

THERMOMOLD PERM

PRODUCT DESCRIPTION

Thermomold Perm is a ready-to-use investment for casting permanent pattern foundry moulds. This product was developed to produce moulds used to cast aluminium alloys due to its high dimensional accuracy, excellent surface finish and high permeability, and is widely used in prototyping applications.

PRODUCT BENEFITS

- + Designed for Aluminium casting permanent pattern process
- + Foamed plaster
- + High permeability

TECHNICAL INFORMATION

Chemical Properties	
% water used	94
Mixing time minutes	2
Working / Casting time minutes	4
Initial setting time (minutes)	10-16
Linear expansion 2 hours after setting %	0.08

The technical data outlined represents typical figures only. For further details, please contact Saint-Gobain Formula directly.

INSTRUCTIONS FOR USE

The recommended Plaster to water ratio can be adjusted to precisely fit process and application. It is important to measure precisely Plaster and Water weights. Model preparation: Remove dust from the surface of the model using compressed air and apply a release agent. Mixing: Mixing plaster in water is the most important step in making a mould and could heavily impact resistance, hardness and absorption properties if performed incorrectly. Always ensure that all equipment is clean. Make sure that the mixing temperature does not exceed 20-25°C. The effectiveness of the foaming agent used will heavily depend on the water temperature used. Pour the plaster into the water and let it soak for 1 min. Ideally, the diameter of the mixing blade should be 2/3 of the total diameter of the mixing tank. Mix for 2 to 3 minutes at a recommended speed of 2000-2500 rpm. (A vortex should form and the bubbles should be as homogenous as possible). To create a bubble structure, use a high speed mixer with a metal, plastic or rubber mixing blade. The bubble structure and air volume generated depend on the type and size of the mixer used and the mixing time. For more information on this process, please contact Formula. Casting: Pour the mix immediately after finishing mixing. Make sure that the mixture does not become too thick or too hard. It is recommended to always pour the mix so as to slowly cover the surface. Plaster setting: Do not handle the plaster mould containing the silicon model until it has reached its setting time to avoid any defects in the finished part. Demoulding: After setting approximately 45 minutes, the plaster piece can be demoulded. The hardness and permeability of the mould will depend on the plaster / water ratio and the mixing system. Firing: Firing can be done in a traditional oven with or without air circulation. Using an oven with an air circulation system reduces the firing cycle time. This phase is generally performed at a temperature higher than 200°C for 30 to 72 hours. Before pouring metal, make sure all moisture is entirely removed from the mould to avoid creating imperfections in the cast parts. Note: drying time is heavily dependent on the size and number of moulds in the oven. The metal must be poured as soon as the mould comes out of the oven. Knocking-out: The mould is left to cool down, then shattered by immersion in water and/or by using a high pressure cleaning system. The part can then be recovered to undergo finishing steps.

PACKAGING AND SHELF LIFE

	Packaging Available	Shelf Life (Month)
Bag	25 kg	12

When stored under dry conditions and in its original packaging, the product will have a specified shelf life that commences from the date of manufacture that is displayed on each sack. Shelf life depends on the packaging type. For those products where a defined 'best before' date is applicable, BBE (Best Before End) followed by the date will be displayed on each sack.

STORAGE

Plaster based products are not recommended for conditions where they are likely to be located externally or in any way subjected to weathering or excessive dampness.

Absorption of moisture can result in changes to physical properties, including a reduction in the set strength of plasters and also a lengthening of setting time.

Gypsum minerals can be affected by absorption of moisture and may change physical properties.

To help protect the product during use, open or part used bags should be carefully folded and closed. Each bag is date stamped and stocks should be rotated so that the oldest material is used first.

CERTIFICATION

Thermomold Perm may generate dust. We therefore recommend that a mask be always worn whilst working with this refractory product and to ensure that the workplace is well ventilated.

ENVIRONMENT, HEALTH AND SAFETY

Material Safety Data Sheets of Saint-Gobain Formula plasters and gypsum minerals are available for all products and may be obtained directly on our website in the [product](#) and [documentation](#) sections. No liability is accepted by Saint-Gobain Formula for injury to any person or loss or damage to property by improper use of the product.

NOTIFICATION

The plaster to water ratios quoted are those used in Saint-Gobain Formula's standard test methods and are not necessarily those used in practice. The precise consistency to use will need to be adjusted to suit the individual application. Changes to plaster to water ratio will influence product performance, particularly setting time and strength. Unless otherwise stated, Saint-Gobain Formula's standard test methods apply. To obtain a copy of the test method, please contact Saint-Gobain Formula directly. This literature cancels and replaces any previous document. All information given is provided in good faith and may be subject to change. It's advisable to contact Saint-Gobain Formula in case of any doubt arising from the content of such information.

CONTACT

*For any information, please visit our website
www.saintgobainformula.com*



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