

# DIN EN ISO 16852:2017-04 (E)

## Flame arresters - Performance requirements, test methods and limits for use (ISO 16852:2016)

---

### Contents

	Page
<b>European foreword</b> .....	<b>4</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2014/34/EU concerning equipment and protective systems intended for use in potentially explosive atmospheres</b> .....	<b>5</b>
<b>Foreword</b> .....	<b>7</b>
<b>Introduction</b> .....	<b>9</b>
<b>1 Scope</b> .....	<b>10</b>
<b>2 Normative references</b> .....	<b>10</b>
<b>3 Terms and definitions</b> .....	<b>10</b>
<b>4 Abbreviated terms and symbols</b> .....	<b>14</b>
<b>5 Hazards and flame arrester classifications</b> .....	<b>15</b>
5.1 Flame transmission: deflagration, stable and unstable detonation.....	15
5.2 Flame transmission: stabilized burning.....	16
<b>6 General requirements</b> .....	<b>16</b>
6.1 Measuring instruments.....	16
6.2 Construction.....	16
6.3 Housings.....	16
6.4 Joints.....	17
6.5 Pressure test.....	17
6.6 Leak test.....	17
6.7 Flow measurement (air).....	17
6.8 Flame transmission test.....	17
6.8.1 General.....	17
6.8.2 Test mixtures.....	18
6.9 Summary of tests to be conducted.....	19
<b>7 Specific requirements for static flame arresters</b> .....	<b>20</b>
7.1 Construction.....	20
7.2 Design series.....	20
7.3 Flame transmission test.....	21
7.3.1 General.....	21
7.3.2 Deflagration test.....	21
7.3.3 Detonation test.....	25
7.3.4 Short time burning test.....	30
7.3.5 Endurance burning test.....	32
7.4 Limits for use.....	34
7.4.1 General.....	34
7.4.2 In-line flame arrester.....	35
7.4.3 Pre-volume flame arrester.....	35
7.4.4 Detonation flame arrester.....	35
7.4.5 Short time burn flame arresters.....	35

<b>8</b>	<b>Specific requirements for liquid product detonation flame arresters</b>	<b>36</b>
8.1	Liquid seals	36
8.2	Foot valves	36
8.3	Flame transmission test	37
8.4	Limits for use	38
<b>9</b>	<b>Specific requirements for dynamic flame arresters (high velocity vent valves)</b>	<b>38</b>
9.1	General	38
9.2	Flame transmission tests	39
9.2.1	Low flow flame transmission test	39
9.2.2	Flame transmission test by opening and closing	40
9.2.3	Deflagration test	41
9.2.4	Endurance burning test	41
9.3	Limits for use	42
<b>10</b>	<b>Specific requirements for hydraulic flame arresters</b>	<b>42</b>
10.1	Equipment	42
10.2	Flame transmission test	42
10.2.1	General	42
10.2.2	Short time burning test	42
10.2.3	Deflagration test	43
10.2.4	Detonation test	43
10.3	Limits for use	43
<b>11</b>	<b>Test of flame arresters installed on or within gas conveying equipment</b>	<b>46</b>
11.1	General	46
11.2	Flame transmission test	46
11.2.1	General	46
11.2.2	Test procedure for gas conveying equipment with inlet pressure >600 hPa	48
11.2.3	Test procedure for gas conveying equipment with inlet pressure ≤600 hPa	48
<b>12</b>	<b>Information for use</b>	<b>49</b>
12.1	Instructions for use	49
12.2	Marking	50
12.2.1	Flame arrester	50
12.2.2	Flame arrester element	52
<b>Annex A (normative) Flow measurement</b>		<b>53</b>
<b>Annex B (informative) Information for selecting flame arresters</b>		<b>57</b>
<b>Annex C (informative) Best practice</b>		<b>58</b>
<b>Bibliography</b>		<b>59</b>