

## C10, BRA Brazer Assessment Scheme

This one day session is for experienced brazers. We assess candidates to the British Refrigeration Association's Brazer scheme. This is a practical skills test coupled with a multiple choice assessment to check knowledge about the safety aspects and application of brazing.

Numbers on the session are usually limited to eight. Trainees are provided with high quality course notes. The course can be tailored to include brazing and pipe working training.

The BRA Brazer Assessment scheme is in accordance with EN14276-1:2006+A1:2011 Annex B (Specification and approval of brazing procedures, brazers and brazing operators) as a suitable procedure to assess and approve individuals carrying out the jointing of copper pipework in accordance with Sound Engineering Practice (SEP) and the category 1 modules of the Pressure Equipment Directive (97/23/EC) / Pressure Equipment Regulations 1999 (SI 1999/2001).

For hazard categories 2, 3 or 4 a qualification from a notified body (i.e. a third party) is required. Very few joints fall into these categories, but if necessary Cool Concerns Ltd can facilitate this qualification.

It is a requirement of the Fluorinated Gas (F Gas) Regulation that anyone installing refrigeration, air conditioning or heat pump system pipe work is required to have a recognised qualification. For pipe fitters who just install pipe but do not pressure test, evacuate or charge systems the BRA brazer certificate is a recognised qualification. Pipe fitters who also pressure test, evacuate and / or charge systems must have an F Gas qualification. Cool Concerns Ltd can assess candidates for the C & G 2079 qualification.

### Cost

Each course is £225 per person excluding VAT. The cost includes course notes, lunch, the test piece and BRA certification.

### Location

The assessments are carried out at our training centre a few minutes from junction 8 of the M5. We provide joining information with directions, start time and a list of local hotels. For a group of six or more brazers the assessments can be carried out at your premises using your equipment. There is an additional charge to cover our travel costs.

### About Cool Concerns Training

Our training is developed and delivered by the working directors Jane Gartshore and Stephen Benton. We are engineers and have a wide and varied range of practical and theoretical experience within the refrigeration and air conditioning industry.

We provide training which is up to date, informative and fun with the emphasis on practical 'hands on' mixed with high quality presentations and supported by relevant documentation

and notes. All our training is designed to use trainees' time as efficiently as possible to minimise expensive down time. We draw on our wide range of experience to prepare and deliver industry leading training sessions. We limit numbers on each session to ensure an effective trainer to trainee ratio.

## The Assessment

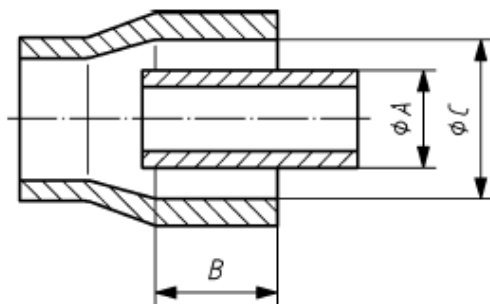
For the practical part of the test the candidate brazes a number of copper to copper and copper to steel horizontal and vertical lap joints. Two levels of test are available. Engineers working on small commercial systems (Level 2) will do only the smaller diameter test pieces, and engineers working on large commercial systems (Level 3) will do all test pieces. The test pieces are cut open and examined to check for penetration.



The overall aims of the assessment are to:

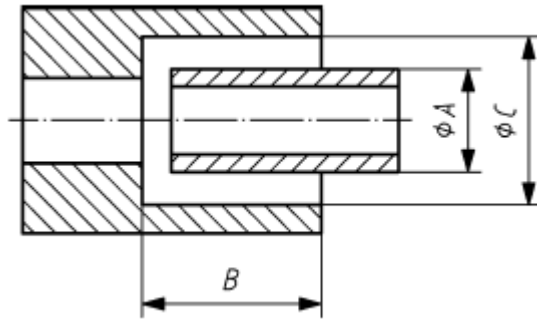
- Ensure that engineers work safely while brazing;
- Reduce refrigerant leakage through 'best practice' jointing.

### Test Pieces 1 and 2, copper to copper joint (either a straight coupler or swaged)



	Test piece 1	Test piece 2
	Small Commercial & Large Commercial (up to 7/8")	Large Commercial (up to 4 1/8")
<b>Size</b>	1/2" 20 SWG	1 3/8" 16 SWG
<b>Minimum fitting depth (B)</b>	8mm	14mm
<b>Clearance (C-A)</b>	0.05mm to 0.45mm	0.05mm to 0.55mm
<b>Total length of test piece</b>	400mm (2 x 200mm)	400mm (2 x 200mm)

**Test Pieces 3 and 4, Copper to Schedule 40/80 Steel joint**



	<b>Test piece 3</b>	<b>Test piece 4</b>
	Small Commercial (up to 7/8") & Large Commercial	Large Commercial (up to 4 1/8")
<b>Size</b>	1/2" 20 SWG (copper) 1/2" (schedule 40 steel)	1 3/8" 16 SWG (Copper) 1 3/8" (schedule 80 steel)
<b>Minimum fitting depth (B)</b>	8mm	14mm
<b>Clearance (C-A)</b>	0.05mm to 0.45mm	0.05mm to 0.55mm
<b>Total length of test piece</b>	400mm (2 x 200mm)	400mm (2 x 200mm)

**Copper EN12735-1:2010**

**Steel ASTM A 106 grade B schedule 40 steel / 80 steel**

**For more information or to book contact:**

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