



SLOVENSKI STANDARD
SIST EN 17308:2025

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Snovi iz izrabljenih avtomobilskih gum - Jeklena žica - Ugotavljanje deleža nekovinskih materialov

Materials produced from end of life tyres - Steel wire - Determination of the non-metallic content

Aus Altreifen gewonnene Materialien - Stahldrähte - Bestimmung der nicht-metallischen Bestandteile

Matériaux obtenus à partir de pneus usagés non réutilisables (PUNR) - Fils métalliques - Détermination de la teneur en matériaux non métalliques

Ta slovenski standard je istoveten z: EN 17308:2024

[SIST EN 17308:2025](#)

ICS:

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83.160.01	Avtomobilske pnevmatike na splošno	Tyres in general

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Materials produced from end of life tyres - Steel wire - Determination of the non-metallic content

Matériaux obtenus à partir de pneus usagés non
réutilisables (PUNR) - Fils métalliques - Détermination
de la teneur en matériaux non métalliques

Aus Altreifen gewonnene Materialien - Stahldrähte -
Bestimmung der nicht-metallischen Bestandteile

This European Standard was approved by CEN on 6 October 2024.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

	Page
European foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Testing programme	7
5 Determination of non-metallic content in steel wire	7
5.1 General.....	7
5.2 Preparation of sampling plan and laboratory sample	7
5.2.1 Principle of correct sampling	7
5.2.2 Sampling plan.....	8
5.2.3 Definition of lot size	8
5.2.4 Sampling point and apparatus	8
5.2.5 Size of a sample increment.....	8
5.2.6 Number of sample increments.....	9
5.2.7 Metrological characteristics of sampling	9
5.2.8 Visual assessment.....	9
5.3 Storage and transport of laboratory sample(s)	9
5.4 Laboratory sample(s) and test portion(s)	9
5.4.1 General principle	9
5.4.2 Laboratory sample	9
6 Determination by pyrolysis method	9
6.1 Principle	9
6.2 Apparatus	9
6.2.1 Analytical scales	9
6.2.2 Pyrolysis set-up	10
6.2.3 Steel wire cleaning apparatus	10
6.2.4 Magnets	11
6.2.5 Tray	11
6.3 Sampling.....	11
6.4 Determination.....	11
6.5 Expression of results	12
7 Determination by hydrostatic method	13
7.1 Principle.....	13
7.2 Pretreatment.....	13
7.3 Apparatus	13
7.3.1 Analytical scale	13
7.3.2 Hydrostatic apparatus	13
7.3.3 Reagents.....	15
7.4 Procedure	15
7.5 Calculation.....	15
7.6 Metrological characteristics	16
8 Report	16
Annex A (informative) Example of a test report sheet	17

Annex B (informative) Schematic diagram of a pyrolyzer.....	18
Annex C (informative) Explanation of the formula used in the hydrostatic method.....	19
Bibliography	21

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EN 17308:2024 (E)**European foreword**

This document (EN 17308:2024) has been prepared by Technical Committee CEN/TC 366 “Materials obtained from End-of-Life Tyres (ELT)”, 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 May 2025 and conflicting national standards shall be withdrawn at the latest by May 2025.

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 supersedes CEN/TS 17308:2019.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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1 Scope

This document specifies two different methods for the quantitative estimation of non-metallic content remaining adhered to the steel wire obtained from the recovery of materials from end-of-life tyres.

The pyrolysis method is considered as the reference method while the hydrostatic method is considered as an *in situ* method.

This document includes sample collection and the preparation of representative samples based on a sampling plan for the purpose of their characterization.

This document does not apply to the operational performance or fitness for use of the materials which are deemed to be a function of agreements between the manufacturer and the customer.

This document does not apply to address all the safety concerns, if any, associated with its use. This document does not establish appropriate safety and health practices and does not determine the applicability of regulatory limitations prior to its use.

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 14243 (all parts), *Materials obtained from end of life tyres*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at <https://www.electropedia.org/>

— ISO Online browsing platform: available at <https://www.iso.org/obp/>

3.1

sample

amount of material taken from a population and intended to provide information on the population

3.2

increment

portion of material extracted in a single operation of the sampling device

[SOURCE: EN 14243-1:2019, 3.1.3, modified – “sub-portion” is replaced by “portion”.]

3.3

characteristic

property which helps to identify or differentiate items of a given population

Note 1 to entry: The characteristic can be either quantitative (by variables) or qualitative (by attributes).

[SOURCE: EN 14243-1:2019, 3.1.4]

EN 17308:2024 (E)**3.4****lot**

defined quantity of material for which a characteristic is to be determined

Note 1 to entry: In sampling standards, the lot is also designated as the stated size or volume that is considered appropriate for assessing the material. It follows that variations occurring in the material on any finer scale than this are deemed not to be of relevance.

3.5**combined sample**

sample consisting of all the increments taken from a lot

Note 1 to entry: A combined sample is a quantity of material, representative of the lot for which the quality is to be determined.

3.6**field sample**

sample taken in the field and from which laboratory samples are produced

3.7**laboratory sample**

sample or sub-sample sent to or received by the laboratory

Note 1 to entry: When the laboratory sample has been prepared (reduced) by subdivision, mixing or crushing, or by a combination of these processes, it becomes the test sample. A laboratory sample that requires no preparation can be used directly as the test sample. A test portion is removed from the test sample for testing or analysis purposes. The laboratory sample is the final sample from the point of view of sample collection, but it is the initial sample from the point of view of the laboratory.

Note 2 to entry: Several laboratory samples can be prepared and sent to different laboratories, or they can be sent to the same laboratory for different purposes. In the latter case, they are generally considered to be a single laboratory sample and documented as such.

[SOURCE: EN 14243-1:2019, 3.1.8, modified – Note 1 to entry contains additional information.]

3.8**test sample**

sample prepared from the laboratory sample, from which the test portions are removed for testing or for analysis

Note 1 to entry: The procedures of preparation from the laboratory sample are not included.

[SOURCE: EN 14243-1:2019, 3.1.9, modified – Note 1 to entry has been added.]

3.9**population**

totality of items, or total volume of material, to be investigated by sampling

Note 1 to entry: The population will generally be a convenient, well-defined subset of the overall population (e.g. a year's production of material) that is believed to be typical of that wider population.

3.10

representative sample

sample resulting from a sampling plan that can be expected to reflect adequately the properties of interest in the parent population

[SOURCE: EN 14243-1:2019, 3.1.12]

3.11

probabilistic sampling

sampling conducted according to the statistical principles of sampling

3.12

steel wire

result of processing end-of-life tyres by which steel wires are separated from textile and rubber fractions

4 Testing programme

When performing a testing programme for determining product characteristics, all the different measurement/testing steps are to be considered and specified by means of standards dealing each with one or several of those steps, thus securing the needed coherence and coordination between these different testing steps. The steps are:

- a) sampling plan;
- b) taking field sample(s);
- c) storage of the sample(s), transport;
- d) pre-treatment, e.g. drying (if needed);
- e) quantification, analysis, calculations;
- f) overall test report.

When undertaking some or all of these measurement steps, a testing laboratory shall operate with appropriate equipment and competent personnel so as to fulfil the applicable requirements specified in the present document. This includes calibration of equipment, e.g. calibration of scales.

5 Determination of non-metallic content in steel wire

5.1 General

Percentage of non-metallic content is a key measurement required for product classification of steel wire. Before being able to obtain an accurate value, a representative sample of the material to be tested shall be taken.

5.2 Preparation of sampling plan and laboratory sample

5.2.1 Principle of correct sampling

The main principle of sampling is to obtain a representative sample(s) from a lot of material from which a characteristic is to be determined. If the lot is to be represented by a sample, then every particle in the lot shall have an equal probability of being included in the sample (i.e. probabilistic sampling). These principles cannot be fully applied in practice with steel wire, so a different procedure is defined to ensure as much as possible the probabilistic sampling.

EN 17308:2024 (E)

NOTE The objective of this procedure is to take samples in a way that is truly representative of the material produced. It is easier when the material is moving (for example on a conveyor belt). Therefore, sampling from moving material will be preferred whenever possible.

5.2.2 Sampling plan

A written sampling plan shall be prepared, before taking samples according to 5.2.4 to 5.2.8. The number of increments shall be not less than the minimum number of increments specified in 5.2.6.

A form for the sampling plan shall be prepared containing the following minimum information:

- a) the name of the producer;
- b) a unique identification number of the sample;
- c) the name of the sampler;
- d) the location(s), date and time of sampling;
- e) the lot identification number which is to be tested (based on 5.2.3);
- f) reference to this document;
- g) any deviation from this document.

Once completed, this form becomes the sampling certificate.

5.2.3 Definition of lot size

The lot size shall be defined by the producer in accordance with requested specifications and is a fixed quantity for which a characteristic is determined. The lot size M_{lot} may be defined by the producer as:

- a) a fixed quantity produced between machine settings;
- b) a fixed quantity in a production day/shift;
- c) a fixed quantity minimum of 10 t.

The lot size is based on production quality management decisions or specific customer requirements.

5.2.4 Sampling point and apparatus

Based on health and safety assessments and producer equipment, a fixed point for the collection of sample increments shall be chosen. Sampling shall be carried out using a sample box or other suitable equipment. The sampling box is passed through the stream of falling material so that it uniformly cuts the full flow of falling material. The box shall be large enough so that it does not become overloaded. Automatic systems fulfilling these criteria may also be used.

Sample increments shall be collected with the same frequency within the lot in order to represent the whole lot.

5.2.5 Size of a sample increment

Both criteria shall be fulfilled:

- mass of minimum increment: 0,5 kg;
- volume of minimum increment: 2 dm³.