

CEN

CWA 17094-3

WORKSHOP

December 2016

AGREEMENT

ICS 95.060

English version

Police firearms technology - Part 3: Police shotgun ammunition features - Recommendations

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN-CENELEC Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its Members.

This CEN Workshop Agreement is publicly available as a reference document from the CEN Members National Standard Bodies.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, 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: Avenue Marnix 17, B-1000 Brussels

© 2016 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No.:CWA 17094-3:2016 E

Contents	Page
European foreword.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms, definitions and symbols.....	6
3.1 Terms and definitions	6
3.2 Symbols.....	9
4 Tactical principles	9
5 Applying requirements.....	10
5.1 General.....	10
5.2 Requirement categories	10
5.3 Measurement imprecision.....	12
5.4 Measurement reliability	12
5.5 Sampling.....	12
5.6 Conditioning of test sample.....	12
5.7 Test methods	13
5.8 Sentencing.....	13
5.9 Reference weapons.....	13
5.10 Component requirements.....	14
5.10.1 Calibre	14
5.10.2 Dimensions.....	14
5.10.3 Visual defects.....	14
5.10.4 Cartridge case material.....	15
5.10.5 Cartridge case markings.....	15
5.10.6 Projectile materials.....	16
5.10.7 Primer sensitivity	16
5.10.8 Ammunition waterproofing	19
5.11 Internal ballistics	19
5.11.1 Chamber pressure and pressure timing.....	19
5.12 Functional reliability - Malfunctions.....	20
5.13 External ballistic requirements	22
5.13.1 Velocity consistency.....	22
5.13.2 Shot pattern uniformity.....	22
5.13.3 Precision.....	23
5.14 Packing and labelling requirements.....	24
5.14.1 Pallets.....	24
5.14.2 Transportation durability.....	24
5.14.3 Inner package	24
5.14.4 Multi-box package.....	24
5.14.5 Package labelling.....	24
5.15 Shelf life requirements - Guarantee of functionality.....	25
5.16 Documentation.....	25
Bibliography.....	27

European foreword

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties on 15th October 2016, the constitution of which was supported by CEN following the public call for participation made on 23rd March 2015.

A list of the individuals and organizations which supported the technical consensus represented by the CEN Workshop Agreement is available to purchasers from the CEN Management Centre. These organizations are as follows:

Industry members

B&T AG

FABBRICA D'ARMI PIETRO BERETTA S.p.A.

Fiocchi Munizioni SpA Socio Unico

GLOCK Ges.m.b.H.

MEN Metallwerk Elisenhütte GmbH

RUAG Ammotec GmbH

Sellier and Bellot JSC

Steyr Mannlicher GmbH

Police members

Norwegian Police shared services

Swedish Police Authority

UK Home Office Centre for Applied Science and Technology (CAST)

Chairman

Jorma Jussila PhD, Adjunct Professor

The formal process followed by the Workshop in the development of the CEN Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN Management Centre can be held accountable for the technical content of the CEN Workshop Agreement or possible conflict with standards or legislation. This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its members.

The final text of this CWA was submitted to CEN for publication on 16th November 2016.

This CEN Workshop Agreement is publicly available as a reference document from the National Members of CEN: AENOR, AFNOR, ASRO, BSI, COSMT, DIN, DS, ELOT, IBN/BIN, IPQ, MSZT, NEN, NSAI, NSF, ON, SEE, SIS, SFS, SNV, STRI, SUTN, UNI.

Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN Management Centre.

The following principles have been followed when defining the recommendations:

1. Official European and international standards shall be complied with. In case both exist, the European standard prevails. Therefore, for example, C.I.P. and ISO decisions will be followed.
2. An official standard shall be used as the basis for defining test methods when such a standard can be found.
3. Any test method shall be scientifically valid, reflect reality and be repeatable.
4. De facto standard-like agreements or in-house agreements will be used as reference material only recognizing the fact that alignment with their requirements will yield certain benefits. It is, however, not possible to directly refer to these agreements since it would mean allowing changes to our recommendations by some outside organization without our consent. Furthermore, the documentation of such agreements is not always available to all interested parties and does not necessarily comply with the first three principles above. Such agreements are for example NATO, FBI and German Police Technische Richtlinie. They all contain valuable ideas and provide valuable reference material.

1 Scope

This document has been written for the purpose of defining the recommended features of police shotgun ammunition.

This document in its full extent can be used for type certification of a product. When using it to define the technical requirements for an invitation to tender a subset of the requirements can be selected and rated according to their importance to the procuring unit. A further subset can be defined for carrying out acceptance inspections of a manufacturing lot or for assessing and monitoring the current ammunition in use. It describes an open system of requirements for different types of ammunition recognizing that several different technical implementations may comply with the requirements and police needs. Tactical environments may set differing priorities on requirements. Based on tactical views a suitable set of requirements can be chosen and their threshold values adjusted.

The service ammunition requirements are based on International Law principles that define the use of force guidelines. The means used and harm caused shall be in reasonable proportion to the objective and interests being protected. Any police action shall be reasonable and shall be performed without causing greater damage or harm than is necessary to accomplish the task. Any actions shall be justifiable in relation to the importance of the task and overall assessment of the situation. The taking of a human life cannot be an objective.

Any situation justifying the use of lethal force is an extreme one and law enforcement officials have an obligation to protect first the non-involved bystanders, themselves and lastly the offenders from unnecessary and unjustified danger and harm.

It can therefore be said that:

- it is not acceptable to cause unnecessary danger to the innocent by using bullets of inferior and untested terminal ballistic qualities;
- it is unacceptable to demand a police officer to risk his or her health or life by using inaccurate, unreliable or ineffective ammunition and firearms;
- it is unacceptable to cause the offender more severe injuries than are justifiable and necessary to stop unlawful activities;
- a firearm is a lethal weapon. Both using and not using it may lead to loss of life although killing a human being cannot be an objective. The use of a firearm is sometimes necessary and unavoidable in order to avoid more serious consequences;

It is recognized that different ammunition can be used for training purposes and field service. It is also recognized that exceptional circumstances may justify the use of other types of ammunition than the ones described in this document in which case a suitable subset of these recommendations can be used.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 6508-1, *Metallic materials - Rockwell hardness test - Part 1: Test method (ISO 6508-1)*

ISO 2859 (all parts), *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ASTM D4169, *Standard Practice for Performance Testing of Shipping Containers and Systems (Random test option / Truck, Assurance level I test or equivalent)*

C.I.P. Decisions, Texts, Tables; Permanent International Commission for the Proof of Small Arms C.I.P. Commission Internationale permanente Pour l'Epreuve des Armes à Feu portatives, <http://www.cip-bobp.org>

3 Terms, definitions and symbols

3.1 Terms and definitions

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

3.1.1

percussion delay

time from percussion mass release to the impact of firing pin on the percussion primer

3.1.2

barrel time

time from firing pin impact on percussion primer to bullet exit from the barrel

3.1.3

cartridge

complete ammunition assembly intended for a firearm and comprising of casing, percussion primer, powder and projectile

3.1.4

firing pin

pin with usually about 2 mm diameter round tip striking the percussion primer with kinetic energy provided by the percussion mass. The firing pin can be a separate component or integral to the percussion mass

3.1.5

firing pin radial deviation

radial deviation of the firing pin tip from the centre axis of the cartridge chamber

3.1.6

conformance inspection sample

cartridges taken from a manufacturing lot for verification of conformance to requirements (see also test sample)

3.1.7

MOA

in this document, angles are measured in units of $1^\circ = 1/360$ of the full circle and $1 \text{ MOA} = 1^\circ/60$