



obomodulan®

Boards, block materials and cast blocks made of polyurethane for model-, tool- and mould making



OBO - Your partner for the realisation of your ideas!

The company

OBO-Werke GmbH & Co. KG was established in 1994, although the success story began with the company Otto Bosse in 1869.

From the beginning OBO has been located in Stadthagen where for more than 140 years the business has excelled in the manufacture of wood based laminate materials, for example obo-Festholz®, obo- Multiplex and special plywood and in more recent years obomodulan®.

In the mid 80's the first obomodulan® boards were supplied in Germany. What started from two grades, has developed over the years to a large comprehensive

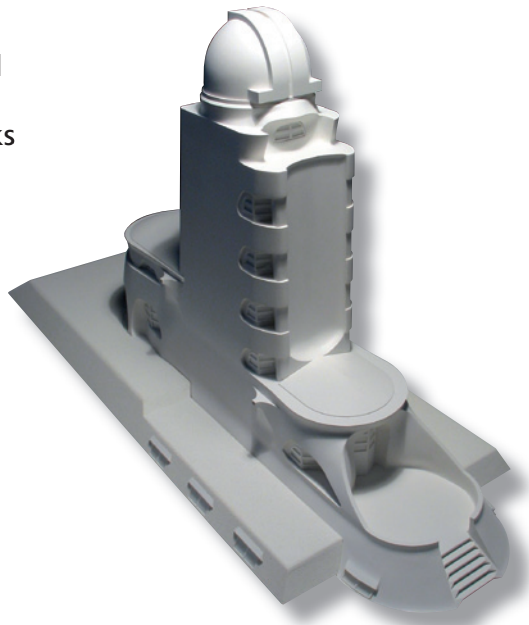
product range. Since July 2004 only polyurethane boards are now manufactured at the Stadthagen facility.



obomodulan®

We develop and produce Model and Tooling Boards, we also manufacture specially cast blocks of obomodulan® to our customers requirements.

More recently special applications have been realised from extraordinary ideas in addition to the well known such as - fences, sculptures and displays for exterior applications.



Our advantages are:

- a comprehensive range of differing densities from 80 up to 1600 kg/m³
- probably the largest range of standard board dimensions up to 2000 x 1000 x 200 mm depending on type and density to optimize efficient use of our material
- cast blocks and mould casting
- profile following bonded block constructions
- full service programme offering cutting, bonding and machining of boards

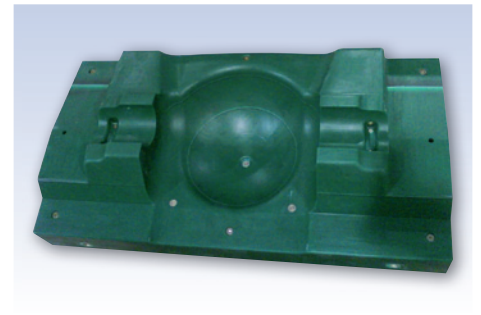


By kind permission of:
werk5 GmbH, Berlin

Properties

obomodulan® convinces by:

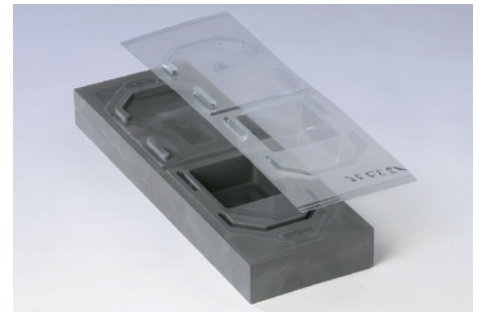
- homogeneous and smooth surfaces
- even, fine cell structure
- high edge strength
- low coefficient of thermal expansion
- free machining with low dust generation
- being generally recognized as physiologically neutral
- being odourless



Fields of application

obomodulan® is used amongst others in the following areas:

- Design models
- Styling and architectural models
- Data control models
- Operational models
- Flow patterns
- Original and master models
- machining/router fixtures
- Foundry patterns
- Checking fixtures
- Test units
- Laminating tools
- Pressing tools
- Hammer form tools
- vacuum forming tools



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Our standard types and dimensions

Technical Data (measured average values)								
Types	Colour	Density kg/m ³ (approx.)	Compressive strength approx. MPa DIN EN ISO 604	Bending strength approx. MPa DIN EN ISO 178	Linear thermal expansion coefficient temperature from approx. 25 up to 70 °C according to DIN 53752	Shore D DIN 53505	Deflection temperature	
80	yellow	80	Please ask for the technical data and dimensions for this product separately!					120°C
160	yellow	145	Please ask for the technical data and dimensions for this product separately!					150°C
210	light grey	200	3	3	43x10 ⁻⁶ .K ⁻¹	18-25	80°C	
302	pink	300	5	7	41x10 ⁻⁶ .K ⁻¹	28-45	80°C	
502	orange	470	13	17	44x10 ⁻⁶ .K ⁻¹	40-50	95°C	
500	magma	500	17	19	36x10 ⁻⁶ .K ⁻¹	47-63	80°C	
650	white	720	31	30	46x10 ⁻⁶ .K ⁻¹	67-69	90°C	
630	mokka	620	18	22	53x10 ⁻⁶ .K ⁻¹	46-56	80°C	
652	mokka	650	30	30	56x10 ⁻⁶ .K ⁻¹	60-70	80°C	
652HT	terracotta	650	27	28	62x10 ⁻⁶ .K ⁻¹	58-67	120°C	
700	terra	720	33	31	44x10 ⁻⁶ .K ⁻¹	61-70	80°C	
710	light blue	700	50	30	30x10 ⁻⁶ .K ⁻¹	68	140°C	
750	turquoise	750	32	36	59x10 ⁻⁶ .K ⁻¹	60-72	100°C	
850	grey	820	37	37	55x10 ⁻⁶ .K ⁻¹	65-75	100°C	
1000	crème	950	52	55	58x10 ⁻⁶ .K ⁻¹	70-76	90°C	
1200	green	1200	82	94	57x10 ⁻⁶ .K ⁻¹	81-85	80°C	
1200	sahara	1200	85	95	52x10 ⁻⁶ .K ⁻¹	82-85	90°C	
1400	blue	1200	94	100	76x10 ⁻⁶ .K ⁻¹	83-85	88°C	
1550	grey	1550	100	100	62x10 ⁻⁶ .K ⁻¹	85	90°C	
1600	grey	1600	94	65	43x10 ⁻⁶ .K ⁻¹	88	100-120°C	
1600	sand	1600	116	75	49x10 ⁻⁶ .K ⁻¹	88-89	94°C	
1700	black	1600	116	75	49x10 ⁻⁶ .K ⁻¹	88-89	94°C	

The technical data relating to the material and its processing has been compiled carefully and is correct to the best of our knowledge. The information cannot, however, be taken to be legally binding nor as any commitment that the material has certain properties or is suited for any particular purpose.

We deliver all standard boards tempered, trimmed and sanded.

Boards, finished tools and models should be stored flat in dry conditions at room temperature.

The material should be acclimatised to 18 - 25°C prior to machining. Temperature variations should be kept as moderate as possible.



Dimensions (mm)		● standard dimensions,	X possible dimensions		Fields of application																																				
750x500x50	1000x500x50	1500x500x50	1524x610x50	2000x500x50	1000x1000x50	2000x1000x50	750x500x75	1000x500x75	1500x500x75	2000x500x75	1000x1000x75	750x500x100	1000x500x100	1500x500x100	1524x610x100	2000x500x100	1000x1000x100	2000x1000x100	1500x500x150	2000x500x150	2000x1000x150	1500x500x200	2000x500x200	2000x1000x200																	
																																			visualizing-, styling-, conception-, milling program-, architectural-, proving- and laminating models; thermoplastic deep drawing tools						
		●		●		●								●																						original-, master- and flow patterns; windtunnel-, working-, data control- and laminating models; thermoplastic deep drawing tools, foundry patterns, architectural models					
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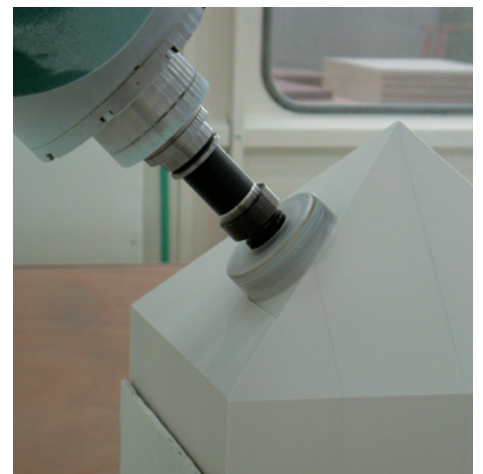
Machining

We recommend the use of high speed CNC-machine centres and traditional wood and plastic working machines for the purpose of machining obomodulan®. In principle, traditional metal working machines are also suitable for this purpose.

However, they generally do not achieve such high speeds and feed rates and may therefore be less efficient.

Carbide milling cutters should be used for machining purposes. Solid carbide for small milling cutters and reversible carbide tips for larger cutter diameters. The cutting edge geometry is identical to that used for machining aluminium.

We can send you the detailed machining processing information by fax or e-mail.



obomodulan® cast blocks/mould casting

To meet with your requirements obomodulan® can be produced as bespoke cast to size blocks; thus optimizing your costs through a reduction of time and raw material consumption.

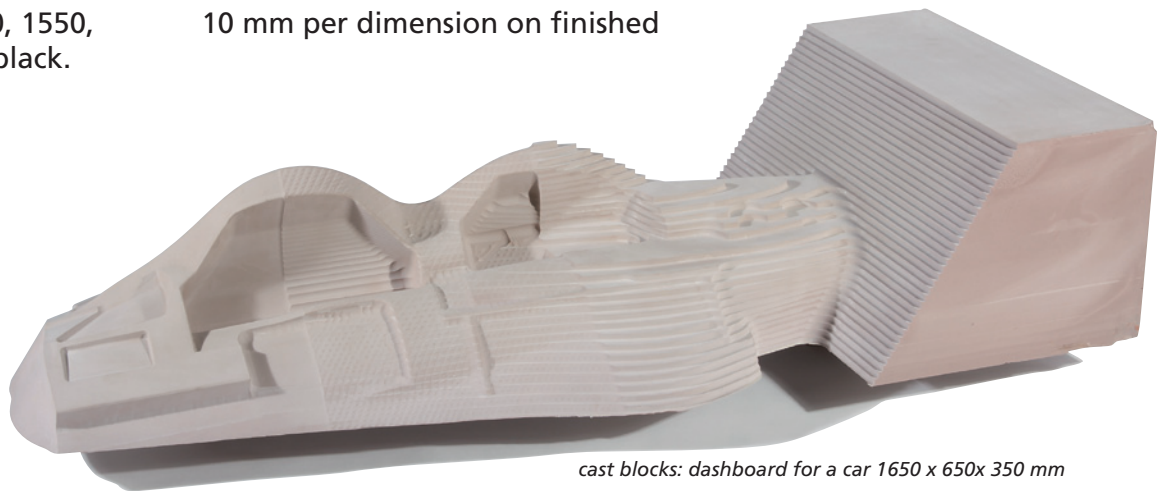
At present, we offer you this service for the obomodulan® types 700, 1000, 1200, 1550, 1600 sand and 1700 black.

Most shapes and profiles are possible in a wide range of dimensions. Cast blocks can be produced either to your design data or a supplied mould tool.

We are able to supply the cast blocks to your specified dimensions. Please allow an additional 10 mm per dimension on finished

sizes, plus any machining allowance you require when specifying cast blocks and boards.

Cast blocks will be delivered tempered but un-machined.



cast blocks: dashboard for a car 1650 x 650x 350 mm

Advantages and properties:

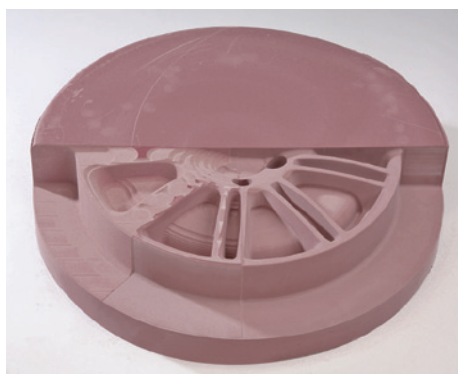
- Our cast forms are produced using the identical formulation as our board material.
- improved economic efficiency by reduced material consumption
- no glue lines
- profile following cast block
- reduced machining time by optimized shape



Casting in a special mould



Cast block with removable core and taper of mould



Wheel rim, with three machining stages



Individual cast block

Horizontal saw cut boards

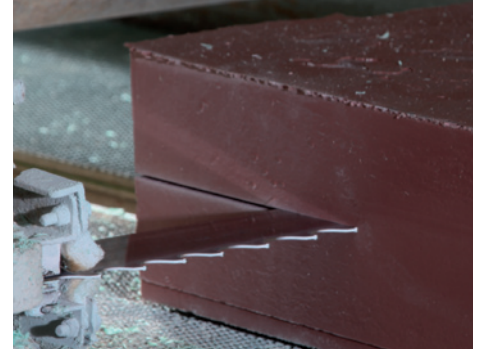
Beside our large variety of standard boards we offer you the following special service:

We cut boards starting at a thickness of 5 mm in every requested thickness with our horizontal saw.

We surface calibrate the boards after cutting.

Your advantage:

- optimized dimension
- easier handling
- reduced milling time
- lesser material waste



Horizontal saw

Bonding facility

You can have all obomodulan® standard types bonded according to your requirements with our bonding press.

We can provide blocks up to 6000 x 1700 x 800 mm, depending on type and weight.

We are able to offer you the type 210 and 302 with a dimension up to 2000 x 1000 x 2000 mm.

We use a two component Epoxy based adhesive. However, you may also use any other polyurethane, epoxy or polyester based adhesive of your choice.

This procedure offers the following **important advantages:**

- **Bonded boards and block construction** of this facility give the highest level of stability during machining.
- **Minimal and uniform glue lines**
- **Time and cost saving** production and processing
- **Increased efficient use of material**



Bonding press

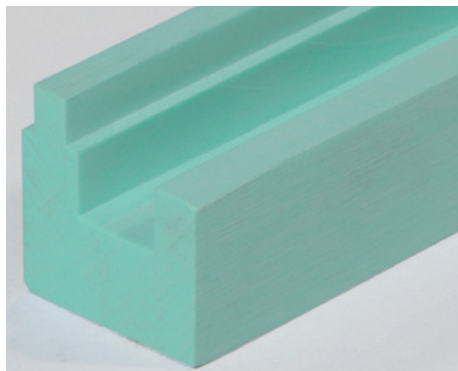


Profile following bonded block constructed

Special machining and service

On request we also manufacture cut to size or special dimensions according to your drawing or sketch.

Beside our CNC machines we have other machines for special machining in house. Please ask us and we are pleased to make you an offer.



Sectional strip made for a customer



CNC machine

Further Information

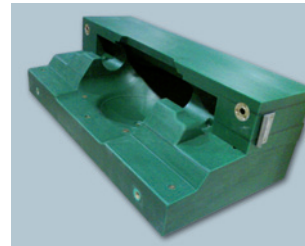
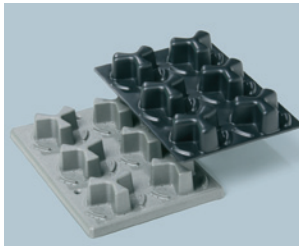
You can obtain the following information by fax or e-mail:

- machining data
- material safety data sheets
- information to individual applications:
 - cast blocks / mould casting
 - thermoforming
 - injection mould tooling
 - sheet metal pressing



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Certification

OBO-Werke GmbH & Co. KG are certified according to DIN EN ISO 9001:2008.

Our production process and the products are under continuous inspection and approval.

