



# SLOVENSKI STANDARD SIST EN 268:1997

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## Smodniki za trgovsko strelivo - Zahteve in preskusne metode

Propellants for commercial ammunition - Requirements and test methods

Treibladungspulver für Handelsmunition - Anforderungen und Prüfverfahren

Poudres propulsives pour les munitions du commerce - Exigences et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 268:1991**

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### **ICS:**

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EUROPEAN STANDARD

EN 268

NORME EUROPEENNE

EUROPAISCHE NORM

March 1991

UDC: 662.3:620.1

Descriptors: Ammunition, powdery materials, consumer information, specifications, sampling, definitions, tests, sensitivity, thermal stability

English version

Propellants for commercial ammunition -  
Requirements and test methods

Poudres propulsives pour les munitions    Treibladungspulver für Handelsmunition  
du commerce - Exigences et méthodes    - Anforderungen und Prüfverfahren  
d'essai

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CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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### FOREWORD

This European Standard was prepared by technical committee CEN/TC 111 "Propellants for commercial ammunition", for which the Secretariat is held by the Institut Belge de Normalisation (IBN).

This technical committee was created in May 1984 in answer to a request of the Association of European Manufactures of Sporting Ammunition (AFEMS).

The study of the original AFEMS proposal was started at the first TC 111 meeting in October 1984 and was continued at the meetings held in June 1985 and May 1986. Out of these deliberations came a draft proposal which was mainly inspired by the tests and criteria of tests series 3 of the Recommendations on the transport of dangerous goods - Tests and criteria - United Nations.

The final draft was submitted for Formal Vote and approved.

In accordance with the Common CEN/CENELEC Rules the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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## 1 SCOPE

This European Standard specifies

- a) the information to be provided by the manufacturer concerning the production process, the chemical composition and the physical characteristics
- b) the stability and sensitiveness type- tests and requirements

for propellant powders intended for use in commercial ammunition in order to ensure their safe storage and handling and their safe use for this type of ammunition.

## 2 REFERENCE

Recommendations on the transport of dangerous goods - Test and Criteria - First edition - United Nations, New York, 1986 (ST/SG/AC.10/11)

## 3 INFORMATION TO BE PROVIDED BY THE MANUFACTURER OF THE PROPELLANT

### 3.1 Name and address of the manufacturer

### 3.2 Commercial name of the propellant

### 3.3 Indication of the manufacturing process :

- Ball process
- Extrusion process
- Rolling process
- Other (to be described briefly)

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### 3.4 Chemical composition of the propellant, expressed as percentages by mass

More specifically, the following composition details shall be given :

- stabilizer and plasticizer content,
- nitrocellulose and nitroglycerine content,
- graphite and/or acetylene black content,
- moisture content.

State the methods of analysis employed by reference to an existing standard or by a complete description.

### 3.5 Physical characteristics of the propellant

More specifically, the following elements shall be given :

- the appearance of the propellant : colour, shape of the particles (flake, disc, tube, rod, ...),
- the bulk density of the propellant (stating the method of determination employed by reference to an existing standard or by a complete description),
- the nominal dimensions of the propellant particles.

## 4 SAMPLING

NOTE - The sampling procedure described in this clause only considers sampling from a lot of containers.

### 4.1 Definitions

For the purpose of this standard, the following definitions apply :

**4.1.1 lot :** A definite quantity of propellant packed in a definite number of containers and produced under conditions which are presumed uniform. The extent of a lot can be given in a natural way (one consignment, the production of a given period, etc.) or in an arbitrary way by agreement between the parties concerned.

**4.1.2 Increment :** A quantity of propellant obtained by a sampling device at one time from a single lot.

**4.1.3 gross sample :** The quantity of propellant consisting of all the increments taken from a single lot.

**4.1.4 blended gross sample :** The quantity of propellant consisting of all the increments from a single lot blended together to obtain a uniform gross sample.

**4.1.5 laboratory sample :** A sample prepared by reduction of the blended gross sample without change in composition and intended for the laboratory which is to carry out the necessary tests.

**4.1.6 reference sample :** A sample prepared at the same time as, and identical with, the laboratory sample, which is acceptable to the parties concerned and retained for use as a laboratory sample if a disagreement occurs.

**4.1.7 storage sample :** A sample prepared at the same time as, and identical with, the laboratory sample, and intended for possible future use as a laboratory sample.

**4.1.8 test portion :** A quantity of propellant taken from the laboratory sample and on which the test or observation is actually carried out.

### 4.2 Sampling procedure

The sampling procedure is schematically represented in figure 1.

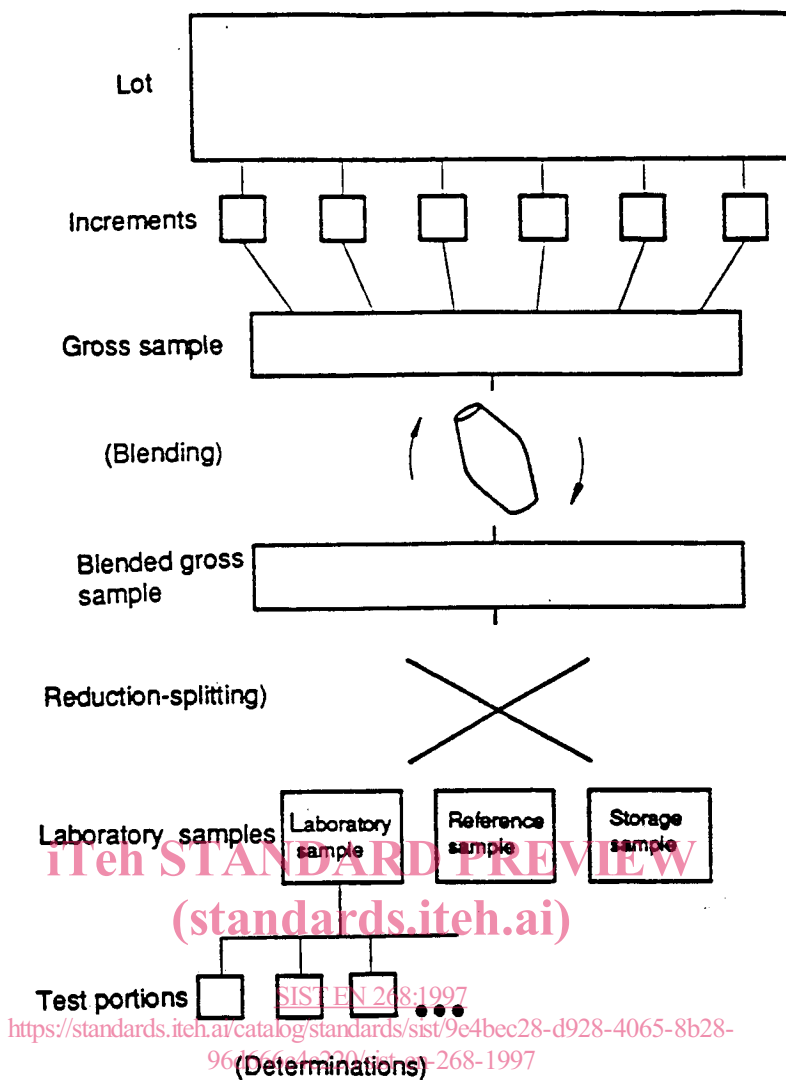


Figure 1 - Sampling scheme

Prepare a gross sample of at least 6 kg for each lot by sampling the number of containers indicated in the table.

Table - Minimum number of containers to be sampled

Total number of containers in the lot	Minimum number of containers to be sampled
1 to 2	All
3 to 8	2
9 to 25	3
26 to 100	5
101 to 500	8
501 or more	13

Select the containers to be sampled at random throughout the lot.

Take from every selected container several increments from different places in such a manner that the gross sample will be representative of the lot as accurately as possible. The mass of each increment shall be approximately constant, the total mass of increments being at least 6 kg. The number of increments taken per container shall be constant.

If containers holding different quantities are included in the lot, the containers selected shall be representative of the lot and the number and total mass of increments taken from every selected container shall be in proportion to the content of the container.

Assemble all increments and mix thoroughly with a suitable device so as to obtain the blended gross sample.

#### 4.3 Preparation of laboratory samples

Prepare a laboratory sample, a reference sample and a storage sample, all three being identical, of at least 2 kg each, by splitting or reducing the blended gross sample.

Pack the three laboratory samples in suitable, clean sample containers and stopper.

#### 4.4 Labelling, transport and storage of samples

Label the containers holding the samples as soon as they are taken. The labels shall bear all the necessary information to enable the samples to be identified without dispute (propellant description, an indication of the lot, place and date of sampling, name of sampler, sample mass, ...). The label and marking ink used shall be capable of withstanding the transport and storage conditions. Attach the label to the neck or body of the container.

After closure and labelling, the sample container shall be sealed in such a way that the contents and the label cannot be removed without breaking the seal. Precautions shall be taken to avoid contamination of the sample.

During transport and storage the samples shall be protected from light, moisture, dust and excessive heat or cold.

NOTE - protection against moisture and dust may be obtained by covering the stopper and top of the container with a cap of paper, plastics material or metal.

Sample containers shall be accompanied by a delivery note repeating the details given on the label and by a report giving all the sampling details.

#### 4.5 Test portions

Take the necessary test portions from the laboratory sample.

### 5 STABILITY AND SENSITIVENESS TESTS AND REQUIREMENTS

NOTE - The propellant meets the requirements for the intended characteristics, if it passes the test of subclause 5.3 and one of the tests of each of subclauses 5.1 5.2 and 5.4.

#### 5.1 Sensitiveness to mechanical impact

Conduct the test according to one of the methods given under test type (a) of test series 3 of the UNO Recommendations (1986). If test method (v) is used, M 2525 sp conditions (see subclause 24.2 of the UNO Recommendations) apply.

If test method (i) is used, the propellant shall not be impact sensitive at a drop height of 10,16 cm, according to the criteria of subclause 20.4.1 of the UNO Recommendations.



If test method (ii) is used, the propellant shall have a limiting impact energy of more than 2 J, according to the criteria of subclause 21.4 of the UNO Recommendations.

If test method (iii) is used, the propellant shall have a figure of insensitiveness (F of I) of more than 80, according to the criteria of subclause 22.4.1 of the UNO Recommendations.

If test method (iv) is used, the propellant shall show no propagation at a drop height of 75 cm, according to the criteria of subclause 23.4 of the UNO Recommendations.

If test method (v) is used, the propellant shall have an impact sensitiveness of at least 12,5 cm, according to the criteria of subclause 24.4 of the UNO Recommendations.

## 5.2 Sensitiveness to friction

Conduct the test according to one of the methods given under test type (b) of test series 3 of the UNO Recommendations (1986).

If test method (i) is used, the propellant shall have a limiting load of at least 80 N, according to the criteria of subclause 25.4 of the UNO Recommendations.

If test method (ii) is used, the propellant shall have a figure of friction (F of F) greater than 3,0, according to the criteria of subclause 26.4 of the UNO Recommendations.

If test method (iii) is used, the propellant shall have a threshold of initiation (TIL) greater than that of dry PETN (pentaerythrytol tetranitrate), according to the criteria of subclause 27.4 of the UNO Recommendations.

## 5.3 Thermal stability

Conduct the test according to the test type (c) of test series 3 of the UNO Recommendations (1986).

In the first part of the test, the propellant shall not ignite or explode.

In the second part of the test, the propellant shall be thermally stable, according to the criteria of subclause 28.4.2 of the UNO Recommendations.

## 5.4 Sensitiveness to flame

Conduct the test according to one of the methods given under test type (d) of test series 3 of the UNO Recommendations (1986).

The propellant shall show no explosion or detonation, according to the criteria of subclause 29.4 or 30.4 of the UNO Recommendations.

## 6 TEST REPORT

The test report shall include the following :

- a) a reference to this European Standard;
- b) a complete identification of the sample;
- c) the information in accordance with clause 3;
- d) the results of the tests stating the methods employed;
- e) whether the propellant complied with the requirements of clause 5;
- f) the date of each test.