

SUBJECT GLASS CHEMICAL HOMOGENEITY TEST  
Process Specification

SUPERSEDED DATE

This specification covers a test for chemical homogeneity of glass in the form of tubing or bulbs.

1. Sample.

The sample is cut in the form of a section, the cuts being perpendicular to the direction of drawing or blowing, thickness being about 1 cm. In the case of tubing or round cylindrical bulbs, the sample will be a ring section 1 cm thick. For pressed bulbs, a representative sample giving a cross section of the wall may be used.

2. Annealing

The sample is to be well annealed after cutting. For wall thickness less than 1/8", cooling through the annealing range at 2°C/min. or slower will be satisfactory.

3. Examination for Strain.

The ring section is examined for strain immersed in a suitable liquid whose index of refraction is close to that of the glass. Optical retardation caused by chemical inhomogeneities in the glass section can be measured with a polariscope equipped with a 1/4 wave plate. The section should be lined up with its axis parallel to the direction of light in the polariscope, and maximum positive and negative retardation determined over the entire ring section.

4. Limits.

A maximum measurable retardation of ±30 millimicrons/cm shall be allowed.

ENGINEERING SECTION  
STANDARDIZING