

CERTESS[®] PROCEM[®]

PROCEM[®] layers are conductive multilayer metallic coatings designed for the electromagnetic shielding of polymers and composite materials.

The production of electrically conductive coatings is one of the commonly used methods to ensure the shielding function without fundamentally questioning the design of the devices. In addition to the EMC function, additional requirements are often associated, such as corrosion resistance and solderability.

These PVD treatments make it possible to reconcile these various requirements while providing other advantages linked to the implementation process: the dimensional accuracy, the quality of any sparing, the negligible impact on the weight of the objects.

Characteristics:

- Discharge of electrostatic charges
- EMI shielding
- Multifunctionality (resistance to chemical aggression, friction or abrasion, etc.)
- Negligible impact on the weight and precision of objects
- Possible application on large parts

Materials suitable for treatment:

- Glass • Engineering plastics • Organic composites • Ceramics • Cermets • Metals and alloys

Examples of use:

- Weaponry components • Captors • Telephony • Connections • Sensors • Printed circuits • Heating elements • Satellite antennas

Trade name	CERTESS [®] PROCEM [®] 2	CERTESS [®] PROCEM [®] 3	CERTESS [®] PROCEM [®] 4
Architecture	Silver base	Copper base	Aluminium base

The deposited layers generally have a thickness of 1 to 5 µm, adaptable according to requirements.

The deposition temperatures are typically dependent on the substrate.

PROCEM[®] is used for electromagnetic shielding in telecommunications, aerospace, weaponry, and for its high conductivity in connectors and electrical components. It is also a good alternative to hard chrome.

This coating can be applied to most polymers and composites, as well as to alloys containing little or no zinc, tin, magnesium, or lead.

Coatings	Composition	Thickness	Minimum treatment temperature	Square resistance R (mΩ)*	Applications
CERTESS® PROCEM® 2	Silver base layer	Typically 1 - 2µm depending on application	~90°C	< 20 mΩ	Electromagnetic shielding/EMC Automotive Telecom Aerospace Military
CERTESS® PROCEM® 3	Copper base layer		~80°C	< 30 mΩ	
CERTESS® PROCEM® 4	Aluminum base layer		<80°C	< 50 mΩ	

*Depending on measurement protocol

