



**SLOVENSKI STANDARD**  
**oSIST prEN 16228-6 rev:2011**  
**01-junij-2011**

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**Oprema za vrtanje in temeljenje - Varnost - 6. del: Oprema za vpihavanje, nanašanje malte in vbrizgavanje**

Drilling and foundation equipment - Safety - Part 6: Jetting, grouting and injection equipment

Geräte für Bohr- und Gründungsarbeiten - Sicherheit - Teil 6: Geräte für Injektionsarbeiten

Machines de forage et de fondation - Sécurité - Partie 6: Machines de réalisation par jet de structure de sol ciment, de cimentation et d'injection

**Ta slovenski standard je istoveten z: prEN 16228-6 rev**

<https://standards.iteh.ai/catalog/standards/sist/067e66d2-2ace-40e1-b09a-25e5b75170be/sist-en-16228-6-2014>

**ICS:**

93.020	Zemeljska dela. Izkopavanja.	Earthworks. Excavations.
	Gradnja temeljev. Dela pod zemljo	Foundation construction. Underground works

**oSIST prEN 16228-6 rev:2011**

**en,fr**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 16228-6 rev**

February 2011

ICS 93.020

Will supersede EN 791:1995+A1:2009, EN  
996:1995+A3:2009

English Version

## Drilling and foundation equipment - Safety - Part 6: Jetting, grouting and injection equipment

Machines de forage et de fondation - Sécurité - Partie 6:  
Machines de réalisation par jet de structure de sol ciment,  
de cimentation et d'injection

Geräte für Bohr- und Gründungsarbeiten - Sicherheit - Teil  
6: Geräte für Injektionsarbeiten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 151.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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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.

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## Contents

Page

Foreword.....	3
Introduction .....	4
1 Scope .....	4
2 Normative references .....	5
3 Terms and definitions .....	5
4 List of significant hazards .....	5
5 Safety requirements and/or protective measures .....	6
5.1 General.....	6
5.2 Components.....	6
5.2.1 Fluid pumps, hoses and mixers .....	6
5.2.2 Working conditions .....	7
5.2.3 Additional requirements for hazardous gases .....	7
5.2.4 Removal of guarding .....	7
5.2.5 Additional requirements for hoses used for jet-grouting.....	7
5.2.6 Emergency stops for jet-grouting .....	7
5.2.7 Hose fastening for jet-grouting .....	7
5.2.8 Burst safety factors for jet-grouting hoses.....	7
5.2.9 Conditions for testing the high pressure jet of jet-grouting drill rigs .....	7
5.2.10 Guarding of mixers .....	7
5.3 Dust.....	8
6 Verification of the safety requirements and/or protective measures.....	8
6.1 General.....	8
6.2 Types of verification.....	8
6.3 Fitness for purpose testing .....	9
6.3.1 General.....	9
6.3.2 Tests.....	9
7 Information for use .....	9
7.1 Operator's manual .....	9
7.2 Maintenance instructions .....	9
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC .....	11

## Foreword

This document (prEN 16228-6:2011) has been prepared by Technical Committee CEN/TC 151 "Construction equipment and building material machines - Safety", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 791:1995+A1:2009, EN 996:1995+A3:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

prEN 16228 "Drilling and foundation equipment – Safety" comprises the following parts:

Part 1: Drilling and foundation equipment – Safety – Common requirements

Part 2: Drilling and foundation equipment – Safety – Mobile drill rigs for civil and geotechnical engineering, quarrying and mining

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

Part 4: Drilling and foundation equipment – Safety – Foundation equipment

Part 5: Drilling and foundation equipment – Safety – Diaphragm walling equipment

Part 6: Drilling and foundation equipment – Safety – Jetting, grouting and injection equipment

Part 7: Drilling and foundation equipment – Safety – Interchangeable auxiliary equipment

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## Introduction

This European Standard is a Type C-standard as stated in EN ISO 12100.

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

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

## 1 Scope

This document specifies the specific safety requirements for jetting, grouting and injection equipment when used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer.

Rigs for drilling, vibrating, pile driving, to be used for preparing holes for this applications are covered by prEN 16228-2 and/or prEN 16228-4.

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 includes all machinery 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 types of pressure and wear resistant grout hoses, fittings, quick release coupling with thread or hose connection, ball valves and flexible pipes;
- 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 repeat the requirements from part 1, but adds or replaces the requirements for application for jetting, grouting and injection equipment.

This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards, hazardous situations and events during commissioning, operation and maintenance of jetting, grouting and injection equipment.