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Technical Guideline – Instruction Bulletin

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Airborne remote gas detection

The DVGW Deutscher Verein des Gas- und Wasserfaches e.V. – Technisch-wissenschaftlicher Verein – (German Technical and Scientific Association for Gas and water, a registered association – Technical-Scientific Association) – has been supporting the gas and water sectors since 1859 with a focus on safety, hygiene and the protection of the environment.

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Foreword

The systematic above ground inspection for leaks in gas distribution systems is a focal point in the inspection of gas distribution systems and is performed in accordance with the specifications of DVGW Code of Practice G 465-1 "Inspection of gas pipeline systems with operating pressures up to and including 4 bar". For above ground inspection, gas concentration measuring instruments complying with the requirements of DVGW Code of Practice G 465-4 "Gas leak detection and gas concentration measuring devices for leakage survey on gas supply systems" shall be used. The extraction is performed with carpet or bell probes.

Apart from the traditional measuring methods based on the semiconductor sensor and the flame ionisation detector, the continuously enhanced laser-based detection of methane has also been available during the last few years. The DVGW "Remote gas detection" project group has analysed different airborne remote gas detection methods in terms of their efficiency. In addition, the currently most sensitive airborne system was compared with traditional measuring systems.

As a result of this work it can be stated that during the tests conducted under pseudo-field conditions, the remote gas detection system examined reliably detects even the lowest methane concentrations. The current technical status of airborne remote gas detection leads to the conclusion that these are basically suited for the above ground inspection of high pressure gas pipelines inside and outside of built-up areas. Following this, the Technical Committee on "Gas transmission pipelines" resolved to approve airborne pipeline monitoring systems that meet the requirements of this Instruction Bulletin for the above ground inspection of gas transmission pipelines, the maintenance of which is regulated by DVGW Code of Practice G 466-1 "Steel gas pipelines for operating pressures above 5 bar – Maintenance". This Instruction Bulletin formulates requirements, test criteria and implementation instructions for the airborne remote gas detection.

Amendments

None

Earlier editions

None