

DIN EN 13763-16:2025-12 (E)

Explosives for civil uses - Detonators and detonating cord relays - Part 16: Verification of delay time accuracy of electric and non-electric detonators, surface connectors and detonating cord relays

| Contents | | Page |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------|
| European foreword | | 3 |
| 1 | Scope | 5 |
| 2 | Normative references | 5 |
| 3 | Terms and definitions | 5 |
| 4 | Principle | 5 |
| 5 | Apparatus | 5 |
| 6 | Preparation of test sample | 6 |
| 7 | Procedure | 6 |
| 7.1 | Electric detonators, non-electric detonators and surface connectors | 6 |
| 7.2 | Detonating cord relays | 7 |
| 8 | Expression of results | 8 |
| 8.1 | Electric and non-electric detonators | 8 |
| 8.2 | Surface connectors and detonating cord relays | 8 |
| 9 | Test report | 8 |
| Annex A (normative) Calculation procedures | | 10 |
| A.1 | Calculation of mean delay time and standard deviation | 10 |
| A.2 | Calculation of the adjusted nominal delay time and the adjusted nominal time difference | 10 |
| A.3 | Test for outliers according to Grubbs test | 11 |
| A.3.1 | Outlier criteria for electric detonators and non-electric detonators | 11 |
| A.3.2 | Outlier criteria for surface connectors and detonating cord relays | 12 |
| A.4 | Calculation of c-factor for electric detonators and non-electric detonators | 12 |
| A.5 | Calculation of the mean deviation from nominal delay time | 13 |
| A.6 | Graphical representation using acceptance triangles | 13 |
| Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2014/28/EU relating to the making available on the market and supervision of explosives for civil uses aimed to be covered | | 15 |
| Bibliography | | 16 |