INDUSTRY GUIDE

Ovens & Furnaces for Welding Electrode Makers

Batch, continuous and dual-fuel electrode baking ovens, flux dryers, hot rooms and packing tunnels.

A welding electrode plant depends on its baking ovens. Extruded electrodes carry a wet flux coating that has to be dried and then baked hard, so moisture falls to the level each grade allows. Low-hydrogen electrodes need the highest bake and the tightest control. If the oven is overloaded, recovers slowly, or vents moisture poorly, the plant ships electrodes that fail moisture tests or crack in the coating.

Heating processes in this industry

Initial drying after extrusion	about 80°C, so the coating dries without cracking
Intermediate drying	about 120–200°C to remove most of the water
Baking electrodes	80–450°C in AHS ovens, set by grade; follow the electrode maker's data sheet
	Re-drying exposed low-hydrogen electrodes (E7018 type): about 340–400°C for 1 hour (Lincoln Electric guidance)
Holding opened low-hydrogen electrodes	about 120–150°C
Flux and raw-material drying before mixing	low-temperature hot air
Packing	shrink tunnel up to 300°C

Equipment AHS builds for this industry

- Electrode Baking Oven
- Flux Drying Oven
- Conveyor Tunnel Oven
- Walk-in Oven
- Hot Air Oven
- Hot Air Generator Oven
- Shrink Packaging Machine
- Industrial Gas Burner

Why AHS

- Our biggest line by value: more than 500 documents on electrode baking ovens since 2003
- About 49 electrode makers have bought ovens or spares from us since 2017
- Continuous ovens with zoned drying and baking, PLC/HMI recipe control and cloud data logging
- Dual-fuel ovens that switch between gas and electric heating with a selector switch
- Flue-gas heat recovery to the pre-heat zone on continuous gas ovens
- Spares and service for heaters, burners, controllers and thermocouples