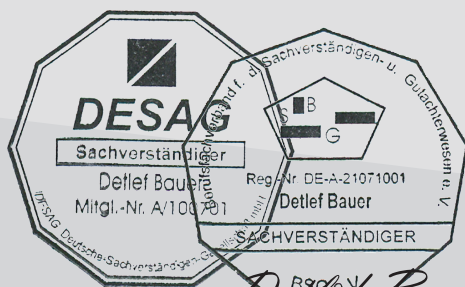


MATERIAL CERTIFICATE

Material Indication	Version 03/2015 PUCEST 90-15mf	Version 02/2024 PUCEST 85-15mf	Version 02/2024 PUCEST 65-15mf	Version 03/2015 PUCEST 55-15mf	Version 03/2015 PUCEST 25-15mf	Version 03/2015 PUCEST TIX
abrasion DIN ISO 4649 mm ³	12,4	6,2	3,6	6,3	63,1	41,9
hardness DIN 53 505 Shore A	90	83	63	55	25	85 (±5)
tightness DIN 53 479 g/dm ³	1230	1230	1220	1230	1230	1230
tensile strenght DIN 53 504 N/mm ²	45,2	45,3	38,2	24,6	6,6	
tear strenght DIN 53 504 N/mm ²	45,2	47,7	43,3	24,6		24,7
ultimate elongation DIN 53 504 %	538	572	591	623	630	225
tear-propagation resistance DIN ISO 34-1 N/mm	45,7	33,5	22,7	18,7	4,1	
Static friction Stainless steel		0,61				
Sliding friction Stainless steel		0,54				

The testing was made under room temperature and normal relative humidity. The values are guideline values. The above mentioned values cannot give a representation of characteristics, they are made under laboratory conditions.

The use of our products is outside of our control and will not release the costumer to make his own test for his specific application.



proved by:
Phoenix Compounding
Technology GmbH - Prüfwesen

stamp/ signature
Detlef Bauer

NOTE ON PROCESSING

A good machining of the harder PUCEST -materials is subsequently possible to achieve tighter tolerances than according to M3 DIN 7715. The machining can take place through drilling, rotating, milling, sawing, grinding or cutting. The most important fact in this connection is to pay attention to razor-sharp cutters and to choose as little small-angles as possible.

The machining of the harder types (from 85° Shore A) is easier than the machining of the softer types. As PUCEST opposes a big resistance against abrasion, it also tries to resist or to evade the tool cutter.

Longitudinal rotating

shore hardness	cutting speed	feed mm/rotation	tool material	tool angle alpha/beta/gamma	surface quality Rt (µm)
65	300-500	0,1- 0,2	SS-Stahl	12 / 53 / 25	100
80	300-500	0,1- 0,2	SS-Stahl	12 / 53 / 25	50
95	100-150	0,1- 0,2	SS-Stahl	12 / 53 / 25	20

Cutting-off

Tools which are similar to knives and which are also used in the wood treatment are most suitable. The tool angle should amount to 15°. To achieve a fine surface, it is recommended to use drilling water (emulsion) or oil for the lubrication and the cooling.

Drilling

Here you also have to pay attention to razor-sharp cutters. Drills which are common in the metal working industry can be used.

cutting speed v =	40-50 m/min
feed s =	0,01-0,03mm/Rot.

Only very hard materials can be treated with a bigger feed. The boreholes in the tighter polyurethane-types are usually 4-5% smaller than the drill diameter. The usage of drilling water (emulsion) is necessary.

Milling

With circumferential speeds of 200-400 m/min, surface qualities as stated below can be achieved with fast milling cutters. Tools with minor tooth numbers (2 or 3) are suitable to guarantee a good chip removal.

The following tool angles are recommended:

clearance angle =	10°
rake angle =	25°

Bonding

Basically, good bonded joints between PUCEST and other materials can be achieved. The most common joint is PUCEST together with metal. You have to stick to the processing advices of the PUCEST adhesive when bonding.

Grinding

For a better stability of the sheet material which shall be bonded, the material has to be roughened with coarse-grained grinding fibre discs on grinding machines.

Welding

The welding of sheet goods can only happen with our PUCEST WGS-PUR and our flux cored wire PUCEST WGS-FD.

Cutting/Sawing

The machining cutting methods are most suitable for PUCEST solid material as well as for reinforced perforated plates.

Water jet cutting

The PUCEST plates can also be perfectly cut to size with water jet cuttings. The following experience values concerning the cutting rate have to be considered.

Plates up to 12 mm cutting speed max: 550-580 mm/min
Plates 12 – 20 mm cutting speed max: 500/mm/min

Filling

The PUCEST plates can be filled or grouted after their grinding (like described in "processing advices PUCEST TIX").