



KUANG TAI

Welding Consumables

Storage & Handling

General

- Welding consumables can meet promised and expected properties when user handles the manufacture's storage and handling recommendations.
- We recommend to follow each validated technical rule, regulation, recommendation and standard during transport, storage and handling.
- Mechanical damage and moisture absorption should be avoided.
- Kuangtai Welding consumables will meet their promised performance and properties for two years when always being stored properly under recommended conditions. When this period is exceeded, a visual inspection and a welding test should be carried out to verify the quality before use them.
- Further information about handling of welding consumables can be found from individual standards.

Precaution

- Welding consumables should be stored in unopened and undamaged original packaging.
- The storage environment must be clean, dust-free, dry and well-ventilated.
- Direct exposure to sunlight has to be avoided.
- Opened pallets should not be stacked to avoid damage of the product packaging.
- Direct contact of the packaging with floor and walls must be avoided.
- Welding consumables must be stored in frost free environment and appropriate measures must be undertaken to avoid temperatures below the dew point.

Stick Electrodes for General Recommendations

- Stick electrodes need to be protected to avoid moisture absorption depending on the type of electrode, the base metal used and the application.
- Stick electrodes in undamaged original packaging need to be stored in a dry environment.
- Recommended storage conditions are 5-50°C and maximum relative humidity of 80%.
- The storage period should not exceed two years.
- The storage management should follow the first in first out principle to avoid the deterioration of stick electrodes.
- Stick electrodes in opened or damaged packaging must be stored separately in higher temperature environment.
- The re-drying time and temperature of stick electrodes before use depends on type, kind of packaging and application. Further information is given on the electrode package.
- Stick electrodes where no re-drying recommendation is given can be dried at 100-120°C for 1 hour.
- Cellulose electrodes do not require re-drying.
- Electrodes exposed directly to water, oil or grease must not be used.

Recommendations

in re-drying conditions for low hydrogen type electrodes

Condition	Preheating	Re-drying
Keep in the air for less than 1 week and no direct touch with water	-	350-400°C
Direct touch with water or keep in high humidity environment	80-105°C	350-400°C

Recommendations

in re-drying conditions for non-low hydrogen type electrodes

Stick electrodes	Re-drying	Time
KT410; KT411	No Recommend	-
KL-524	200-260°C	30-45 mins
KT-403; KT-413; KT-413V; KL-514	150-180°C	20-30 mins

Stick Electrodes for Stainless Steel

- Storage and handling of stick electrodes is similar to that of low hydrogen type.
- Stick electrodes need to be protected to avoid moisture absorption.
- Unless used in dissimilar welding, stick electrodes can not cause the cold cracking after stick electrode is moisture absorption.
- There are blowholes at start or center of the weld when stainless steel stick electrodes pick up enough moisture.
- Stick electrodes should be stored in sealed containers or placed in oven at 120°C.
- Stick electrodes should be baked at 350-400°C for 1hour when blowholes occur during welding.
- Rapid cooling after baking condition may cause coating crack of stick electrodes.

Submerged Arc Welding Flux

- Fluxes can be kept in their unopened original package for up to two years.
- Flux from damaged packages must be used or repacked immediately.
- Fluoride-basic fluxes in original package must be re-dried before use to avoid the risk of hydrogen induced cracking.
- Detailed information about temperature and duration are shown in the following table.

Recommendations in re-drying conditions for submerged arc welding flux		
Type	Re-drying	Time
Fluoride-basic (KF-880)	300-350°C	1-2 hours
Aluminate-basic (KF-550、KF-660、KF990)	300-350°C	1-2 hours
Aluminate-rutile (KF-330)	150-200°C	1-2 hours

Flux Cored Wire

- Flux cored wires can be kept in their unopened original package for up to two years.
- Recommended storage conditions of flux cored wires are 5-50°C and maximum relative humidity of 80%.
- Storage temperature of flux cored wires below the dew point is to be avoided.
- There is a risk of condense water forming on the wire surface when being opened and unpacked in heated environment at storage temperatures below 10°C. This can lead to porosity and pit marks at the beginning of the weld.
- The used wires should be removed from the welding machine and stored in the original package after finishing welding.

Solid wires and TIG rods

- Solid wires and TIG rods can be kept in their unopened original package for up to two years.
- Recommended storage conditions of solid wires and TIG rods are 5-50°C and maximum relative humidity of 80%.
- Storage temperature of solid wires and TIG rods below the dew point is to be avoided.
- There is a risk of condense water forming on the wire surface when being opened and unpacked in heated environment at storage /temperatures below 10°C. This can lead to porosity and pit marks at the beginning of the weld.
- Incorrect handling and storage of solid wires and TIG rods can cause the damage of wire and spools, such as kink, bending or rust forming.