

DIN 86019 CuNi10Fe1Mn (CuNi 90/10, UNS C70600) Pipe Specification

This specification covers copper-nickel alloy pipes in grade CuNi10Fe1Mn according to DIN 86019, also known as CuNi 90/10 and UNS C70600, widely used for seawater and marine service.

1. Standard Overview – DIN 86019

DIN 86019 specifies copper-nickel alloy tubes and pipes for condensers, heat exchangers, and seawater service, particularly in marine and offshore environments.

2. Material Introduction – CuNi10Fe1Mn / C70600

CuNi10Fe1Mn is a 90/10 copper-nickel alloy containing iron and manganese additions to improve corrosion resistance and mechanical strength.

3. Equivalent Standards

Standard	Designation
DIN	CuNi10Fe1Mn
ASTM / UNS	C70600
Common Name	CuNi 90/10

4. Chemical Composition

Element	Composition (%)
Cu	Balance
Ni	9.0 – 11.0
Fe	1.0 – 1.8
Mn	0.5 – 1.0
Zn	≤ 0.5
Pb	≤ 0.02

5. Mechanical Properties

Property	Typical Value
Tensile Strength	360 – 450 MPa
Yield Strength	≥ 120 MPa
Elongation	≥ 30 %

6. Heat Treatment

Pipes are supplied in annealed condition, typically annealed at 700–800 °C.

7. Hardness

Typical hardness ranges from 80 to 120 HB.

8. Testing Requirements

Chemical analysis, tensile test, eddy current or hydrostatic test, and dimensional inspection are performed in accordance with DIN 86019.

9. Size Range

Outside Diameter: 6 mm – 273 mm.

Wall Thickness: 0.8 mm – 25 mm.

Length: Random or cut-to-length.

10. Typical Applications

Seawater piping, heat exchangers, condensers, shipbuilding, offshore platforms, and desalination plants.

11. Related Products

CuNi 70/30 (C71500) Pipes

ASTM B466 / B467 CuNi Tubes

Copper-Nickel Fittings

Copper-Nickel Flanges

