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Technical Rule - Standard

DVGW G 260 (A) September 2021

Gas Quality

Gasbeschaffenheit

H₂ Ready

GAS

The DVGW is the technical and scientific association of gas and water engineers and comprises approximately 14,000 members. For more than 150 years, the DVGW has been setting the technical standards for the safe, secure and reliable supply of gas and water, actively initiating the exchange of ideas and information in the gas and water sectors and encouraging and promoting on-going progress in the sectors through practical guidance.

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Preface

This code of practice has been developed by several project groups founded by both the Technical Committee “Gaseous Combustible Substances” and the Technical Committee “Renewable Gases”. It serves as the basis for the gas quality of fuel gas used in the supply of gas to the general public. Gases from regenerative sources receive special attention due to the consequences of climate protection.

The requirements for the quality of gases used in the supply of the general public with gas have been adjusted to the developments as technical rules multiple times.

The revision of this code of practice mainly aimed at merging DVGW Codes of Practice G 260 and G 262 and integrating renewable gases (biomethane, synthetic natural gas SNG, hydrogen) into the supply of gas of the general public. The publication of two European Standards for natural gas H (DIN EN 16726) and renewable gases (DIN EN 16723-1) and the current lack of specific information on calorimetric quantities like the Wobbe index or the calorific value within these two standards has been taken into account. The results from in-progress European research projects shall only be evaluated after they have been published.

Intense discussions within the aforementioned standard committees have led to the conclusion that, currently, no changes to the calorimetric quantities Wobbe index and the calorific value will be made on a national level.

On a national level, extensive studies have been conducted on calorimetric quantities. The final reports of the DVGW’s main study on gas quality phase I + II have been published while the DVGW Codes of Practice G 260 / G 262 were in the process of being merged. The corresponding considerations on this topic are detailed in Annex E.

Furthermore, limit values of gas constituents and gas accompanying substances have been adapted to the specifications in European standards DIN EN 16723-1 and DIN EN 16726 as closely as possible.

The gas quality parameters specified in DVGW Code of Practice G 260 have been incorporated into the communication of member states concerning their national gas supply conditions in accordance with Article 4 of Regulation EU 2016/426 on Appliances Burning Gaseous Fuels. The parameters of DVGW G 260 have been, in part, incorporated into the European standardization and serve in DIN EN 437, amongst others, to define test gases, appliance categories, and gas supply pressures for gas appliances sold in Germany.

Until all gas supply areas have completely switch from L-Gas and adapted H-gas, gases of the 2nd gas family, Group L, remain subject to this Code of Practice.

Apart from being used as a supplemental gas for injection, hydrogen has been included as a reference gas. To be able to utilize hydrogen as a reference gas, a new 5th gas family has been introduced which assumes two different hydrogen qualities that differ in their level of purity.

Adhering to combustion characteristics and limit values contributes to safeguarding the health of gas consumers and persons working in the gas supply industry, supplying the general public with gas safely and free of disturbances, to keeping interferences with the technical safety of gas systems and gas appliances to a minimum, and using gas in a manner that is as environmentally friendly as possible.

If not otherwise specified, all specifications refer to normal conditions (see 3.9.1).

This Code of Practice supersedes both DVGW Code of Practice G 260:2013 and DVGW Code of Practice G 262:2011.

Thanks to all contributing experts from companies and associations who actively helped with the revision of this Code of Practice.

Revisions

Compared to DVGW Code of Practice G 260:2013-03, the following changes have been made:

a) the contents of DVGW Code of Practice G 262 on the requirements for gas quality have been, for the most part, integrated into this work. Consequently, DVGW Code of Practice G 262 is going to be withdrawn in its current state after the publication of this technical rule.

b) methane-rich, renewable gases such as bio-methane and synthetic methane (SNG) are gases of the 2nd gas family and consequently gases usable in the supply of the general public with gas.

c) the wording on the upper limit of the Wobbe index for gases of the 2nd gas family has been rendered with more precision.

d) hydrogen injection into methane-rich gases falls into the range of the 2nd gas family if the combustion characteristics have been adhered to.

e) in principle, this should allow for the injection of more than 10% hydrogen if the corresponding network's suitability – including all measuring devices, downstream plants/systems, and gas applications – has been tested and verified for such hydrogen contents.

f) a 5th gas family has been defined for gas networks that are operated with pure hydrogen.

g) limited sections of the gas network, called "network cells" (see 3.7), have been defined and specified. This refers to regions where e.g., partly upgraded biogases are delivered to consumers and these consumer's gases are prevented from gaining entry into other networks.

Previous Versions of DVGW G 260:

Regulations for the Quality of Gases (“Richtlinien für die Beschaffenheit des Gases”), GWF 82. 11.11.1939, p. 745

DVGW G 260:1959-04

DVGW G 260:1965-03

DVGW G 260:1973-01

DVGW G 260-1:1983-04 and DVGW G 260-2:1990-03

DVGW G 260:2000-01

DVGW G 260:2008-05

DVGW G 260:2013-03

Previous Versions of DVGW G 262:

DVGW G 262:1991-06

DVGW G 262:2004-11

DVGW G 262:2011-09