

## Mirrors – Visual quality standard for installed mirrors

4.8.1 April 2020  
Supersedes February 2000

### 1. Introduction

This Data Sheet is designed to be used in conjunction with Data Sheet 4.8 Recommendations for Fixing Mirrors and will deal specifically with the Visual Quality Standard for Installed Mirrors.

### 2. Scope

This Data Sheet relates to the Visual Fault Characteristics which can occur and the relevant quality standards expected of Finished Mirrors.

### 3. Mirror Standard

The standard will apply in full only to mirrors made of flat, annealed float glass, clear or coloured, supplied in 2mm to 10mm thickness in all sizes, having the rear surface coated with a reflective silver deposit which is protected by a layer of metallic copper or another material and one or more protective coatings, e.g. paint, lacquer etc and for use inside a normally occupied domestic or commercial building. This standard does not apply for mirrors used in aggressive and/or high humidity atmospheres e.g. horse riding halls; swimming pools, medical baths, saunas etc. This standard does not apply to reflective glass for external applications. If in doubt, please consult a local GGF member.

### 4. Method for Quality Checking of Glass, Reflective Coating, Edge and Protective Coating

The mirror is viewed in a vertical position, with the naked eye and under normal diffused daylight conditions (between 300 and 600 lux at the mirror) from a distance of 1 metre. The direction of observation is normal, i.e. at right angles to the mirror surface. The use of an additional light source e.g. spotlight, is not allowed.

### 5. Mirror Faults

The quality of a Mirror can be affected by faults altering the appearance of the image of reflected objects.

Alteration of images can result from faults in the glass, faults in the reflective coating and optical faults.

### 5.1 Glass Appearance Faults

Faults which alter the visual quality of the mirror. They can be spot, linear or enlarged area faults. Solid or gaseous inclusions, deposits, scratches etc are admissible as defined in Table 1.

#### 5.1.1 Spot Faults

Spot faults consist of nuclei (solid or gaseous inclusions) deposits, crush marks etc. In certain circumstances spot faults are accompanied by a distortion zone or 'halo'. The nucleus of a spot fault is measurable. A cluster is a group of not less than 3 spot faults, separated by not more than 50mm.

#### 5.1.2 Linear Faults

Linear faults can be in the form of scratches, extended spot faults etc. Brush marks are very fine circular scratches that can hardly be seen and are associated with glass cleaning techniques.

#### 5.1.3 Enlarged Area Faults

Enlarged area faults can be as the result of tin deposits, glass surface erosion etc.

#### 5.1.4 Edge Faults

Edge faults are entrant/emergent faults in the form of chips, shells, corners on/off, vents etc. Entrant and emergent chips or shells are acceptable provided they are not greater than 1.5mm deep.

Corners on/off and vented (cracked) edges are not allowed if visible under conditions detailed in 4. Method for Quality Checking of Glass, Reflective Coating, Edge and Protective Coating

### 5.2 Reflective Silver Coating Faults

Faults in the reflective silver layer which will alter the appearance of the silvered glass. They consist of scratches, stain, colour spots and edge deterioration.

Reflective silver coating faults shall not be allowed if visible under conditions described under heading 4.



GGF Datasheet: Recommendations for Adhesive Backed Polymeric Film Applied to Glass:  
 Definitions, Descriptions and Components

5.2.1 Scratches

Surface defects of various width, length and depth.

5.2.2 Stain

An alteration to the reflective coating where the reflective surface exhibits zones with various degrees of discolouration.

5.2.3 Colour Spots

Alteration of the reflective coating in the form of small, generally coloured spots.

5.2.4 Edge Deterioration

Discolouration of the reflective silver at the edge of the mirror.

5.3 Optical Faults

Optical Faults are directly associated with distortion of the reflected image. A mirror shall be examined in areas of 500mm x 500mm at a time. The observer is located at a distance of 2 metres at a right angle to the area be examined. Behind the observer must be a non uniform background. The reflected image must not be optically disturbed, for example by another reflective surface or window. The mirror meets requirements if it does not exhibit any disturbing optical variation outside the allowed tolerances.

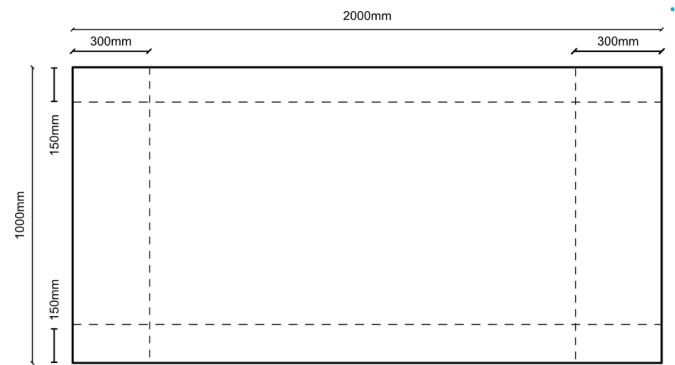


Table I - Acceptance levels for glass faults in as-cut finished sizes

| Area of finished sizes with cut or cut and ground edges | Spot Faults                     |                    |                    |                    | Surface Faults |           |
|---|---------------------------------|--------------------|--------------------|--------------------|----------------|-----------|
|   | Centre Zone                     |                    | Border Zone a b    |                    | Brush Marks    | Scratches |
|   | ≥ 0.2mm<br>< 0.3mm <sub>c</sub> | > 0.2mm<br>< 0.3mm | ≥ 0.2mm<br>< 0.5mm | > 0.5mm<br>< 1.0mm | < 50mm         |           |
| ≤ 0.3 m <sup>2</sup>                                    | 2                               | 1                  | 2                  | 0                  | 2              | 0         |
| 0.31 to 1.0 m <sup>2</sup>                              | 2                               | 1                  | 2                  | 0                  | 2              | 0         |
| 1.01 to 1.5m <sup>2</sup>                               | 3                               | 2                  | 3                  | 1                  | 3              | 0         |
| > 1.51m <sup>2</sup>                                    | 4                               | 2                  | 4                  | 2                  | 4              | 0         |

a) The size of the border zone is determined as 15% of the edge length and width (see illustration above).  
 b) Defects greater than 0.5mm (in centre zone) and 1.0mm (border zone) are not accepted.  
 c) Defects smaller than 0.2mm are accepted providing they do not form a cluster.

Figure 1: Exclusion areas for viewing mirrors