



Brazing Guide

Precision Brazing Solutions for Steel, Copper Alloys, and Dissimilar Metals

Overview

We offer a comprehensive range of high-quality brazing rods engineered to deliver strong, durable, and clean joints across a variety of metals including steel, copper, brass, and their alloys. Whether you are working in automotive repair, HVAC, plumbing, refrigeration, or general fabrication, our products provide reliable performance with excellent flow and adhesion characteristics to ensure lasting connections. This guide will help you select the right brazing rod for your application and provide best practice tips for preparation, brazing, and safety.

1. Selecting the Right Brazing Rod

Product	Base Metals	Flux Requirement	Key Strengths	Typical Use Cases
Bronze C2FC	Mild steel, galvanised steel, copper, brass	Integrated flux coating	Easy use, strong joints, corrosion resistant	Automotive repair, tubular furniture, galvanised steel
Bronze C5	Steel, cast iron, copper alloys	External flux required	High strength, wear resistance	Heavy fabrication, agricultural machinery
Bronze C2K	Steel, copper, cast iron, dissimilar metals	Integrated flux core	No extra flux, clean joints	Maintenance, pipeline brazing, dissimilar joints
Bronze MN	Mild steel, cast iron, copper alloys	External flux required	Manganese bronze, high ductility	Fabrication, pipework, dissimilar metal joining
CP2	Copper, copper alloys	Self-fluxing on copper	Low melting point, no flux on copper-to-copper	Plumbing, HVAC, refrigeration
CP3	Copper, copper alloys	Self-fluxing on copper	High phosphorus, low melting range	Plumbing, heating, electrical systems
CP4	Copper, copper alloys	Self-fluxing on copper	Silver-enhanced strength and flow	HVAC, refrigeration, precision joints





2. Preparation Tips

- **Clean the Base Metals:** Remove dirt, grease, rust, and oxidation for optimal brazing results. Use mechanical cleaning or appropriate chemical cleaners.
- **Fit-Up:** Ensure tight and consistent joint clearance, typically 0.05–0.15 mm, to promote capillary action.
- **Flux Use:**
 - Use integrated flux-coated rods (C2FC, C2K) to simplify flux application.
 - For bare rods like C5, MN, CP2, CP3, CP4, use suitable brazing flux unless self-fluxing on copper.
- **Preheating:** Preheat thicker or dissimilar metals to avoid thermal shock and ensure uniform heating.

3. Brazing Process

- **Heating:** Use an oxy-acetylene torch or suitable brazing heat source. Heat the joint evenly to the recommended brazing temperature:
 - Bronze C2FC: 730 – 850°C
 - Bronze C5: 850 – 950°C
 - Bronze C2K: 720 – 850°C
 - Bronze MN: 880 – 950°C
 - CP2, CP3: 600 – 700°C
 - CP4: 600 – 700°C
- **Applying Rod:** Feed the brazing rod into the heated joint once the base metals reach the proper temperature. The rod should melt and flow smoothly, adhering well via capillary action.
- **Avoid Overheating:** Excess heat can degrade joint strength and cause oxidation.
- **Cooling:** Allow the joint to cool naturally in still air to minimize thermal stresses.

4. Safety Precautions

- Work in a well-ventilated area to avoid fumes.
- Always wear protective gloves, goggles, and flame-resistant clothing.
- Follow all safety guidelines and regulations for handling flux and brazing equipment.





5. Common Applications

Application

Automotive and agricultural repair

Plumbing and HVAC systems

Refrigeration and air conditioning

Electrical and electronic brazing

Structural steel and pipework

Dissimilar metal joints (steel to copper/brass)

Recommended Rods

Bronze C2FC, Bronze C5, Bronze MN

CP2, CP3, CP4

CP3, CP4

CP3, CP4, Bronze MN

Bronze C2FC, Bronze C5, Bronze MN

Bronze C2FC, Bronze C2K, Bronze MN

6. Troubleshooting

Issue

Poor flow or
adhesion

Weak or brittle
joints

Flux residues

Porosity or voids

Possible Cause

Dirty metals, insufficient heat,
wrong flux

Overheating or incorrect filler
material

Incomplete cleaning after brazing

Excessive gap or improper heating

Solution

Clean metals, increase heat, use correct flux

Use correct rod, control heat carefully

Clean joints with warm water or
recommended solvents

Ensure tight joint fit and uniform heating

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