HOBART
FILLER METALS

Product Storage & Handling Guidelines

Introduction

This document has been developed to provide guidelines for the storage and care of Hobart Filler Metals welding wires and rods. When followed, these guidelines will help ensure product performs as intended during and after the storage period, as well as supporting the Hobart Brothers LLC product warranty.

Always consult applicable contract and fabrication documents for additional requirements that may be imposed in your specific welding application.

Hobart Brothers LLC is not responsible for personal, product, or other property damage resulting from improper storage, transportation, set up, or tear down of packaging.

Need Assistance?

For additional questions on the storage and care of Hobart Filler Metals products, please contact the Applications Engineering Department. at 1-800-532-2618 or at Applications.Engineering@HobartBrothers.com

Warranty

Hobart Brothers LLC products are warranted from defects in material and workmanship for a period of (1) year from the time of shipment in its original undamaged and unopened package. For details on the Hobart Brothers LLC product warranty,

please contact our Customer Service department at 1-800-424-1543.

Contents

General Guidelines

The following guidelines are applicable to all Hobart Filler Metals products.

Supplementary guidelines are included in sections specific to a particular product or package type; please note that these supplementary guidelines supersede the general guidelines given in this section. Always consult applicable contract and fabrication documents for additional requirements that may be imposed in your specific welding application and/or superscede the guidelines provided in this document.

While hermetically-sealed or vacuum-packed product provides an extra measure of protection from the storage or welding environment, these guidelines should still be followed to ensure the best possible product performance and warranty support.

Storage

- Wires and rods should be stored in their original, intact packaging when not in use. After removal from original packaging, certain classifications of welding electrodes for SMAW (stick electrodes) may be stored away from the original packaging in a storage oven at elevated temperatures indicated in the "Stick Electrodes" section of this document.
- Wires and rods should be stored in a dry, enclosed environment and preferably at a constant temperature (minimal temperate fluctuation) to prevent them from cycling through dew points.
- The storage condition of unopened product/packaging should be between 40°F (4°C) and 120°F (49°C) with a maximum of 80% humidity, unless specified otherwise.
- Product and packaging should always be stored away from potential sources of damage to the product or packaging such as open flames, sparks from the welding process, or moisture. Sources of moisture include—but are not limited to—rain, snow, spray, humidity, dripping water, condensation, or storing the product in standing water. Moisture contact may significantly affect the product performance and void the product warranty.
- Product moved from colder to warmer environments must be allowed to acclimate to within 10°F (6°C) of the temperature in the welding environment before removal from packaging and use. Acclimation is particularly important when the product is stored at temperatures well below the welding environment temperature. If not acclimated, condensation can form directly on the product if opened in a warm environment while still cold.

Handling

- Avoid contamination of the wire or rod surface with compressed air exhaust, grinding abrasive dust/debris, paint or lubricant overspray, etc.
- Do not use additions to the wire feeding system that intend to "clean" a wire's surface and/or add aftermarket wire lubricants. These additions are often known as wire wipes and/or lubricant pads.

Special Considerations for Handling Pallets and Drum Packaging

Failure to properly handle pallets of product or bulk packaging can create a hazardous situation which, if not avoided, could result in death or serious injury. Proper handling of these heavy loads are explained in the following text:

- Only qualified material handling personnel should perform the lifting/transportation of pallets or bulk packaging.
- Never lift damaged pallets or packaging and/or use damaged equipment or equipment with insufficient capacity.

- Hobart bulk packaging shall be kept vertical during transportation and storage. Never drop, tip, or roll Hobart bulk packaging. Dropping, rolling, or tilting Hobart bulk packaging at any time will increase the likelihood of wire tangles while in use.
- Prior to lifting and transporting, plan a safe route to the destination that minimizes the potential for collisions.
- Always use a lifting device of sufficient capacity that is intended for lifting a pallet or the specific type of bulk wire packaging.
- If the lifting device has a locking device, ensure that the locking device is free of obstructions and is in use.
- Do not perform a single-side lift of bulk packaging. Damage to the wire and drum will occur.
- During lifting, ensure the lifting device is centered over the load to prevent the risk of swinging.
- The load should never be lifted higher than is immediately necessary to clear obstacles. Never walk under the pallet or bulk packaging while it is suspended. Never transport pallets or bulk packaging over the top of personnel in the area.
- Pallets or bulk packaging should never be stacked higher than indicated on package labeling.

Aluminum Wire

In addition to the guidelines indicated in “General Guidelines”, the following guidelines are applicable to the proper storage and handling of MaxalMig® and MaxalTig® aluminum wires and rods.

Storage

- During use, keep welding wires and rods covered at all times.
- Welding wires and rods may be stored in a dry heated room or cabinet until use.
- Wires and rods moved from colder to warmer environments must be allowed to stabilize thermally in (acclimate to) the welding environment for at least 24 hours prior to welding. If not acclimated, condensation can form directly on the wire or rods creating hydrated oxide on exposed surfaces.
- If the filler metal is below the dew point temperature indicated by the intersection of the welding environment’s air temperature and relative humidity shown in the following table, condensation will form on the material causing weld discontinuities.

Air Temp (°F)	Relative Humidity %									
	100	90	80	70	60	50	40	30	20	10
110	110	106	102	98	93	87	80	72	60	41
100	100	97	93	89	84	78	71	63	52	32
90	90	87	83	79	74	68	62	54	43	32
80	80	77	73	69	65	59	53	45	35	
70	70	67	63	59	55	50	44	37		
60	60	57	53	50	45	41	35			
50	50	46	44	40	36					
40	40	37	34							
32	32									

Handling

» Do not lift or transport spools horizontally by a single spool flange. Doing so can bend the flange, leading to wire tangles or less-than-ideal wire feeding.

Shown at left is an example of improper aluminum spool handling. Shown at right is an example of proper aluminum spool handling, whereby both flanges of the spool are supported.

Tubular Wire (Metal Cored & Flux Cored)

In addition to the guidelines indicated in “General Guidelines”, the following guidelines are applicable to the proper storage and handling of Hobart Filler Metals tubular wires.

Hobart Brothers LLC produces the Hobart and Tri-Mark brands of products. When the term “tubular” is used in this document, it refers to Gas-Shielded Flux Cored, Self-Shielded Flux Cored, and Metal-Cored products in the Hobart and Tri-Mark brands. Metal cored wires refers to those wires used for both GMAW and SAW.

Storage & Reconditioning

» Hobart Brothers LLC tubular electrodes are not recommended to be stored in a storage or drying/reconditioning oven at elevated temperatures as these temperatures can cause changes in the electrode performance.

Stick Electrodes

In addition to the guidelines indicated in “General Guidelines”, the following guidelines are applicable to the proper storage and handling of Hobart Filler Metals stick electrodes.

Storage and Use of Product Within Unopened Packaging

Product within unopened packaging should be stored in accordance with the “General Guidelines” provided in this document. Extra care should be taken to maintain the integrity of the original packaging; welding electrodes may be damged by atmospheric moisture when stored in damaged packaging. Damaged packaging permits entry of damp air which may be picked up by the product and lower its quality.

For product not supplied in hermetically-sealed packaging (ex. cartons or plastic pacs), users should perform a reconditioning cycle of all product within the packaging before use. The specific time and temperature of this reconditioning cycle is indicated under the “reconditioning” heading of this section respective to the electrode type/classification being used. After this reconditioning cycle, users should then consider immediately storing unused product in accordance with the conditions indicated in “Storage of Product After Removal from Packaging”.

Product stored in packaging having a hermetic seal may be used from unopened packaging without the need for this initial reconditioning cycle. However, users should consider immediately storing unused product in accordance with the conditions indicated in “Storage of Product After Removal from Packaging”.

Storage of Product After Removal from Packaging

The following table recommends proper storage conditions of product removed from hermetically sealed packaging and product removed from packaging without a hermetic seal that has undergone an initial reconditioning cycle. These storage conditions may necessitate the use of an oven. Before oven storage, remove any packaging that may be damaged within the environment of the storage oven.

Item Designation	Storage
Mild Steel & Low Alloy Cellulosic – E6010, E6011, E7010, E8010	Dry at room temperature
Mild Steel – E6013, E6022, E7014, E7024	100°– 130°F (40°– 55°C)
Mild Steel & Low Alloy Low Hydrogen – E7018, E8018, E9018, E11018	250°F – 300°F (120°– 150°C)
Stainless Steel Stick Electrodes Sterling AP & AC/DC (AWS-16) Sterling (AWS-17)	225°F – 260°F (108°– 125°C)
Hardalloy® Surfacing	225°F – 260°F (108°– 125°C)

The instruction, “Dry at Room Temperature” in the table signifies that the humidity should be below 70% and the temperature should be within the limits 40°F to 120°F (4°C to 50°C). Humidity below 50% should be avoided for E6010, E6011, E6012 and E6013 electrodes. At no time should the E6010, E6011, E6012, and E6013 classes of electrodes be stored in an oven above 130°F (55°C).

Reconditioning

Welding electrodes may be damaged by atmospheric moisture. The following table recommends proper time and temperature

for reconditioning electrodes that have absorbed excess moisture or exceeded the allowable atmospheric exposure time provided by a welding/fabrication code or specification.

Before oven reconditioning, remove any packaging that may be damaged within the environment of the reconditioning oven.

Item Designation	Reconditioning
Mild Steel & Low Alloy Cellulosic – 6010, 6011, 7010, 8010	Not recommended
Mild Steel – 6013, 6022, 7014, 7024	250°F – 300°F, 1 hour (120°– 150°C)
Mild Steel & Low Alloy Low Hydrogen – 7018, 8018, 9018, 11018	500°F –800°F, 1-2 hours (260°– 425°C)
Stainless Steel Stick Electrodes Sterling AP & AC/DC (AWS-16) Sterling (AWS-17)	500°F – 600°F, 1 hour (260°– 315°C)
Hardalloy® Surfacing	450°F – 600°F, 1 hour (235°– 315°C)

Submerged Arc Fluxes

In addition to the guidelines indicated in “General Guidelines”, the following guidelines are applicable to the proper storage and handling of Hobart Filler Metals submerged arc welding fluxes.

Storage

Make sure that the packaging cannot get damaged. In case the original packaging gets damaged, flux shall be re-packed in sealed containers and stored under controlled climatic conditions of 15–35°C (60–95°F) and maximum 70 percent relative humidity, for a maximum period of one year.

At shift end, flux from unprotected flux hoppers and from opened packs shall be stored in a drying cabinet or heated flux hopper at 150°C ± 25°C (300°F ± 45°F).

Recycling

During continuous welding operations, unused flux can be recycled and returned to the flux hopper for reuse. Maintain compressed air in the recycling system, free from moisture and oil. Remove slag and mill scale from the recycled flux. Add at least one part of new flux to three parts of recycled flux after flux has been recirculated three times.

Reconditioning

For hydrogen critical applications, any flux suspected of having picked-up moisture must be re-dried at a temperature of 300–350°C (570–660°F) for a minimum of two hours. Re-drying time starts when the entire quantity of flux has reached 300°C (570°F). Re-dried flux must be stored at 150°C ± 25°C (300°F ± 45°F) before use.

For hydrogen critical applications, flux reconditioning is suggested for product supplied in either paper or plastic-foil packaging.

Disposal

Hobart recommends that all fluxes be disposed of according to applicable local, state and federal regulations. Typically, fluxes are considered a “Special Waste” or “Industrial Solid Waste” by most disposal facilities. We recommend that end-users contact their local disposal facility to determine if a waste profile and laboratory analysis are required to determine the proper method of disposal. A local disposal facility can also advise on paperwork and tracking required for proper disposal.