Glass Specification

Visual Criteria – Toughened and Heat-Strengthened Glass

Anisotropy (Iridescence)

Anisotropy (Iridescence) or „Leopard Spots“, associated with toughened and heat-strengthened glasses, shall be kept to an absolute minimum.

In respect to the quality assessment the area of a glass pane to be considered is defined by the architect. An evaluation of the main zone and the edge zone shall be made.

The glass manufacturer has to use photo-elastic measuring methods (polarimeter-systems), to analyze

a) the magnitude of stress (maximum optical retardation in nm) and
b) the direction of stress (azimuth in °)

all over the glass surface of each monolithic glass pane.

The resolution of the measuring system shall be sufficient to evaluate the quality.

Based on the measurands a) and b) the angle-dependent effective optical retardation, can be calculated for each pixel analyzed.

The evaluation in the considered zones has to take place at the angle at which maximum anisotropy is to be expected. At this angle, the percentage of analyzed pixels shall be determined, that have an effective optical retardation of at most 75 nm (p-quantile (75 nm)).

Alternatively the 95 % p-quantile can be determined for the effective optical retardation at worst case angle.

Full size samples indicating the p-quantile (75 nm) (alternatively the 95 % p-quantile) shall be submitted to the contractor for assessment prior to order.

The p-quantile (75 nm) (alternatively the 95 % p-quantile) of accepted full size samples will be used as acceptance limit for the objective assessment of all project glass panes.

The benchmark panels should be viewed in clear sky conditions so that the effect of polarized light can be appreciated the most. The panel should be viewed in conditions representative to the final installation of the glass units.

Glass panes with p-quantile (75 nm) (alternatively 95 % p-quantile) above the agreed characteristic value shall be rejected.

Upon request the glass manufacturer has to provide the quality control documents to confirm conformity. These documents shall at a minimum include for each glass plane supplied the following elements:

- p-quantile (75 nm) in % (alternatively 95 % p-quantile in nm)
- For assessment considered area of the glass pane
- Glass type
- Job number
- Glass position
- Date of heat treatment