

SURFACE TREATMENT
ELECTROLESS NICKEL + PTFE
DSF 1.1.4

Definition:

An electroless plating process which uses an auto-catalytic chemical reaction to deposit a non-porous surface coating of nickel/phosphorus combined with particles of PTFE onto a wide range of substrates. Components plated in electroless nickel possess an excellent combination of wear, corrosion and chemical resistance. The result is a very accurate, dry-lubricated, low friction surface that is extremely hard and resistant to wear. This process provides a highly accurate layer with no deviation in plating depth over the entire surface of the component, regardless of the complexity of its design. The uniformity of its deposit is why electroless nickel plating is increasingly preferred over conventional electrolytic plating.

Treatment Information:

The engineering drawing will identify the area to be treated.
Typical thickness is: 10µm unless otherwise stated.
Deposit hardness approximately 33 Rc, but on request can be increased up to 59 Rc by means of a secondary heat treatment.
Electroless nickel can be applied to a wide range of substrates including, aluminium and aluminium alloys, copper and copper alloys, ferrous and stainless metals, beryllium copper, zinc and titanium.

Appearance:

The finished article shall be free from visible plating defects such as blisters, pits or un-plated areas.
The plating will be smooth and adherent, clean and free from damage.

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Description:

This process offers a very accurate (dimensionally controlled) dry lubricated composite coating.

Combines low friction & release properties of PTFE with the functional wear resistant hardness of electroless nickel.

Properties:

- Corrosion & wear resistant.
- Dry lubrication, non-stick low friction.
- Uniform coating & wide operating temperature.
- Plates on most metals (mild steel; stainless steel & aluminium).
- Electrically conductive (non-insulating).
- No post machining or hardening.

ASM (DEK) Applications:

Suitable for components & assemblies that cannot use conventional lubricants or are difficult to access & maintain.

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