



A high quality orthopedic material: moldable, resilient, convenient, hygienic.



EUROPLEX® O is a proven material for the manufacturing of orthopedic devices. The advantages can be summed up as follows:

- EUROPLEX® O is characterized by its excellent impact and notched impact strength as well as its rigidity. Insoles and other orthopaedic devices made from EUROPLEX® O are virtually unbreakable.
- EUROPLEX® O can be thermoformed from temperatures as low as 90 °C without predrying. It is easy to machine and its shape can also be subsequently corrected by simple means.
- EUROPLEX® O is not attacked by perspiration and is generally highly resistant to chemicals.
- The relatively light inherent color of EUROPLEX® O makes orthopedic aids very unobtrusive to wear and enables pressure points to be easily identified during fitting.
- EUROPLEX® O shows very good X-ray transmission. That means there is no need to remove orthopaedic devices for this examination method.
- EUROPLEX® O is physiologically unobjectionable and has a perfectly smooth surface. It is therefore easy-care and hygienic.



Transparent insole and orthosis manufactured from EUROPLEX® O sheets.

Transparent EUROPLEX® O sheets are available in size 2.000 x 1.250 mm and thicknesses between 1,5 bis 4,0 mm ex stock for short-term delivery.

| Product Properties | EUROPLEX® O | Unit | Standard |
|---------------------------------------|-------------|-------------------|-------------|
| Density | 1,08 | g/cm ³ | ISO 1183 |
| Vicat softening temperature | 99 | °C | ISO 306/B50 |
| Max. permanent service temperature | 70 | °C | |
| Modulus of elasticity | 2.700 | MPa | ISO 527 |
| Tensile strength | 85 | MPa | ISO 527 |
| Izod notched impact strength (3.0 mm) | 7 | kJ/m ² | ISO 180/1A |

Processing instructions for EUROPLEX® O sheets:

Sawing: Sawing should be performed using unset, carbide-tipped circular sawblades with the largest possible number of teeth (72 – 90). Take care to feed the material at a uniform rate, but not too slowly. With band saws, use slightly side-set blades with 14 teeth per inch (as for non-ferrous metals).

Milling: Clean cuts are achieved with single-edged endmilling cutters (plunge milling). The speed of the spindle should be about 11,000 rpm.

Drilling: For drilling you may use the commercially available twist drills designed for metal.

Die cutting: EUROPLEX® O can be die-cut without difficulty and does not need to be pre-heated.

Grinding: The best results are achieved with belt sanders of grit 240 at a belt speed of 8 to 10 m/s. Do not press the workpiece against the belt for too long or with too much force, but lift it briefly at intervals.

Polishing: Polishing is best performed with a buffing wheel made of grey cotton or flannel. Before starting to polish, apply some wax to the rotating wheel. The peripheral speed should be around 20 m/s. Once again: do not press the material to the polishing wheel for too long or with too much force, but lift it briefly at intervals.

Barrel polishing: Generally speaking, barrel polishing is also possible. Depending on the original surface quality, the material has to be kept in the barrel polishing unit for up to 24 hours.

Thermoforming: EUROPLEX® O has a glass transition temperature of 93 °C. Optimum thermoforming results are achieved at between 100 and 120 °C. If the temperature is further increased, this results in irreversible clouding of the material, which does not affect its mechanical properties, however. Pre-drying is not required. Since the thermoforming conditions vary widely from fabricator to fabricator, the degree of clouding may be regarded as a certain indicator of the optimum conditions (e.g. time span to onset of clouding under IR-radiator – 0.5 min.). The following data are meant as a guideline and will have to be adjusted to the actual conditions.

Heating by IR-radiator: At a distance of about 20 to 30 cm from the radiator, a heating period of about 2 min. is sufficient.

Heating in an air-circulation oven: At a preselected temperature of about 150 °C, the heating periods are approximately the following:
 2,0 mm thick 2.0 – 2.5 min.
 3,0 mm thick 3.0 – 3.5 min.
 4,0 mm thick 4.0 – 4.5 min.

Bonding: Best suited for bonding are products such as epoxy, cyanoacrylate or PUR-type adhesives.



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Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

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