

# AK E80C-Ni1

**Description:** E80C-Ni1 is a low-alloy, gas-shielded metal-cored welding wire classified under AWS A5.28 for high-strength structural steel applications. This nickel addition enhances low-temperature toughness and improves resistance to brittle fracture, making E80C-Ni1 suitable for demanding structural environments.

**Application:** E80C-Ni1 is widely used in industries requiring high-strength and reliable weld performance: Offshore and Marine Structures、 Heavy Fabrication、 Structural Steel Fabrication、 Low-Temperature Service Applications. Nickel-enhanced toughness makes it suitable for colder environments where impact resistance is critical.

## Typical Chemical Composition(%):

|                      | C     | Si   | Mn   | S     | P     | Cr | Ni        | Mo   | V    |
|----------------------|-------|------|------|-------|-------|----|-----------|------|------|
| <b>Requirement</b>   | 0.12  | 0.90 | 1.50 | 0.03  | 0.025 | —  | 0.80-1.10 | 0.30 | 0.03 |
| <b>Actual Result</b> | 0.060 | 0.54 | 1.20 | 0.002 | 0.013 | —  | 0.95      | 0.10 | 0.02 |

## Typical Mechanical Properties:

|                      | Tensile Strength (MPa) | Yield Stress (MPa) | Elongation (%) | Impact Values (J) |
|----------------------|------------------------|--------------------|----------------|-------------------|
| <b>Requirement</b>   | 550                    | 470                | ≥24            | ≥27J(-45°C)       |
| <b>Actual Result</b> | 595                    | 510                | 28             | 58                |