

<b>STN</b>	<b>Bezvýkopová výstavba a skúšanie kanalizačných potrubí a stôk</b>	<b>STN EN 12889</b>  75 6105
------------	---	--

Trenchless construction and testing of drains and sewers

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/22

Obsahuje: EN 12889:2022

Oznámením tejto normy sa ruší  
STN EN 12889 (75 6105) z novembra 2001

**136110**



EUROPEAN STANDARD

EN 12889

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2022

ICS 93.030; 23.040.05

Supersedes EN 12889:2000

English Version

## Trenchless construction and testing of drains and sewers

Mise en oeuvre sans tranchée et essais des  
branchements et collecteurs d'assainissementGrabenlose Verlegung und Prüfung von  
Abwasserleitungen und -kanälen

This European Standard was approved by CEN on 5 September 2022.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN 12889:2022 (E)****Contents**

Page

European foreword.....	4
<b>1 Scope .....</b>	<b>5</b>
<b>2 Normative references.....</b>	<b>5</b>
<b>3 Terms and definitions .....</b>	<b>5</b>
<b>4 General.....</b>	<b>7</b>
<b>4.1 Technical principles.....</b>	<b>7</b>
<b>4.2 Safeguarding design decisions .....</b>	<b>7</b>
<b>5 Construction components and materials .....</b>	<b>8</b>
<b>5.1 General.....</b>	<b>8</b>
<b>5.2 Pipes and joints.....</b>	<b>8</b>
<b>5.3 Manholes and inspection chambers.....</b>	<b>8</b>
<b>5.4 Delivery, handling and transportation on site .....</b>	<b>8</b>
<b>5.5 Storage .....</b>	<b>8</b>
<b>5.6 Other materials.....</b>	<b>9</b>
<b>6 Techniques .....</b>	<b>9</b>
<b>6.1 Classification.....</b>	<b>9</b>
<b>6.2 Unmanned techniques.....</b>	<b>11</b>
<b>6.2.1 General.....</b>	<b>11</b>
<b>6.2.2 Non-steerable techniques .....</b>	<b>11</b>
<b>6.2.3 Steerable techniques.....</b>	<b>18</b>
<b>6.3 Manned techniques .....</b>	<b>23</b>
<b>6.3.1 General.....</b>	<b>23</b>
<b>6.3.2 Non-steerable techniques .....</b>	<b>24</b>
<b>6.3.3 Steerable techniques.....</b>	<b>24</b>
<b>6.3.4 Other manned techniques.....</b>	<b>28</b>
<b>7 Requirements of planning and construction .....</b>	<b>29</b>
<b>7.1 General.....</b>	<b>29</b>
<b>7.2 Basic evaluation, design and construction planning.....</b>	<b>29</b>
<b>7.2.1 General.....</b>	<b>29</b>
<b>7.2.2 Survey of existing structures and systems.....</b>	<b>30</b>
<b>7.2.3 Ground and groundwater.....</b>	<b>31</b>
<b>7.2.4 Minimum clear dimensions.....</b>	<b>33</b>
<b>7.2.5 Subsidence, heaves, cover .....</b>	<b>33</b>
<b>7.2.6 Layout of the line.....</b>	<b>33</b>
<b>7.2.7 Tolerances .....</b>	<b>33</b>
<b>7.2.8 Starting, intermediate and target pits.....</b>	<b>33</b>
<b>7.2.9 Working face support .....</b>	<b>34</b>
<b>7.2.10 Additional measures in water bearing ground .....</b>	<b>34</b>
<b>7.2.11 Obstacles .....</b>	<b>34</b>
<b>7.2.12 Soil conditioning.....</b>	<b>34</b>
<b>7.2.13 Structural calculation .....</b>	<b>35</b>
<b>7.2.14 Construction site arrangement.....</b>	<b>35</b>
<b>7.3 Work preparation and construction .....</b>	<b>35</b>
<b>7.3.1 General.....</b>	<b>35</b>
<b>7.3.2 Starting, intermediate and target pits.....</b>	<b>36</b>

<b>7.3.3</b>	<b>Exit and entry processes .....</b>	<b>36</b>
<b>7.3.4</b>	<b>Static calculation of launch and reception shafts.....</b>	<b>36</b>
<b>7.3.5</b>	<b>Overcut .....</b>	<b>36</b>
<b>7.3.6</b>	<b>Recording and logging of jacking parameters.....</b>	<b>36</b>
<b>7.3.7</b>	<b>Support of the working face.....</b>	<b>37</b>
<b>7.3.8</b>	<b>Lubricant and supporting medium .....</b>	<b>37</b>
<b>7.4</b>	<b>Avoidance of damage.....</b>	<b>37</b>
<b>8</b>	<b>Inspection and testing of pipelines after installation.....</b>	<b>38</b>
<b>8.1</b>	<b>General .....</b>	<b>38</b>
<b>8.2</b>	<b>Visual inspection.....</b>	<b>38</b>
<b>8.3</b>	<b>Leaktightness .....</b>	<b>38</b>
<b>9</b>	<b>Qualifications .....</b>	<b>38</b>
	<b>Annex A (informative) Additional information about the different systems.....</b>	<b>39</b>
	<b>Annex B (informative) Guide to typical ranges of application regarding diameters and lengths in suitable soil .....</b>	<b>49</b>
	<b>Annex C (informative) Guide to typical ranges of application for selected trenchless techniques regarding diameters and lengths in suitable soils .....</b>	<b>51</b>
	<b>Annex D (informative) Trenchless insertion using a pipe plough system.....</b>	<b>52</b>
	<b>Bibliography .....</b>	<b>53</b>

## EN 12889:2022 (E)

### European foreword

This document (EN 12889:2022) has been prepared by Technical Committee CEN/TC 165 “Waste water engineering”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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.

This document supersedes EN 12889:2000.

In comparison with the previous edition, the following changes have been made:

- a) editorial and technical revision of the complete document;
- b) modification of terms and definitions;
- c) adaptation of the description of all methods of trenchless techniques and installation of pipelines;
- d) Clause 7 “Requirements of planning and construction” was added.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## 1 Scope

This document is applicable to the trenchless construction, trenchless replacement techniques and testing of new drains and new sewers in the ground and usually operating as gravity or pressure pipelines, formed using prefabricated pipes and their joints.

Renovation techniques for existing pressure and non-pressure systems are not covered by this document.

Methods of trenchless construction include:

- manned and unmanned techniques;
- steerable and non-steerable techniques.

NOTE 1 Mining or tunnelling techniques for permanent structures (e.g. *in situ* construction or the use of prefabricated segments) are not covered by this document although some parts can apply to these methods.

NOTE 2 Trenchless insertion using a pipe plough system is a common method for installing small pipes and cables. The method does not exactly cope with the scope of this document. Therefore, it is described in the informative Annex D.

Requirements for associated pipeline installation work other than trenchless construction, e.g. for manholes and inspection chambers, are not covered by this document and are specified in EN 1610. This also applies to pipes that are subsequently installed within entry and exit shafts/pits.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 476, *General requirements for components used in drains and sewers*

EN 752, *Drain and sewer systems outside buildings - Sewer system management*

EN 805, *Water supply - Requirements for systems and components outside buildings*

EN 1295-1, *Structural design of buried pipelines under various conditions of loading - Part 1: General requirements*

EN 1610, *Construction and testing of drains and sewers*

EN 1997-2, *Eurocode 7: Geotechnical design - Part 2: Ground investigation and testing*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**