

## საქართველოს სტანდარტი

---

ხის გადამამუშავებელი მანქანების უსაფრთხოება - ერთი მხრიდან ფორმაში ჩამოსხმის მანქანები მბრუნავი ხელსაწყოთი - ნაწილი 3: რიცხობრივად კონტროლირებადი (NC) საბურღი და სათხრელი მანქანები

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

საქართველოს სტანდარტებისა და მეტროლოგიის  
ეროვნული სააგენტო  
თბილისი

საინფორმაციო მონაცემები

1 შემუშავებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტების დეპარტამენტის მიერ

2 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2019 წლის 20 დეკემბრის № 102 განკარგულებით

3 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 848-3:2012 “ხის გადამამუშავებელი მანქანების უსაფრთხოება - ერთი მხრიდან ფორმაში ჩამოსხმის მანქანები მბრუნავი ხელსაწყოთი - ნაწილი 3: რიცხოვრივად კონტროლირებადი (NC) საბურღი და სათხრელი მანქანები”

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2019 წლის 20 დეკემბერი №268-1.3-016666

დაუშვებელია წინამდებარე სტანდარტის სრული ან ნაწილობრივი კვლავწარმოება, ტირაჟირება და გავრცელება სსიპ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს ნებართვის გარეშე

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

English Version

## Safety of woodworking machines - One side moulding machines with rotating tool - Part 3: Numerically controlled (NC) boring and routing machines

Sécurité des machines pour le travail du bois - Machines à fraiser sur une face à outils rotatifs - Partie 3: Perceuses et défonceuses à commande numérique

Sicherheit von Holzbearbeitungsmaschinen - Fräsmaschinen für einseitige Bearbeitung mit drehendem Werkzeug - Teil 3: NC-Bohr- und Fräsmaschinen

This European Standard was approved by CEN on 11 August 2012.

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

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 .....9

4 List of significant hazards ..... 17

5 Safety requirements and/or measures ..... 19

5.1 General..... 19

5.2 Controls ..... 20

5.2.1 Safety and reliability of control systems..... 20

5.2.2 Position of controls ..... 21

5.2.3 Starting ..... 22

5.2.4 Normal stopping ..... 22

5.2.5 Emergency stop..... 23

5.2.6 Operational stop ..... 24

5.2.7 Mode selection switch..... 24

5.2.8 Speed control system ..... 26

5.2.9 Interlocking of guards, protective devices, movements and functions..... 27

5.2.10 Failure of the power supply ..... 27

5.2.11 Failure of the control circuits ..... 27

5.3 Protection against mechanical hazards ..... 27

5.3.1 Stability ..... 27

5.3.2 Risk of break-up during operation ..... 27

5.3.3 Tool holder ..... 28

5.3.4 Braking tool spindle(s)..... 28

5.3.5 Devices to minimise the risk of ejection ..... 29

5.3.6 Workpiece supports and guides ..... 29

5.3.7 Prevention of access to moving parts and devices to minimise the effect of ejection..... 29

5.3.8 Clamping device ..... 40

5.4 Protection against non-mechanical hazards ..... 42

5.4.1 Fire ..... 42

5.4.2 Noise ..... 42

5.4.3 Emission of chips and dust ..... 43

5.4.4 Electricity ..... 44

5.4.5 Ergonomics and handling..... 44

5.4.6 Lighting..... 45

5.4.7 Pneumatics ..... 45

5.4.8 Hydraulics..... 45

5.4.9 Static electricity ..... 45

5.4.10 Electromagnetic compatibility..... 45

5.4.11 Lasers ..... 45

5.4.12 Unintended movements ..... 46

5.4.13 Supply disconnecting devices ..... 46

5.4.14 Maintenance ..... 46

6 Information for use ..... 46

6.1 Warning devices ..... 46

6.2 Marking ..... 47

6.3 Instruction handbook ..... 47

საინფორმაციო ნაწილი. სრული ტექსტის სახსრავად შეიძინეთ სტანდარტი.

<b>Annex A (normative) Operating conditions for noise measurement.....</b>	<b>52</b>
<b>A.1 General .....</b>	<b>52</b>
<b>A.2 Operating conditions for routing units of NC routing machines and NC combined boring/routing machines .....</b>	<b>52</b>
<b>A.2.1 General .....</b>	<b>52</b>
<b>A.2.2 Noise measurements .....</b>	<b>53</b>
<b>A.2.3 General data sheet .....</b>	<b>55</b>
<b>A.3 Operating conditions for boring units of NC boring machines and NC combined boring/routing machines .....</b>	<b>57</b>
<b>A.3.1 General .....</b>	<b>57</b>
<b>A.3.2 Noise measurements .....</b>	<b>58</b>
<b>A.3.3 General data sheet .....</b>	<b>60</b>
<b>Annex B (normative) Curtains on NC routing and NC combined boring and routing machines – Impact test method.....</b>	<b>63</b>
<b>B.1 General .....</b>	<b>63</b>
<b>B.2 Test method .....</b>	<b>63</b>
<b>B.2.1 Preliminary remarks .....</b>	<b>63</b>
<b>B.2.2 Testing equipment.....</b>	<b>63</b>
<b>B.2.3 Test procedure.....</b>	<b>64</b>
<b>B.3 Results.....</b>	<b>66</b>
<b>B.4 Assessment .....</b>	<b>67</b>
<b>B.5 Test report.....</b>	<b>67</b>
<b>Annex C (informative) Example of a test equipment for impact test.....</b>	<b>69</b>
<b>Annex D (normative) Braking tests .....</b>	<b>70</b>
<b>D.1 Conditions for brake tests .....</b>	<b>70</b>
<b>D.2 Tests .....</b>	<b>70</b>
<b>D.2.1 Un-braked run-down time .....</b>	<b>70</b>
<b>D.2.2 Braked run-down time.....</b>	<b>70</b>
<b>Annex E (normative) Curtains on NC routing and NC boring and routing machines – Wear test method.....</b>	<b>71</b>
<b>E.1 General .....</b>	<b>71</b>
<b>E.2 Test method .....</b>	<b>71</b>
<b>E.2.1 Preliminary remarks .....</b>	<b>71</b>
<b>E.2.2 Test method .....</b>	<b>71</b>
<b>E.3 Results.....</b>	<b>76</b>
<b>E.4 Assessment .....</b>	<b>76</b>
<b>E.5 Test report.....</b>	<b>76</b>
<b>Annex F (normative) Rigid guards on NC routing machines – Impact test method.....</b>	<b>77</b>
<b>F.1 General .....</b>	<b>77</b>
<b>F.2 Test method .....</b>	<b>77</b>
<b>F.2.1 Preliminary remarks .....</b>	<b>77</b>
<b>F.2.2 Testing equipment.....</b>	<b>77</b>
<b>F.2.3 Test procedure.....</b>	<b>78</b>
<b>F.3 Results.....</b>	<b>78</b>
<b>F.4 Assessment .....</b>	<b>78</b>
<b>F.5 Test report.....</b>	<b>79</b>
<b>F.6 Example of test equipment for impact test.....</b>	<b>79</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC.....</b>	<b>80</b>
<b>Bibliography.....</b>	<b>83</b>

## Foreword

This document (EN 848-3:2012) has been prepared by Technical Committee CEN/TC 142 "Woodworking machines - Safety", the secretariat of which is held by UNI.

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 April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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 848-3:2007+A2:2009.

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 the Machinery Directive.

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

The main modification to the 2009 edition relates to the introduction of performance levels (PL) and curtains wear test.

Organisations contributing to the preparation of this document include the European Committee of Woodworking Machinery Manufacturers Association "EUMABOIS".

EN 848 consists of the following parts:

- EN 848-1, *Safety of woodworking machines — One side moulding machines with rotating tool — Part 1: Single spindle vertical moulding machines;*
- EN 848-2, *Safety of woodworking machines — One side moulding machines with rotating tool — Part 2: Single spindle hand fed/integrated fed routing machines;*
- EN 848-3, *Safety of woodworking machines — One side moulding machines with rotating tools — Part 3: Numerically controlled (NC) boring and routing machines (the present document).*

The European Standards produced by CEN/TC 142 are particular to woodworking machines and compliment the relevant A and B standards on the subject of general safety (see Introduction of EN ISO 12100:2010 for a description of A, B and C standards).

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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 has been prepared to be a harmonised standard to provide one means of conforming to the essential health and safety requirements of the Machinery Directive and associated EFTA Regulations.

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

The machinery concerned and the extent to which hazards, hazardous situations and events 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 other standards, for machines that have been designed and built according to the provisions of this type C standard.

The requirements of this document are directed to manufacturers and their authorised representatives of numerically controlled (NC) boring machines and routing machines. It is also useful for designers.

This also includes examples of information to be provided by the manufacturer to the user.

Common requirements for tooling are given in EN 847-1:2005+A1:2007 and EN 847-2:2001.