

Surface materials engineering



PVD-PECVD TECHNOLOGIES
INNOVATIVE COATINGS

HEF, world leader in surface materials engineering, provides unique coating solutions, available throughout the world.

01 | About **PVD-PECVD technologies**

02 | Characteristics of our **surface coatings**

03 | The **benefits of our deposits** for your applications

04 | Technologies and **equipment made in HEF**

05 | **CERTESS[®]**: a complete range of surface materials

06 | Our **markets**

01 | About PVD-PECVD technologies

[PVD VIDEO](#)

02 | Characteristics of surface coatings

1 / The PVD technology adapts to the geometry of the part:

- Flat or curved surface
- Cylindrical or tubular parts
- Simple-shape parts

2 / Chemical vapour deposition can be used on polished, textured or machined surfaces and on a broad range of substrates:

- Metals: steel, stainless steel, aluminium, titanium, copper, magnesium, etc.
- Ceramics: alumina, zirconia, etc.
- Polymers: PC, PS, PMMA, PEEK, etc.

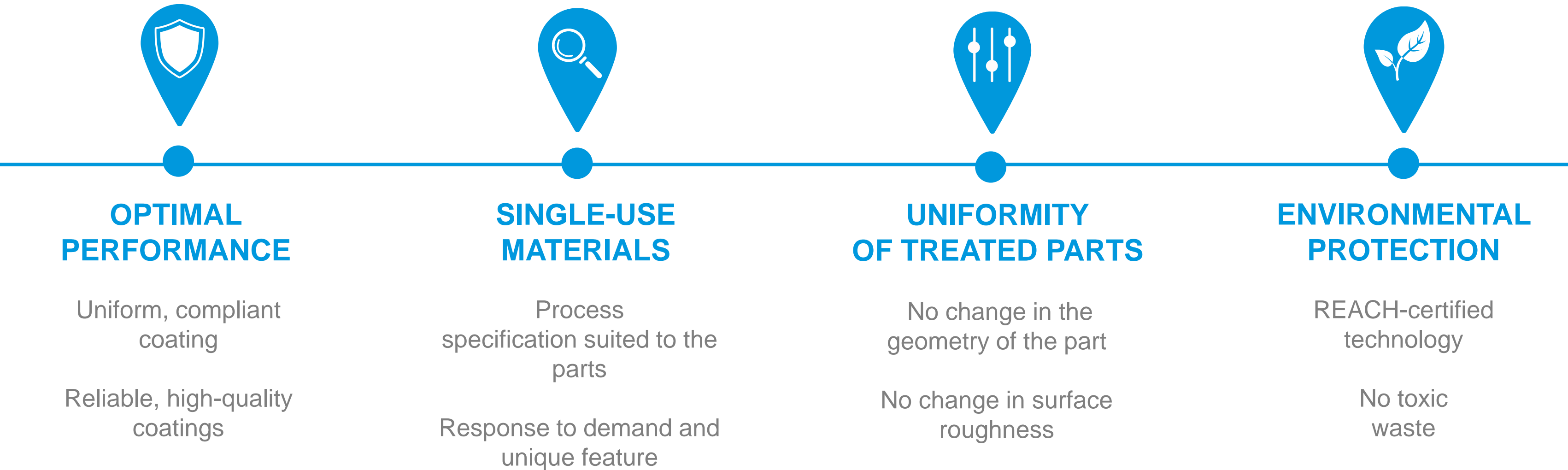
➤ **With our expertise, we can tackle complex geometries and large sizes.**



Coating characteristics
such as thickness or hardness are
customised to meet your needs.



03 | The benefits of PVD for your applications



 **PVD improves the properties of your parts by protecting them from harmful external factors.**

04 | Technologies and equipment made in HEF

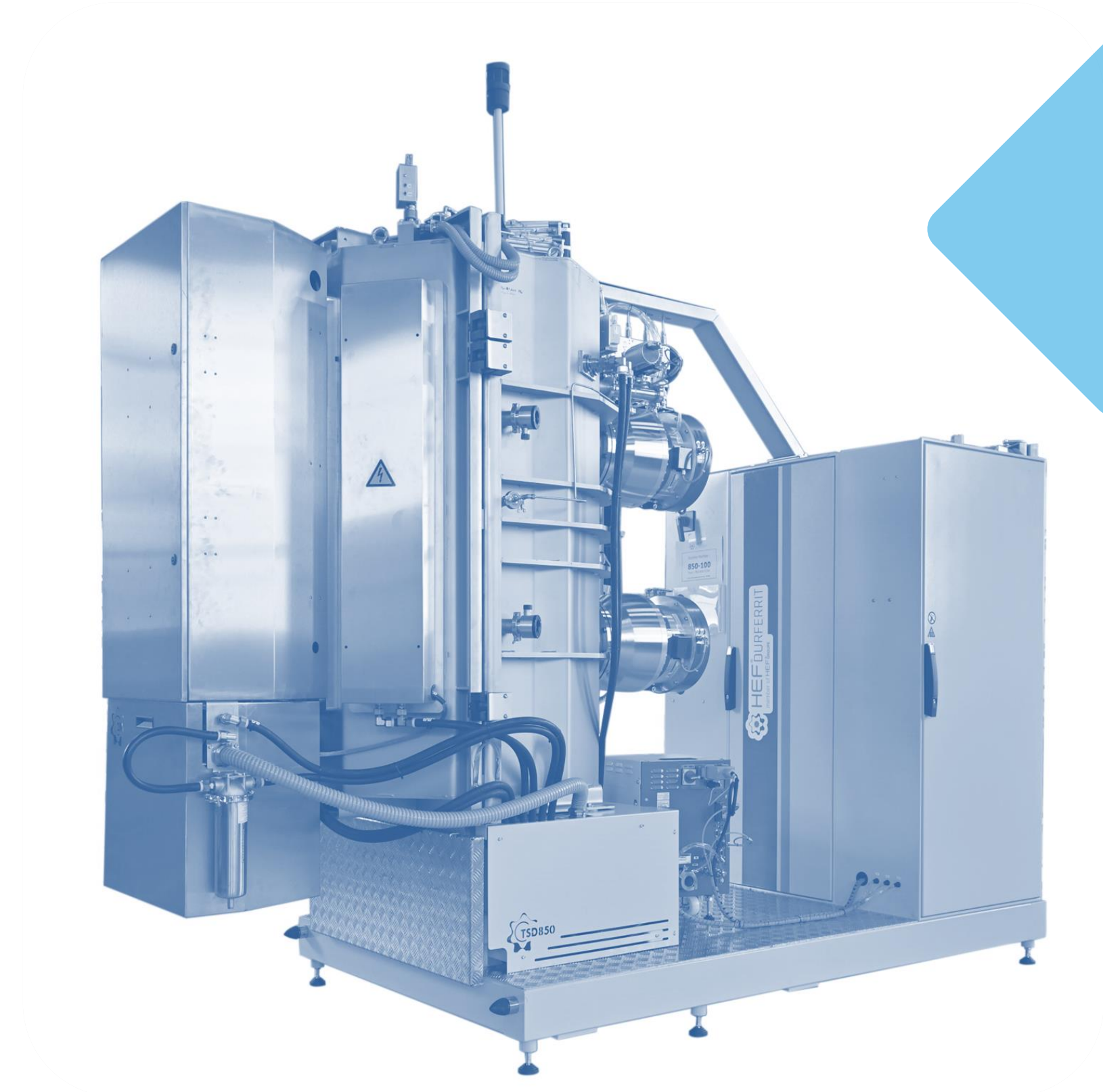
HEF designs and manufactures all its equipment in France. It is shipped and installed in our subsidiaries worldwide to guarantee production uniformity.

Example of TSD 850 coating system:

- 1,000 mm treatment height
- Fully automated system
- Latest-generation pumping system
- Plug'n'play sources
- More than 100 systems worldwide



HEF can create tailor-made surface coating machines to meet your expectations.

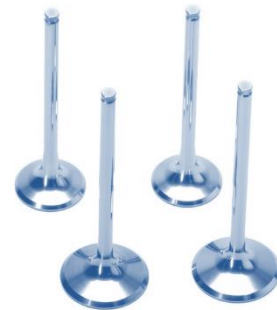


05 | CERTESS®

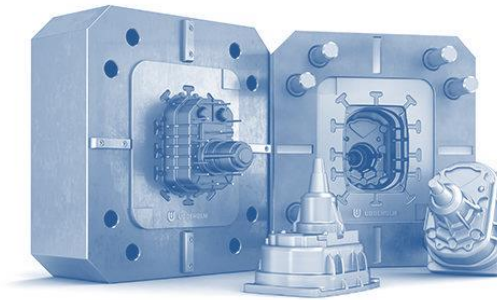
A complete range of high-performance coatings suited to specific operating environments,



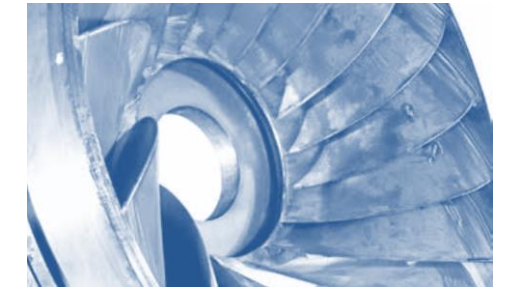
Cestess® Carbon: carbon coating to improve tribological properties (DLC)



Cestess® Nitro: nitride coating to improve mechanical properties



Cestess® Eject: smooth coating to improve mould performance



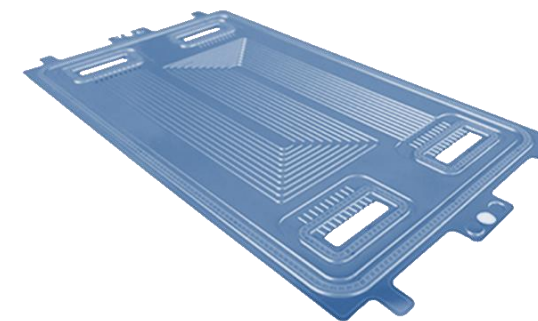
Cestess® Blast: multi-layer coating to combat the erosion of components



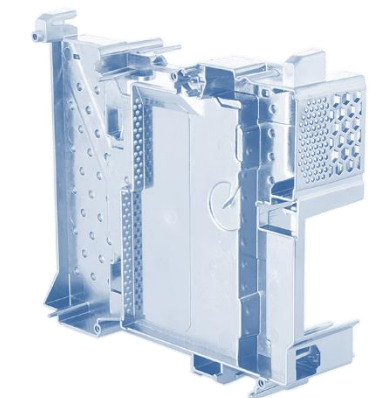
Cestess® Look: technical coating to improve the visual appearance



Cestess® Life: biocompatible coating for medical applications



Cestess® Elec: conductive coating to improve electrical properties



Cestess® Procem: multi-layer coating to protect against electromagnetic interference

06 | Markets

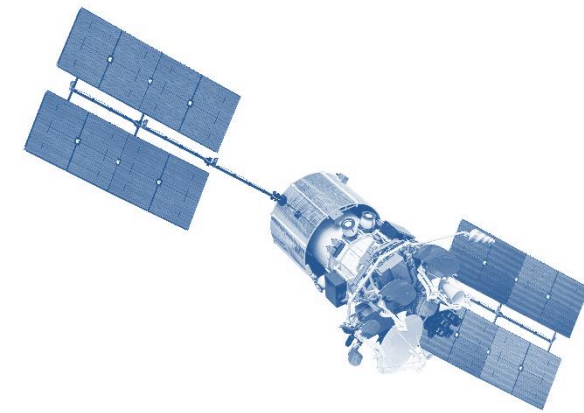
Covering 5 markets, our coatings combine long-term protection with second-to-none performance.



MOBILITY



ENERGY



AEROSPACE AND DEFENCE



CONSUMER GOODS



PACKAGING

Our expertise at your disposal,

HEF provides you with its extensive expertise, across the world with a global presence via 90 sites in 21 countries. PVD-PECVD technologies are eco-friendly and effective, as they protect your parts in the long run.

Our commitment to research and innovation is what drives us at HEF, which is why our teams ceaselessly develop new materials and customise treatments so that your parts are ever more sustainable, resistant and efficient,



www.hef.group

