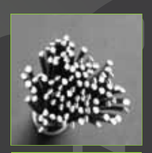
Rod ST 2000 Catalogue



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ARMOUR Brazing Rod ST 2000

ARMOUR GROUP
The Name You Can Rely On

Brazing Rod

General advantages of brazing:

- Suitable for joining thin walled parts.
- Suitable for compact parts with many joining spots per area unit.
- Suitable for large area joints.
- Suitable for joining with low distortion and without local superheat; maintains integrity of base materials.
- Suitable for constructions and materials which do not allow reaching the melting T of the base materials.
- Dissimilar metals easily joined: Al-steel; Al-Ti; Al-Mg ...
- Allows joining and heat treatment in one process step for many materials.
- Process easily automated.
- Strong and waterproof joints, owing liquids like oils, water and coolant used at high operative pressures.
- High heat transfer effectiveness allows weight reduction.
- Cost effective, no need for heavy equipmen.

Introduction to Brazing

Brazing is a metal joining process that uses the principle of capillary action to distribute the molten filler metal between the surfaces of the base metals. Capillary action will work properly only when the surfaces of the metals are clean. If they are "contaminated" - coated with oil, grease, rust,scale or just plain dirt - those contaminants has to be removed to ensure a sound, strong, neat-appearing joints. Successful aluminium bonding requires prior removal of the oxide layer. All aluminium surfaces have a thin, but dense and tough oxide layer. In the presence of oxygen, this oxide layer rebuilds immediately after having been removed. As it prevents the filler metal from wetting the aluminium parts to be brazed, the oxide layer has to be removed or broken up during the brazing process. Cleaning the metal parts is seldom a complicated job, but it has to be done in the right sequence.

Preparation & Procedures :

Preparation

Step 1: Cut pipe to desired length

Unroll Armour Aluminium tube and cut to the exact length required using a tube cutter. Always check and ensure cutting blades are sharp enough to give a clean cut. Cut pipe square and if tube is out of shape, it should be brought back to true dimension and roundness with a sizing tool.

Step 2: Clean the components & remove all contamination

Remove all inside and outside burrs with a reamer, file, or other sharp edge scraping tool. Clean tube end and inside surface of fitting.The joint surface areas should be clean and free from oil, grease, and Remove all inside and outside burrs with a reamer, file, or other sharp edge scraping tool. Clean tube end and inside surface of fitting. The joint surface areas should be clean and free from oil, grease or oxide contamination. Surface may be properly cleaned by stiff rubbing with emery cloth or steel cloth. Remember to remove small foreign particles such as emery dust, by wiping with a clean dry cloth. It is important to ensure the cleanliness for a better joint.

Tools Required:
Tube cutter, emery cloth or steel cloth, reamer of file.

Procedures

Step 1: Recommended Brazing Alloy

Selection of brazing alloy is of primary importance to ensure a tight and leak free seal. Whether it is of dissimilar material such as brazing Alu-Cu or Alu-Alu, Armour Brazing Rod ST2000 is highly recommended. It's specially formulated content has the ideal amount of flux prepared for the filler alloy to join the metal work pieces in speedy time.

Step 2: Recommended Brazing Alloy

Aluminium does not require heavy heating or large equipment due to its low melting point and the tip is to maintain a low and constant temperature. Armour Brazing Torch with butane cylinder gas is highly recommended to further enhance the cost effectiveness of brazing Aluminium. Achieving an even temperature distribution of 450-500°C. Start heating the tube and keep the torch at a distance between 15-20mm and always keep the torch in short motions. Flame should be applied at a point just adjacent to the fitting and work the flame alternatively around the tubes until both reach brazing temperature before applying the brazing fillers.

Step 3: Placement of blow torch and brazing rod

Pull the torch slightly back to about 25-30mm and apply the brazing rod at an angle of 10-15 degree. Take note that only after the base metal has been heated to brazing temperatures should the filler be added. The flame may be detected momentarily to the tip of the filler metal to begin the melting process. Always keep both the fitting and the tube heated by placing the flame on the tube as the brazing rod is drawn towards the joint. he brazing alloy will diffuse and completely fill all joint areas.

Step 4: Cooling Frame

Allow joint to cool off for at least 4-7mins depending on size and area of joint. Filler and base material must be left to fuse without movement. All fluxes residues must be removed for inspection immediately after the brazing alloy has set. Use emery cloth or a wire brush whenever necessary.
In spite of the above procedures and cautions, we have noted the art of brazing is relatively simple and the rules are common sense. With more practise, brazing aluminium can be 5 times faster than brazing other alloy. However, there may be occasions whereby technicians and installers failed to perform the procedures correctly and things go wrong, so the only remedy is through practise and to understand Aluminium's temperature window.

Statement of Liability