

No. 526

Polishing acrylic glass parts



A

Description

Acrylic glass, also known as Plexiglas®, is a diverse material processed in many industries.

Acrylic glass is used for advertising lighting, in display and model-making, for picture frames, in interior fittings, in apparatus engineering, for sanitary objects, in the construction of vehicles, aircraft and boats as a noise protection element, etc. It is characterised by its good visible quality and high transparency (92%).



526/01

Acrylic glass is offered as cast acrylic glass (type GS = yellow protective film on the bottom of the plate) and as extruded acrylic glass (type XT = blue protective film on the bottom of the plate).

- Cast acrylic glass: wide processing scope, particularly suited for individual production and for small series production, e.g. displays, models, furniture, apparatus engineering, special glazing, etc.
- Extruded acrylic glass: more efficient and cheaper acrylic glass. Particularly suited for series production of advertising lighting, caravan/mobile home windows, less demanding series parts.

Previous solution:

1. Complex, energy-sapping and time-consuming polishing by hand.
2. Machine preparation with angle grinders. There is thus the risk of overheating the surface and polishing agent flying off.

The water absorption of acrylic glass increases with an increasing temperature. Permanent exposure to temperatures over 40°C can give acrylic glass a milky white colour. This can be remedied by air or oven drying, but only if there has been no considerable overstress.

Solution:

Using the ROTEX RO 150 FEQ, or alternatively the ROTEX RO 125 FEQ, and the corresponding Festool system accessories the above-mentioned problem can be solved quickly, cleanly and efficiently, and without the problem of heat development.

B

Tools/Accessories



526/02

The following tools and accessories are used in this application example:

Designation	Order No.
ROTEX RO 150 FEQ	
Geared eccentric sander ROTEX RO 150 FEQ	493915
Sanding pad ST-STF-D150/8 FX-H	493915
FastFix backing pad PT-STF D125 FX-R0125	493078

Alternative:

Designation	Order No.
ROTEX RO 125 FEQ	
Geared eccentric sander ROTEX RO 125 FEQ	571333
FastFix sanding pad, ST-STF D125/8 FX-H	492127
FastFix backing pad PT-STF D125 FX-R0125	492128
Polishing felt, hard PF-STF-D125x20-H	493078

Designation	Order No.
Polishing	
Fine-sanding polish, medium MPA 8000	492425
High-gloss polish, fine MPA 10000	492426
Ceramic high-gloss polish, extra fine, MPA 11000	492427
Finish cleaner MPA-F	493066
Microfibre polishing cloth MPA MICROFIBRE	493068

C

Preparation/Set-up



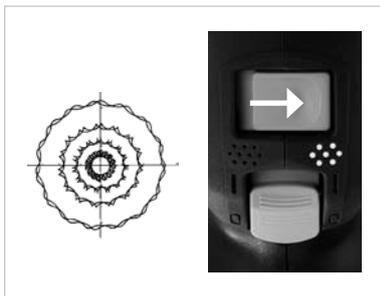
526/03

Sanding

	RO 150 FEQ	RO 125 FEQ
Sanding motion	Coarse sanding	
Electronic level	4 – 6	
Backing pad	PT-STF-D150-FX-R0150	PT-STF-D125-FX-R0125
Polishing felt	Felt, hard	
Abrasives	MPA 8000 MPA 10000 MPA 11000	

D

Procedure



526/04



526/05

Pre-polishing:

1. Position polishing felt D 150, hard, on the PoliStick backing pad.
2. Switch ROTEX to coarse sanding (see Fig. 525/0).
3. For safe work with the ROTEX the extraction channel not required is removed (see Fig. 525/05).
4. Set the speed to 4 – 6.
5. Apply fine-sanding polish MPA 8000 to the polishing felt.
6. The surface is polished by gently lifting the ROTEX over the felt edge.
7. Check the surface by wiping using the microfibre cloth.

High-gloss polishing:

1. Depending on the size of the workpiece apply sufficient high-gloss polish MPA 10000 or MPA 11000 to the workpiece surface.
2. Set the speed to 4 - 6.
3. Using a new polishing felt, hard, the entire area is polished crosswise to a high gloss with the machine in a planar position.

Notes:

1. The coarse sanding motion ensures intensive polishing and prevents the polish from flying off the pad. At the same time, the coarse sanding motion prevents the acrylic glass from heating up, especially when processing extruded acrylic glass (XT), as the softening temperature is approx. 10° lower than for cast acrylic glass (GS).
2. Finishing using a sheepskin pad should be avoided as acrylic glass is statically charged with friction and attracts dust. As long as the surface is not washed or cleaned, the antistatic effect from humidity and temperature remains and is maintained for a long period. However, should static charges occur on the surface, the acrylic glass can be wiped using an antistatic plastic cleaner and care product.
3. To prevent the polish flying off the pad when the ROTEX is switched on, it is important to start the tool only when it is lying on the surface being polished.

FESTOOL

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