

# Shelf Life, Storage, and Reconditioning of ESAB Welding Filler Metals.



## SHELF LIFE

The useful shelf life of welding filler metals is highly dependent on the conditions under which they are stored.

The shelf lives given below assume that:

- products in hermetically sealed containers are stored unopened under conditions that protect them from direct contact with water
- products in other containers are stored unopened under conditions where they are protected from direct contact with water and the temperature and humidity are kept relatively steady i.e. the temperature is kept between 50 and 90 F (10 and 32 C) and the relative humidity is kept at 50% or less.

Shelf life may be substantially less under other storage conditions.

Filler Metal	Package	Shelf Life
Atom Arc Low Hydrogen Electrodes	Hermetically Sealed Cans	5 yrs
Atom Arc Low Hydrogen/Low Alloy Electrodes	Hermetically Sealed Cans	5 yrs
Sureweld Carbon Steel Electrodes	Hermetically Sealed Cans	2 yrs
	Other Packages	1 yr
Arcaloy Stainless Steel Electrodes	Hermetically Sealed Cans	5 yrs
	Other Packages	1 yr
Dual Shield Cored Wires	Vacuum Bags	5 yrs
	Other Packages	1 yr
Coreshield Self-Shielded Cored Wires	Vacuum Bags	5 yrs
	Other Packages	1 yr
Coreweld Metal Cored Wires	Vacuum Bags	5 yrs
	Other Packages	1 yr
Shield-Bright Stainless Steel Cored Wires	Vacuum Bags	5 yrs
	Other Packages	1 yr
Core-Bright Self-Shielded Stainless Steel Cored Wires	Vacuum Bags	5 yrs
	Other Packages	1 yr
Spoolarc Solid Wires	Standard Spool Package	3 yrs
OK Autrod Stainless Steel Solid Wires	Standard Spool Package	5 yrs
OK Nickel Electrodes	VacPac	5 yrs
OK Fluxes	Bags	2 yrs
	Hermetically Sealed Steel Buckets	5 yrs
	2200 lb Bags	6 mos

In some cases, it may be possible to restore Electrodes, Cored Wires, and OK Flux to usable conditions by putting them through a reconditioning process. See Storage and Reconditioning on the next page.

## **STORAGE AND RECONDITIONING**

### **Dual Shield, Coreweld and Coreshield Carbon Steel and Low Alloy Cored Wires (FCAW)**

#### **Storage:**

The standard package of a spool or coil within a plastic bag and a carton will provide acceptable protection for standard Dual Shield wires when they are stored under proper conditions, i.e., conditions where heat does not exceed: 50°F – 90°F (10°C – 32°C) and where humidity is less than 50% R.H.

When weld metal hydrogen level must be guaranteed, the product must be packaged in aluminized vacuum sealed bags. All Dual Shield II and Dual Shield II H4 products will have a low weld metal hydrogen level in the as-manufactured condition, but only the vacuum sealed packaging will prevent moisture pickup after extended storage and protect it from environmental contamination.

Once the vacuum sealed bag is opened, unused product may be stored in dry rod ovens at temperatures not to exceed 300°F (150°C) for coils and wire spool baskets and 125°F (52°C) for plastic spools. Plastic bags should always be removed when storing at elevated temperatures to allow excess moisture to escape.

#### **Reconditioning:**

Generally, flux cored wires exhibiting weld metal porosity or “worm tracks” due to moisture absorption by the core ingredients can be reconditioned by re-baking. Products on coils or wire baskets may be re-baked at 300°F (150°C) for 6 – 8 hours. However, product on plastic spools cannot be reconditioned. Always remove the plastic bag when re-baking.

### **Shield Bright and Shield Bright X-tra Stainless Steel Cored Wires (FCAW)**

All ESAB Shield-Bright stainless steel wires are provided in vacuum-sealed packaging and will remain dry indefinitely as long as the package has not been opened or the vacuum seal is not compromised. Once the package is opened, the wire may begin to absorb moisture from the atmosphere. Low levels of moisture absorption are not detrimental, but an erratic arc, “worm tracking” or other forms of porosity may occur when excessive levels of moisture have been absorbed.

The following storage and reconditioning practices are recommended best practices. These recommended best practices are not mandatory and alternate practices may be followed provided the user has proven the alternate practices suitable for their situation.

#### **Storage:**

The following are the recommended best practices for storing opened containers: when not in use, remove wire from the feeder and store it in a controlled dry environment. Product on any package can be stored at a temperature between 50°F (10°C) and 90°F (30°C) and less than 50% relative humidity. Optionally, product on metal spools may be stored in an oven at a temperature between 250°F (120°C) and 300°F – 350°F (150°C – 175°C).

#### **Reconditioning:**

In the event that they have absorbed excessive moisture, Shield Bright wire packaged on metal spools may be salvaged by reconditioning as follows:

Re-bake at 300°F – 350°F (150°C – 175°C) for 6 – 8 hours. If, after reconditioning, the wire continues to exhibit an erratic arc, porosity and/or “worm tracks” it should be discarded. Wire packaged on plastic spools cannot be reconditioned and should be discarded if moisture related problems are encountered.

If there is a serious concern about moisture pickup we strongly suggest you purchase product packaged on a “wire spool” and handle as recommended above. All Shield-Bright and Shield-Bright X-tra stainless cored wire products are available on an optional wire spool. Contact Customer Service for delivery information.

## STORAGE AND RECONDITIONING

### Atom Arc, Sureweld , Arcaloy and OK Stick Electrodes

All Coated Electrodes in unopened and undamaged hermetically sealed containers can be stored in a dry environment for extended periods of time (see Shelf Life). After containers have been opened, the electrodes should be stored as shown below:

Filler Metal	Electrodes Stored Open	Recondition Electrodes
Sureweld 10P, 10P Plus. 710P, 810P, 6010 and 6011	Ambient Air	Do Not Recondition
Sureweld 6013	100°F – 150°F (40°C – 65°C)	30 minutes @ 250°F (120°C)
Sureweld 7014 and 7024	100°F – 150°F (40°C – 65°C)	1 hr @ 250°F (120°C)
Atom Arc and Atom Arc Alloys	225°F – 300°F (105°C – 150°C)	1 hr @ 700°F (370°C)
Arcaloy Lime (-15 classification)	225°F – 300°F (105°C – 150°C)	2 hr @ 650°F (345°C)
Arcaloy AC-DC ( -16, -17 classification)	225°F – 300°F (105°C – 150°C)	1 hr @ 400°F (205°C)
OK Nickel Electrodes	225°F – 300°F (105°C – 150°C)	2 hr @ 400°F (205°C)

When reconditioning electrodes, they should be placed in the drying oven such that they are stacked no more than 4 layers high. The reconditioning time starts when the electrodes have reached the recommended temperature.

### OK Submerged Arc Flux

#### Storage:

Fluxes should not be stored longer than 3 years. Unopened flux bags must be stored in maintained storage conditions as follows: 50°F – 90°F (10°C – 32°C) and where humidity is less than 50% R.H.

The content of unheated flux hoppers must after an 8 hour shift be placed in a drying cabinet or heated flux hopper at a temperature of 300°F +/- 45°F (150°C +/- 25°C).

Remaining flux from opened bags must be stored at a temperature of 300°F +/- 45°F (150°C +/- 25°C).

#### Recycling:

Moisture and oil must be removed from the compressed air used in the recycling system. Addition of new flux must be done with the proportion of at least one part new to one part recycled flux. Foreign materials such as mill scale and slag must be removed by using a suitable system such as sieving or magnetic separator.

#### Re-Drying:

When handled and stored as above, ESAB fluxes can normally be used straight from the bag.

In severe applications, stipulated by the applicable material specification, re-drying of the flux is recommended. Furthermore, if somehow the flux picked up moisture, re-drying can return the flux to its original as manufactured moisture content 525°F – 615°F (275°C – 325°C).

Re-drying must be done either in equipment that turns the flux so that the moisture can evaporate easily or in an oven on shallow plates with a flux height not exceeding 2 in. (5 cm). Re-dried flux not immediately used must be stored at 300°F +/- 45°F (150°C +/- 25°C).



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