

# DIN SPEC 18198:2022-05 (E)

## Measurement and evaluation methods for optical anisotropic effects in thermally toughened glass

---

<b>Contents</b>	<b>Page</b>
Foreword .....	4
Introduction .....	6
1 Scope .....	7
2 Normative references .....	7
3 Terms and definitions.....	7
4 Testing of thermally toughened glass.....	10
5 Measurement.....	10
5.1 General .....	10
5.2 Requirements .....	10
5.3 Setup.....	11
5.3.1 Method A — Calibrated polarimeters.....	11
5.3.2 Method B — Calibrated polariscopes.....	11
5.4 Test conditions.....	11
5.5 Relevant measurands .....	11
5.5.1 Retardation .....	11
5.5.2 Azimuth angle (optional).....	11
5.6 Calibration.....	11
5.7 Measurement uncertainty.....	12
5.8 Analysis/evaluation criteria.....	12
5.8.1 Evaluation zones.....	12
5.8.2 Evaluation methods.....	13
5.8.3 Additional evaluation methods .....	13
5.9 Limitations .....	14
6 Quality classes.....	14
6.1 General .....	14
6.2 Quality classes.....	14
7 Test report.....	15
Annex A (informative) Guidance on verification of the measurement accuracy of the scanners.....	16
A.1 General .....	16
A.2 Method 1 — Retardation plates.....	16
A.3 Method 2 — Calibration plate .....	16
A.4 Method 3 — Babinet-Soleil compensator .....	16
Annex B (informative) Assessment of the probability and frequency of visibility of optical anisotropy effects at the installation site .....	17
B.1 General .....	17
B.2 Glass.....	17
B.2.1 Glass type.....	17
B.2.2 Coatings .....	17
B.2.3 Glass thickness and glass structure.....	17
B.3 Viewing conditions on site .....	17
B.3.1 Viewing angle and direction .....	17

B.3.2	Location and surroundings of the building.....	18
B.3.3	Building usage or background of the glazing .....	18
Annex C	(informative) Visual assessment at the installation site .....	20
C.1	General.....	20
C.2	Test conditions.....	20
C.3	Best-case scenario.....	20
C.4	Worst-case scenario .....	20
Annex D	(informative) Guidance on the evaluation of non-monolithic structures .....	21
D.1	Guidance.....	21
	Bibliography .....	22

## Figures

Figure 1	— Evaluation zone .....	13
----------	-------------------------	----

## Tables

Table 1	— Measuring range, maximum permissible error and reproducibility of the measuring systems.....	12
Table 2	— Quality classes based on method A ( $x_{0,95}$ ) .....	14
Table 3	— Quality classes based on method B ( $I_{50,75}$ ) .....	15
Table B.1	— Overview of the parameters that increase the probability of visibility of the optical anisotropy effects .....	18