

BS EN 16228-3:2014



BSI Standards Publication

Drilling and foundation equipment — Safety

Part 3: Horizontal directional drilling equipment (HDD)

bsi.

...making excellence a habit.™

This is a preview. [Click here to purchase the full publication.](#)

National foreword

This British Standard is the UK implementation of EN 16228-3:2014. Together with BS EN 16228-1:2014, BS EN 16228-2:2014, BS EN 16228-4:2014, BS EN 16228-5:2014, BS EN 16228-6:2014 and BS EN 16228-7:2014, it supersedes BS EN 791:1995+A1:2009 and BS EN 996:1995+A3:2009, which are withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/513, Construction equipment and plant and site safety.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2014.
Published by BSI Standards Limited 2014

ISBN 978 0 580 73266 9
ICS 91.220; 93.020

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2014.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16228-3

May 2014

ICS 93.020

English Version

**Drilling and foundation equipment - Safety - Part 3: Horizontal
directional drilling equipment (HDD)**

Machines de forage et de fondation - Sécurité - Partie 3:
Appareils de forage horizontal dirigé (HDD)

Geräte für Bohr- und Gründungsarbeiten - Sicherheit - Teil
3: Geräte für das gerichtete Horizontalbohrverfahren

This European Standard was approved by CEN on 6 March 2014.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 List of additional significant hazards	8
5 Safety requirements and/or protective measures	9
5.1 General.....	9
5.2 Stability	9
5.2.1 General.....	9
5.2.2 Ground pressure.....	10
5.3 Brakes	10
5.3.1 Brakes for travelling.....	10
5.3.2 Brakes for slewing.....	10
5.4 Winches, draw-works and ropes.....	10
5.4.1 General.....	10
5.4.2 Roller and leaf chains.....	10
5.5 Indicating devices for inclination.....	10
5.6 Operating position(s)	10
5.6.1 General.....	10
5.6.2 Cab/Cabin	11
5.6.3 Driving, tramming and operating(s) position.....	11
5.6.4 Falling Object Protection (FOPS).....	11
5.7 Access to operating positions, intervention and servicing points	11
5.8 Retrieval, transportation, lifting and towing of horizontal directional drills and their parts	11
5.9 Travel speed.....	11
5.10 Control devices	12
5.10.1 General.....	12
5.10.2 Pedestrian controlled horizontal directional drills.....	12
5.10.3 Protective measures for stopping of rotation and feed.....	12
5.10.4 Restricted operating mode	12
5.11 Equipment for information and warning	12
5.11.1 General.....	12
5.11.2 Warning devices	12
5.12 Guards and protective devices	13
5.12.1 General.....	13
5.12.2 Design	13
5.12.3 Foot barrier.....	13
5.12.4 Danger zones at rear of machine	13
5.12.5 Elevating drill frame	13
5.12.6 Breakout clamps	13
5.12.7 Ground fixation device.....	14
5.12.8 Horizontal directional drills with a drill rod/pipe storage magazine.....	14
5.12.9 Horizontal directional drills without a mechanical drill/pipe handling system	14
5.13 Immobilisation system	15
5.14 Drill frame extensions	15
6 Verification of the safety requirements and/or protective measures	15
6.1 General.....	15