Applications

- **corrosion-resistant coatings**: ZnMg, Ti, Al, Cr, Cu, Sn, Zn
- **decorative coatings**: TiN, Cr, Ti, TiO₂
- **transparent abrasion-resistant coatings**: SiO₂, Al₂O₃
- **hard coatings**: TiN, TiC, a-C, WC, Al₂O₃, a-C(H)(Ti/W)
- **insulating coatings**: SiO₂, Al₂O₃
- **conductive coatings**: Al, Cu, Sn, Mo
- **brazing and welding layers**: Cu, Sn, Si
- **photo catalytic layers**: TiO₂
- **solar absorption layers**: Ti or Cr based cerments
- **conversion layers**: SiO₂
- **high-reflective layers**: SiO₂, TiO₂
- **special functional layers**: Al, Cu, Sn

Coating processes

- high-rate electron beam evaporation
- evaporation of metals, compounds, alloys
- plasma-activated deposition processes (SAD and HAD)
- reactive deposition processes
- pulse magnetron sputtering
- other PVD processes (e.g. jet evaporation)
- PECVD processes

Equipment

- **general**: modularly built 8-chamber equipment
- **general dimensions**: length / width / height: 14 m / 2.5 m / 4 m
- **coating width**: up to 500 mm
- **substrate speed**: 0.001 ... 1.0 m/s
- **strip dimensions**: • width up to 300 mm
  • thickness 0.015 mm – 1.5 mm
  • weight of coil up to 1000 kg
- **sheet dimensions**: • size up to 500 mm x 500 mm
  • weight up to 15 kg
- **1st electron beam gun**: power maximum 160 kW
- **2nd electron beam gun**: power maximum 300 kW
- **additional equipment**: • heater, power maximum 60 kW
  • different ion etchers, power maximum 30 kW
  • dual magnetron sputter system, power maximum 30 kW
  • power supply for plasma activation, arc current max. 3000 A
  • magnetic trap for the EB coating of temperature sensitive substrates
  • turn-over device for double side coating of sheets
  • XRF-thickness-distribution-measurement-system
  • optical film thickness measurement system by using acromatic light
Coating equipment

- Magnetic field enhanced ion etcher
- Radiation heater
- After-treatment station
- High-power electron beam gun
- XRF-thickness-distribution-measurement-system

We focus on quality and the ISO 9001.

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plasma

general
(flexible technological equipment - example)

1 ... various pre-treatment processes,
e.g. heating, etching, deposition of interfacial layers
2 ... high power electron beam gun
3 ... various crucibles to deposit materials of different materials
4 ... plasma-activated deposition process
5 ... thermal after-treatment, e.g. electron beam heating
6 ... XRF-thickness-distribution-measurement-system, optical film thickness measurement system by using acromatic light
7 ... squeeze valve, during coil change
8 ... sealing tool pairs to decouple pressure
9 ... interaction device for double side coating of sheets
10 ... high power electron beam gun
11 ... strip edge control for double side coating of sheets
12 ... squeeze valve, during coil change

strips

maximum size: 500 mm × 500 mm
maximum weight: 15 kg
maximum speed: 0.001 ... 1.0 m/s

sheets

maximum size: 500 mm × 500 mm
maximum weight: 15 kg
maximum speed: 0.001 ... 1.0 m/s

Schematic layout of the MAXI plant

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