

**Technical Document 112**  
**PRESSURE EQUIPMENT DIRECTIVE**  
**97/23/EC**  
**DECLARATION OF CONFORMITY**

We hereby certify that the products stipulated below which may be used in assemblies subject to the Pressure Equipment Directive, complies with all the relevant provisions of the Pressure Equipment Directive and National Laws and Regulations adopting this Directive.

**Description:** ACR range of copper end feed series 9000 fittings acc to ASME / ANSI B16.22 from 1/4" up to 4-1/8" nominal diameter are suitable for use with pipe work with refrigerants such as R134A, R404A, R407C, R410A and CO2 in the following listed pressure conditions based on calculations in accordance with DKI worksheet i 158 recommended means.

<b>(a) Factor of Safety = 2</b>	
Temperatures up to and including 100°C	
<b>Fitting Nom Ø</b>	<b>Safe Working Pressure (a) Maximum (bar)</b>
1/4	159
3/8	113
1/2	98
5/8	88
3/4	79
7/8	72
1-1/8	69
1-3/8	62
1-5/8	61
2-1/8	54
2-5/8	50
3-1/8	47
3-5/8	46
4-1/8	45

<b>(a) Factor of Safety = 2</b>	
Temperatures up to and including 150°C	
<b>Fitting Nom Ø</b>	<b>Safe Working Pressure (a) Maximum (bar)</b>
1/4	139
3/8	99
1/2	85
5/8	77
3/4	69
7/8	63
1-1/8	60
1-3/8	54
1-5/8	53
2-1/8	47
2-5/8	43
3-1/8	41
3-5/8	40
4-1/8	40

Means of calculation: DKI worksheet i 158 recommended formula as follows:

$$P = \frac{20 \times F \times T}{(D-T) \times SF}$$



(Continued.)

**Where:**

**P = Maximum safe working pressure (bar).**

**20= Constant.**

**F = Design Stress (N/mm) for Copper according to DKI worksheet i 158**

**D = Fitting Outside diameter in worst case condition.**

**T = Fitting minimum wall thickness.**

**SF= Factor of Safety.**

**Where: (in accordance with DKI worksheet i 158)**

**Design Stress for Copper at temperatures up to and including 100° C is 200 N/mm**

**Design Stress for Copper at temperatures up to and including 150° C is 175 N/mm**

**Where: Fitting Outside diameter in worst case condition is the largest fitting socket inside diameter in combination with wall thicknesses of minimum condition. Dimensions of both being in accordance with ASME B16.22-2001.**

**Where: = Factor of Safety value is 2**


**Where a lower factor of safety is acceptable data may be obtained upon request from IBP Technical Departments. The usage, means of calculation and the component values used therein will be in accordance with this document.**

**Manufacturer:** IBP Atcosa,  
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Spain.

**Harmonised Standard Applied:** None applicable.

**Other Standard(s) Applied:** EN 378:2000.

**Notified body:** Not applicable.

  
**Alan Glaze**  
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**Date: 28<sup>th</sup> October 2013.**

**Fittings manufactured under Sound Engineering Practice cannot be CE marked, under the terms and conditions of the Directive.**

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