CUSTOMER INFORMATION FORM

TOPIC: Do basic covered electrodes (E7018) require redrying process?

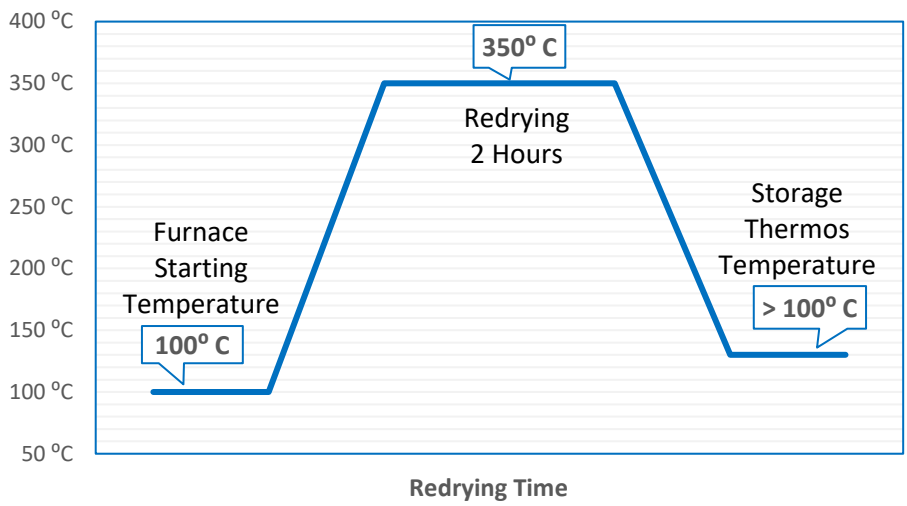
Mentionable exceptions are vacuum packed electrodes, but all the other groups are definetely, absolutely, must be redried.

Unless supplied in a vacuum package, all electrodes with basic coverings -often referred to by the designation E7018 in the AWS standard- must be redried for the time and temperature specified by the manufacturer prior to first use.

The coverings of basic electrodes are largely composed of calcium oxide compound, which has a high moisture absorption property. For this reason, in situations when they are not supplied in a vacuum package; or the vacuum package is left open, the moisture and moisture-related hydrogen value in their covers may increase significantly in a short time. In the case transferring the hydrogen content due to moisture in the weld metal to the base metal, the probability of facing hydrogen cracking –also called cold cracking- is quite high. In order to prevent possible welding problems, basic covered electrodes should be redried at the appropriate level and temperature specified by their manufacturers(see Figure 1). Since the moisture value of the cover may increase in a short time after the redrying process, the electrodes must be stored in a temperature-controlled electrode thermos(see Figure 2) in order to preserve their current state after the redrying process.

Figure 1: Redrying information on the label of ESB 48 product

The redrying temperature must be carried out at the temperature specified by the manufacturer for the product. Redrying at temperatures above the specified value will cause deterioration in the quality of the cover and ultimately in the weldability of the product.



Graphic: Appropriate redrying and storage temperature/time graph for our ESB 48 product in E7018 standard

In order to prevent the cover from being exposed to thermal shock during the electrode redrying process, the electrodes should not be exposed to redrying temperature directly. After the electrodes are placed at the furnace at 100°C. the temperature should be gradually increased to the appropriate redrying temperature.

Figure 2: Electrode redrying furnace and electrode thermos