



SUBJECT COILED HEATER FIRING
 Process Specifications

SUPERSEDED DATE 10/3/41

Initially used for cleaning coiled heaters, such as MCF52, which are not fired after application of insulating coating or for setting heaters, as 2 segment helical type MCF344, so they do not become distorted when fired at 1700°C after insulating coating has been applied.

Firing removes residual oxide impurities from the wire and tends to eliminate strains, but if not carefully performed, may produce brittleness.

1. EQUIPMENT REQUIREMENTS

Furnace - Model No. 780-F (49-2-7)

Boats - Model No. 706-N, These boats, of 1/32" sheet molybdenum, are 6" long x 1" wide x 3/4" deep, (inside dimensions). Boats have rounded bottoms and are curved upward at one end.

Flat ceramic sleeves, into which 3 to 6 two segment heaters may be inserted during firing.

→ Optical Pyrometer ***

2. PROCEDURE

- a. Load a boat not over two-thirds full with single helical coiled filaments evenly distributed lengthwise in tiers. Coils which are crooked or which are not evenly supported when fired will be permanently distorted. Insert 2-segment heaters into flat sleeves and load sleeves into boats not over 3/4 full.
- b. Push loaded boat into center of heating tube and fire at 1200°C for four minutes or as specified on the heater. If boats other than Model No. 706-N must be used, a change in firing time may be necessary, depending on the weight and diameter of the boats.
- c. Push boat into center of cooling chamber and allow to cool until boat and coiled filaments reach approximate temperature of cooling chamber. Coils, if insufficiently cooled, may become oxidized on removal from cooling chamber.
- d. Open gate of cooling chamber, allowing hydrogen to ignite, and remove boat quickly to prevent condensation of moisture from flame reaching the heaters. Close gate. The use of a rod with a cover shaped sheet metal attachment is recommended for keeping the boat covered as it is pulled out of cooling chamber.

ENGINEERING SECTION
 STANDARDIZING

*** Indicates deletion of reference to an obsolete notice.

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