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Interested committees:

Title: Draft BS EN ISO 20770-4 Drilling and foundation equipment - Safety. Part 4: Diaphragm walling equipment.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 20770-4

Drilling and foundation equipment — Safety — Part 4: Diaphragm walling equipment

Machines de forage et de fondation — Sécurité —

Partie 4: Machines pour parois moulées

ICS: 53.100

ISO/TC 195/SC 3

Secretariat: **AFNOR**

Voting begins on:
2025-02-13

Voting terminates on:
2025-05-08

This document is circulated as received from the committee secretariat.

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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).

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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.

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.

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.

Drilling and foundation equipment — Safety —

Part 4: Diaphragm walling equipment

1 Scope

This document, together with part 1, deals with all significant hazards for diaphragm walling 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 [Annex B](#)).

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 diaphragm walling equipment.

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 474-5:2022, *Earth-moving machinery — Safety — Part 5: Requirements for hydraulic excavators*

EN 474-12:2022, *Earth-moving machinery — Safety — Part 12: Requirements for cable excavators*

EN 13000:2010+A1:2014, *Cranes — Mobile cranes*

ISO 6395:2008, *Earth-moving machinery — Determination of sound power level — Dynamic test conditions*

ISO 6396:2008, *Earth-moving machinery — Determination of emission sound pressure level at operator's position — Dynamic test conditions*

ISO 11886, ____,¹⁾ *Drilling and foundation machinery — Soil or soil and rock mixture drilling and foundation machines — Commercial specifications*

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

ISO 20770-1, ____,²⁾ *Drilling and foundation equipment — Safety — Part 1: Common requirements*

ISO 20770-3, ____,³⁾ *Drilling and foundation equipment — Safety — Part 3: Foundation equipment*

3 Terms and definitions

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

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

2) Currently at stage CD

3) Currently at stage CD

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/>

3.1 diaphragm wall

structural retaining wall or cut-off wall, both of which can be impermeable and constructed in-situ in the ground as a series of contiguous panels

Note 1 to entry: Panels are typically narrow but deep and are cut between surface guide walls and can depend on a slurry or mud suspension for temporary ground support. Structural walls are typically of reinforced concrete with the concrete placed from the bottom of the panel upwards to displace the slurry or mud suspension.

Note 2 to entry: There are other diaphragm wall techniques, for example continuous trenchers; these techniques use machines and cutting tools such as digging chain or wheel disc, which are covered by EN 474-10:2022.

3.2 diaphragm walling rig

carrier machine equipped with cutting tool to cut panels for *diaphragm walls* ([3.1](#))

Note 1 to entry: The diaphragm walling rig is either:

- a complete machine satisfying this document, or
- a carrier machine able to withstand dynamic loads as specified in [4.2](#) with interchangeable equipment in the form of diaphragm wall cutting tools, which can be provided by different suppliers or manufacturers.

Note 2 to entry: The carrier machine is, e.g.:

- foundation equipment as defined in ISO 20770-3:____; or
- a crane as defined in EN 13000:2010+A1:2014; or
- a cable excavator as defined in EN 474-12:2022; or
- a hydraulic excavator as defined in EN 474-5:2022.

3.3 diaphragm wall cutting tool

tool for cutting panels for diaphragm walls

Note 1 to entry: Diaphragm wall cutting tools can either be:

- *diaphragm wall grab* (as defined in ISO 11886:____, 3.4.4.1);
- *diaphragm wall cutter* (as defined in ISO 11886:____, 3.4.4.3).

Note 2 to entry: Diaphragm wall cutting tools can be rope suspended and guided by frames or kelly bars.

3.4 recovery

extraction of a diaphragm wall cutting tool

Note 1 to entry: For example, grab or cutter when it is stuck in the panel.

3.5 triggering of free-fall

action (manual or automatic) that causes the starting of the free-fall