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Safety and control devices for gas burners and gas-burning appliances — General requirements

AMENDMENT 1

Dispositifs de commande et de sécurité pour brûleurs à gaz et appareils à gaz — Exigences générales

AMENDEMENT 1

Reference number
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The committee responsible for this document is ISO/TC 161, *Control and protective devices for gas and/or oil burners and appliances*.

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Introduction

ISO 23550 and the relevant product standards of ISO/TC 161 specify certain types of gas connectors, such as threads or flanges.

In the gas appliance industry, additional types of connectors for connection inside the appliance are used for connecting gas controls and pipes together. These types of connectors are called “Gas quick connectors” (GQCs). With these types of quick connectors both production and maintenance for appliances are possible.

These types of GQCs have regionally been used for many years in large quantities.

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Page 1, Scope

Add the following paragraphs:

This International Standard is also applicable to Gas Quick Connectors (GQC) for use inside appliances with connections up to, and including DN 25, and a maximum pressure up to, and including 100 kPa.

This International Standard is applicable to

— tube to tube connections,

— tube to control connections, and

— tube to fitting connections.

Page 2, Terms and definitions

Add the following new terms and definitions:

3.18

gas quick connector

GQC

connector consisting of fastener, socket, plug and seal

3.19

GQC fastener

clip retaining the connection of plug and socket

3.20

GQC socket

outside part of GQC

3.21

GQC plug

inside part of GQC

3.22

GQC seal

gas seal between the socket and the plug

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Page 5, Subclause 6.4, Gas connections

Add the following subclause:

6.4.9 Gas connection by GQC

Shall be according to Annex H.

Page 41

Add the following normative Annex H “Gas quick connectors”.

Annex H
(normative)
Gas quick connector (GQC)

H.4 Classification

H.4.2 Group of control

GQCs shall be classified as group 1 connections.

H.6 Construction

H.6.4 Gas connection

6.4.1 to 6.4.8 are not applicable.

Add the following new subclause:

Gas quick connector

Gas quick connects that can be disassembled without tools shall only be used in restricted access areas, which shall be specified in the operating and installation instructions (see 9.2).

Examples of GQC are given in Figure H.1.

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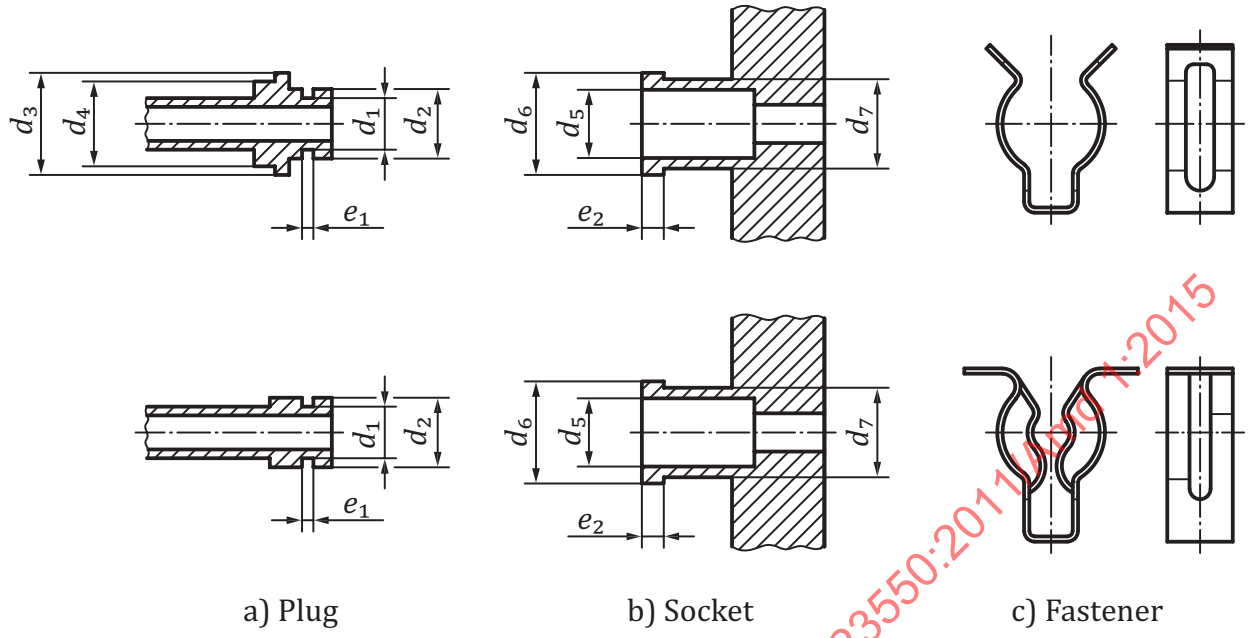

a) Plug b) Socket c) Fastener

Key

d_1 diameter outside of the plug for the GQC seal
d_2 diameter outside of the plug for insertion into the socket
d_3 diameter outside of the plug for retaining of the fastener*1
d_4 diameter outside of the plug for the base of the fastener
e_1 width of channel in the plug for the GQC seal
d_5 diameter inside of the socket
d_6 diameter outside of the socket for retaining of the fastener*1
d_7 diameter outside of the socket for the base of the fastener
e_2 width of projection of the socket for retaining the fastener
Dimension d_3 of plugs and dimension d_6 of sockets are the same.

NOTE Both sockets under b) are identical. For illustrative purposes they are shown together with the plug and the fastener.

Figure H.1 — Examples for GQC

H.7 Performance

H.7.2 Leak-tightness

Shall be according to 7.2 with the following addition:

The test is carried out before and after the assembly test of 7.3.4.6.

H.7.2.2.3 Internal leak-tightness

7.2.2.3 is not applicable.

H.7.3 Torsion and bending

H.7.3.2 Torsion

Shall be according 7.3.2 with the following addition:

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The torque requirement is not applicable in the case of a torque applied to the GQC, plug and socket which can freely turn around each other.

H.7.3.3 Bending moment

7.3.3 is replaced by the following.

GQC shall meet leakage requirements of 7.2.2 before, during, and after the test, as specified in H.7.3.4.5.

H.7.3.4 Torsion and bending test

Add the following two subclauses to 7.3.4:

H.7.3.4.1 General

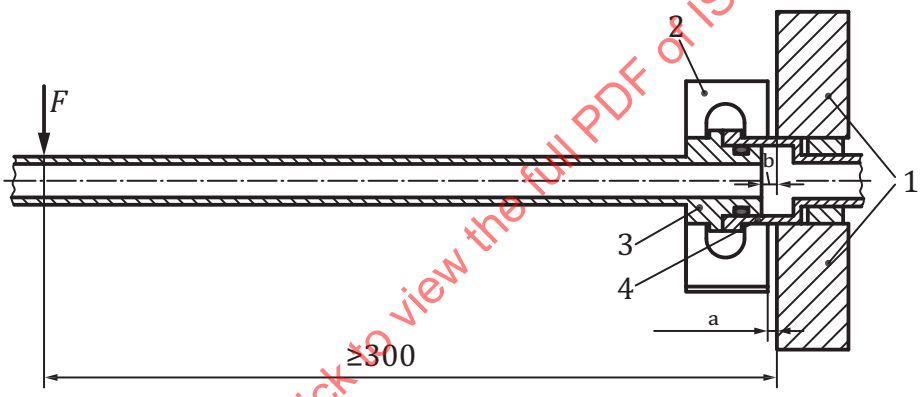
7.3.4.1 is replaced by the following:

GQC which are part of the control are tested under the same conditions as valid for that control.

For tube-to-tube and fitting-to-tube connections, the following applies:

Use the GQC, with the assembly, as shown in Figure H.2.

Dimensions in millimetres



Key

1 fixture
2 fastener
3 plug
4 socket
F force
a A clearance (see "a") shall be provided between the fixture and the fastener to prevent contact between the two parts which would impact results. This clearance is not required if the socket is integral to a control body.
b A clearance (see "b") between the fixture and the face of the plug during the bending-moment test.

Figure H.2 — Bending-moment test assembly for pipe-to-pipe connection (clamping on the connector part)

H.7.3.4.5 900-s bending-moment test — Group 1 controls only

Shall be according to 7.3.4.5 with the following modification:

For pipe to pipe connections replace Table 4 by Table H.1.

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Table H.1 — Bending moment

Diameter nominal, DN	Bending moment N m
6	10
8	10
10	10
15	25
20	25
25	25

Apply force for the required bending moment given in Table H.1, taking the mass of the pipe into account.

Apply force at the point of greater than or equal to 300 mm from the fixture.

Remove force and visually inspect the GQC for deformation and verify that the clearance 'a' of Figure H.2 shall be maintained, then test the GQC for external leak-tightness, in accordance with 7.2.2.2.

H.7.3.4.6 Assembly test

The clamping force/removing force shall be tested based on the following conditions:

Disassemble and re-assemble the GQC connection 30 times.

Remove fastener and visually inspect the GQC parts for deformation and damage, then reassemble the GQC and test for external leak-tightness in accordance with 7.2.2.2.

H.7.3.4.7 Tensile test

Use the fastener with the assembly, as shown in Figure H.3. Apply force for the required tensile strength according to Table H.2, taking the mass of the rod into consideration.

Table H.2 — Tensile test

DN size	Force N
6	6
8	10
10	16
15	33
20	67
25	100

Remove force and then verify the fastener is still in place and functional and check for deformation of the fastener.

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