

## Report

### 1. Background

The firm of RECTUS Apparatebau Walter Klein GmbH - 7147 Eberdingen-Nussdorf applied in a letter dated 29.07.1998 for certification of a quick-acting connector (type 21...) by the DVGW (German Association of Gas and Water Engineers). Since, according to a decision of the Expert Committee on "Domestic Installations", the said certification could not be granted, the DVGW recommended that a report be compiled, providing evidence as to the suitability of the specified connectors for commercial and industrial use.

The said connectors were tested in accordance with DIN 3387(07-/76) and DIN 3587 (09-/81) as long ago as 1984 and were granted certification accordingly. The matter related to the following connectors in particular:

Type 20	DN 2.7	PN4 DVGW G86e 084
Type 21	DN5	PN4 DVGW G86e 085
Type 25	DN8	PN4 DVGW G86e 086
Type 27	DN10	PN4 DVGW G86e 087
Type 38	DN15	PN4 DVGW G86e 088
Type 39	DN2	PN4 DVGW G86e 089

Certification was also granted to the quick-acting shutoff fittings types SSV21 AW17 (3/8 Whitworth) and SSV 21 AM14 (cutting ring M14 x 1.5).

All the connectors are made in two versions, i.e. KA (isolating on one side) and KB (isolating on both sides). Internal and external connecting threads can be supplied.

The results of the aforementioned type test are given in the report bearing file number 86/315/84/476.

## 2. Test parameters and procedure

The tests required for the report were carried out in accordance with DIN 3387, part 1 (01/91), DIN 2999 and DIN 3537, part 1 (06/90). The results obtained from the tests were duly taken into account in the designated test report and the connector types 21 and 38 were subjected to additional random sampling (connector operation and leak testing).

The connectors were evaluated in accordance with DIN 4815/5. In addition, the materials used were tested for their suitability for gases as per G260/I and for temperatures up to 80°C. Separate testing of the quick-acting shutoff fitting was superfluous, because this is configured in the same manner as the quick-acting connectors with the addition of a stopcock. Actuation of the stopcock takes place as a function of the connected or disconnected state of the connector. This being so, the shutoff fitting provides an effective seal, subject to the proper use of the quick-acting connector.

## 3. Results

The practical test and comparative observations showed that the requirements of the specified standards, in so far as they apply, are fulfilled.

The materials used are suitable for gases as per G260/I. The O-rings are made of material No. N7003, made by Busak and Shamban GmbH & Co, Stuttgart. This material is registered with the DVGW under approval No. DIN-DVGW 91.02e 013, valid until 30.04.2001.

External and internal sealing integrity were established at a pressure of 6 bar (medium, air; test specimen under water for 5 mins.). None of the three type 21 or type 38 connectors tested revealed any leaks.

The same result was obtained after repeated (5 each) changes of temperature from +90°C to room temperature and subsequent storage (24 hours) at -20°C. The testing of connector actuation consisted of 1000 cycles (manual connection and disconnection) on the type 21.

Even after this test, the connectors revealed no leaks and could easily be closed and opened at nominal pressure.

As a further requirement, the installation and operating instruction manual was checked. This contained a recommendation by the manufacturer to the effect that a shutoff fitting should be installed in the line upstream of every connector.

The connector is attached to the equipment; the plug-in fitting is attached to the hose.

Actuation of the connector is described. Disconnection must not take place until after the additional, upstream quick-acting valve has been closed.

Warning instructions are included.

Conditions of use (pressure, temperature) are specified.

#### 4. Outcome

Rectus quick-acting connectors types 20, 21, 25, 27, 38 and 39 are suitable for industrial and commercial use and for all the gases specified in G260/I.

The following restrictions must be observed:

- a) Connecting lines used for commercial and industrial purposes must comply with DIN 3383 (safety-type gas hoses) or DIN 3384 (flexible metal tubes).
- b) The additional shutoff valve recommended in the installation instruction manual must be specified without fail. Only a DIN-DVGW registered part is permitted.
- c) Plug-in fittings and connectors when disconnected are to be protected from contamination with sealing caps or plugs.

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