Elektromagnetiline ühilduvus. Tööpinkide tooteperekonna standard. Osa 2: Häiringukindlus

Electromagnetic compatibility (EMC) - Product family standard for machine tools - Part 2: Immunity

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 50370-2:2003 sisaldab Euroopa standardi EN 50370-2:2003 ingliskeelset teksti. Käesolev dokument on jõustatud 12.03.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 50370-2:2003 consists of the English text of the European standard EN 50370-2:2003. This document is endorsed on 12.03.2003 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This standard deals with the electromagnetic immunity of machine tools designed exclusively for industrial and similar purposes that use electricity, the rated voltage of the machine tool not exceeding 1 000 V a.c. or 1 500 V d.c. between lines. Machine tools may incorporate motors, heating elements or their combination, may contain electric or electronic circuitry, and may be powered by the mains, or any other electrical power source. This immunity standard may also be used for assessment of equipment used in other environments, which require less stringent immunity levels (residential, light industry) than the industrial environment. This standard is not intended for the EMC conformity assessment of modules to be placed on the marke tseparately.This standard is not intended for complying with Machinery Directive 98/37/EC. Hence safety considerations are not covered by this standard. This standard does not cover fixed installations as defined in the Guide to the Application of Directive 89/336/EEC, published by the European Commission. This standard does not apply to apparatus intended to be used in locations where special electromagnetic conditions prevail, such as the presence of high electromagnetic fields (e.g. in the vicinity of a broadcast transmitting station) or where high pulses occur on the power network (e.g. in a power generator station). In these instances special mitigation measures	**Scope:** This standard deals with the electromagnetic immunity of machine tools designed exclusively for industrial and similar purposes that use electricity, the rated voltage of the machine tool not exceeding 1 000 V a.c. or 1 500 V d.c. between lines. Machine tools may incorporate motors, heating elements or their combination, may contain electric or electronic circuitry, and may be powered by the mains, or any other electrical power source. This immunity standard may also be used for assessment of equipment used in other environments, which require less stringent immunity levels (residential, light industry) than the industrial environment. This standard is not intended for the EMC conformity assessment of modules to be placed on the marke tseparately.This standard is not intended for complying with Machinery Directive 98/37/EC. Hence safety considerations are not covered by this standard. This standard does not cover fixed installations as defined in the Guide to the Application of Directive 89/336/EEC, published by the European Commission. This standard does not apply to apparatus intended to be used in locations where special electromagnetic conditions prevail, such as the presence of high electromagnetic fields (e.g. in the vicinity of a broadcast transmitting station) or where high pulses occur on the power network (e.g. in a power generator station). In these instances special mitigation measures

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English version

Electromagnetic compatibility (EMC) - Product family standard for machine tools Part 2: Immunity

Compatibilité électromagnétique (CEM) - Norme de famille de produits pour les machines-outils Partie 2: Immunité

Elektromagnetische Verträglichkeit (EMV) - Produktfamiliennorm für Werkzeugmaschinen Teil 2: Störfestigkeit

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 210, Electromagnetic compatibility (EMC).

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50370-2 on 2002-11-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2003-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-11-01

This standard is intended for publication in the Official Journal of the European Communities as harmonized standard for the assessment of conformity with the protection requirements of the Electromagnetic Compatibility Directive (89/336/EEC).

The purpose of this product family standard is

- to establish uniform requirements for the electromagnetic immunity of the machine tools contained in the scope,
- to fix test specifications of immunity,
- to refer to basic standards for methods of testing,
- to standardise conditions during the tests, performance criteria and test report format for the assessment of conformity.

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, Annexes A, B and C are normative and Annexes D and E are informative.

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Contents

1 Scope

This standard deals with the electromagnetic immunity of machine tools designed exclusively for industrial and similar purposes that use electricity, the rated voltage of the machine tool not exceeding 1 000 V a.c. or 1 500 V d.c. between lines.

Machine tools may incorporate motors, heating elements or their combination, may contain electric or electronic circuitry, and may be powered by the mains, or any other electrical power source.

This immunity standard may also be used for assessment of equipment used in other environments, which require less stringent immunity levels (residential, light industry…) than the industrial environment.

This standard is not intended for the EMC conformity assessment of modules to be placed on the market separately.

This standard is not intended for complying with Machinery Directive 98/37/EC. Hence safety considerations are not covered by this standard.

This standard does not cover fixed installations as defined in the Guide to the Application of Directive 89/336/EEC, published by the European Commission.

This standard does not apply to apparatus intended to be used in locations where special electromagnetic conditions prevail, such as the presence of high electromagnetic fields (e.g. in the vicinity of a broadcast transmitting station) or where high pulses occur on the power network (e.g. in a power generator station). In these instances special mitigation measures may have to be employed.

Immunity requirements in the frequency range 0 Hz to 400 GHz are covered. No measurements need to be performed at frequencies where no requirements are specified.

2 References

2.1 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 61000-4-2	Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test (IEC 61000-4-2)
EN 61000-4-3	Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques – Radiated, radio-frequency electromagnetic field immunity test (IEC 61000-4-3)
EN 61000-4-4	Electromagnetic compatibility (EMC) — Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test (IEC 61000-4-4)
EN 61000-4-5	Electromagnetic compatibility (EMC) — Part 4-5: Testing and measurement techniques – Surge immunity test (IEC 61000-4-5)

EN 61000-4-6 [1)]	Electromagnetic compatibility (EMC) — Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6)
EN 61000-4-8	Electromagnetic compatibility (EMC) — Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test (IEC 61000-4-8)
EN 61000-4-11	Electromagnetic compatibility (EMC) — Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11)
IEC 60050	International Electrotechnical Vocabulary (IEV)

2.2 Other references

ISBN 92-828-0762-2	1997	Electromagnetic Compatibility (EMC) - Guide to the application of Directive 89/336/EEC

3 Terms, definitions and abbreviations

3.1 Terms and definitions

3.1.1
machine tool (MT)
machine, not portable as a whole during its operation, driven by an external electrical energy source and intended to work typically metal products in the solid state, with material removal (cutting processes as turning, milling, grinding, drilling, machining...) or without material removal (forming processes as bending, forging...)

The machine tool is normally equipped with a power supply, an electrical and electronic assembly for power and control and one or more power drive systems for the movement of mobile elements or parts

3.1.2
module
unit consisting of mechanical, pneumatic, hydraulic, electrical and/or electronic parts (examples: machine bed, tool holder, sensor, spindle unit, cabinet including NC-controller and human-machine-interface, programmable logic controller - PLC, power drive...), intended exclusively for an industrial assembly operation for incorporation in an apparatus or system. A component can be considered as a module

3.1.3
electromagnetically relevant component/module
an electromagnetically relevant component or module for immunity aspects is defined as one that, due to its electromagnetic characteristics, is liable to have its performance degraded by electromagnetic disturbances such that it will influence the EMC characteristics or the intended operation of typical assemblies into which it may be incorporated

1) At draft stage.