

TECHNICAL DATA - SPECIFICATION SHEET - TALOS® S80

SEAMLESS ROUND COPPER TUBES FOR HIGH-PRESSURE APPLICATIONS UP TO 80 BAR
IN REFRIGERATION SYSTEMS

1. Material

Seamless drawn round tubes made of high purity copper, grade **Cu-DHP** (CW024A), meeting or exceeding the requirements of **EN 12735-1** and designed for a Maximum Operating Pressure of **80 bar** according to **EN14276:2020** complying with the European Pressure Equipment Directive (PED) **2014/68/EU**.

2. Mechanical Properties & Grain Size

Material Condition	Tensile Strength R _m [MPa]	Elongation A [%]	Indicative Hardness [HV]	Average Grain Size [mm]
R220 - Annealed	> 220	> 40	40 – 70	0,020 – 0,040
R250 - Half-hard	> 250	> 30	75 – 100	n/a
R290 - Hard	> 290	> 3	> 100	n/a

3. Nominal Tube Dimensions and Tolerances

Nominal Dimensions			Outside Diameter OD [mm]			Wall Thickness at any point
OD"	OD mm	Wall mm	Mean all	to any diameter*		
				R290	R250	
5/16"	7,940	0,70	± 0,04	± 0,04	± 0,09	± 10%
3/8"	9,525	0,80				
1/2"	12,700	0,90				
5/8"	15,875	1,05	± 0,05	± 0,06	± 0,10	± 13%
3/4"	19,050	1,30				
7/8"	22,225	1,50				
1.1/8"	28,575	1,90	± 0,06	± 0,07	± 0,11	± 13%
1.3/8"	34,925	2,30				
1.5/8"	41,275	2,70				
2.1/8"	53,975	3,60				
2.5/8"	66,675	4,50	± 0,07	± 0,10	± 0,15	± 15%

* including deviation from circular form

4. Surface Quality & Cleanliness

Tubes are bright and smooth, free from cracks, slivers, seams, scales and other surface defects. The inner and outer surface of the tube shall be clean, free from grease, oxides and dirt. The carbon residue on the inner surface shall not exceed **0,38 mg/dm²**.

5. Eddy Current Testing

The Cu-tubes are **100% tested** in an eddy current unit capable of detecting and rejecting any defect detrimental to subsequent processing or the end use of the tube.

6. Drift Expansion (Flaring)

The outside diameter of the tube end shall be capable of being expanded by greater than **30%** without cracks, breaks or tears visible to the unaided eye, applicable for material condition R220 and R250.

7. Marking on tube

The tubes shall be durably ink marked at repeated distances along their length with at least the following information:

- Manufacturer's identification [HALCOR ACR TALOS S80]
- Pertinent EN standard [EN 12735-1]
- Material designation [Cu-DHP]
- Nominal Outside Diameter and Wall thickness in mm [OD x Wall]
- Material condition [R220 / R250 / R290] and the half hard symbol "I-I-I" if in R250 condition
- Date of production [Year and Month]
- Lot number

8. Form of Delivery and Packing

The tubes shall be delivered in straight length in all conditions or coiled if in R220 condition, end capped and packaged in such a way that they are protected from any damage under normal transportation, storing and handling conditions.

9. Maximum Allowable Pressure

The tubes shall withstand a maximum operating pressure of **80 bar** at temperatures up to 100 °C according to EN 14276:2020 and in compliance with the European Pressure Equipment Directive (PED) 2014/68/EU.

10. Inspection Document

An inspection document / a mill test certificate Type 3.1 according to EN 10204 shall be supplied with each dispatch upon request.