

# Platinised Titanium-Anodes

Innovative anode solutions



## Anodes

# Platinised Titanium-Anodes

## Specifications

Carrier metal:	Titanium, Ti
Material:	Grade 1 (DIN 3.7025) or Grade 2 (DIN 3.7035)
Anode body made of:	Expanded metal, sheet metal, tube, rod, wire, 3D materials (e.g. Ti felt etc.)
Construction:	According to customer requirements
Thickness of the Pt layer:	1.5 – 5 µm, in special cases up to 20 µm
Pt layer by means of:	Galvanic, pyrochemical process
Current density:	≤ 75 A / dm <sup>2</sup>
Application as:	Anode and bipolar electrode
pH of the electrolyte:	0 – 11 recommended
Bath temperature:	≤ 60°C recommended



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## Expanded metal types:

METAKEM offers various mesh sizes available for Ti expanded metals, see our [Overview of expanded metal types](#).

An anode made of **Platinised Titanium** combines the electrochemical behaviour of platinum with the corrosion resistance of titanium.

The anode offers the following advantages for the user over lead anodes or soluble anodes:

- ♦ Production of application-specific anode moulds
- ♦ Low weight and stable anode shape
- ♦ Uniform deposition due to stable anode shape
- ♦ Long service life with high current density
- ♦ Opportunity to conserve energy
- ♦ Re-coating of expensive anode moulds
- ♦ Good distribution of current density due to expanded metal
- ♦ No anode residues in the bath
- ♦ Titanium current supply with copper core possible for processes with high current densities

The anode mould made of expanded metal, sheet metal, rod, wire, or tubing is made of titanium.

The activating Pt layer is usually 1.5 – 5 µm thick and at most up to 20 µm for high loads. The service life of a **PtTi-Anode** depends on the bath type, the bath temperature, and the anodic current density. For high anode currents, a titanium current supply with a copper core is recommended.

For current densities <75 A / dm<sup>2</sup>, the consumption of the activating Pt layer is low (e.g. in fluoride-free chromium bath: 1 – 4 g Pt / MAh) and the service life of the anode is long.

For current densities >75 A / dm<sup>2</sup> or baths with a low fluoride content, platinised niobium is recommended as a **PtNb-Anode** (see “Platinised Niob”).

The **PtTi-Anode** made of expanded metal is the preferred choice good current distribution on the cathode. Expanded metal ensures a high scattering power, good electrolyte exchange, and a compact design with low weight.