

# POSTLE INDUSTRIES, INC.

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Data Sheet

## POSTALLOY® 54-FCG

### Description

The deposits chemistry of **POSTALLOY 54-FCG** is similar to that of cast iron, and can be used for build-up or joining a variety of cast iron parts. The welded section is best described as a re-casting of the defective area.

Since the expansion and contraction rate of **POSTALLOY 54-FCG** is very close to cast iron, it is ideal for repairing thermally cycled parts, such as engine components, furnace doors, and ingot molds. **POSTALLOY 54-FCG** has similar mechanical properties and will rust the same as cast iron, making it ideal for repairing parts that need a perfect color match, such as foundry defects.

Weld repairs with **POSTALLOY 54-FCG**, when properly preheated, are fully machinable without hard spots. These benefits combined with a nickel-free weld deposit make **POSTALLOY 54-FCG** a very sound, economical alternative to traditional welding methods and materials.

### Welding Parameters - Use DC Reverse Polarity.

Diameter	1/16"(1.6mm)
Current <i>amps</i>	240-270
Voltage (DCRP) <i>volts</i>	28-31
Gas Flow <i>cfh (l/hr)</i>	100% Co <sub>2</sub>

The key to making a successful repair is to control the cooling rate through proper preheat and postheat. Ideally the entire part should be preheated from 700°-1100°F to help relieve expansion and contraction stresses that buildup during the welding process. This is especially important if the part is complex with many different thicknesses and/or cross members. In some cases a localized or tapered preheat may be used, with a full preheat in the weld vicinity.

Whether the entire part is preheated or a localized preheat is used, the following guidelines will ensure that the welded zone is fully machinable.

1. The hardness and grain structure of the weld area is determined during the first three or four minutes after welding. If the weld area cools from a "white heat"(2200°F) to a "black heat"(1000°F) within one minute, a hard white iron zone will likely develop. This can be avoided by using gas torches on the weld area immediately after breaking the arc. This will help retard the cooling rate.
2. The weld area must be kept a light cherry color(1600°F) for a period of 2 to 3 minutes and cooled slowly to a "black heat"(1000°F). When finished apply thermal blankets to help maintain a slow cooling rate.
3. Depending on your application an oven stress relief, before the casting is allowed to cool, at 1100°F may be desirable.

### Packaging

Diameter	1/16"(1.6mm)
25 lb spools	Available