

## CMT MATERIALS, INC

107 Frank Mossberg Drive Attleboro, MA USA 02703

Phone (508) 226-3901 Fax (508) 226-3902

Air permeable material

### Handling guidelines METAPOR®

METAPOR® is manufactured in blocks of 500 x 500 x 400 mm and sawed into slabs of any required thickness. After the sawing process, the air permeability of the slab surface is reduced due to partial closure of the pores. It is essential to **mill both surfaces of the slab** by cutting off approx. 0.5 mm, providing complete air – permeability.

### Slab identifier

	<b>METAPOR</b> Air permeable aluminium	<i>075701</i>	<i>53</i>	<i>10</i>
Product group				
Material name				
Slab number				
Characteristic value for air permeability: 0= resistance free throughput, 60= no throughput				
Slab thickness in mm				

### Storage

Store dry, protect against jolts and impacts. Avoid contact with grease and fluids.

### Machining

The machining properties of METAPOR® are excellent and are comparable with rapid machinable aluminium. **METAPOR® must be machined dry and should not be in contact with any cooling liquids.** In order to avoid any closure of pores, sharp tools made of HSS or carbide with edge angles as for aluminium must be used. It is recommended to use dust extraction.

Cutting speed up to 1000 m/min can be applied. The forward feed can be set up to 0.1mm/ tooth; in areas of thin walls the forward feed should be reduced.

### Grinding / Polishing

Grinding and polishing of the machined surfaces can be made by hand or with a vibrating grinder. Use corundum paper with grains of 400 / 600 / 1200 in the ascending order. **METAPOR® has to be polished dry and without any polishing paste!**

### Cleaning of areas, contaminated with grease, fluids or dust

Thoroughly rub light dishwashing liquid into the affected area. Rinse with water until cleared of foam. Heat METAPOR® for approx. 3 hours (depending on the size) in an oven. Temperature setting: 80°-100°C.

The pores of METAPOR® can also be cleaned by ultrasonic cleaning. Good results have already been achieved after 15 minutes at a frequency of 33kHz.

### Sealing of pores

In some cases, non air-permeable areas within a METAPOR® tool are required. The pores in those areas can be easily sealed with synthetic enamel, adhesive or epoxy resin.

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### Adhesive bonding

For METAPOR® BF 100 AL, HD 100 AL and MACRO products, we highly recommend to use **ARALDITE 2014** through CMT Materials, Inc or directly from CIBA for bonding. For the high temperature material BF 210 AL, we recommend to use

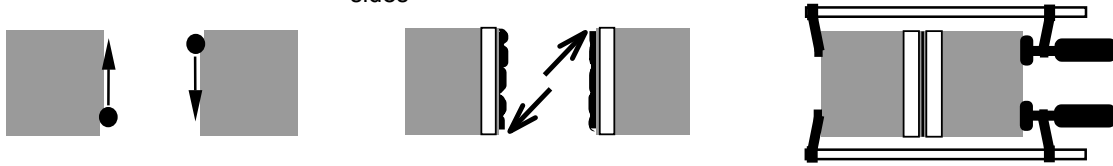
HYSOL EA 9394/C-2 from DEXTER Corp.

In order to achieve best bonding results while minimizing witness-lines, preheating of METAPOR® and adhesive to a temperature of 40-50°C is recommended!

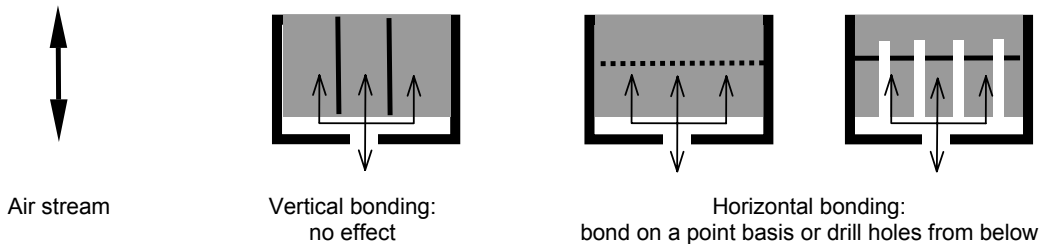
Mill plane the surfaces to be connected.

Cover frame segments with tape and apply adhesive on both sides

Press parts together. Allow adhesive to harden.



### Effect of bonded areas on air permeability



### Using screws with METAPOR®

METAPOR® tools can be fixed with particle board screws. Drill pilot holes with a reduced diameter of approx. 1 mm compared to the diameter of the screws. Inserts bonded into METAPOR® segments, provide good durability and strength.

### Repair of METAPOR® tool

In cases of small damage, the METAPOR® tool can be repaired as follows:

Damaged area should be removed by creating a conical cavity; then a slightly oversized METAPOR® plug is machined; for larger plugs, some **spots** of adhesive should be applied on contact surfaces; METAPOR® plug is then pressfit into the conical cavity and the surfaces are ground flat.

