR1: Mechanical resistance and stability: not applicable.			
BR2: SAFETY IN THE CASE OF FIRE:			
Reaction to fire:	1	A1	EN 14306
BR3: HYGIENE, HEALTH AND THE ENVIRONMENT:			
Short term water absorption by partial immersion:	3	16,3%	EN 14306
Release of dangerous substances to the indoor environment:	-	No test method available	
BR4: SAFETY AND ACCESSIBILITY IN USE:			
Rate of release of corrosive substances: - Trace quantities of water soluble chlorides: - Trace quantities of water soluble fluorides: - pH-value:	3	Lower than detection limit. Lower than detection limit. 10,2	EN 14306
Dimensional stability:	3		
Compressive strength (CS10):	3	At 10% deformation: (CS10)4500 (≥ 4500 kPa)	
BR5: PROTECTION AGAINST NOISE: NOT APPLICABLE.			

BR6: ENERGY ECONOMY AND HEAT RETENTION:			
Thermal conductivity at 200°C	3	0,07 W/(m.K)	EN 14306
Dimensions (thickness dN) and tolerances:	3	dN: is given on the packaging tolerance class: +3 mm, -2 mm.	
Water vapour permeability (transmission coefficient μ):	3	4	
DURABILITY:			
Durability of thermal resistance against high temperature:	3	Maximum service temperature: ST(+)1000 (≥1000°C)	EN 14306

The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.
This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.
The reader of this document is invited to visit the website "www.promat-ce.eu" to review the latest version of this DoP.
The Safety Data Sheet (SDS) of PROMASIL®-1000L is available on request.

Signed for and on behalf of the manufacturer by

Carl Janssens,
Managing Standards and Regulations,
Tisselt, 23.08.2016

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