

# Door viewers

DHF TS 002:2009

Technical specification produced by dhf

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# Foreword

For many years now, door viewers have been referred to in standards, codes of practice, etc but without any official guidance to indicate how well they should perform or how their performance should be measured. This Technical Specification was written to address those issues and provide manufacturers and specifiers with a means to distinguish “fit for purpose” products from cheap “look-alikes”.

TS 002 has been available on the dhf website since November 2005 and whilst there does not appear to be a strong enough case for a British standard, interested parties within the security industry continue to show support and it is in response to those interests that this revision has been prepared.

## 1: Scope

Requirements and test methods for all forms of door viewer, designed to be used on doors in buildings, to allow occupants to detect and identify callers without having to reveal their own identity, or even their presence in some circumstances, to the caller.

## 2: Normative References

Listed below are the normative references that apply to this standard. The publication dates are those which were applicable at the time this standard was written. Unless otherwise stated, subsequent amendments/revisions when dated and published will apply to this standard in place of the dated version shown below:

BS 3900-F2:1973	Methods of test for paint - Durability tests on paint film - Determination of resistance to humidity (cyclic condensation)
BS EN 1634-1:2000	Fire resistance tests for door and shutter assemblies - Part 1: Fire doors and shutters
BS EN 1634-2:2008	Fire resistance tests for door and shutter assemblies - Part 2: Fire resistance characterisation test for elements of building hardware
BS EN 1634-3:2004	Smoke control doors and shutters
BS EN 1670:2007	Building hardware - Corrosion resistance - Requirements and test methods

## 3: Definitions & abbreviations

For the purpose of this standard, the following definitions shall apply:

### 3.1 Angle of vision

included angle of cone of visibility, inside which an object can be seen

### 3.2 Door viewer

optical device with wide angle lens to provide a one-way viewing facility.

## 4: Classification

### 4.1 General

For the purpose of this standard, door viewers shall be classified according to the standard seven character classification system used for CEN/TC33/WG4 building hardware standards (with an additional category for length adjustment range) and with requirements and grades as described in 4.2.

### 4.2 Classification categories

#### 4.2.1 Category of use (box 1)

No requirement in this category (dash in classification box)

#### 4.2.2 Durability (box 2)

No requirement in this category (dash in classification box)

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#### 4.2.3 Door mass (box 3)

No requirement in this category. (dash in classification box)

#### 4.2.4 Suitability for use on fire/smoke doors (box 4)

Three grades are identified as shown below:

Grade 0 Not approved for use on fire/smoke resisting door assemblies

Grade A Suitable for use on smoke resisting door assemblies in accordance with Annex A.1

Grade B Suitable for use on fire and smoke resisting door assemblies in accordance with Annex A.2

#### 4.2.5 Safety (box 5)

No requirement in this category (dash in classification box)

#### 4.2.6 Corrosion resistance (box 6)

Five grades are identified (1, 2, 3, 4 or 5) mirroring exactly the corrosion resistance grades in BS EN 1670:2007 but without the option of a grade 0

#### 4.2.7 Security (box 7)

Three grades are identified (1, 2, or 3) according to the requirements in clause 5.7

#### 4.2.8 Length adjustment range (box 8)

The actual range limits (in mm) are identified according to the requirement in clause 5.8

The above can be represented by an 8-box classification code, as shown in the example below, in which the grades displayed relate to a non-fire resistant door viewer with grade 3 corrosion resistance, grade 2 security, and an adjustment range of 30 to 60 mm

-	-	-	0	-	3	2	30/60
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## 5: Requirements

### 5.1 Category of use

No requirement

### 5.2 Durability

No requirement

### 5.3 Door mass

No requirement

### 5.4 Suitability for use on fire/smoke doors

Grade A and grade B products shall conform to the requirements of Annex A

### 5.5 Safety

No requirement

### 5.6 Corrosion Resistance

When tested in accordance with 6.6 for the appropriate grade as indicated below, the acceptance conditions defined in 5.4 of BS EN 1670:2007 shall be met for all surfaces visible when the product is fitted in service.

Grade	BS EN 1670:2007 Grade	Description
1	1 (24 hours)	Low corrosion resistance
2	2 (48 hours)	Moderate corrosion resistance
3	3 (96 hours)	High corrosion resistance
4	4 (240 hours)	Very high corrosion resistance
5	5 (480 hours)	Exceptionally high corrosion resistance

### 5.7 Security

#### 5.7.1 Angle of vision

When tested in accordance with 6.7.1, it shall be possible to view a point source of light anywhere within a cone of visibility having the “angle of vision” shown in Table 1

#### 5.7.2 Visual clarity

When tested in accordance with 6.7.2, a readability rating shall be determined based on the point size of lettering that can be read through the viewer at a fixed distance. Requirements in relation to grading are shown in Table 1

#### 5.7.3 Resistance to misting up

When tested in accordance with 6.7.4, products shall not lose more than 50% readability (determined by the point size of lettering readable before and after the test). Requirements in relation to grading shall be as shown in Table 1

Table 1

Grade	1	2	3
Angle of vision (included angle of cone)	>120°	>140°	>160°
Visual clarity (readability at 150mm)	36 point	18 point	8 point
Resistance to misting up	no	yes	yes
Ability to clear after misting up	no	yes	yes

#### 5.7.4 Ability to clear after misting up

After testing to 6.7.4, and drying out as described in 6.7.5, the readability shall be the same as it was before test 6.7.4. Requirements in relation to grading shall be as shown in Table 1

#### 5.8 Length adjustment range

The length adjustment range limits shall be determined by testing in accordance with 6.8

## 6: Test methods

### 6.1 Category of use

No requirement

### 6.2 Durability

No requirement

### 6.3 Door mass

No requirement

### 6.4 Suitability for use on fire/smoke doors

See Annex A

### 6.5 Safety

No requirement

### 6.6 Corrosion Resistance

The product shall be subjected to a neutral salt spray test as detailed in BS EN 1670:2007 for the appropriate length of time indicated in 5.6

### 6.7 Security

#### 6.7.1 Angle of vision

The door viewer shall be mounted, in accordance with manufacturer's instructions to a 45 mm thick (+/- 1mm) wooden block which, in turn, is mounted perpendicular to a form of protractor as shown in Figure B1 of Annex B, where the cone of visibility (as defined by the confluence of the converging lines on the protractor) is centred on and in line with the axis of the door viewer, and the vertex of the cone is on the outer face of the lens. The choice of wood is not important for this test.

Whilst looking through the door viewer, a point source of light shall be moved into view and the angle at which it first appears shall be noted. The test shall be repeated from the 180° opposite position and the two readings added together to give an average "viewing angle" for the cone of vision.

#### 6.7.2 Visual clarity

The door viewer shall be mounted in a suitable test-rig in which the viewer is held perpendicular to, and 150 mm away from, a sheet of paper displaying Ariel black text in various point sizes. Using normal or corrected normal vision, in good light, attempts shall be made to read the text in progressively smaller point sizes, and the smallest point size that can be read shall be noted.

### 6.7.3 Resistance to misting up

The door viewer shall be mounted, in accordance with manufacturer's instructions, to a 45 mm thick (+/- 1mm) painted wooden block - representing part of a typical external door to a dwelling. This, in turn, shall be mounted in a test-rig in which the viewer is held perpendicular to, and 150 mm away from, a sheet of paper displaying Ariel black text in various point sizes. Using normal or corrected normal vision, in good light, attempts shall then be made to read the text in progressively reducing font sizes, and the smallest point size that can be read shall be noted. The wooden block shall then be stood upright in an environmental chamber and subjected to 72 hours of cyclic humidity to BS 3900-F2:1973. Immediately after the humidity test, the readability test shall be repeated by the same person.

### 6.7.4 Ability to clear after misting up

Following the humidity test of 6.7.3, the door viewer (still in the wooden block) shall be allowed to dry out for 72 hours at 30° C after which the readability test shall be repeated by the same person who carried out the test in 6.7.3.

## 6.8 Length adjustment range

The door viewer shall be screwed up to its shortest length and the distance between the mounting flanges measured. It shall then be unscrewed so that there is a full turn of engagement on all threaded connections and the distance between the mounting flanges again measured. The 2 dimensions shall be noted.

# 7: Marking

The following information shall be quoted on the labelling, packaging or literature: -

- manufacturer's name or trademark, or other means of positive identification
- clear product identification
- classification according to clause 4 of this standard number and date of this standard

## Annex A Normative

Door viewers suitable for use on fire/smoke doors

### A.1 Grade A:

Products representative of their type and classified as grade A in 4.2.4 shall have been subjected to a successful evaluation proving their suitability for use on smoke doors.

Door viewers are suitable for use on smoke doors if a door incorporating the lock has passed a smoke test to EN 1634-3.

### A.2 Grade B:

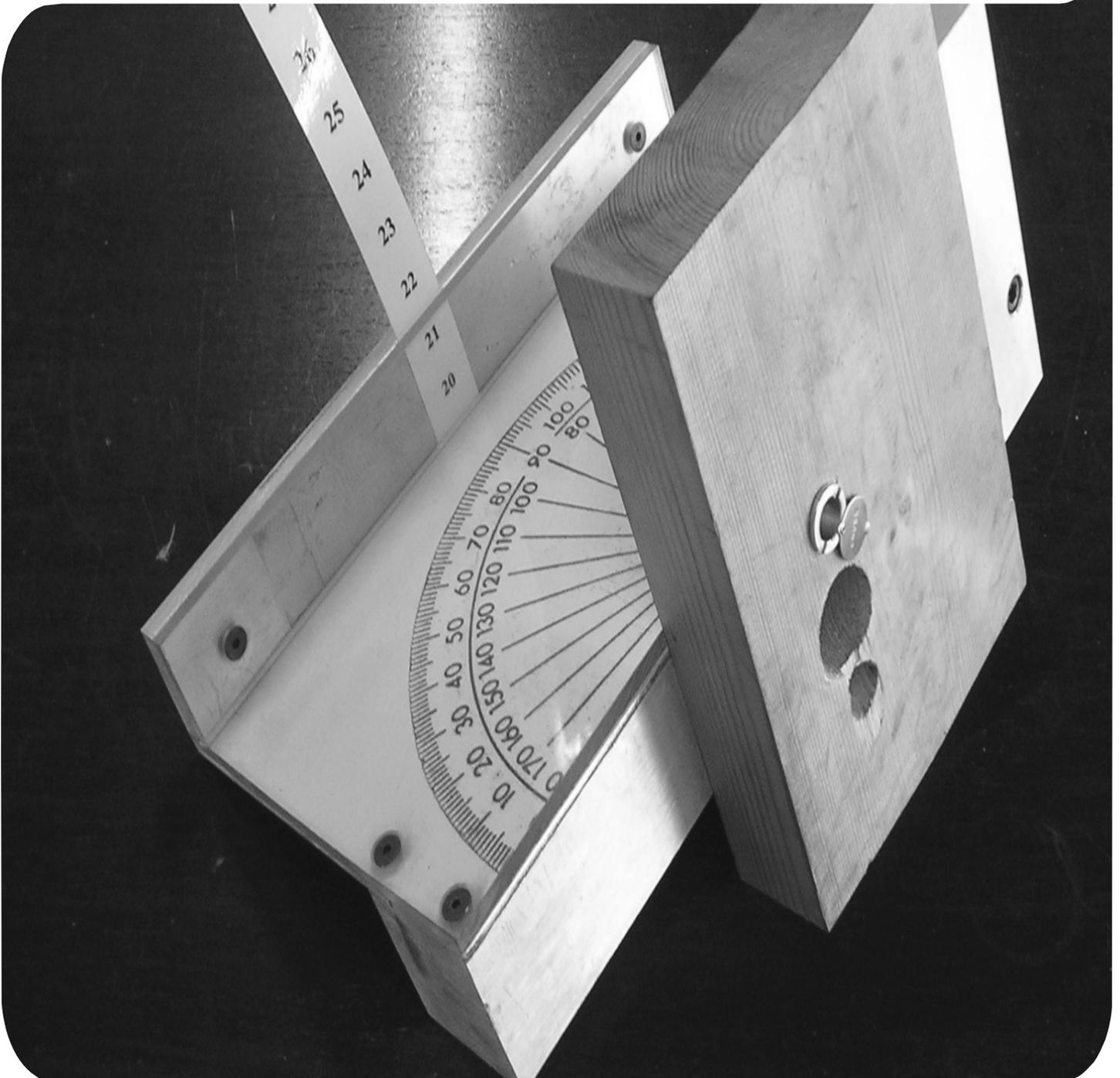
Products representative of their type and classified as grade B in 4.2.4 shall have been subjected to a fire test from both sides of the door, in accordance with EN 1634-1:2000 or EN 1634-2:2008, to prove the effect of the product on the fire resistance of the complete door assembly.

It is not necessary for the product to be functional after such a fire test.

# Annex B Normative

Test apparatus illustrations

Figure B1



## Annex C Normative

### Test sampling and sequencing

Three test samples, (marked A ,B and C) shall be subjected to a sequence of tests as shown in the following table:

Table C.1

	Sample A	Sample B	Sample C
1 <sup>st</sup> test	Angle of vision Clauses 5.7.1 and 6.7.1	Visual clarity Clauses 5.7.2 and 6.7.2	Visual clarity Clauses 5.7.2 and 6.7.2
2 <sup>nd</sup> test	Length adjustment Clauses 5.8 and 6.8	Resistance to misting up Clauses 5.7.3 and 6.7.3	Resistance to misting up Clauses 5.7.3 and 6.7.3
3 <sup>rd</sup> test	Corrosion resistance Clause 5.6 and 6.6	Ability to clear after misting up Clause 5.7.4 and 6.7.4	Ability to clear after misting up Clause 5.7.4 and 6.7.4





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