DIN EN 15947-5:2022-12 (E)

Pyrotechnic articles - Fireworks, Categories F1, F2 and F3 - Part 5: Requirements for construction and performance

Contents

Page

European foreword 4

1 Scope 6

2 Normative references 7

3 Terms and definitions 7

4 Construction 7
4.1 Construction materials (type test and batch test) 7
4.1.1 General requirements 7
4.1.2 Specific requirements 7
4.2 Length of handle and pull string (type test and batch test) 8
4.3 Permitted elements in battery, battery requiring external support, combination and combination requiring external support (type test and batch test) 9
4.4 Dimensions for mini rocket (type test and batch test) 9
4.5 Specific requirements for compound firework (type test and batch test) 10
4.6 Specific requirements for fireworks which eject pyrotechnic units with end closures (type test) 10

5 Pyrotechnic composition (type test) 10

6 Means of initiation 14
6.1 Permitted means of initiation (type test and batch test) 14
6.2 Protection of means of initiation (type test and batch test) 16
6.3 Attachment of means of initiation and resistance to ignition by an abrasive surface (type test and batch test) 16
6.4 Requirements for means of initiation (type test and batch test) 16
6.4.1 General requirements 16
6.4.2 Specific requirements 17

7 Performance 17
7.1 Properties to be checked before functioning tests 17
7.1.1 Loose pyrotechnic composition after mechanical conditioning (type test) 17
7.1.2 Integrity (type test and batch test) 17
7.1.3 Stabilization of flight (type test and batch test) 18
7.1.4 Other requirements (type test) 18
7.2 Properties to be checked during functioning tests (type test and batch test) 18
7.2.1 Principal effects 18
7.2.2 Functioning 18
7.2.3 Angle of ascent or flight 18
7.2.4 Motion 19
7.2.5 Stability during functioning 19
7.2.6 Height of explosion 20
7.2.7 Sound pressure level 20
7.2.8 Explosions and other failures 20
7.2.9 Burning or incandescent matter 21
7.2.10 Extinguishing of flames 21
7.2.11 Debris and projected debris 23
7.2.12 Burning rate of composition 23
7.2.13 Pull-string or strip 24

7.3 Properties to be checked after functioning tests (type test and batch test) 24
7.3.1 Droop 24
7.3.2 Plastics body 24
7.3.3 Tube containing the propellant charge for rocket and report rocket 24

8 Primary pack or selection pack (type test and batch test) 24

9 Type testing 24
9.1 General 24
9.2 Specific requirements for primary packs to be examined 26

10 Batch testing 26
10.1 General 26
10.2 Sampling plans 26
10.3 Unit of product 26
10.4 Nonconformities 27
10.5 Acceptance or rejection of a batch 29
10.5.1 Nonconforming units 29
10.5.2 Critical nonconforming units 29
10.5.3 Major nonconforming units 29
10.5.4 Minor nonconforming units 29
10.5.5 Fireworks supplied in primary packs or selection packs 29

Annex ZA (informative) Relationship between this European Standard and the essential safety requirements of Directive 2013/29/EU aimed to be covered 30