

SUBJECT DETERMINING RELATIVE THERMAL EXPANSION
MATCH BETWEEN A GLASS AND CHROME IRON

DATE 2/6/48

Initially for glass window to use Chrome iron as used in Type C7408H.

PROCEDURE

1. Preparation of Seal

- a. Select a strip of metal 0.125" ±0.010" thick, 1" wide, and 4" long. Clean metal either by sand-blasting or by firing in dry hydrogen at 1100° C. for 5 minutes (FCK5, Stdzg. Not. 34-1-1F).
- b. Select a uniform strip of glass 1/8" to 1/4" thick, 3/8" wide, and 3" long.
- c. Using an air muffle furnace at a temperature from 1100 to 1150° C., heat metal to furnace temperature and oxidize. Then place cold strip of glass on hot metal and make seal. The shortest time should be used which will eliminate re-entrant angles on the seal edge.
- *d. Anneal glass by placing the seal, immediately after removal from the sealing furnace, in a furnace set at the annealing point of the glass. Hold for 10 minutes, remove strip from annealing furnace, and cool in air.

2. Examination of Seal for Strain

- a. Measure strain at the glass to metal interface, at a point in the center of the seal. A suitable immersion liquid should be used. Express strain in terms of the total retardation measured on a polariscope divided by the width of the seal; express in millimicrons per centimeter.

STANDARDIZING SECTION
ENGINEERING DEPT.