

STN P	Výbušniny na civilné použitie Posudzovanie výbušnín vyrábaných na mieste výbuchu a súvisiacich výrobných zariadení	STN P CEN/TS 18063 66 8004
------------------	---	--

Explosives for civil uses - Assessment of on-site mixed explosives and associated manufacturing units

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. 02/26

Táto predbežná slovenská technická norma je určená na overenie. Prípadné pripomienky pošlite do novembra 2027 Úradu pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky.

Obsahuje: CEN/TS 18063:2025

141865

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2026
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 18063

November 2025

ICS 71.100.30

English Version

**Explosives for civil uses - Assessment of on-site mixed
explosives and associated manufacturing units**

Explosifs à usage civil - Évaluation des explosifs
mélangés sur site et des unités de fabrication associées

Explosivstoffe für zivile Zwecke - Bewertung von vor-
Ort hergestellten Sprengstoffen und deren
Herstellungseinheiten

This Technical Specification (CEN/TS) was approved by CEN on 26 October 2025 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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, Türkiye 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

CEN/TS 18063:2025 (E)

Contents	Page
European foreword	4
Introduction	5
1 Scope	7
2 Normative references	7
3 Terms and definitions	7
4 Requirements for each couple “explosive – manufacturing equipment”	10
5 Products type definition, production phase assessment parameters and requirements ..	12
5.1 General	12
5.2 ANFO	13
5.2.1 Product type definition	13
5.2.2 Production phase assessment	13
5.2.3 Requirement during production phase assessment	13
5.3 ANFO + metal powder	13
5.3.1 Product type definition	13
5.3.2 Production phase assessment	14
5.3.3 Requirement during production phase assessment	14
5.4 Sensitized emulsion matrix	14
5.4.1 Type definition	14
5.4.2 Production phase assessment	14
5.4.3 Requirement during production phase assessment	14
5.5 Pumpable blend (emulsion matrix + AN / ANFO)	15
5.5.1 Product type definition	15
5.5.2 Production phase assessment	15
5.5.3 Requirement during production phase assessment	15
5.6 Pourable blend (emulsion matrix + AN / ANFO)	15
5.6.1 Product type definition	15
5.6.2 Production phase assessment	16
5.6.3 Requirement during production phase assessment	16
5.7 Slurry, water gel	16
5.7.1 Product type definition	16
5.7.2 Production phase assessment	16
5.7.3 Requirement during production phase assessment	17
5.8 Other products	17
6 Equipment	17
6.1 General	17
6.2 Single auger + injector	17
6.3 Auger + injector + other	17
6.4 Mixing process + pump + gassing/crosslinking equipment	18
6.4.1 General requirements	18
6.4.2 Ancillary equipment	18
6.5 Mixing process + pump + other equipment for sensitization (microballoons, aluminium, etc.)	18
6.5.1 General requirements	18
6.5.2 Ancillary equipment	19

6.6	Hand mixing.....	19
6.7	Explosive pumping/loading unit	19
6.7.1	General requirements.....	19
6.7.2	Ancillary equipment.....	19
6.8	Pneumatic loading.....	19
7	Design and construction of Mobile Manufacturing Unit (MoMU)	20
7.1	General requirements.....	20
7.2	Tank and bulk containers requirements	20
7.3	Driving power requirements.....	20
7.4	Electrical requirements.....	20
7.5	Management of change	20
7.6	Security requirements.....	21
7.7	Identification requirements	21
8	Process.....	21
8.1	Process description.....	21
8.2	Safety risk assessment.....	21
9	Operation.....	22
10	Maintenance	23
11	Training.....	23
12	Production records	24
13	Calibration.....	24
14	Requirements for certification	24
14.1	Characterization of explosive suitable for on-site manufacturing technologies.....	24
14.2	Product type assessment	25
14.3	Production conformity assessment	25
14.3.1	General	25
14.3.2	Conformity to type based on internal production control plus supervised product checks at random intervals assessment	25
14.3.3	Conformity to type based on quality assurance assessment	25
15	Documentation, Logbook, Test report.....	26
15.1	General documentation.....	26
16	Other considerations.....	26
Annex A (informative) Typical descriptors for appearance		27
A.1	Texture	27
A.2	Colour.....	27
A.3	Odour	27
Annex B (normative) On-site testing methods.....		28
B.1	Density measurement test	28
B.2	Velocity of detonation.....	29
Bibliography		30

CEN/TS 18063:2025 (E)**European foreword**

This document (CEN/TS 18063:2025) has been prepared by Technical Committee CEN/TC 321 “Explosives for civil uses”, the secretariat of which is held by UNE.

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 addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: 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, Türkiye and the United Kingdom.

Introduction

Background

Manufacturing units are production facilities which are used on-site and contain raw materials with all necessary production machinery. This technology has become more and more common in infrastructure and mining, not only for economic reasons but also, quite importantly, for the higher safety of handling of such explosives.

The assessment of conformity of on-site mixed explosives in the production phase requires a different approach than in a stationary manufacturing unit with access to a laboratory. The approach to verification shall be simple and robust, given the conditions of manufacturing on-site.

One of the main challenges is to determine the limit of the manufacturing unit characteristics that have to be taken into account in order to reach the proper conformity assessment of the explosives manufactured on-site.

Given this context and the lack of existing reference documents, this Technical Specification will help to compile the current knowledge and best practices, by fixing requirements related to explosives manufactured on-site and their associated manufacturing units.

Overview on on-site mixed explosives and associated manufacturing units

The following types of on-site mixed explosives are currently known:

- ANFO (ammonium nitrate fuel oil);
- ANFO mixed with metal powder;
- blends from AN (ammonium nitrate) and ANE (ammonium nitrate emulsion) (multiple variants are possible: the AN may be porous or non-porous; the emulsion may be sensitized or not; with or without aluminium) (known also as heavy ANFO). These blends may be pourable or pumpable;
- blends from ANFO and ANE (multiple variants are possible: the emulsion may be sensitized or not; with or without aluminium) (known also as heavy ANFO). These blends may be pourable or pumpable;
- emulsion explosive (with or without aluminium) manufactured from an emulsion matrix and sensitized by micro balloons or by chemical gassing;
- emulsion explosive (with or without aluminium) manufactured from the basic ingredients (including formation of the emulsion) and sensitized by micro balloons or by chemical gassing;
- emulsion explosive manufactured from an emulsion matrix;
- emulsion explosive manufactured from the basic ingredients;
- multi-component explosives including those manufactured from (normally two) pre-formulated components by simple shaking or hand mixing;
- slurry;
- water gel.

CEN/TS 18063:2025 (E)

The following types of equipment for mixing on-site explosives are currently known:

- pumps/auger(s)/sensitization unit;
- pumps/emulsion formation unit/auger(s)/mixing unit/sensitization unit;
- auger/injector/other;
- single auger or (mixing) pump(s)/ sensitization unit;
- single auger/injector;
- single injector/auger or (mixing) pump(s)/sensitization unit.

Although in some cases the final explosive product is not immediately present after the mixing of raw materials and it is required to wait a certain time before the sensitization of the mixed raw materials occurs, the operation of mixing raw materials on-site in view of obtaining a product used for its explosive properties is considered as the manufacture of explosives.

1 Scope

This document gives guidance on the issues related to the conformity assessment of explosives manufactured on-site.

On one hand, it specifies requirements to be considered for the assessment during the design phase of the explosive and a simple and robust approach to follow for the assessment of the conformity in the production phase.

And on the other hand, it specifies requirements for the mobile manufacturing units and their accessories as a contribution to the guarantee of the conformity of explosives produced in on-site conditions with no access to a laboratory.

This document gives guidance on also basic requirements for explosives loading equipment.

This document does not apply to the preparation of multi-component explosives as they neither require manufacturing equipment nor mechanical loading.

NOTE 1 This document does not address the requirements of the transport of dangerous goods regulations.

NOTE 2 This document does not address the requirements established in Directive 2006/42/EC (Machinery).

NOTE 3 Despite the provisions given in this document, other provisions provided for in state, federal or local regulations apply.

NOTE 4 The intention of this document is not to hinder the development and use of new technologies (including equipment and processes) for the on-site manufacture of explosive, but because of limited access to testing resources on site, the approach consisting of having specified requirements for the equipment is valid to ensure the conformity of future products and technologies.

2 Normative references

The following documents are referred 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 13857-1:2025, *Explosives for civil uses — Part 1: Vocabulary*

EN 13631-1:2025, *Explosives for civil uses — Explosives for blasting, boosters and explosive substances — Part 1: Requirements*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN