

English Version

Explosives for civil uses - Detonators and detonating cord relays - Part 19: Determination of firing impulse of electric detonators

Explosifs à usage civil - Détonateurs et relais pour
cordeau détonant - Partie 19: Détermination de
l'impulsion d'allumage des détonateurs électriques

Explosivstoffe für zivile Zwecke - Zünder und
Sprengschnurverbinder - Teil 19: Bestimmung des
Zündimpulses elektrischer Zünder

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 13763-19:2021) has been prepared by Technical Committee CEN/TC 321 “Explosives for civil uses”, the secretariat of which is held by UNE.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13763-19:2003.

In comparison with the previous edition, the following technical modifications have been made:

- a) Clause 4, *Principle*, has been added;
- b) Clause 7, *Procedure*, has been revised to adjust the statistical procedure and electrical parameters;
- c) Clause 9, *Test report*, has been updated;
- d) Annex A, *Range of applicability of the test method*, has been removed;
- e) a new Annex A, *Estimation of the normal standard deviation s from the range and sample size*, has been added;
- f) Annex ZA has been updated.

This document has been prepared under a Standardization Request (M/562) annexed to the Commission Implementing Decision C(2019)6634 final as regards Explosives for civil uses given to CEN by the European Commission and the European Free Trade Association, and supports Essential Safety requirements of Directive 2014/28/EU.

For relationship with Directive 2014/28/EU, see informative Annex ZA, which is an integral part of this document.

EN 13763, *Explosives for civil uses — Detonators and detonating cord relays*, is currently composed with the following parts:

- *Part 1: Requirements*
- *Part 2: Verification of thermal stability*
- *Part 3: Determination of sensitiveness to impact*
- *Part 4: Determination of resistance to abrasion of leading wires and shock tubes*
- *Part 5: Determination of resistance to cutting damage of leading wires and shock tubes*
- *Part 6: Determination of resistance to cracking in low temperatures of leading wires*
- *Part 7: Determination of the mechanical strength of leading wires, shock tubes, connections, crimps and closures*
- *Part 8: Determination of resistance to vibration*
- *Part 9: Determination of resistance to bending of detonators*

- *Part 11: Determination of drop resistance of detonators and relays*
- *Part 12: Determination of resistance to hydrostatic pressure*
- *Part 13: Determination of resistance of electric detonator to electrostatic discharge*
- *Part 15: Determination of equivalent initiating capability*
- *Part 16: Determination of delay accuracy*
- *Part 17: Determination of no-fire current of electric detonators*
- *Part 18: Determination of series firing current of electric detonators*
- *Part 19: Determination of firing pulse of electric detonators*
- *Part 20: Determination of total resistance of electric detonators*
- *Part 21: Determination of flash-over voltage of electric detonators*
- *Part 22: Determination of capacitance, insulation resistance and insulation breakdown of leading wires*
- *Part 23: Determination of the shock-wave velocity of shock tube*
- *Part 24: Determination of the non-conductivity of shock tube*
- *Part 25: Determination of transfer capacity of relay and coupling accessories*
- *Part 26: Definitions, methods and requirements for devices and accessories for reliable and safe function of detonators and relays*
- *Part 27: Definitions, methods and requirements for electronic initiation system*

Introduction

At blasting it is very important from a safety perspective to be aware about the impulse required for possible initiation of the detonators. To avoid inadvertent initiation, the shot-firer needs to get information about the levels for all-fire current as well as the level for no-fire current.