



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
LittleRock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 4/30/2026

Return Request: 5/8/2026

Project: Hot Springs National Park – Rehabilitate Bathhouses – Maurice Bathhouse

Supplier: Comfort Systems USA (Arkansas), Inc.

Manufacturer: Varies

Submittal: Refrigerant Piping and Specialties (Re-Submittal #1)

Submittal Number: 232300.001

Spec Section: 232300

Drawing # and Installation Location: M1.4, MP1.0, and MP1.1

ARCHITECT

Strata Architecture
1701 Oak Street, Suite 100
Kansas City, Missouri 64108
(816)474-0900

GENERAL CONTRACTOR

Tepa, LLC
2345 Grand Blvd, Suite 700
Kansas City, Missouri 64108
(816)708-1110

ENGINEER

IMEG Corp.
1600 Baltimore Street, Suite 300
Kansas City, Missouri 64108
(816)842-8437

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Road
North Little Rock, Arkansas 72117
(501)834-3320

Comments:

--

CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117

Spec Section 232300, 2.1, B.

Refrigerant Piping

**Dehumidifier (ACC-1M/DHU-1M) to be Type "ACR"
Hard Copper Tube with Wrot Copper Fittings and 15%
Sil Phos Joints**

**Relocated Hale Condensing Unit (ACCU-1H) to be Type
"ACR" Hard Copper Tube with Wrot Copper Fittings
and 15% Sil Phos Joints**

**VRF System (HP-1M/IU-1M through 4M) to be Type
"ACR" Hard Copper Tube with Wrot Copper Fittings
and 15% Sil Phos Joints**

**Existing Condensing Unit (ACCU-1M) to be Type
"ACR" Hard Copper Tube with Wrot Copper Fittings
and 15% Sil Phos Joints**

COPPER TUBE FOR HVACR APPLICATIONS

Job Name Maurice Bathhouse

Contractor Comfort Systems USA (Arkansas), Inc.

Job Location Hot Springs, Arkansas

Wholesaler

Engineer IMEG Corp

Streamline® Rep

Product Description:

Streamline® ~~Service Coils~~, ACR/Nitrogenized straight-length ~~or line set~~ copper tube for use in refrigeration applications. Available sizes ranging from 1/8" to 8-1/8" in outside diameter. All tube should be manufactured in the United States.

Material:

Streamline® Copper Tube is manufactured from UNS C12200 grade of copper.

Key Specifications:

Streamline® Copper Refrigeration Service Coils, ACR/Nitrogenized straight lengths and line sets are made to meet the chemical, mechanical, cleanliness, and eddy current testing requirements of the applicable specification of ASTM B280. Streamline® copper tube is third party verified in select sizes¹ through Underwriters Laboratories (UL) for operating pressure of 700psi at 250°F.

Installation:

Installations shall comply with the latest applicable building codes for the local jurisdiction. For detailed installation instructions, consult the Copper Development Association at copper.org.

References:

¹ Product Line	Product Type	Outer Diameter
Copper Tube	Streamline® Refrigeration Service Coils	1/8" – 1-1/8"
C UL US 700 PSI R410A	Streamline® Line Sets & Mini-Splits	1/8" – 1-1/8"
	Streamline® ACR - Type L (Hard Lengths)	1/8" – 1-3/8"
	Streamline® ACR - Type K (Hard Lengths)	1/8" – 2-5/8"

C12200
ASTM B280

99.9% Pure Copper
Seamless Copper Tube for Air Conditioning and Refrigeration



COPPER TUBE DATA

Mueller Streamline's cleaning, purging and pressurizing process assures the high level of tube cleanliness in conformance to ASTM B280, the refrigeration industry standard. The tube is sealed with plugs which maintain the standard of cleanliness from the factory to the job site.

STREAMLINE® COPPER TUBE PRESSURIZED WITH NITROGEN provides maximum protection against the formation of harmful oxides normally formed during brazing operations. Reduction of these oxides greatly reduces system contamination. Plugs are reusable. When less than a 20' length of tube is required for an installation the unused length of tube may be re-plugged to prevent atmospheric contamination during storage.

STREAMLINE® NITROGENIZED seamless copper tube is available in sizes 3/8" OD through 3-1/8" OD. Larger sizes from 3-5/8" OD through 8-1/8" OD are cleaned and capped. Manufactured and cleaned in accordance with ASTM B280. 20-ft. lengths hard drawn - cleaned and capped - color coded - Marked "ACR/MED"

~~TYPE K NITROGENIZED ACR / MED~~

RATED WORKING PRESSURE (PSIG)

O.D. DIA.	WT/FT	150°F	200°F	250°F	300°F	400°F
3/8	0.145	913	877	860	842	537
1/2	0.269	960	923	904	885	565
5/8	0.344	758	728	713	698	446
3/4	0.418	700 †	700 †	700 †	577	368
7/8	0.641	700 †	700 †	700 †	668	426
1 1/8	0.839	700 †	700 †	700 †	513	327
1 3/8	1.04	700 †	700 †	700 †	416	266
1 5/8	1.36	700 †	700 †	700 †	387	247
2 1/8	2.06	700 †	700 †	700 †	341	217
2 5/8	2.93	700 †	700 †	700 †	312	199
3 1/8	4	500 ^	500 ^	500 ^	302	193
3 5/8	5.12	450 ^	450 ^	450 ^	286	183
4 1/8	6.51	450 ^	450 ^	450 ^	282	180
5 1/8	9.67	293	281	276	270	172
6 1/8	13.9	295	283	277	271	173
8 1/8	25.9	314	301	295	289	184

TYPE L NITROGENIZED ACR / MED

O.D. DIA.	WT/FT	150°F	200°F	250°F	300°F	400°F
3/8	0.126	777	747	731	716	457
1/2	0.198	700 †	700 †	700 †	612	391
5/8	0.285	700 †	700 †	700 †	567	362
3/4	0.362	700 †	700 †	700 †	496	316
7/8	0.455	700 †	700 †	700 †	457	292
1 1/8	0.655	700 †	700 †	700 †	388	248
1 3/8	0.884	700 †	700 †	700 †	344	220
1 5/8	1.14	650 ^	650 ^	650 ^	320	205
2 1/8	1.75	550 ^	550 ^	550 ^	285	182
2 5/8	2.48	500 ^	500 ^	500 ^	263	168
3 1/8	3.33	450 ^	450 ^	450 ^	249	159
3 5/8	4.29	450 ^	450 ^	450 ^	238	152
4 1/8	5.38	400 ^	400 ^	400 ^	230	147
5 1/8	7.61	229	229	215	211	135
6 1/8	10.2	213	213	201	196	125
8 1/8	19.3	230	230	216	212	135

Tables give computed allowable stress at indicated temperatures for copper tube that has been annealed either through brazing or an annealing furnace.

† UL Recognized to 700 PSI (select sizes)
^ Rated in accordance with UL 207 Performance Testing

A BRAND OF MUELLER INDUSTRIES 

COPPER FITTINGS FOR HVACR APPLICATIONS

Job Name Maurice Bathhouse	Contractor Comfort Systems USA (Arkansas), Inc.
Job Location Hot Springs, Arkansas	Wholesaler
Engineer IMEG Corp	Streamline® Rep

Product Description:

Streamline® Wrot Copper fittings for use in refrigeration applications. Available sizes ranging from 1/8" to 8-1/8" in outside diameter. Product is designed to join ASTM B280 and ASTM B88 seamless copper tube.

Material:

Streamline® Wrot Copper fittings shall be made from material in compliance with UNS C12200 grade of copper.

Key Specifications:

Streamline® Wrot Copper pressure fittings shall conform to ASME B16.22 and MSS SP104. Streamline® Wrot Copper pressure fittings are third party verified in select sizes¹ through Underwriters Laboratories (UL) for operating pressure of 700psi at 250°F.

Installation:

Installations shall comply with the latest applicable building codes for the local jurisdiction. For detailed installation instructions, consult the Copper Development Association at copper.org.

References:

Product Line	Product Type	Outer Diameter
¹ Copper Fittings 	Streamline® Wrot Solder-Joint Pressure	1/8" – 2-5/8"

*700PSI at 250°F in select patterns

C12200	99.9% Pure Copper
ASME B16.22	Wrot Copper and Copper Alloy Solder Joint Pressure Fittings
MSS SP104	Wrot Copper Solder and Joint Pressure Fittings

Other Applicable Standards

ASTM B88	Seamless Copper Water and Gas Tube (Types K, L, M)
ASTM B280	Seamless Copper Tube for Air Conditioning and Refrigeration

SIL-FOS® 15

(SILVALOY® 15, SILVALOY® 15 EXCEL)

NOMINAL COMPOSITION

Silver	15.0% ± 0.5%
Copper	80.0% ± 1.0%
Phosphorus	5.0% ± 0.2%
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Gray
Melting Point (Solidus)	1190°F (643°C)
Flow Point ⁽¹⁾	1300°F (705°C)
Brazing Temperature Range	1300 °F - 1500 °F (705 °C - 815 °C)
Specific Gravity	8.38
Density(lbs/in ³)	0.303
Electrical Conductivity (%IACS) ⁽²⁾	9.90
Electrical Resistivity (Microhm-cm)	17.4

⁽¹⁾ The true liquidus for Sil-Fos 15 is 1475°F (802°C). The alloy will flow freely and make strong joints at 1300°F (705°C).

⁽²⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Sil-Fos 15 was developed primarily for use on copper, but its use has extended to other nonferrous copper base alloys. It is used extensively on refrigeration units, air conditioning apparatus, electrical conductors, copper and brass pipe fittings, and other copper and brass equipment.

BRAZING CHARACTERISTICS

Sil-Fos 15 is a copper rich, filler metal that is self-fluxing on copper by virtue of its phosphorus content. The self-fluxing property of this filler metal is effective on copper only. With copper-base alloys, such as brass or bronze, the joints should be fluxed with Handy Flux®. Sil-Fos 15 should not be used on nickel-base and iron-base alloys, as the phosphorus reacts with the nickel or iron to form brittle compounds at the interface of the joints.

Sil-Fos 15 has a strong tendency to liquate (i.e. to separate into low and high melting constituents) if heated slowly through its melting range, as normally occurs in furnace brazing. The results in leaving a "skull" of unmelted alloy behind may be objectionable from the standpoint of appearance. In furnace brazing it is preferable to pre-place the alloys inside the joint where the skull is not visible.



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 232300, 2.2.

Refrigerant Valves

Not Applicable!