BLOOH SOLUTION LTD.

SCANDIUM ALLOYS FOR

MARINE APPLICATIONS

ENGINEERED FOR USE AT SEA

www.blooh-solution.com

SCANDIUM AT SEA: MARITIME TOUGHNESS MEETS AEROSPACE PRECISION

Maritime environments are among the most corrosive and mechanically demanding in the world. Offshore platforms, ship hulls, and marine engineering components face constant exposure to saltwater, humidity, impact stress, and structural fatigue.

Traditional marine-grade aluminum alloys, such as the 5xxx and 6xxx series, offer decent resistance—but fall short in corrosion protection, weight optimization, and long-term durability.

BLOOH Solution Ltd. delivers the next generation of marine materials with its scandium-aluminum solutions, engineered for strength, stability, and superior corrosion resistance.

BS-BREAKTHROUGH

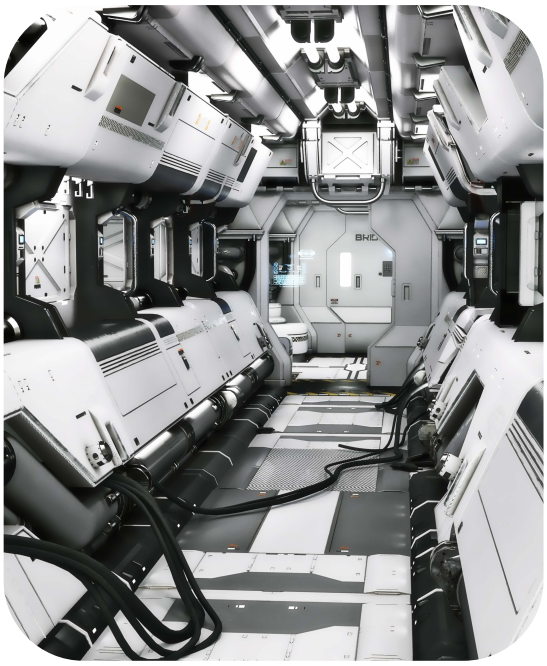
By adding scandium, BLOOH Solution's marine alloys achieve exceptional resistance to pitting, crevice corrosion, and stress corrosion cracking—outperforming conventional aluminum alloys without compromising formability or weldability.

Longer Service Life

Less Downtime

Reduced Weight

These materials lower fuel consumption in commercial fleets, extend maintenance intervals for offshore installations, and reduce total lifecycle costs—while delivering superior mechanical performance.



ENGINEERED FOR EXTREME CONDITIONS

BLOOH Solution's scandium-enhanced marine alloys are designed for:

- Ship hulls and deck components
- Offshore wind turbines and structural supports
- Subsea housings and frames
- Yacht and boat parts requiring top-tier corrosion resistance

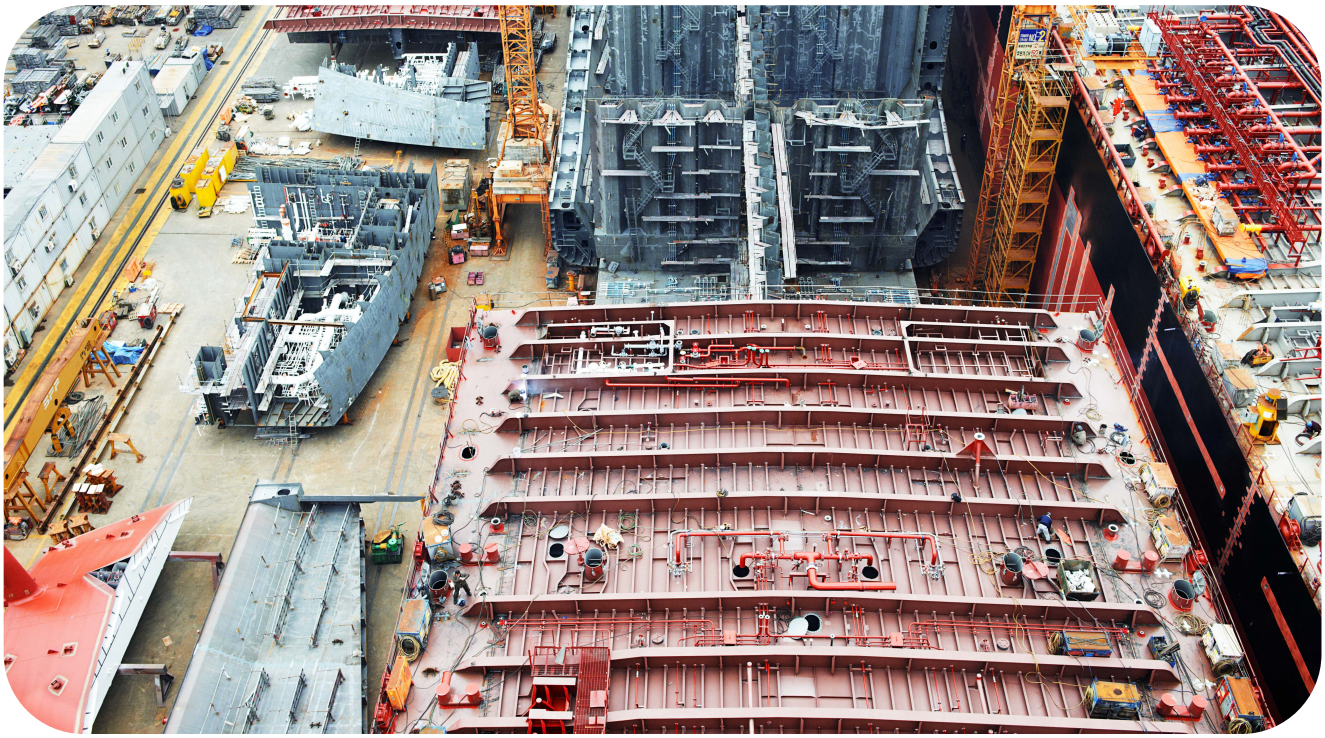
Sustainability from Shore to Sea

BLOOH Solution recovers scandium as a by-product of its integrated lithium processes—enabling long-term supply of ethically sourced, traceable raw materials that support climate goals in both maritime and defense sectors.

PORTFOLIO

SC-AL MARINE 1 – STRUCTURAL ALLOY FOR SHIP HULLS

This high-strength alloy is specifically designed for load-bearing marine components and ship structures. The optimized scandium content provides excellent corrosion and fatigue resistance in saltwater-exposed and impact-prone areas.



TECHNICAL SPECIFICATION

Scandium Content: 0.8–1.2%

Yield Strength: ~420 MPa

Density: ~2.73 g/cm³

Fatigue Strength: High

Corrosion Resistance: Excellent (salt spray & immersion tested)

Elongation: 14–16%

Weldability: Very good (minimal post-processing required)

Application Areas: Hull plating, bulkheads, deck reinforcements

PORTFOLIO

SC-AL MARINE 2 – ALLOY FOR OFFSHORE PLATFORMS

Specifically engineered for offshore applications, this alloy resists pitting, crevice corrosion, and cyclic loading. It is compatible with protective surface coatings and can be anodized for extended service life.

TECHNICAL SPECIFICATION

Composition: Al-Mg-Sc + corrosion modifiers

Corrosion Performance: Marine-grade (neutral to saline environments)

Creep Behavior: Maintains shape under cyclic thermal exposure

Available Forms: Cast and profile parts

Yield Strength: ~440 MPa

Thermal Stability: Maintains form under extreme humid conditions

Surface Finishing: Anodizable & paintable

Application Areas: Support structures for offshore wind turbines, platform frames

PORTFOLIO

SC-AL MARINE POWDER – ADDITIVELY MANUFACTURED SPECIALTY PARTS

This scandium-based powder alloy is designed for the additive manufacturing of high-precision maritime components. It ensures uniform density and structural stability—even in complex geometries such as subsea housings and connectors.

TECHNICAL SPECIFICATION

Particle Size: 15–53 µm

Weldability (Post-Printing): Compatible with TIG/MIG

Surface Roughness (Printed): <12 µm Ra

Microstructure: Fine and uniform grain structure

Tensile Strength (Printed): ~470 MPa

Compatibility: Binder Jetting, Laser Powder Bed Fusion (LPBF)

Build Density: ≥99.5% of theoretical density

Application Areas: Custom fittings, subsea connectors, pump housings

DRIVING INNOVATION FORWARD!

FOR MORE INFORMATION PLEASE CONTACT:

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