

## Furseweld Exothermic Welding System

### FURSEWELD EXOTHERMIC WELDING TRAINING NOTES

#### 1. CLEANING OF CONDUCTORS

The surfaces of all conductors to be weld must be clean, dry & bright. Oil and grease may be burned out with a butane/acetylene torch. After cleaning use a cable brush to remove any residue and brighten the surfaces.

#### 2. PREPARATION OF CONDUCTORS

Corroded cable must be cleaned as above. Bent or out-of-round cable will hold the mould open and cause leaks; therefore, the cable must be straightened before clamping the mould into place.

Bar, Tube, & Lugs require the removal of oxides using a file, emery cloth or a card brush

Steel & cast iron surfaces require the removal of rust and scale using a rasp, coarse file or a grinder (do not use a resin-bonded wheel)

Galvanised surfaces may be cleaned with emery cloth to remove oxide film

Earth rods that are threaded, mushroomed or tapped at the ends require the end to be cut off

Steel rail must be cleaned with a grinder to remove mill scale and rust

#### 3. WELDING PROCEDURE

##### **Step 1**

Position the cleaned conductors in the mould after ensuring the mould is dry by pre-heating or making a test joint. Lock the mould with the correct handle clamp; if the mould does not close properly adjust the clevis nuts attached to the handles.



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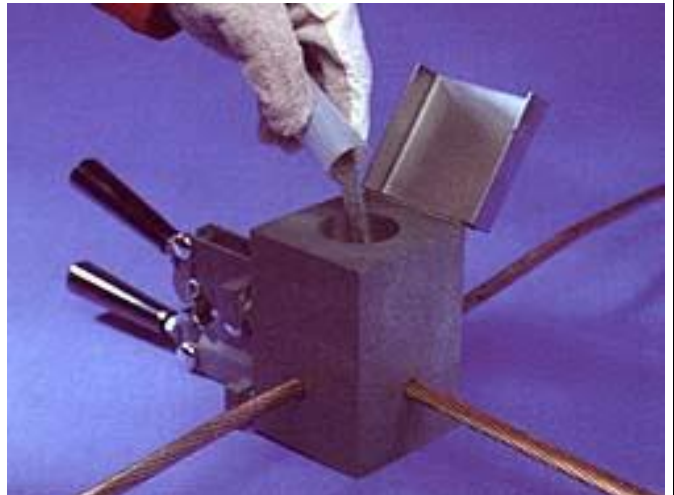
### Step 2

Insert the steel disk into the mould crucible; ensuring it is centred over the tap hole.



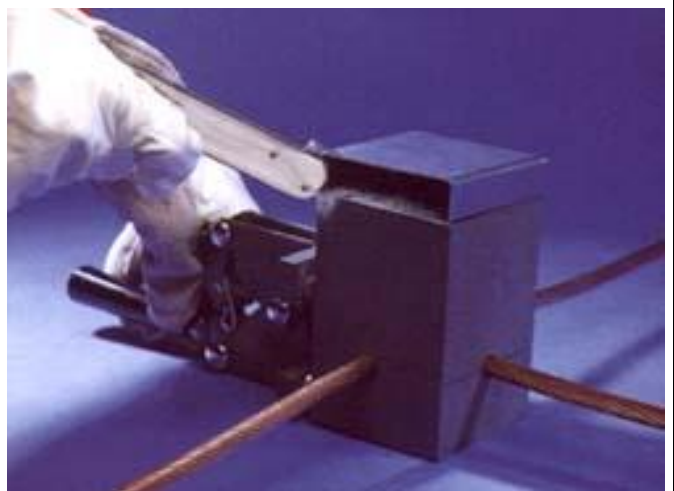
### Step 3

Dump the welding powder into the crucible (**do not pour**); the starting powder will be retained in the base of the cartridge. To loosen the starting powder, replace the cap and tap the cartridge on the ground.



### Step 4

Spread the starting powder evenly over the top of the welding powder ensuring a small amount is placed on top edge of the mould (aperture side of the lid).



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### Step 5

Close the lid and ignite the starting powder with the flint gun; pull the gun away immediately to prevent fouling the flint. Wait a few seconds and lift the lid; then observe the contents of the crucible.



### Step 6

When the contents have dulled in appearance the mould can be opened.



**If continuous welding is anticipated it is suggested multiples of moulds should be used; i.e. 2 or 3 moulds. This will give the moulds time to cool down between welds**

### **4. CLEANING OF MOULDS**

Before using the mould again the mould must be cleaned correctly. Use a crucible cleaning tool to clean the mould crucible of slag and dust. Clean the rest of the mould with a sort bristle brush (paint brush),

**\*Do not clean the mould with any other tool.**



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### **SAFE WORKING PRACTICE**

#### **POTENTIAL HAZARDS**

AS WITH ALL FORMS OF WELDING THE POTENTIAL HAZARDS ARE: -

- 1 FIRE
- 2 ACCIDENTAL CONTACT WITH HOT WORK
- 3 SPATTER OF MOLTEN METAL
- 4 EYE IRRITATION
- 5 THOAT/CHEST IRRITATION

#### **PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

THE FOLLOWING SHOULD ALWAYS BE WORN: -

- 1 GLOVES
- 2 EYE PROTECTION
- 3 BOOTS
- 4 HELMET

#### **PROCEDURE**

- 1 FURSEWELD MATERIALS MUST BE STORED IN A DRY AND SECURE PLACE
- 2 ONLY TAKE ON TO SITE SUFFICIENT MATERIALS TO GIVE CONTINUITY OF WORK
- 3 FULLY DISCUSS THE OPERATION WITH THE CLIENT INCLUDING SITE FIRE PRECAUTIONS
- 4 WEAR ALL THE ABOVE LISTED PERSONAL PROTECTIVE EQUIPMENT AND ANY OTHER EQUIPMENT WHICH MAY BE REQUIRED
- 5 DO NOT USE FLAME OR HEAT NEAR FLAMMABLE SUBSTANCES OR ATMOSHERES; THIS WILL INCLUDE THE FOLLOWING: PAINTS, SOLVENTS, OILS, PETROLEUM, DIESEL, GASSES, PAPER, RAGS

#### **IT IS IMPORTANT TO:**

- 1 ENSURE THE MOULD IS NOT DAMP AS IGNITION IN A DAMP MOULD MAY CAUSE SPLASH BACK OF HOT METAL
- 2 IT IS THEREFORE, ESSENTIAL TO ENSURE THAT A DAMP MOULD IS DRIED BY THE APPLICATION OF HEAT, E.G. BY A GAS FLAME OR BY THE TEST FIRING OF A FUSEWELD POWDER (WITH THE USE OF THIS TYPE OF MOULD DO NOT TEST IN A EMPTY MOULD)
- 3 THE MOULD LID MUST BE SECURELY IN PLACE BEFORE FIRING
- 4 CARRY OUT THE JOINTING AS PER INSTRUCTIONS