



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 20770-5:2025**  
**01-april-2025**

---

**Oprema za vrtnanje in temeljenje - Varnost - 5. del: Oprema za vpihavanje, nanašanje malte in vbrizgavanje (ISO/DIS 20770-5:2025)**

Drilling and foundation equipment - Safety - Part 5: Jetting, grouting and injection equipment (ISO/DIS 20770-5:2025)

Geräte für Bohr- und Gründungsarbeiten - Sicherheit - Teil 6: Geräte für Injektionsarbeiten (ISO/DIS 20770-5:2025)

Machines de forage et de fondation - Sécurité - Partie 5: Machines pour traitement des sols par injection et machines pour injection des sols par jet (ISO/DIS 20770-5:2025)

**Ta slovenski standard je istoveten z: prEN ISO 20770-5**

[oSIST prEN ISO 20770-5:2025](http://standards.sist.si/standards/sist/prEN/ISO/20770-5:2025)

<http://standards.sist.si/standards/sist/prEN/ISO/20770-5:2025>

**ICS:**

53.100	Stroji za zemeljska dela	Earth-moving machinery
93.020	Zemeljska dela. Izkopavanja. Gradnja temeljev. Dela pod zemljo	Earthworks. Excavations. Foundation construction. Underground works

**oSIST prEN ISO 20770-5:2025**

**en,fr,de**





# DRAFT International Standard

## ISO/DIS 20770-5

### Drilling and foundation equipment — Safety —

Part 5:

### Jetting, grouting and injection equipment

*Machines de forage et de fondation — Sécurité —*

*Partie 5: Machines pour traitement des sols par injection et machines pour injection des sols par jet*

ICS: 53.100

ISO/TC 195/SC 3

Secretariat: **AFNOR**

Voting begins on:  
**2025-02-13**

Voting terminates on:  
**2025-05-08**

Standards  
(<https://standards.iteh.ai>)  
Document Preview

[oSIST prEN ISO 20770-5:2025](https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025)

<https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025>

This document is circulated as received from the committee secretariat.

**ISO/CEN PARALLEL PROCESSING**

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENTS AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

## ISO/DIS 20770-5:2025(en)

# iTeh Standards (<https://standards.iteh.ai>) Document Preview

[oSIST prEN ISO 20770-5:2025](https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025)

<https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025>



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

## ISO/DIS 20770-5:2025(en)

## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Safety requirements and/or protective/risk reduction measures</b> .....	<b>2</b>
4.1 General.....	2
4.2 Components.....	3
4.2.1 Fluid pumps, hoses and mixers.....	3
4.2.2 Working conditions.....	3
4.2.3 Remote control.....	3
4.2.4 Remote stopping devices for jet grouting pumps.....	3
4.2.5 Hose fastening for jet-grouting.....	3
4.3 Dust.....	3
4.4 Noise.....	3
<b>5 Verification of the safety requirements and/or protective/risk reduction measures</b> .....	<b>3</b>
5.1 General.....	3
5.2 Functional test.....	4
<b>6 Information for use</b> .....	<b>4</b>
6.1 Operator's manual.....	4
6.2 Maintenance instructions.....	5
<b>Annex A (normative) Noise test code</b> .....	<b>6</b>
<b>Annex B (informative) List of additional significant hazards</b> .....	<b>7</b>
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered</b> .....	<b>8</b>
<b>Annex ZB (informative) Relationship between this European Standard and the essential requirements of Regulation EU 2023/1230 aimed to be covered</b> .....	<b>12</b>
<b>Bibliography</b> .....	<b>16</b>

## ISO/DIS 20770-5:2025(en)

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO *had not* received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*, Subcommittee SC 3, *Drilling and foundation machinery and equipment*.

A list of all parts in the ISO 20770 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

<https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025>

**ISO/DIS 20770-5:2025(en)****Introduction**

This document is a type C standard as stated in ISO 12100:2010.

The machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

When requirements of this type C standard are different from those which are stated in type A or B standards, the requirements of this type C standard take precedence over the requirements of the other standards, for drilling and foundation equipment that have been designed and built according to the requirements of this type C standard.

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[oSIST prEN ISO 20770-5:2025](https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025)

<https://standards.iteh.ai/catalog/standards/sist/ad25dbef-a22e-450e-88fd-e829e2cad4f2/osist-pren-iso-20770-5-2025>





# Drilling and foundation equipment — Safety —

## Part 5: Jetting, grouting and injection equipment

### 1 Scope

This document together with ISO 20770-1:\_\_\_\_, deals with all significant hazards for jetting, grouting and injection equipment when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer associated with the whole life time of the machine (see [Clause 4](#)).

The requirements of this part are complementary to the common requirements formulated in ISO 20770-1:\_\_\_\_.

This document does not repeat the requirements from ISO 20770-1:\_\_\_\_, but adds or replaces the requirements for application for jetting, grouting and injection equipment.

Rigs for drilling, vibrating, pile driving, to be used for preparing holes for these applications are covered by ISO 20770-2:\_\_\_\_ and/or ISO 20770-4:\_\_\_\_.

Jetting, grouting and injection equipment is used in the preparation, transfer and application of grouting materials used for either:

- the improvement of ground condition; or
- the filling of voids e.g. around piles or ground anchors.

Jetting, grouting and injection equipment are constituted by all equipment and installations, operated by hand or electrically, pneumatically, mechanically or hydraulically powered, necessary for the following:

- mixing, storing, measuring and pumping of substances (cement suspension, mortar or chemical liquids/ mixtures);
- jetting, grouting and injection processes (of/into subsoil) with low, medium or high pressure or vacuum systems;
- all control systems, electrical or mechanical pressure and flow recorders, for monitoring the grouting;
- all jetting, grouting and injection accessories, such as: special tools, lances, rods, sockets, packers, retention clamps and swivel hooks.

This document does not apply to machines and equipment for conveying, spraying and placing concrete and mortar (covered by ISO 21573-1:2024 and ISO 21592:2006).

This document does not deal with jetting, grouting or injection units intended to use products that generate toxic gases.

### 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 809:1998+A1:2009, *Pumps and pump units for liquids — Common safety requirements*

## ISO/DIS 20770-5:2025(en)

EN 853:2015, *Rubber hoses and hose assemblies — Wire braid reinforced hydraulic type — Specification*

EN 854:2015, *Rubber hoses and hose assemblies — Wire braid reinforced hydraulic type — Specification*

EN 856:2015+AC:2019, *Rubber hoses and hose assemblies — Rubber-covered spiral wire reinforced hydraulic type — Specification*

EN 857:2015, *Rubber hoses and hose assemblies — Rubber-covered spiral wire reinforced hydraulic type — Specification*

EN 12001:2012, *Conveying, spraying and placing machines for concrete and mortar — Safety requirements*

ISO 3862:2020, *Rubber hoses and hose assemblies — Rubber-covered spiral-wire-reinforced hydraulic types for oil-based or water-based fluids — Specification*

ISO 3949:2020, *Plastics hoses and hose assemblies — Textile-reinforced types for hydraulic applications — Specification*

ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 11886, \_\_\_\_<sup>1)</sup>, *Drilling and foundation machinery — Soil drilling machines, and soil/rock drilling machines, and foundation machines — Commercial specifications*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 20770-1, \_\_\_\_<sup>2)</sup>, *Drilling and foundation equipment — Safety — Part 1: General requirements*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010, ISO 11886:\_\_\_\_ apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

No terms and definitions are listed in this document.

## 4 Safety requirements and/or protective/risk reduction measures

### 4.1 General

Jetting, grouting and injection equipment shall comply with the requirements of ISO 20770-1:\_\_\_\_ except as modified or replaced by the requirements of this document. In addition, jetting, grouting and injection equipment having no mobility nor lifting function, the corresponding clauses of ISO 20770-1:\_\_\_\_ do not apply, e.g. 4.7, 4.10.2, 4.16.3, 4.2.3.6.6, 4.2.3.6.7.

A cab is not required for grouting and injection equipment, therefore, ISO 20770-1:\_\_\_\_ 4.14.1 does not apply.

In addition, the equipment shall be designed according to the principles of ISO 12100:2010 for relevant but not significant hazards, which are not dealt with by this document.

1) At the stage of preparation : ISO/DIS 11886:2023

2) Currently under preparation