

# WELDING AGRITUF 25% HIGH CHROME IRON ONTO MILD STEEL BACKING PLATE



## INSTRUCTION GUIDE FOR AGRICULTURAL APPLICATIONS

25% high chrome iron (also known as high chromium white iron) is a highly wear-resistant alloy, commonly used in ground engaging parts for agriculture, as well as in mining and cement industries. Its high chromium content gives excellent abrasion resistance, but it can be prone to cracking during welding if not handled correctly. Following the right welding procedures is essential maximizing performance of this wear protection chrome.

### SAFETY PRECAUTIONS

- Always wear appropriate PPE: welding helmet, gloves, flame-resistant clothing, and safety glasses.
- Ensure adequate ventilation to avoid inhaling fumes.
- Follow all site-specific safety protocols.

### PREPARATION

#### 1. Material Identification

- Confirm that the Agrituf chrome part will be fully supported by a backing plate before welding.

#### 2. Cleaning

- Remove all dirt, grease, paint, and oxides from the weld area using a grinder or wire brush.

#### 3. Preheating

- Preheating the chrome casting to 400–600°F (200–315°C) is highly recommended. This helps reduce thermal shock and minimizes the risk of cracking. If preheating is not possible, use even lower heat input and shorter weld beads to help control heat.

#### 4. Joint Design

- For thicker sections, use a V-groove or U-groove joint. Maintain a root opening of  $\frac{1}{16}$ – $\frac{1}{8}$ " (2–3mm) to ensure full penetration. For thinner materials, a simple butt joint with a small gap may be sufficient.

### WELDING PROCEDURE

#### 1. Welding Process

- Shielded Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW/MIG) are both suitable for welding Agrituf Chrome.
- Use low heat input and straight stringer beads (avoid weaving) to minimize dilution and reduce the risk of cracking.
- Limit each weld bead to 4" (100mm) at a time to control heat.

#### 2. Cooling

- After welding, cool the part slowly. Cover with insulating blankets or bury in dry sand to avoid rapid cooling and thermal shock.

### POST-WELD TREATMENT

#### Inspection

- Visually inspect the weld for major cracks. Some small cracking on the edge of the chrome casting is common and usually does not affect workability, as long as the chrome casting is fully supported by the backing plate. Ideally the backing plate should extend at least  $\frac{1}{4}$ " (6mm) beyond the chrome casting in all directions for proper support.

**Please note:** This guide is for informational purposes only. Welding should be done by qualified personnel. If you need further advice, please contact a professional welder or engineering shop. Agrituf is not responsible for any damage or injuries resulting from the use of this guide.

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