

Handling, storage, drying stick electrodes

To ensure satisfactory weld quality, stick must be handled and stored properly before use. Electrode coatings are carefully designed to provide the necessary operating characteristics and weld properties required for each electrode type. Generally stick electrodes should be stored in their original packing. The storage facilities should have an infrastructure which makes the "first in - first out" principle possible. Electrodes are manufactured to be within acceptable moisture limits, consistent with the type of covering and strength of the weld metal. It is recommended to facilitate the storage room in such way that the electrodes are stored dry and safe. Moisturizing units should not be stored in the same area. Open packaging should be stored in special conditioned areas.

TYPICAL STORAGE CONDITIONS FOR STICK ELECTRODES

Storage of covered electrodes in cardboard boxes requires in general humidity and temperature controlled storage areas. Recommended storage conditions include:

- Temperature 18-25°C, relative humidity max. 60%
- Temperature 25-35°C, relative humidity max. 50%

Redrying of stick electrodes is recommended if the electrodes have picked up moisture or is imperiously required for low-hydrogen basic coated electrodes. We advise you to use the electrodes from a quiver after redrying.

TYPICAL REDRYING GUIDELINES FOR STICK ELECTRODES

Electrodes for	Coating type	Redrying recommended	Redry temperature °C	Redrying time / h.
Unalloyed and low alloy structural steel	A, AR, RC, R, RR	No	--	--
	RB, B	Yes	300-350	2 - 10
Pipelines	C	Not allowed!	--	--
Fine grain steel	B	Yes	300-350	2 - 10
High temperature steel	R	No	--	--
	B	Yes	300-350	2 - 10
Stainless and heat resisting steel	R	Yes	120-200	2 - 10
	RB, B	No	--	--
Soft-martensitic steel	B	Yes	300-350	2 - 10
Duplex steel	R, RB	Yes	250-300	2 - 10
Hardfacing	R	No	--	--
	RB, B	Yes	300-350	2 - 10
Ni-base alloys	All types	If necessary	120-300	2 - 10

In certain cases it may be reasonable to redry electrodes even when they are not mentioned in the table above. Should the coating exhibit and excessively high water content as a result of e.g. improper storage or other adverse influences, which is reflected by the welding behaviour and by increased spattering or formation of pores, the electrodes may be redried at 100-120°C for one hour. Electrodes in special packaging (f.i. HILcans) can be used without redrying and holding in a drying oven within a period of 8 hours after opening. After that the electrodes can be redried in accordance with the table above.

Handling, storage, drying cored wires

Unalloyed and low-alloyed cored wires are less sensitive to moisture pick-up since a metal sheath mainly covers the internal core. Nevertheless it is possible that the working environment affects the low hydrogen characteristics. For storage we recommend the same conditions as mentioned for stick electrodes (typical storage conditions for stick electrodes). For redrying we suggest to redry the wires at 150°C / max. 24 h.

Stainless steel cored wires are more sensitive to moisture pick up. Therefore the spools are vacuum packed. Storage facilities and redry procedures are the same as for unalloyed and low-alloyed cored wires. For stainless steel cored wires we kindly ask you to pay extra attention to removing the spools at the end of the working period and store them in a conditioned area. In case of need you can redry the wires at 150°C / max. 24 h.

Handling, storage, drying fluxes for submerged arc welding

We recommend to store welding fluxes at a constant temperature in a conditioned area, this to avoid moisture pick-up. The shelf life of welding fluxes can be max. three years if stored properly. Flux in damaged packaging should be used or repacked immediately. To ensure a crack-free usage fluoride-basic fluxes should be dried before usage. Redrying can be avoided in case of usage directly from undamaged, airtight packaging.

TYPICAL REDRYING GUIDELINES SUB-ARC WELDING FLUXES				
Production method	Type	Redrying recommended	Redry temperature °C	Redrying time / h.
Agglomerated flux	FB	Yes	350	2 - 10
	AR	Yes	300	2 - 10
Fused	MS	Yes	150	2 - 500

Redry temperatures as mentioned in the table above are considered to be guidelines only. Redrying in multiple sequences is possible within the mentioned redrying time. Fluxes that are not used immediately after redrying should be stored in a heated area or in an airtight packaging such a hermetically sealable drums. Storage temperature of the heated area should be around 150°C, max. storage period is 30 days. We recommend using a redrying oven where special care should be taken to overheating the flux.