



Diffusion Alloys

COATING AT THE CORE

A Time To ACT plc business

For more technical or general information contact us at:

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Telephone: +44-(0)1642 967139

Or visit us at: www.diffusion-alloys.com

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HYDROGEN

Clean Technology

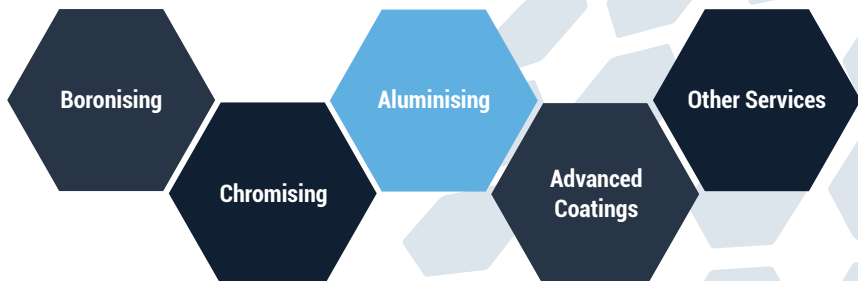
Diffusion Alloys recognises the need for an industrial revolution to drive down carbon emissions and protect the planet for future generations.

We are at the forefront of applications for clean energy and the hydrogen industry. We offer a range of diffusion coatings to protect metal and systems degradation caused by:

- High temperature corrosion
- Hydrogen permeation
- Oxidation
- Metal dusting
- Chromium poisoning
- Wear and erosion

Our coatings are already providing demonstrable protection and life extension in:

- 'Blue' hydrogen generation (SMR)
- Solid oxide fuel cells (SOFC)
- Solid oxide electrolyser (SOE)
- Green ammonia
- Green transportation fuels
- Energy storage (batteries & other)
- Heat exchanger units
- Nuclear(LCR)



We are committed to providing coating technologies and processes that meet the global supply chain requirements of our customers for decades to come.

Industry references include clean technology, power generation, aerospace, oil & gas, petrochemical & refining, steel, & automotive.





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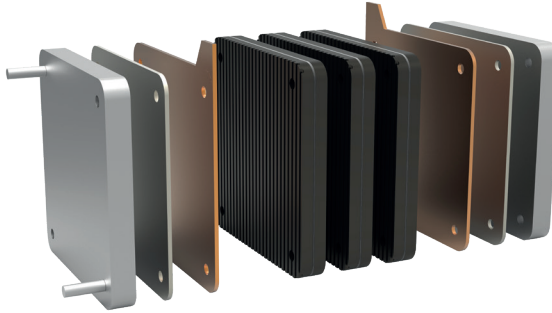
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A focus on ALUMINSING

Aluminising, sometimes referred to as Alonizing and Calorizing, is a high temperature chemical process whereby aluminium diffuses into the surface of the base metal to form a metallurgical aluminide surface layer.

This protection is conferred by the aluminium oxide that forms at the aluminide coating surface in service. This oxide constitutes an extremely effective barrier. The aluminide coating essentially acts as an aluminium reservoir to maintain and support the aluminium oxide. Materials suitable for aluminising include mild steel, low alloy steels, cast/wrought stainless steels, nickel-base alloys and nickel-iron alloys.

Properties and Uses of Aluminising

Aluminide diffusion coatings offer protection in medium and high temperature operating environments against:

- Hot Corrosion
- Hydrogen permeation
- Carburisation
- Sulfidation
- Oxidation
- Metal Dusting
- Chromium poisoning

Diffusion Alloys' Aluminising Facility and Processes

- Processing capability for large and small components.
- Process know-how for coating complex internal geometries as well as external surfaces.
- A comprehensive range of furnaces; laboratory scale, medium and large production furnaces and have the largest aluminising furnace of any diffusion coating company in the world, coating up to 18m tube length.
- Coating by pack cementation, above pack vapour and slurry.
- Full capability laboratory testing facility, including SEM/EDX.

We work with our customers to develop, analyse, and test diffusion coatings specific to our customer's system requirements. We understand our customers development schedules and can design and deliver a coatings development program efficiently and effectively whilst also providing practical input and solutions for productionising and commercial viability.

