



# HOSHIZAKI AMERICA, INC.

## SERVICE BULLETIN

SB25-0008

July 14, 2025

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**Subject:** Brazing Copper to Galvanized Coated Steel Refrigerant Tubing

**Overview:** To provide standardized procedures for brazing copper refrigerant tubing to galvanized steel tubing in the field. Proper technique and material selection are essential to ensure mechanical integrity, corrosion resistance, and long-term system reliability.

### Material Required:

Item	Specification
Brazing Rod	Non Sil-FOS 50% or higher
Flux	White Brazing Flux or equivalent (suitable for steel, not required for copper alone)
Torch	Oxy-acetylene or air-acetylene torch with appropriate tip size
PPE	Flame-resistant gloves, tinted safety goggles/shield (#5 lens), long sleeves, fume extraction or N95+ respirator if indoors
Cleaning tools	Abrasive cloth, wire brush, emery cloth

### Procedure:

- Preparation:
  - Clean both copper and galvanized steel surfaces using emery cloth or wire brush until shiny.
  - Remove any oxidation, oil, or coating residue.
  - The zinc coating may release toxic fumes: minimize exposure and use fume extraction.
- Flux Application:
  - Apply white flux only to the galvanized steel tube.
  - Copper does not require flux with Sil-Fos unless bonding to steel.
- Assembly:
  - Insert copper tube into the steel socket.
  - Recommended clearance: 0.001"—0.005".

- **Brazing:**
  - Heat galvanized steel side first.
  - Maintain temperature below 900°F until ready to braze.
  - Once flux is clear (~1100°F), apply brazing rod.
  - Avoid direct flame on zinc coating for extended periods.
- **Cooling and Clean-Up:**
  - Let the joint air-cool naturally.
  - Remove flux residue with warm water and a brush.

### **Recommended Brazing Temperature Range**

- Base Metal Melting Point:
  - Copper: ~1980°F (1082°C)
  - Galvanized Steel: Steel ~2600°F (1427°C), Zinc coating ~787°F (419°C)
- Brazing Alloy Melting Range:
  - Non Sil-Fos (50% or higher) : 1205°F-1305°F Temp range

Please ensure that all servicing procedures adhere strictly to these guidelines to maintain compliance and ensure the safety and reliability of Hoshizaki products.

If you have any questions, please contact Hoshizaki Technical Support at 1-800-233-1940, or at email: [tech-support@hoshizaki.com](mailto:tech-support@hoshizaki.com)