Table 12 : Permissible stresses for copper and copper alloy pipes

Material (annealed)	Specified minimum tensile strength (N/mm²)	Design temperature (°C)										
		≤50	75	100	125	150	175	200	225	250	275	300
Copper	215	41	41	40	40	34	27,5	18,5				
Aluminium brass	325	78	78	78	78	78	51	24,5				
Copper-nickel 95/5 and 90/10	275	68	68	67	65,5	64	62	59	56	52	48	44
Copper-nickel 70/30	365	81	79	77	75	73	71	69	67	65,5	64	62

2.2.3 Thickness reduction due to bending

a) Unless otherwise justified, the thickness reduction b due to bending is to be determined by the following formula:

$$b = \frac{Dt_0}{2{,}5\rho}$$

where:

ρ : Bending radius measured on the centre line of the pipe, in mm

D : as defined in [1.4.1]

t_0 : as defined in [2.2.1].

b) When the bending radius is not given, the thickness reduction is to be taken equal to:

$$\frac{t_0}{10}$$

c) For straight pipes, the thickness reduction is to be taken equal to 0.

2.2.4 Corrosion allowance

The values of corrosion allowance c are given for steel pipes in Tab 13 and for non-ferrous metallic pipes in Tab 14.

Table 13 : Corrosion allowance for steel pipes

Piping system	Corrosion allowance (mm)
Superheated steam	0,3
Saturated steam	0,8
Steam coils in cargo tanks and liquid fuel tanks	2,0
Feed water for boilers in open circuit systems	1,5
Feed water for boilers in closed circuit systems	0,5
Blow-down systems for boilers	1,5
Compressed air	1,0
Hydraulic oil	0,3
Lubricating oil	0,3
Fuel oil	1,0
Thermal oil	1,0
Fresh water	0,8
Sea water	3,0
Refrigerants referred to in Ch 1, Sec 16	0,3
Cargo systems for oil tankers	2,0
Cargo systems for ships carrying liquefied gases	0,3
Note 1: For pipes passing through tanks, an additional corrosion allowance is to be considered in order to account for the external corrosion. **Note 2:** The corrosion allowance of pipes efficiently protected against corrosion may be reduced by no more than 50%. **Note 3:** When the corrosion resistance of alloy steels is adequately demonstrated, the corrosion allowance may be disregarded.	