TECHNICAL BULLETIN TB-005

SELECTING THE RIGHT CORE MATERIAL

HOW CORE MATERIAL AFFECTS ANODE PERFORMANCE

The core is the electrical connection between the anode and the structure. Choosing the right material and design is critical for long-term, reliable performance.

STEEL STRAP

Flat steel strap is commonly used in a wide range of applications.

- Cost-effective
- Easy to weld or bolt
- Suitable for many environments

STEEL CABLE

Stranded steel cable is ideal for high-stress or flexible applications.

- High mechanical strength
- Flexible for curved surfaces
- Good for deep or buried anodes

THREADED ROD OR STUD

Provides a secure, low-resistance connection for bolted installations.

- Strong mechanical connection
- Easy to install and remove
- Ideal for flush or recessed mounting

ALUMINUM CORE

Used in aluminum anodes to prevent galvanic corrosion.

- Compatible with aluminum anodes
- Prevents galvanic corrosion
- Suitable for submerged aluminum structures

TITANIUM CORE

For highly corrosive environments where extra durability is required.

- Exceptional corrosion resistance
- Long service life
- Higher initial cost

CABLED CORE WITH LUG

Flexible connection with a crimped or welded terminal lug.

- Easy to connect to structure
- Flexible installation
- Common in retrofit applications

KEY FACTORS WHEN SELECTING A CORE MATERIAL

- ✓ Environment (water chemistry, soil resistivity)
- ✓ Installation method (welded, bolted, recessed)
- ✓ Mechanical strength requirements
- ✓ Expected anode life
- ✓ Electrical conductivity
- ✓ Compatibility with anode material
- ✓ Cost and availability

> **A poorly selected or installed core can lead to high resistance, premature failure, and reduced protection.**

ENGINEERING NOTE

Always consider the environment, installation method, and expected anode life when selecting a core material. Contact Purity Casting Alloys for help choosing the best option for your application.