

<b>STN</b>	<b>Autodomiešavače Bezpečnostné požiadavky</b>	<b>STN EN 12609</b>  27 8545
------------	--	--

Truck mixers - Safety requirements

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/21

Obsahuje: EN 12609:2021

**132637**

---

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2021  
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii.

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12609**

January 2021

ICS 91.220

English Version

**Truck mixers - Safety requirements**

Bétonnières portées - Prescriptions de sécurité

Fahrmischer - Sicherheitsanforderungen

This European Standard was approved by CEN on 13 January 2020.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, 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: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
European foreword.....	5
Introduction .....	6
1 Scope .....	7
2 Normative references .....	7
3 Terms, definitions, symbols and abbreviated terms.....	9
4 Safety requirements and/or protective measures .....	11
4.1 General requirements .....	11
4.1.1 General.....	11
4.1.2 Mechanical hazards.....	12
4.1.3 Electrical hazards.....	13
4.1.4 Thermal hazards .....	13
4.1.5 Noise .....	13
4.1.6 Electromagnetic compatibility (EMC).....	13
4.2 Control system .....	14
4.2.1 Stop system.....	14
4.2.2 Multiple control stations .....	14
4.2.3 Cable-less remote control .....	15
4.3 Manual control devices for emergency operation .....	15
4.4 Positioning of control devices .....	15
4.4.1 Control devices at the work station.....	15
4.4.2 Other control devices.....	15
4.5 Working lights.....	15
4.6 Additional removable equipment.....	15
4.7 Interface mixer unit and truck or trailer.....	15
4.8 Mixer drum.....	16
4.8.1 Manhole .....	16
4.8.2 Mixer drum-locking device.....	16
4.8.3 Mixer drum opening.....	16
4.9 Flip-over chute .....	17
4.10 Swivel chute .....	17
4.11 Mixer drum closure system.....	17
4.12 Power transmission from the power source to the mixer drum drive system.....	17
4.13 Water system .....	17
4.14 Exhaust system of the auxiliary engine.....	17
4.15 Platform at the charging hopper .....	18
4.16 Tread at rear underrun protective device .....	18
4.17 Visual aid.....	18
5 Verification of safety requirements and/or protective measures .....	19
6 Information for use .....	20
6.1 General.....	20
6.2 Instruction handbook.....	20
6.2.1 General.....	20
6.2.2 Noise .....	21
6.2.3 Operation .....	22

6.2.4	Maintenance and repair .....	23
6.3	Information and warnings .....	24
6.3.1	Labelling for the control device.....	24
6.3.2	Warnings.....	24
6.4	Marking .....	24
Annex A	(informative) Figures.....	25
A.1	Typical design .....	26
A.2	Types of drive, diagrams.....	27
A.3	Dimensions for access ladder to platform.....	28
A.4	Minimum clearance 'a' depending on distance 'W' to the reference plane, according to Table 1 .....	29
A.5	Cross-sections (view from cabin side) of the truck mixer to indicate the positions of the manhole when the mixer drum is locked by the mixer drum-locking device.....	29
A.6	Fixed guard at mixer drum opening .....	30
A.7	Minimum clearance between mixer drum roller cover and mixer drum track ring .....	31
A.8	Minimum clearance between mixer drum and supporting arm .....	32
A.9	Minimum clearance between mixer drum and charging hopper bracket .....	33
A.10	Minimum clearance between mixer drum and discharge hopper.....	34
A.11	Minimum clearance between mixer drum and guard rail at platform .....	35
A.12	Minimum distance between mixer drum closure system and discharge hopper .....	36
A.13	Minimum clearance between mixer drum and additional equipment.....	37
A.14	Minimum clearance between mixer drum and rear splash guard .....	39
A.15	Minimum dimensions of the visibility test rectangle (VTR) .....	39
A.16	Example of flip-over chute.....	40
A.17	Example of technical solution for enforced two-hand operation to bring the flip-over chute to its lowered end position .....	41
Annex B	(normative) Noise-test code for truck mixers .....	42
B.1	Scope .....	42
B.2	Determination of the A-weighted sound-power level .....	42
B.2.1	General .....	42
B.2.2	Measurement surface and microphone positions .....	43
B.2.3	Period of observation.....	43
B.3	Determination of the A-weighted emission sound pressure level at the work station.....	43
B.3.1	General .....	43
B.3.2	Machine work station.....	43
B.3.3	Period of observation.....	43
B.4	Measurement procedure and operating conditions .....	44
B.4.1	Specific measurement procedure for truck mixers powered by a truck engine .....	44

**EN 12609:2021 (E)**

<b>B.4.2</b>	<b>Measurement procedure for mixer units not powered by a truck engine .....</b>	<b>44</b>
<b>B.4.3</b>	<b>Operating conditions during test .....</b>	<b>44</b>
<b>B.4.4</b>	<b>Fan speed .....</b>	<b>44</b>
<b>B.5</b>	<b>Information to be recorded during the test.....</b>	<b>44</b>
<b>B.6</b>	<b>Information to be reported .....</b>	<b>44</b>
<b>B.7</b>	<b>Declaration and verification of noise emission values.....</b>	<b>45</b>
<b>Annex C (informative)</b>	<b>Example of a noise emission declaration .....</b>	<b>46</b>
<b>Annex D (informative)</b>	<b>List of significant hazards.....</b>	<b>47</b>
<b>Annex ZA (informative)</b>	<b>Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered.....</b>	<b>50</b>
<b>Bibliography</b>	<b>.....</b>	<b>53</b>

## **European foreword**

This document (EN 12609:2021) 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 July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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

This document has been prepared under a standardization request 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(s), see informative Annex ZA, which is an integral part of this document.

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

**EN 12609:2021 (E)****Introduction**

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

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- a) machine manufacturers (small, medium and large enterprises);
- b) health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- a) machine users/employers (small, medium and large enterprises);
- b) machine users/employees (e.g. trade unions, organizations for people with special needs);
- c) service providers, e.g. for maintenance (small, medium and large enterprises);
- d) consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

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

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

## 1 Scope

**1.1** This document specifies the safety requirements for truck mixers.

This document also covers the interface between the mixing unit and the truck or trailer (but not the truck or trailer itself).

NOTE 1 Truck or trailer constructed primarily for the carriage of goods as classified according to directive 2007/46/EC, category N3 or O4.

This document does not cover:

- a) additional equipment (conveyor belt, mortar pump, concrete pump, concrete-placing boom);
- b) requirements for operation in tunnels;
- c) truck or self-propelled mixers equipped with self-loading systems;
- d) front-discharge mixers;
- e) mixing units with articulated steering;
- f) truck mixer drum cleaning systems;
- g) energy source(s).

This document does not deal with carrier vehicles, e.g. trucks, tractors, construction machinery and mobile industrial handling equipment or other self-propelled vehicles.

This document does not include requirements which are covered in directives related to the construction of vehicles or national road regulations.

NOTE 2 The use in public road traffic is governed by the national regulations.

**1.2** This document deals with all significant hazards, hazardous situations and events relevant to truck mixers when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Annex D). This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards during transportation, assembly, dismantling, disabling, scrapping, operation and maintenance of the truck mixer.

**1.3** This document is not applicable to machines which are manufactured before the date of publication of this document by CEN.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005)*

EN 61000-6-2:2005, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2:2005)*



**EN 12609:2021 (E)**

EN 61000-6-2:2005/AC:2005, *Electromagnetic compatibility (EMC) — Part 6-2: Generic Standards — Immunity standard for industrial environments (IEC 61000-6-2:2005)*

EN ISO 2867:2011, *Earth-moving machinery — Access systems (ISO 2867:2011)*

EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13766-1:2018, *Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 1: General EMC requirements under typical electromagnetic environmental conditions (ISO 13766-1:2018)*

EN ISO 13766-2:2018, *Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 2: Additional EMC requirements for functional safety (ISO 13766-2:2018)*

EN ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design (ISO 13850:2015)*

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**