

METAPOR

micro-porous, air permeable aluminium composite material

Made of aluminium granules and epoxy resin. The material is **air-permeable over the entire surface**. In contrast to sintered materials, the pores are not closed off after machining.

The surface may be polished dry and without any polishing paste as smooth as a mirror.

Main fields of application:

1) Thermoforming moulds

Highly detailed moulds, engraved inserts and other intricate features are quickly produced since there is no need to drill vacuum holes. Even porosity on all surfaces results in extremely sharp definition and accuracy of formed components without deformation. Elimination of trapped air and related waviness f.e. at large flat surfaces or bottom inserts.

2) Vacuum clamping systems

METAPOR offers new possibilities as a result of its easy machining properties. A constant decompression within the material allows a strong holding force, even when the damping surface is partially covered. METAPOR vacuum damping device permits holding of parts without deformation. Since there are no drill holes or channels, even sensitive parts show no deformation. Static jam while ejecting can be eliminated using compressed air, which creates a smooth and even air cushion.

For completely covering of the damping surface the use of METAPOR-MACRO is recommended because of its higher permeability and surface hardness (technical data see below).

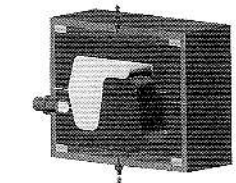
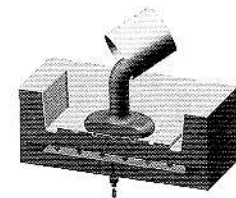
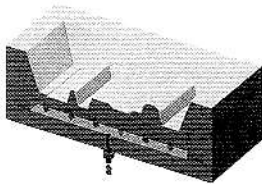
3) Pouring and laminating

Pouring and laminating with METAPOR-moulds is done by using a separating foil, which serves as surface-protection. The parts are produced without any deformation and with a top-quality surface. The negative remains clean, needs no releasing agent and may be re-used at once.

4) Die-casting and pressing process

Use of METAPOR moulds results in complete de-airiation of pouring products with high viscosity.

De-moulding is free of grooves and very easy by means of compressed air. METAPOR is an excellent substitute for plaster for ceramic-production with much longer life and much more exactness.



Four METADOR products exist for different applications. The products are different in permeability, size of pores and heat resistance.

Applications / Properties:

Product	Thermoforming Standard	Transparent	Vacuum-clamping	Air cushion systems	Heat resistance	Permeability*
BF 100 AL	X		X	X	108°C	100%
HD 100 AL		X			108°C	50%
BF 210 AL	X		X	X	210°C	100%
MACRO			X		102°C	300%

* The percentage refer to the permeability of BF 100 AL.

Properties/Product	BF 100 AL	HD 100 AL	BF 210 AL	MACRO
Density g/cm ³	1,8	1,9	1,8	1,7
Hardness shore D	81	81	82	80
Flexural strength N/mm ²	56	43,6	45,3	38,4
E-module N/mm ²	9000	9200	10500	9700
Impact strength kJ/m ²	14	11	12,5	12,5
Coefficient of thermal expansion at 25 - 125°C °C ⁻¹ × 10 ⁴	30,4	36	31	42,9
Heat conductivity at 100°C Wm ⁻¹ °C ⁻¹	19,1	20,5	18	9,9
Dim. stability acc. Martens °C	108	108	210	102
Mean pore diameter µm	15	12	15	70
Total porosity %	15	16	15	31

METAPOR is manufactured in **blocks of 500 x 500 mm** according to index below. Other sizes may be produced according to your desire.

Thickness	10 mm	15 mm	20 mm	25 mm	30 mm	40 mm	50 mm	60 mm	70 mm	80 mm	100 mm	150 mm	200 mm	250 mm	300 mm
Product	Item No.														
BF 100 AL	953.010	953.015	953.020	953.025	953.030	953.040	953.050	953.060	953.070	953.080	953.100	953.150	953.200	953.250	953.300
HD 100 AL	953.010HD	953.015HD	953.020HD	953.025HD	953.030HD	953.040HD	953.050HD	953.060HD	953.070HD	953.080HD	953.100HD	953.150HD	953.200HD	953.250HD	953.300HD
BF 210 AL	953.010HT	953.015HT	953.020HT	953.025HT	953.030HT	953.040HT	953.050HT	953.060HT	953.070HT	953.080HT	953.100HT	953.150HT	953.200HT	953.250HT	953.300HT
MACRO	953.010M	953.015M	953.020M	953.025M	953.030M	953.040M	953.050M	953.060M	953.070M	953.080M	953.100M	953.150M	953.200M	953.250M	953.300M

Other thicknesses may also be delivered.

For glueing we recommend:

Item No. 953.400: 2-component adhesive AV 138 with hardener HV 998 in packings of 1,4 kg, **heat resisting up to 120 °C**.

Please ask for further information and handling guidelines for METAPOR!

Upon request: **air permeable casting material ESPOR** and moulds or tools of this product.