



METHOD OF MANUFACTURING A
NICKEL-BASE ALLOY WELDING FILLER METAL

ABSTRACT

5 A welding filler metal (52) is manufactured by casting a nickel-base alloy as an
extrusion rod (40) having a diameter of from about 5 mm (0.2 inch) to about 13 mm (0.5
inch). The extrusion rod (40) has at least about 12 grains in the cross section of the
extrusion rod (40). The extrusion rod (40) is extruded in a single extrusion operation to
a filler-metal diameter of less than about 2 mm (0.1 inch) and using an areal extrusion
ratio of at least about 9:1 to form the welding filler metal (52). Preferably, the process
10 is used to make a nickel-base superalloy welding filler metal (52) of a diameter of about
1.3 - 1.5 mm (0.05-0.06 inch) from an extrusion-rod casting of about 6 mm (1/4 inch)
diameter and having at least about 12 grains in the cross section.

15 Fig. 2