



**pro-K Fachgruppe**  
Thermoplastische Platten

**Technical Leaflet**

Judgement of gloss values on plastic  
surfaces up to GE 40 based on  
reflection properties

Picture example (front side): © MITRAS Materials GmbH

**Important Note:**

This document is purely for information purposes. The information contained in this document has been compiled in accordance with current state of knowledge and with best conscience. The author and pro-K, however, accept no responsibility for the correctness and completeness of the information. Every reader must therefore ascertain if the information is relevant and suitable for purpose.

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**Technical Group Thermoplastic Sheets**

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### 1. Judgement of plastic surfaces in respect of gloss

The judgement of plastic surfaces with regard to gloss properties cannot be defined as a purely physical recognisable level. Subjective perceptions, both physiological and psychological, have a considerable influence on judgement.

A reflection meter value can, with due regard to certain conditions, interpret reflection properties which an observer perceives.

### 2. Measuring method

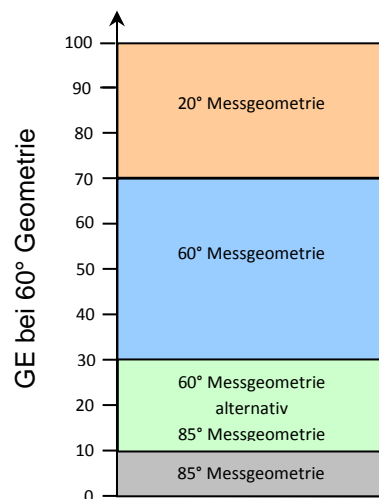
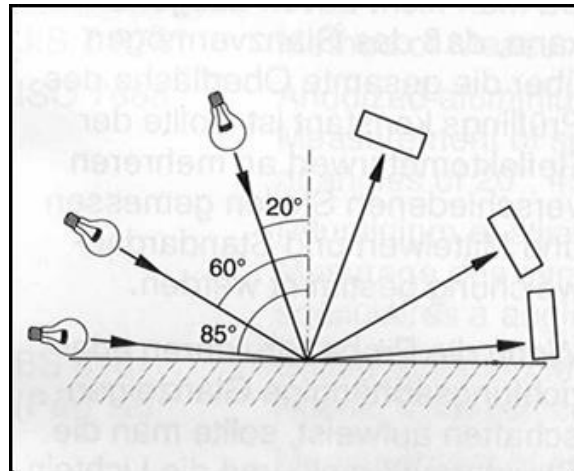
The measuring equipment and the method for testing surfaces is basically subject to DIN EN ISO 2813: 2012-10 (Norm Draft: The content of both Norms DIN 67530 and DIN EN ISO 2813: 1999 have been summarised).

In accordance with practice, with which gloss level is measured is to be established at 20°, 60°, 85° so that a uniform and comparable surface judgement is guaranteed.

Gloss Units at 60° geometry

Measuring Geometry

alternativ = alternative



In practice it has proved best to establish values with only one 60° angle.

## 2.1 Measuring

Measurements should be made in minimum four directions. For materials having directional gloss dependence, the direction being measured must be known and established.

Measurement values of structured surfaces must only be compared with measured values of the same structured surfaces. Care should be taken that measurements are carried out on smooth surfaces with a level position and measured without a tilting fault of the measuring unit.

A comparison between measuring results is only permitted when these have been determined using the same measuring geometry.

A comparison of measurement results (even with equal surface quality) using various measurement geometry is not permitted.

### 3. Definition of gloss units (GE) measured on 3mm thickness plastic sheets

	Less than	GE 2.9 super matt
GE	3.00 to	GE 4.5 matt
GE	4.6 to	GE 15 semi-matt
GE	15.1 to	GE 40 silk matt

Since these descriptions (e.g. super matt) are not defined in any Norm, these should be understood as normal for the market.

#### **Tolerances must be individually agreed and amongst other factors are dependent on**

- material thickness (with increasing material thickness, increased degree of gloss can be expected)
- surface structure (plain, embossed / fine or coarse embossing pattern), see appendix
- the material used
- the colour

### 4. Limitations for the thermoforming process

Thermodynamic loading and the degree of stretching have a considerable influence on surface gloss quality after the thermoforming process.

Particularly with embossed plastic sheets, by thermoforming and the resultant stretching of the emboss structure, gloss value from a technical measurement point of view is changed in such a way that this can no longer be compared with unformed samples.

## Appendix

### Examples

Structure	Thickness	Colour- top layer	Value at 60° geometry
Plain surfaces	3.5	black	6.7
	4	black	6.6
	3	grey	12.2
	4	grey	12
Finely structured surfaces	3	black	2
	3	black	2.6
	4	black	1.8
	3	black	2.5
	3	beige	4.1
	4	beige	3.9
	3	black	2.3
	4	black	3.1
Coarse structured surfaces	3	black	2.7
	4	black	3
	3	grey	2.8
	4	grey	3.8