



Advanced Hard Coatings

Nitron C

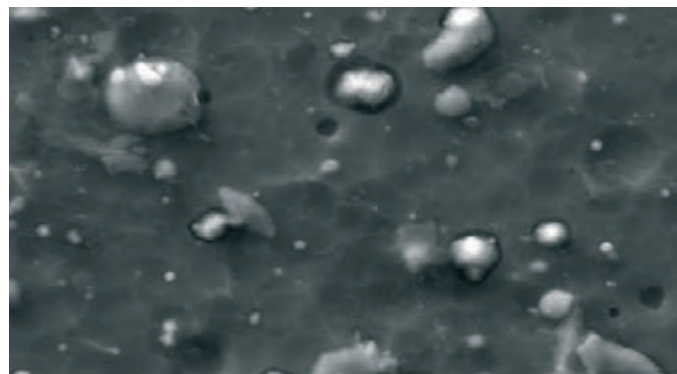


Wallwork Nitron C is a hard PVD coating with excellent release and wear properties which can be applied to a metallic surface. It improves corrosion resistance and has a low coefficient of friction.

Wallwork Nitron C has been developed using Wallwork's unique Electron Beam Evaporation technology. Nitron C can be used as a direct replacement for hard chrome plating, ion nitriding, chemical vapour deposition (CVD), or thermal spray processes such as HVOF.

Defect-Free Coatings

The images below show a direct comparison between standard CrN deposited using Cathodic Arc and Nitron C deposited using Wallwork's electron beam technology. No post-deposition polishing is required to remove defects or droplets.

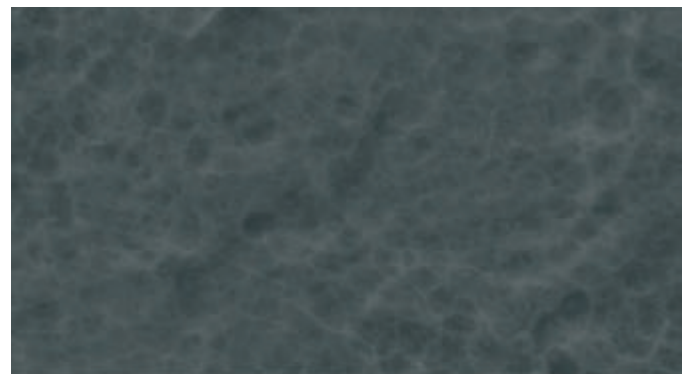


Cathodic Arc: x100 magnification

Nitron C Guideline Characteristics

Hardness	1800 – 2200 VPN
Colour	Silver grey
Oxidation temperature	480°C
Coefficient of friction	0.4 – 0.5 μ
Deposition temperature	Below 450°C
Thickness*	1 – 4 μ m

* Thicker coatings available on request.



Wallwork Electron Beam: x100 magnification



Hardness

Wallwork Nitron C is twice as hard as conventional hard chrome plate, with lower friction and lower residual stress levels.

FDA Compliance

Wallwork Nitron C coating is non-reactive, non-absorbent, and non-additive. It has a high resistance to abrasion and there is little or no likelihood that components of these materials would migrate in significant amounts depending on application. Therefore, these coatings satisfy the FDA regulatory guidelines.

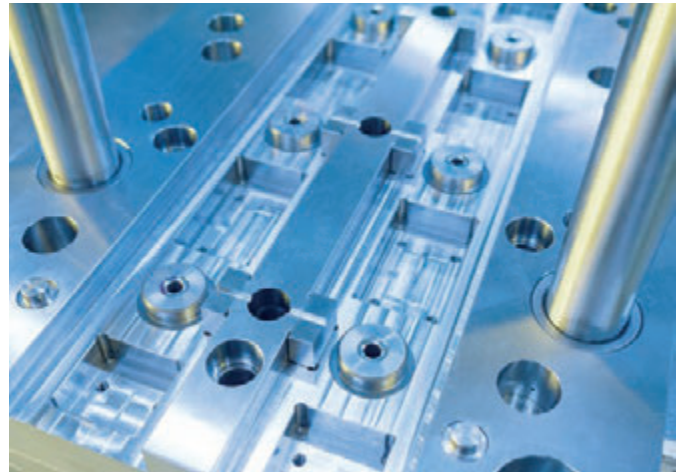
Anti-stick Properties

Wallwork's unique Electron Beam Evaporation processes give a smooth, droplet free surface, when combined with a highly polished substrate. Wallwork Nitron C gives exceptional release properties on many materials (including metals, plastics and powders) when forming, punching or moulding. Wallwork Nitron C follows the tool geometry with minimal build up on the edges as opposed to a wet plating processes.

Process Specification Development

Wallwork Nitron C can be completed to pre-defined standard processing using Wallwork Process Specification PS301, with process acceptance criteria of coating thickness and adhesion per run.

Part specific Process Specifications to capture all unique cleaning, processing or testing requirements can be created and validated as required; contact Wallwork Cambridge for further details.



REACH

Nitron C is compliant to UK REACH regulations and is a very good replacement for components currently being hard chrome plated.

Increased Tool Life

Nitron C will also reduce abrasive or fretting wear on the tool, reducing downtime and frequency of tool replacement.