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Manual blowpipes for welding, cutting and heating — Specifications and tests

AMENDMENT 1

*Chalumeaux manuels pour soudage aux gaz, coupage et chauffage —
Spécifications et essais*

AMENDEMENT 1



Reference number
ISO 5172:1995/Amd.1:1995(E)

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Amendment 1 to International Standard ISO 5172 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 8, *Equipment for gas welding, cutting and allied processes*.

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8.2.5 Sustained backfire test of heating blowpipes with a flat nozzle front end

8.2.5.1 Test conditions

The test assembly is shown in figure 18.

The front end of the nozzle shall be positioned alternately and in parallel to the surface of a flat copper plate. The vertical load applied between a copper plate and nozzle, F , is the deadweight to the blowpipe + 5 N. Positioning shall be carried out five times within five seconds.

The ratio of closing time to opening time is 1 to 1,25. Positioning shall be followed by a time interval of 10 s when the blowpipe is not positioned. Then in turn, the nozzle front end shall be positioned 5 times within 5 s in the mentioned ratio of closing time to opening time. The nozzle front end shall be positioned $5 \times 5 = 25$ times in accordance with the indicated procedure.

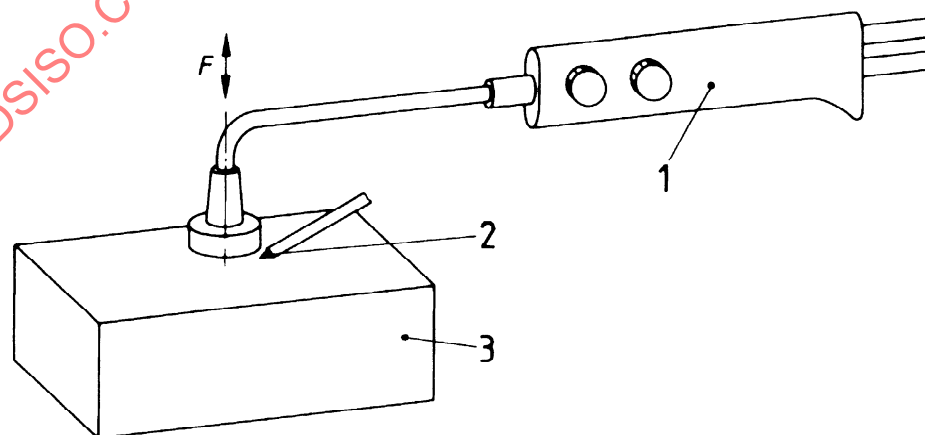
8.2.5.2 Procedure

Ignite the flame and adjust the flame, to normal conditions, with possible readjustment, 30 s after first positioning the blowpipe to the flat copper plate. Do not readjust the flame during the test. After extinction of the flame, re-ignite immediately.

8.2.5.3 Assessment

The test shall be deemed acceptable if no sustained backfire occurs whilst the nozzle front end is positioned 25 times and after a minimum of 25 positioning actions at least 30 popping sounds have occurred.

Should a sustained backfire occur, the test shall be stopped. Nozzle and blowpipe shall be cooled and cleaned. In this case the blowpipe shall pass the test twice for achieving a successful test result. Nozzle and blowpipe shall be cooled between the two additional tests each consisting of 25 positioning actions.



Key

- 1 Heating blowpipe
- 2 Pilot flame
- 3 Copper plate

Figure 18 — Test assembly for closing flat nozzle front ends for heating blowpipes

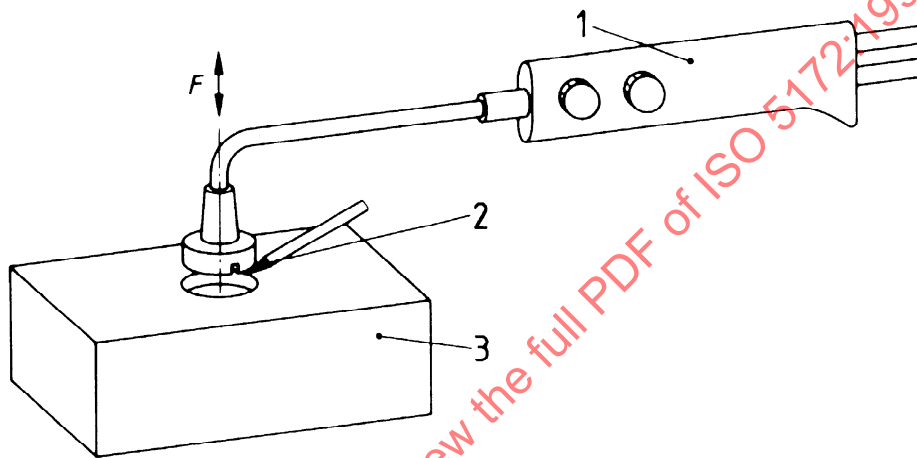
8.2.6 Backfire safety of cutting and heating blowpipes with a recessed nozzle front end

The test assembly is shown in figure 19.

The test conditions, test procedure and assessment of the tests are identical with those of the sustained

backfire test for heating blowpipes with a flat front end in accordance with 8.2.5.

Instead of a flat copper plate, however, a copper plate shall be used which is matched to the nozzle shape being tested (copper plate with a recess for the nozzle). (See figures 20 a), b), c) and d)).

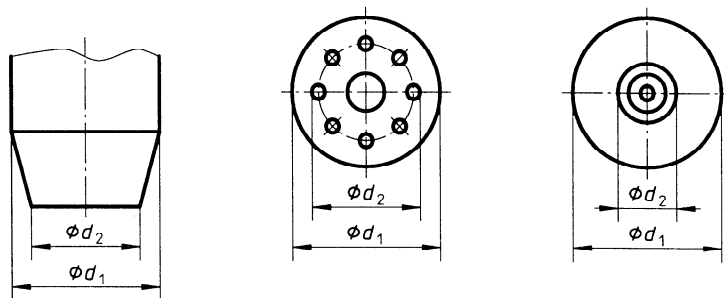


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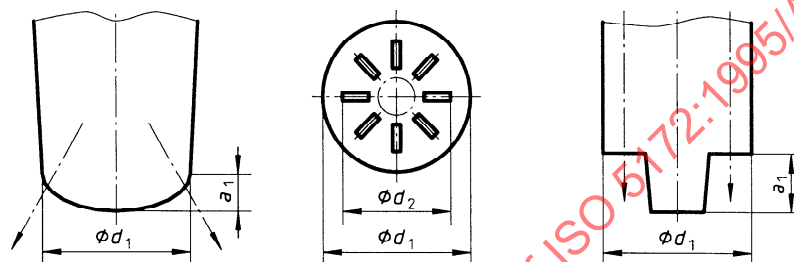
- 1 Cutting and heating blowpipe
- 2 Pilot flame
- 3 Copper plate

Figure 19 — Test assembly for closing recessed nozzle front ends

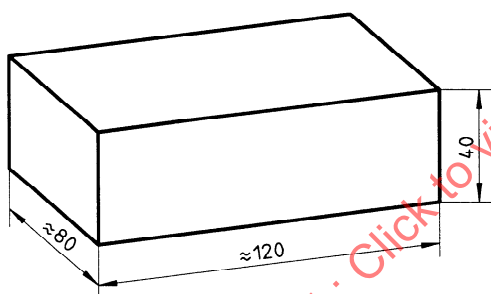
Dimensions in millimetres



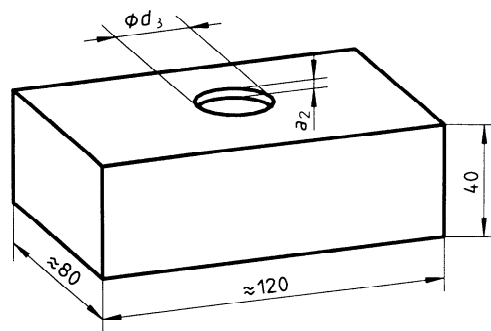
a) Cutting and heating nozzles with a flat nozzle front end



b) Cutting and heating nozzles with a recessed front end



c) Copper plate with no recess for a nozzle with a flat front end



d) Copper plate with a recess for a nozzle with a recessed front end (e.g. for a cylindrical nozzle)

Key

- a_1 = depth of recess
- $a_2 = 1,1 \times a_1$
- d_1 = nozzle diameter
- d_2 = flame diameter at the exit
- $d_3 = 1,1 \times d_1$

Figure 20 — Dimensions of copper plates, examples of dimensions for cutting and heating nozzles

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