

## საქართველოს სტანდარტი

---

გვირაბის მექანიკური საშუალებები - გზის ზედაპირი და გათხრების  
უწყვეტობა - უსაფრთხოების მოთხოვნები

საქართველოს სტანდარტების და მეტროლოგიის  
ეროვნული სააგენტო  
თბილისი

სსტ ენ 12111:2014/2014

## საინფორმაციო მონაცემები

1 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2014 წლის 21 ნოემბრის № 94 და 2014 წლის 1 ივლისის № 55 განკარგულებებით

2 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 12111:2014 „ გვირაბის მექანიკური საშუალებები - გზის ზედაპირი და გათხრების უწყვეტობა - უსაფრთხოების მოთხოვნები”

### 3 პირველად

4 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2014 წლის 21 ნოემბერი №268-1.3-6360

წინამდებარე სტანდარტის სრული ან ნაწილობრივი აღწარმოება, ტირაჟირება და გავრცელება საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს ნებართვის გარეშე არ დაიშვება

English Version

## Tunnelling machines - Road headers and continuous miners - Safety requirements

Machines pour la construction de tunnels - Machines à  
attaque ponctuelle et mineurs continus - Prescriptions de  
sécurité

Tunnelbaumaschinen - Teilschnittmaschinen und  
Continuous miners - Sicherheitstechnische Anforderungen

This European Standard was approved by CEN on 20 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**

საინფორმაციო ნაწილი. სრული ტექსტის სახანაგად შეიძინეთ სტანდარტი.

## Contents

Foreword.....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	9
4 List of significant hazards .....	10
4.1 General.....	10
5 Safety requirements and/or protective measures .....	13
5.1 General.....	13
5.2 Specific requirements .....	13
5.2.1 Contact surfaces.....	13
5.2.2 Stability .....	13
5.2.3 Ladders, access ways and platforms .....	14
5.3 Control station .....	14
5.3.1 General requirements.....	14
5.3.2 Falling objects and ejected material .....	14
5.3.3 Cab .....	14
5.3.4 Visibility .....	15
5.4 Guards .....	15
5.5 Control devices and systems .....	15
5.5.1 General.....	15
5.5.2 Safety and reliability of control systems.....	16
5.5.3 Design of control systems .....	16
5.5.4 Warning system .....	17
5.5.5 Failure of power supply .....	17
5.5.6 Remote control.....	17
5.5.7 Automatic profiling and guidance systems .....	18
5.5.8 Braking, stopping and holding.....	18
5.6 Dust and gas control .....	18
5.6.1 Dust control.....	18
5.6.2 Exhaust gas control .....	19
5.6.3 Gas monitoring .....	19
5.7 Noise .....	20
5.7.1 General.....	20
5.7.2 Noise reduction at source at the design stage.....	20
5.7.3 Information on residual risk .....	20
5.8 Electrical requirements .....	20
5.8.1 General.....	20
5.8.2 Control of electrical power supply.....	20
5.8.3 Portable equipment, accessory and lighting circuits .....	21
5.8.4 Monitoring of circuits .....	21
5.8.5 Cables .....	21
5.8.6 Transformers.....	22
5.8.7 Bonding .....	22
5.8.8 Rechargeable batteries .....	22
5.8.9 Electromagnetic compatibility.....	22
5.9 Lighting.....	22
5.9.1 General.....	22
5.9.2 Working areas .....	22
5.9.3 Travelling and maintenance areas .....	22
5.10 Retroreflective plates .....	23

საინფორმაციო ნაწილი. სრული ტექსტის სახანავედ შეიძინეთ სტანდარტი.

5.11	Hydraulic and pneumatic systems .....	23
5.11.1	Hydraulic systems .....	23
5.11.2	Pneumatic systems .....	23
5.12	Fire protection.....	23
5.12.1	General.....	23
5.12.2	Fixed fire extinguishing systems .....	24
5.12.3	Portable fire extinguishers .....	24
5.13	Ground support equipment .....	24
5.13.1	Installing elements for ground support.....	24
5.13.2	Drilling for bolting.....	24
5.14	Retrieval, towing, transportation and lifting .....	25
5.14.1	General.....	25
5.14.2	Retrieval and towing.....	25
5.14.3	Transportation .....	25
5.14.4	Lifting.....	25
5.15	Instruction storage .....	25
5.16	Fuel and fluid storage .....	25
5.16.1	General.....	25
5.16.2	Fuel system .....	25
5.17	Maintenance .....	25
6	Verification of safety requirements and/or protective measures .....	26
7	Information for use .....	29
7.1	General.....	29
7.2	Signals and warning devices .....	30
7.3	Accompanying documents.....	30
7.3.1	General.....	30
7.3.2	General information.....	31
7.3.3	Operating instructions .....	32
7.3.4	Maintenance instructions .....	33
7.4	Marking .....	34
Annex A	(normative) Noise test code .....	35
A.1	Scope .....	35
A.2	A-weighted emission sound pressure levels at workstations .....	35
A.3	A-weighted sound power level determination .....	36
A.3.1	A-weighted sound power levels .....	36
A.3.2	Measurement procedure for large machines.....	36
A.4	Installation and mounting conditions of the machines .....	36
A.5	Test conditions of the machine.....	36
A.5.1	General.....	36
A.5.2	Operating conditions at the place of manufacturer .....	37
A.5.3	Operating conditions in a tunnel environment.....	37
A.6	Information to be recorded and reported.....	37
A.7	Declaration and verification of noise emission values.....	38
Annex B	(informative) Figures .....	39
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC .....	42
Bibliography	.....	43

## Foreword

This document (EN 12111:2014) 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 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 November 2014 and conflicting national standards shall be withdrawn at the latest by November 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12111:2002+A1:2009.

The main technical changes compared to EN 12111:2002+A1:2009 are the following:

- modification of the scope, "impact rippers" deleted;
- update of normative references;
- improvement of requirements on access systems;
- requirements on control systems improved;
- revision of requirements on audible and visual warning signs;
- improvement of noise test code.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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 the United Kingdom.

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

## Introduction

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

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

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 machines that have been designed and built according to the provisions of this type C standard.

Annex A is normative and contains the “Noise Test Code” and Annex B is informative and contains “Figures”.