

GUIDANCE ON VISUAL INSPECTION

This guideline applies to the assessment of the visual quality of glass for the building industry (use in the building envelope and in the finishing of structural installations/structures).

The assessment is carried out according to the test principles described below with the aid of the specified allowances.

This guideline was developed by:

Bundesinnungsverband des Glaserhandwerks, Hadamar · VFF Verband Fenster + Fassade, Frankfurt/Main · Bundesverband Flachglas e. V., Troisdorf. © Bundesinnungsverband des Glaserhandwerks, VFF Verband Fenster + Fassade und Bundesverband Flachglas e. V.
Stand März 2019

INSTRUCTION FOR VISUAL INSPECTION

EXAMINATION CONDITIONS:

Any defects must not be marked before the inspection.

The observer stands inside the room and is one metre (1.00 m) away from the glazing.

He is looking out through the glazing at a viewing angle that corresponds to the normal use of the room.

The viewing angle is usually perpendicular to the glass

THE LIGHTING CONDITIONS:

The test is carried out in normal and diffuse daylight. Direct sunlight or targeted illumination of the glasses is not permitted.

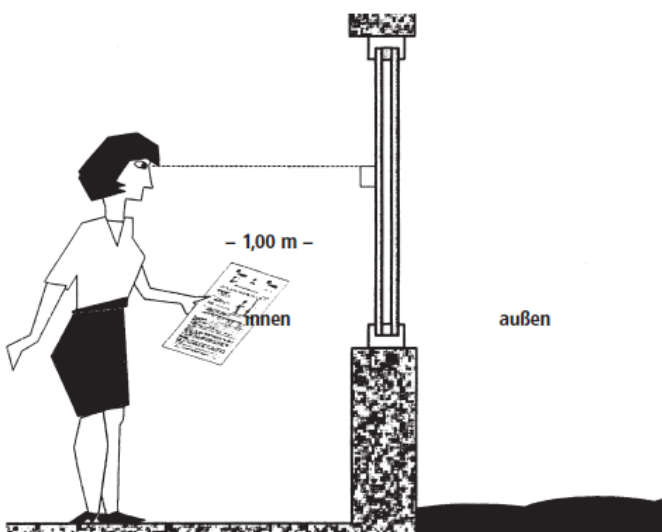
IRREGULARITIES:

Irregularities are inclusions, bubbles, spots, stains, scratches, residues (in the SDR) etc..

These must not be specially marked.

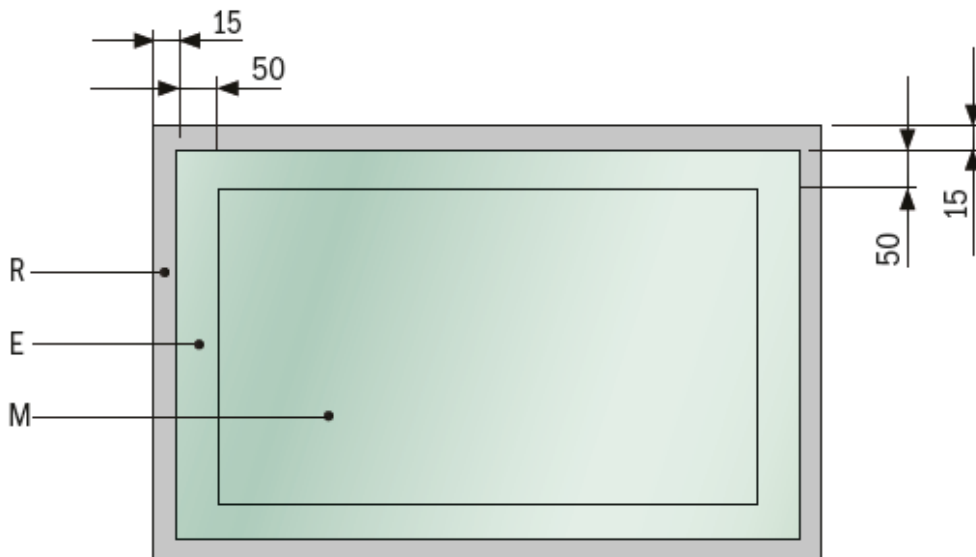
Depending on the test conditions, the following are considered irregularities: a punctual irregularity (in the manner of a bubble, etc.)

a linear irregularity (in the manner of a scratch, etc.)



APPROVALS FOR THE VISUAL QUALITY OF GLASS PRODUCTS FOR THE BUILDING INDUSTRY

Visual quality assessment zones



R = rabbet zone:

Area of 15 mm that is normally covered by the frame (with the exception of mechanical edge damage, no restrictions - see also section 4.1.3). For free glass edges, the consideration criterion rabbet zone is not applicable (see above).

E = Edge zone:

Area at the edge of the visible surface, with a width of 50 mm. For glass edges < 500 mm, 1/10 of the glass edge length is to be considered as the edge zone.

M = main zone: The remaining area of the visible surface.

PERMISSIBLE CHARACTERISTICS FOR DOUBLE-GLAZED INSULATING GLASS MADE OF A COMBINATION OF FLOAT GLASS, TOUGHENED SAFETY GLASS, TVG, EACH COATED OR UNCOATED

Zone	Größe der Fehler (ohne Höfe, Ø in mm)	Größe der Schelbe S (m ²)			
		S ≤ 1	1 < S ≤ 2	2 < S ≤ 3	S > 3
R	Alle Größen	Uneingeschränkt			
E	Ø ≤ 1	Zulässig sind maximal 2 in einem Bereich mit Ø ≤ 20 cm			
	1 < Ø ≤ 3	4	1 je Meter umlaufender Kantenlänge		
	Ø > 3	Nicht zulässig			
M	Ø ≤ 2	2	3	5	5 + 2 je zusätzlichem m ² über 3 m ²
		Zulässig ist maximal 1 in einem Bereich mit Ø ≤ 50 cm			
	Ø > 2	Nicht zulässig			

Tabelle 1: Zulässige Anzahl punktförmiger Fehler

Zone	Größe und Art (Ø in mm)	Größe der Schelbe S (m ²)	
		S ≤ 1	1 < S
R	Alle	Uneingeschränkt	
E	Punkte Ø ≤ 1	Zulässig sind 3 in jedem Bereich mit Ø ≤ 20 cm	
	Punkte 1 mm < Ø ≤ 3	4	1 je umlaufenden m Kantenlänge
	Recken Ø ≤ 17	1	
	Punkte Ø > 3 und Recken Ø > 17	Nicht zulässig	
M	Punkte Ø ≤ 1	Zulässig sind 3 in jedem Bereich mit Ø ≤ 20 cm	
	Punkte 1 < Ø ≤ 3	Nicht zulässig	
	Punkte Ø > 3 und Flecken Ø > 17	Nicht zulässig	

Tabelle 2: Zulässige Anzahl von Rückständen (Punkte und Flecken)

Zone	Einzellänge (mm)	Summe der Einzellängen (mm)
R	Uneingeschränkt	
E	≤ 30	≤ 90
M	≤ 15	≤ 45

Tabelle 3: Zulässige Anzahl von Kratzern

Hair scrapers are not allowed in heaps.

The allowances increase by 25 % of the above values in the lengths when installed. The result is always rounded up to a full 5 mm. Existing interference fields (yard) must not be larger than 3 mm.

Permissible in the rebate zone R are: External flat edge damage or scallops which do not affect the strength of the glass and do not exceed the edge bond width as well as internal scallops without loose shards which are filled by sealing compound.