AMETEK®

SPECIALTY METAL PRODUCTS

OIL & GAS

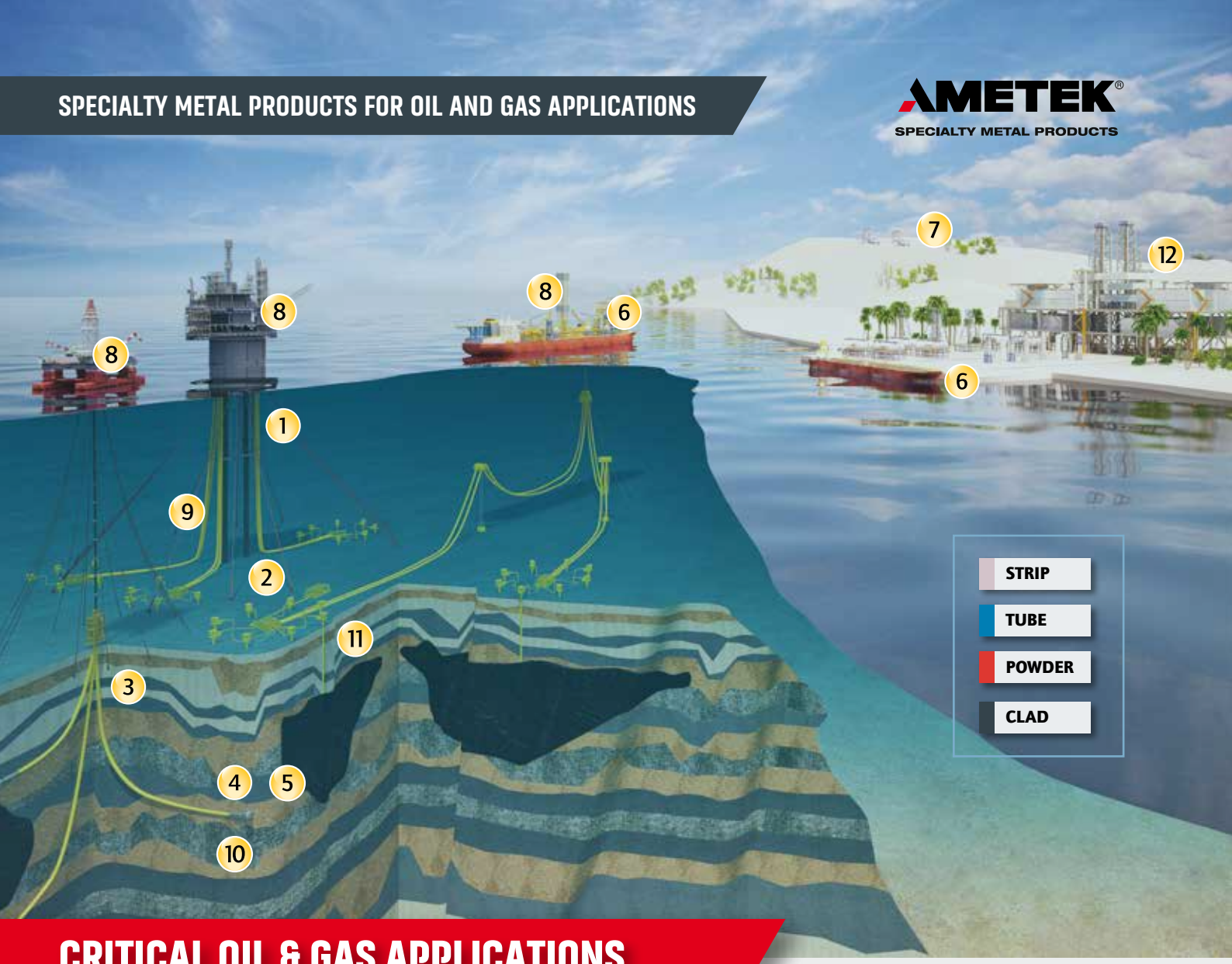
High performance metal products for hostile and corrosive subsea, downhole and offshore applications

Our high quality metal products offer maximum wear, pressure and corrosion resistance for extended product life, reduced downtime and maintenance costs in extreme environments.

- High Pressure, Stainless Steel and Nickel Alloy Tubes
- Hardfacing Powder Coatings
- Roll Bonded Clad Plate
- High Lubricity and Hardness Engineered Shaped Components (ESC)
- Hardenable and Conductive Metal Strip

SPECIALTY METAL PRODUCTS FOR OIL AND GAS APPLICATIONS

AMETEK®
SPECIALTY METAL PRODUCTS



CRITICAL OIL & GAS APPLICATIONS

1 Downhole hydraulic control lines

2 High pressure control instrumentation and flow meters

3 Downhole data logging/smart wells

4 Pfinodal® bearing components in drill bits

5 Downhole MWD/LWD pressure housing

6 Topside and onshore instrumentation

7 Hardfacing metal powder coatings

8 Non-sparking tools

9 Electronic connectors

10 Battery components

11 Shaped charges for well perforation

12 Clad plate for pressure vessels

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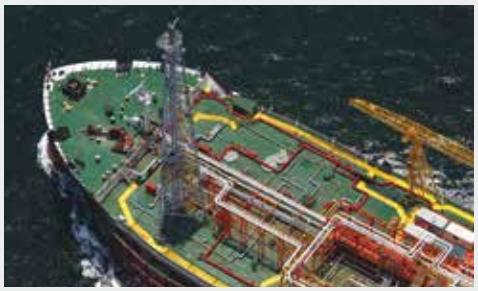

HIGH PRESSURE, PRECISION TUBE

High quality, NORSOK-approved metal tubes engineered to perform without failure for maximum corrosion and pressure resistance up to 60,000 psi.

PRODUCTS

- Seamless stainless steel, nickel alloy and titanium tubes from 3 mm (0.040 in) to 31 mm (1.25 in) outer diameter OD
- Welded stainless steel and nickel alloy tubes from 3 mm (0.118 in) to 28 mm (1.25 in) OD
- Welded and drawn coiled tubing up to 15,000m (with orbital joints)

APPLICATIONS

- Downhole hydraulic control lines
- High pressure control & instrumentation
- Downhole data logging/smart wells
- Downhole MWD/LWD pressure housing
- Topside and onshore instrumentation
- Subsea Xmas trees and manifolds
- Flow meters

CUSTOMER APPROVALS		
ADGAS	ADMA	ADNOC
KNPC	KOC	NPCC
ONGCC	PDO	SAIPEM SPA
SAUDI ARAMCO	Technip	ZADCO

Click for more details

www.finetubes.com

EIGHTY FOUR / AMETEK
SPECIALTY METAL PRODUCTS

HARDFACING POWDER COATINGS

Surface coating powders manufactured to have the precise thermal spraying characteristics, to enhance the performance of a workpiece.

Advantages include improved hardness and machinability, corrosion resistance, wear and heat resistance to extend life and offer total component cost savings.

PRODUCTS

SPRAY AND FUSE COATINGS PRODUCTS		
PF20	PF25	PF35
PF40	PF50	PF55
PF60		

OTHER PRODUCTS		
PI600	316L	*HAC
*I600	*M400	PF55

APPLICATIONS

- Hardfacing: thermal spray, spray and fuse applications for highly abrasive and corrosive environments. Oil field equipment includes drill rods, shafts, tubes, couplings, cutter bars, augers, cylinders
- Precision chemical filtration in extremely corrosive environments
- Powder metallurgy, corrosion protection, and geometric re-tolerancing

*HAC is AMETEK's equivalent to HASTELLOY C. HASTELLOY is a Cabot Corporation trademarked product. I600 is AMETEK's equivalent to INCONEL 600. INCONEL is an International Nickel Company, Inc. trademarked product. M400 is AMETEK's equivalent to MONEL 400. MONEL is an International Nickel Company, Inc. trademarked product.

Click for more details

www.powderclad.com

EIGHTY FOUR / AMETEK
SPECIALTY METAL PRODUCTS

CLAD METAL PLATE

Clad metals produced by our roll-bond technology combine two or more metals into a single sheet or plate that can be cut, welded or formed into a finished part ranging from chemical processing chambers and pressure vessels to small applications and clad pipe. We specialize in cladding stainless steel or nickel alloys to carbon steel.

Because of the properties offered by clad metals, and the wide variety of cladding and backing materials available today, these metals can be combined to make custom materials for a wide range of demanding industries, including health, chemical and petroleum processing and defense.

Roll bonded clad materials with corrosion-resistant alloys are designed to meet the applicable pressure vessel codes in a variety of applications including refining, flue gas desulfurization, and catalytic cracking.

ADVANTAGES

If the problem is unique, then the solution could well be a clad metal. In all cases, clad metals provide combinations of properties and advantages not available in monolithic metals.

- Corrosion resistance
- Superior strength
- Lighter weight
- Excellent thermal conductivity
- Custom sizes and alloy combinations
- Small lot sizes and short lead time

PRODUCTS AND APPLICATIONS

- Pressure vessels
- Transition plates

Click for more details

www.powderclad.com

WALLINGFORD / AMETEK®
SPECIALTY METAL PRODUCTS

HIGH LUBRICITY AND HARDNESS ENGINEERED SHAPED COMPONENTS (ESC)

High strength shaped components including net shapes, bar, plate, rod and tube for critical mining and drilling applications.

Our production processes and heat treatments combine to ensure the high hardness and non-magnetic properties required in a bearing material for bearing sleeves, bushings, washers and caps.

Our specialized Pfinodal® (UNS C72900 material) is a Spinodal copper based alloy and offers similar mechanical properties to Beryllium Copper but without the harmful exposure risks.

ADVANTAGES

- No carcinogenic elements - only copper/nickel/tin
- High hardness and strength
- Non-magnetic properties required in bearing material
- Low distortion during hardening allows for the complex forming of parts and shapes prior to heat treatment without the need for costly fixtures
- Non-sparking and non-corrosive
- Excellent Ductility
- Excellent Lubricity

PRODUCTS AND APPLICATIONS

- Pfinodal® (UNS C72900) ESC for tri-cone drill bits
- Pfinodal® (UNS C72900) shaped charges for well perforation

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WALLINGFORD / AMETEK®
SPECIALTY METAL PRODUCTS

HARDENABLE AND CONDUCTIVE METAL STRIP

High performance metal strip products manufactured via wrought powder metallurgy.

NICKEL STRIP

Our pure nickel strip products are custom-engineered to 99.98% purity for critical battery connector applications. We employ an advanced wrought powder metallurgy process to deliver material with significant advantages in comparison to standard wrought nickel battery strip.

- 15-20% higher conductivity than traditional cast nickel strip
- Consistent chemistry control
- Standard and custom sizes & tempers
- Short lead-times and small minimum order sizes
- Superior surface finish

SPINODAL ALLOYS

Our materials change be roll-tempered to desired mechanical properties. Our Spinodal products (C72900 and C72650) can be further hardened for spring properties in electronic connectors.

Pfinodal® material (C72900) offers a non-sparking and non-magnetic alternative to Beryllium Copper (C17500) with similar mechanical properties but without the harmful exposure risks.

PRODUCTS AND APPLICATIONS

- AM388™ (UNS C72650) strip for non-sparking tools
- AM388™ (UNS C72650) Pfinodal® (UNS C72900) strip for electronic connectors
- Pfinodal® copper alloy strip (UNS C72900) for parabolic cone shaped charges used in well perforation
- Nickel 201/270 strip for rechargeable battery components

Click for more details

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OIL AND GAS APPLICATIONS

ABOUT AMETEK SPECIALTY METAL PRODUCTS

AMETEK Specialty Metal Products (SMP) is a business unit of AMETEK, Inc. a leading global manufacturer of electronic instruments and electromechanical devices with annualized sales of approximately $5.5 billion.

The Specialty Metal Products business unit consists of five businesses and operating facilities in the United States and the United Kingdom.

These businesses are proven experts in the manufacture of advanced metallurgical products including roll bonded clad plate, precision metal strip, ultra-thin foil, shaped wire, engineered components, thermal management materials, water atomized powders and precision tube.

Our high performance metal products are used around the world for critical applications in a range of industries including aerospace, automotive, defense, electronics, industrial, medical, nuclear, oil and gas, and space and satellites.

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SPECIALTY METAL PRODUCTS

www.ametekmetals.com

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