

# SEMI-FINISHED PRODUCTS

## Customized Solutions for Sophisticated Applications

With more than 40 years of experience in metal forming, heat treatment and melting technology, GfE Fremat GmbH (GfE) is an expert in the area of semi-finished products.

Technological, materials and application-technical knowledge are combined perfectly with crucial production facilities. From forming to tailor-made semi-finished products or components, this combination enables GfE to produce special material compositions, to meet high requirements of the dimensional tolerances or to realize further special product properties according to customer requirements. Customized product solutions at consistent high quality are one of GfE's strengths.



### Materials

With the individual selection of the material quality used and the adaptation of the production technologies, the resulting material properties can be adjusted as desired. For this purpose, GfE offers materials advice and development that is tailored to a specific application.

#### Refractory metals and their alloys

- tantalum / tantalum alloys
- niobium / niobium alloys
- titanium / titanium alloys
- zirconium / zirconium alloys

#### Special alloys, e.g.,

- nickel silver
- nickel alloys
- copper alloys

#### Special steel alloys

#### Special soft solder alloys, e.g.,

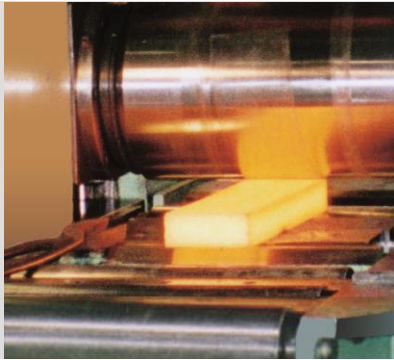
- tin alloys
- bismuth alloys



### Products / Delivery Forms / Dimensions

<b>Plates</b>	thickness 6 - 20 mm	width max. 350 mm	machined
<b>Sheets</b>	thickness 1 - 6 mm	width max. 350 mm	
<b>Strip material</b>	thickness 0.6 - 2 mm thickness 0.1 - 0.6 mm	width max. 200 mm width max. 150 (200) mm	
<b>Rods</b>	Ø 4 - 18 mm	length up to 3000 mm	hammered
<b>Rods</b>	Ø ≥ 20 mm	length ≥ 1000 mm	machined, turned

*Other dimensions, special sizes, special shaped parts, plates, targets: on request.*



## Production Technologies

GfE manufactures special semi-finished products both as individual pieces and small or large series. There is the possibility of reworking the provided material or a complete offer; the production chain can be already started by melting and casting.

Besides, finished moulded parts or work pieces can be manufactured according to drawing by mechanical processing.

### Technologies

- melting, casting
- forging, rolling, hammering
- annealing (high vacuum, air)
- straightening, cutting, die-cutting
- machining (turning, milling, grinding, polishing)

### Raw material

- purchase (ingot, slab)
- provision of customer material (reworking)
- melting and casting



## Applications

- energy and environmental engineering (e.g., electrodes, superconductors)
- furnace construction (e.g., furnace lining)
- chemical plant and apparatus engineering (e.g., fittings)
- medical engineering (e.g., pace maker components)
- precision mechanics and watchmaking
- measurement technology (e.g., thermocouples, strain gauges)
- textile machinery (e.g., spinning nozzles)



## Who we are

With more than 100 years of experience, GfE is one of the world's leading manufacturers and suppliers of high performance metals and materials. Based on our extensive material-scientific know-how we develop high-quality tailor-made solutions for a wide variety of different industrial applications. We offer our customers quick service and qualified technical advice.

Certification in accordance with ISO 9001, ISO 14001 and BS OHSAS 18001 support our claim to the highest quality and safety. We can thus guarantee products that meet the specific requirements of our customers. Their trust and satisfaction are the cornerstone of our business.

GfE is a subsidiary of AMG Advanced Metallurgical Group N.V., Netherlands, a global leader in the production of specialty metals and metallurgical vacuum furnace systems.



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