



Liner production at elkamet

elkamet



ELKAMET AT A GLANCE

Foundation

1955 in Biedenkopf,
owner-managed
company until today



Employees

1.140 Employees
including 10% trainees
and students



Total Revenue

220 mil. Euro
(in 2023)



Certificates

- IATF 16949
- ISO 14001
- ISO 50 001



Business Units

- Extrusions for automotive windscreens and similar applications
- Extrusions for lighting and technical applications
- Plastics for lighting applications
- Tanks and molded parts for vehicles and technical applications



Production Sites

- Biedenkopf, Dautphetal-Wilhelmshütte and Dautphetal-Friedensdorf (**Germany**)
- Myslinka (**Czech Republic**)
- East Flat Rock (**USA**)
- Taicang (**China**)



WHO WE ARE: ROTOMOLDING FOR VEHICLES

Due to our wide range of options and perspectives in product realization, we have **extensive knowledge in processing plastics** and in personal cooperation with customers.

In our business area, we have **specialized in technical products**. These include, for example, fuel and hydraulic oil tanks as well as liners or air ducts.

In 2014 we started the liner production by **extrusion blow molding** and in 2019 by **rotational molding**.

On the basis of our participation/involvement in various research projects, **we are always state-of-the-art in terms of technologies**.



COMPETENCIES: WHAT WE OFFER

Support in the selection of the production process and choice of material



In-house development of tool concepts

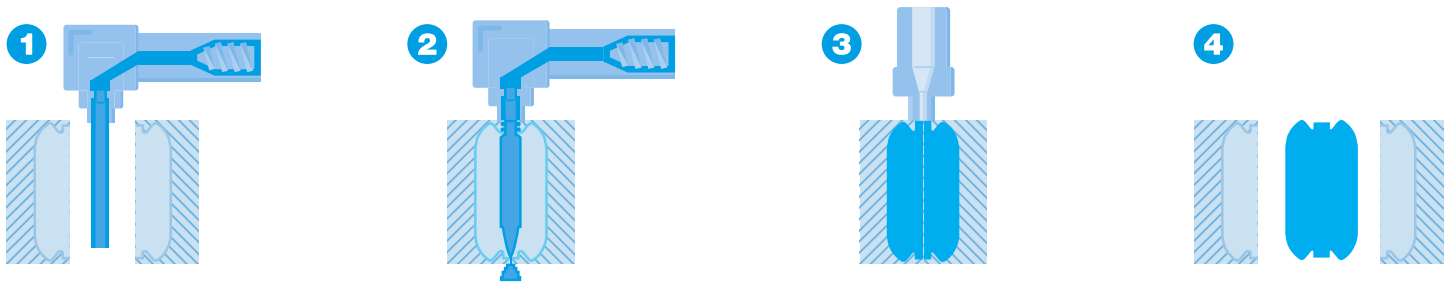


Development and production of customer- and product-specific cooling devices



Monitoring and recording of production temperatures



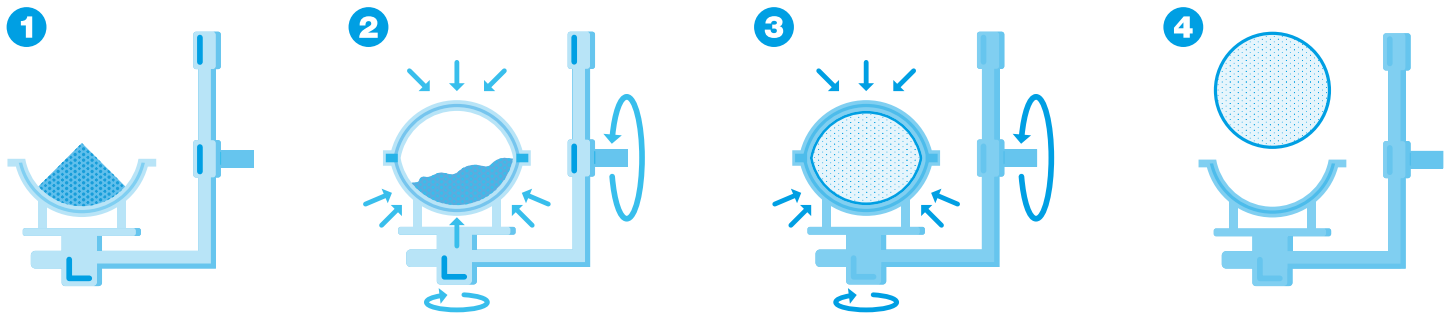


EXTRUSION BLOW MOLDING: PROCESS

- 1. Extrusion:** Melted material is pressed through the extrusion die
- 2. Clamping:** Parison is clamped between two mold-halves
- 3. Blow Molding:** Air pressure pushes the parison out to match the mold
- 4. Demolding:** Mold opens and the product can be removed

EXTRUSION BLOW MOLDING: MATERIALS AND SITES

- Materials:** PA 6, PE
Sites: Czech Republic



ROTATIONAL MOLDING: PROCESS

- 1. Charging:** Powder is filled into mold
- 2. Rotation and Heating:** Polymer turns into viscous melt
- 3. Rotation and Cooling:** Melt solidifies
- 4. Demolding:** Mold opens and product can be removed

ROTATIONAL MOLDING: MATERIALS AND SITES

- Materials:** PE, PP, XPE, PA 6, PA 11, PA 12
Sites: Germany, Czech Republic, USA

LINER PRODUCTION-CENTER

Elkamet has built a new separate area especially for the liner production. It is located at our new plant in Friedensdorf (Germany).

Advantages

- Complete traceability of the process by continuously monitored temperature zones inside the mold
- Direct electrical heating
- Shorter cycle times
- Precise wall thickness control
 - Achievement of uniform wall thicknesses over the entire product
 - Less bubbles inside the liner wall

Materials

- PE / crosslinked PE (rotational molding)
- PA 11 / PA 12 (rotational molding)
- PA 6 (rotational molding + blow molding)

Machines / manufacturing processes

- Rotational molding machines (GER, CZ)
- Conventional
 - Electrically heated
 - Extrusion blow molding machines (CZ)

Applications

- Hydrogen (H2)
- Compressed Natural Gas (CNG)
- Nitrogen (N2)
- Gases and liquids in general



Product sizes

Our equipment includes various machines for each process allowing us to produce different product sizes:

- Max. size of the product in the rotational process
 - L= 2700mm; D= 700mm
- Max. size of the product for extrusion blow molding
 - L= 2100mm; D= 750mm
- Final size depends on length-diameter-ratio



WHICH PROCESS IS SUITABLE FOR YOUR APPLICATION?

	Rotational Molding	Blow Molding
Tooling costs	• • •	•
Quantities	• •	• • •
Complex geometries	• • •	•
Cycle times	•	• • •
Product size	• • •	• • •
Material variety	• • •	• •