# SLOVENSKI STANDARD
# SIST-TS CEN/TS 17977:2024

**01-februar-2024**

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**Infrastruktura za plin - Kakovost plina - Uporaba vodika v prilagojenih plinskih sistemih**

Gas infrastructure - Quality of gas - Hydrogen used in rededicated gas systems

Gasinfrastruktur - Beschaffenheit von Gas - Wasserstoff zur Nutzung in umgestellten Gassystemen

Infrastructures gazières - Qualité du gaz - Hydrogène utilisé dans des réseaux de gaz convertis



**Ta slovenski standard je istoveten z:** **CEN/TS 17977:2023**

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**ICS:**

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|---|---|---|
| 27.075 | Tehnologija vodika | Hydrogen technologies |
| 75.180.01 | Oprema za industrijo nafte in zemeljskega plina na splošno | Equipment for petroleum and natural gas industries in general |

**SIST-TS CEN/TS 17977:2024** **en**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

# CEN/TS 17977

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ICS 75.180.01; 27.075

English Version

# Gas infrastructure - Quality of gas - Hydrogen used in rededicated gas systems

Infrastructures gazières - Qualité du gaz - Hydrogène utilisé dans des réseaux de gaz convertis

Gasinfrastruktur - Beschaffenheit von Gas - Wasserstoff zur Nutzung in umgestellten Gassystemen

This Technical Specification (CEN/TS) was approved by CEN on 28 August 2023 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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## European foreword

This document (CEN/TS 17977:2023) has been prepared by Technical Committee CEN/TC 234 “Gas infrastructure”, the secretariat of which is held by DIN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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# Introduction

This document for hydrogen in rededicated gas systems takes into account the condition of existing piping with possible presence of liquid and solid deposits influencing the hydrogen quality.

Many parameters given in this document are deduced from EN 16726.

This document is the first edition and reflects the current situation, taking into account the existing grid, see Annex B. It is expected that over time the hydrogen delivered through such pipework will improve in quality. This will be taken into account in further development of the document.

This document is supposed to balance the requirements of gaseous hydrogen for the producer, the different grid operators and the end-users, respectively in order to set- up a reliable backbone of future energy supply which is (partly) based on using rededicated gas infrastructure. As a consequence, on-site pre-treatment cannot be excluded for applications and/or processes with specific stringent requirements.

The proposed parameters are verified by German project results (HyQual) which have been consulted in combination with end-users' specifications. In the project, different sources of hydrogen have been evaluated, including pyrolysis, steam reforming, electrolysis (Chlorine-Alkaline process and water electrolysis). Furthermore, the proposal takes biological hydrogen production process into account.

Also, the results of the Work Package 9 of the EC-CEN/GERG PNR project 'Removing the technical barriers to use of hydrogen in natural gas networks and for (natural) gas end users' have been taken into account.

This document supports the whole value chain (producers, system operators, other related services, end-users) to produce, transport, store, deliver and/or use hydrogen in a possibly rededicated (or adapted) natural gas infrastructure and connected applications in a safe way in the CEN member countries and where applicable, without the risk to harm or damage the infrastructure or connected user applications.



However, it is recognized that some end-users are sensitive to some gas quality parameters and impurities. In these cases, purification measures can be needed, for upgrading the hydrogen quality.

This document supports the implementation of the hydrogen strategy on European and national level and will accordingly facilitate the trade of hydrogen across entire Europe.



In the context of this document, the following aspects require close co-operation respectively co-ordination with other TCs (CEN-CLC/JTC 6, CEN/TC 268, ISO/TC 197, TCs for equipment and application):

— taking into account both natural gas systems and new built hydrogen systems;

— hydrogen qualities for fuel cell applications EN 17124:2022 (CEN/TC 268 WG 5, legally binding in some countries, e.g. DE).