Guide to Electrode and Flux Stabilization

Eliminate expensive rework and protect welding profits

This table is offered as a general guide to proper storage and oven holding temperatures.

- Recondition/rebake procedures for electrode coatings exposed to moisture are included.
- Remove electrodes from cardboard containers before placing in ovens.
- Electrode coatings should not be exposed to the rebaking temperature without first being reconditioned at a lower temperature. Failure to do so may result in breakdown of electrode coatings. After rebaking, lower temperature to holding level until reissued.

***DryRod**® ovens have been protecting electrodes for generations of the world's critical welders.*

AWS (TYPE)	Air Conditioned Storage Before Opening (RH=Relative Humidity)	DryRod Oven Holding Temp After Opening	Sufficient Amount of Time to Affect Weld Quality After Exposure to Moisture	
			Recondition Step 1	Rebake Step 2
Cellulose EXX10, EXX11, EXX20	70–120˚F (21–49˚C) 50% max RH	100–120˚F (38–49˚C)	not recommended	not recommended
Titania EXX12, EXX13, EXX14	70–120˚F (21–49˚C) 50% max RH	100–120˚F (38–49˚C)	180–230˚F (82–110˚C) ½ hour	250–300˚F (121–149˚C) 1 hour
Iron Powder M.S. EXX24, EXX27	70–120˚F (21–49˚C) 50% max RH	100–120˚F (38–49˚C)	180–230˚F (82–110˚C) ½ hour	400–500˚F (204–260˚C) ½ hour
Iron Powder Low Hydrogen EXX18, EXX28 **Low Hydrogen** EXX15, EXX16 **Low Hydrogen High Tensile** EXXX15, EXXX16, EXXX18	70–120˚F (21–49˚C) 50% max RH	250–300˚F (121–149˚C)	180–220˚F (82–104˚C) 1½ hour	650–750˚F (343–399˚C) 1 hour
Stainless EXXX-15, EXXX-16	40–120˚F (4.5–49˚C) 60% (±10) max RH	250–300˚F (121–149˚C)	180–220˚F (82–104˚C) 1½ hour	500–600˚F (260–316˚C) 1 hour
Inconnel **Monel** **Nickel** **Hard-Surfacing**	40–120˚F (4.5–49˚C) 60% (±10) max RH	150–200˚F (66–93˚C)	180–230˚F (82–110˚C) ½ hour	not recommended
Brasses **Bronzes**	40–120˚F (4.5–49˚C) 60% (±10) max RH	150–200˚F (66–93˚C)	not recommended	not recommended
Granulated Flux **Agglomerated Flux**	40–120˚F (4.5–49˚C) 60% (±10) max RH	100–200˚F (38–93˚C)	contact manufacturer for specific temperatures	
Flux Cored Wire EXXT-1, EXXT-2, EXXT-5, EXXT-G	40–120˚F (4.5–49˚C) 60% (±10) max RH	250–300˚F (121–149˚C)	contact manufacturer for specific temperatures	

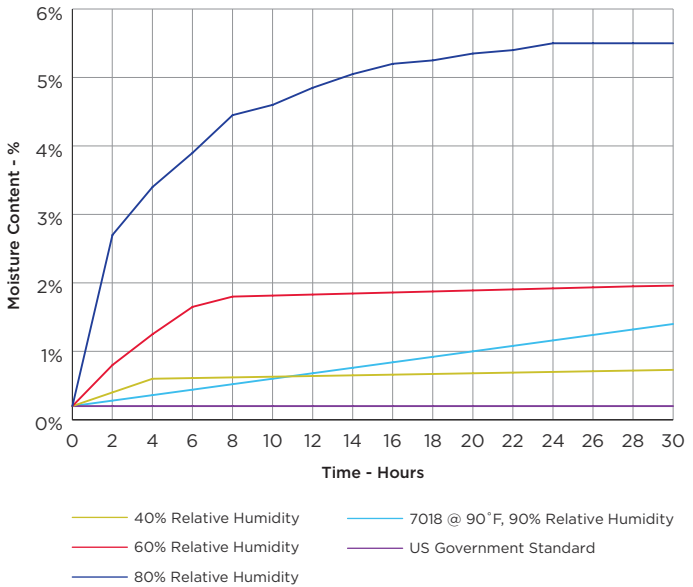
Note: Proper redrying temperatures depend upon the electrode type and its condition. Contact your electrode manufacturer for specific instructions involving critical operations. Phoenix International, Inc. does not accept liability for damage to electrodes and/or welded products resulting from the use of this table. Temperatures and times shown are recommended and are not guaranteed to be correct.

PHOENIX® INTERNATIONAL

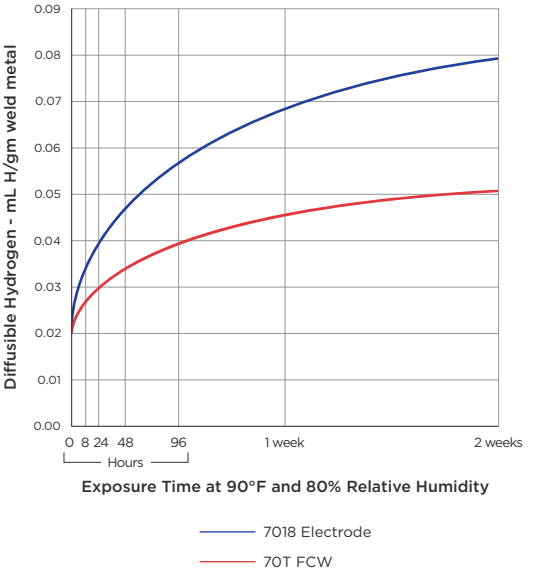
8711 West Port Avenue • Milwaukee, WI 53224 USA
Phone: 414.973.3400 • Fax: 414.973.3210
www.phx-international.com

Moisture Absorption of Low Hydrogen Electrodes

(80°F, 26.6°C)



Moisture Absorption Rate for Typical Flux Core Wire and E7018 Electrode



What Happens to Electrodes* Under Normal Shop Exposure Conditions?

Within two hours at 80% relative humidity, rods may contain up to 13 times the allowable moisture content for U.S. Government & Nuclear Specifications. Within 24 hours, the rods may test up to 26 times the 0.2% allowed. Phoenix DryRod® ovens hold electrodes well within specifications limits.

Keep flux dry as well: Flux used for submerged arc welding is another source for hydrogen. It is a recommended practice to store flux in a holding oven. Treat flux the same as electrode coatings, especially if high strength steel is to be welded.

** Including, to a lesser extent, "moisture resistant" electrodes.*

Contact the wire manufacture's technical department for specific instructions involving wire storage. Phoenix International, Inc. does not accept liability for damage to product resulting from use of the above information. Temperatures and times shown are recommended and are not guaranteed to be correct.

Phoenix International Brands:

DryRod® drywire® safetube ORIGINAL BRAND