Brazing Procedure Specification

In Compliance with ASME Boiler & Pressure Vessel Code Section IX and ASME B31.5 Refrigeration Piping and Heat Transfer Components Standard

Brazing Procedure Specification Number: 18-R78 Revision 1 **Manual Torch Brazing Process**

Supporting Procedure Qualification Record: 20-R18, 18-R78, 20-R78, 21-R218

Base Metal
Limited to P-300 Materials
Thickness Range: 0.015" to 0.118"

Brazing Filler Metal
SFA-5.8 BCuP 2 through 7 permitted
F Number: 103
Product Form: Round, Square or Rectangular Rod

Flow Position
All Positions
Face fed filler metal

Joint Design
Joint Type: Socket (Tube/Fitting)
Joint Clearance: 0.001" to 0.010"
Overlap Length: 0.25" to 2.16"

Brazing Flux, Fuel Gas, or Atmosphere
Brazing flux is not permitted
Acetylene, Natural, Propane or MAPP® Gas is permitted
Internal Purge using Oil Free Dry Nitrogen at 5 to 10 CFH

Post Braze Heat Treatment
Post braze heat treatment is not permitted

Brazing Techniques

- Tube ends shall be cut with a clean sharp tubing cutter.
- Deburr the I.D. of the cut tube end with a clean tool.
- Visually inspect the interior of each tube for obstructions and debris before assembly. Protect the joint before brazing from contamination.
- Method of pre-cleaning: Non-shedding abrasive pads or clean Stainless-Steel wire brush to remove all oxides in the brazing area followed by wiping with a clean lint-free white cloth. Do not groove the surfaces while cleaning.
- Brazing shall take place within 8 hours after cleaning and assembly of the test coupons.
- Purge all tubing with oil free dry nitrogen at 5 to 10 CFH flow rate while brazing and until cool to the touch.
- Start the brazing of joint nearest the purge inlet.
- Use a neutral to slightly reducing flame if using oxy/acetylene
- Post Brazing Cleaning: All completed joints shall be washed with a water-soaked cloth, followed by brushing with a stainless steel hand wire brush to remove any residue for inspection.
- Inside of the tube shall exhibit no oxidation or flaking
- The completed braze test assembly shall be visually examined for cleanliness and the presence of brazing filler metal all around the joint at the interface between the socket and the tube. Internal and external surfaces shall be free of excessive braze filler metal. There shall be no erosion of either base metal.

In the name of the Company stated below, I assume full responsibility for the use and application of this Brazing Procedure Specification.

Updated P-Numbers 12/23

Manufacturer or Contractor Company Name/Representative Name | Manufacturer/Contractor Representative Signature | Date: