

REPAIR AND RECLASSIFICATION OF SUPERALLOY COMPONENTS

ABSTRACT

[0046] Novel materials and methods for repairing/reclassifying superalloy components are described herein. These materials are non-traditional blends of materials having a much higher base material content than traditional repair/reclassification materials. In embodiments used to repair/reclassify nickel-based components, these materials may comprise about 5-18.9 weight percent of a low melting point alloy and about 81.1-95 weight percent of a base material. In embodiments used to repair/reclassify cobalt-based components, these materials may comprise about 15-30 weight percent of a low melting point alloy and about 70-85 weight percent of a base material. These materials can be used to repair surface defects and/or build up worn or eroded areas of a component to meet precise dimensional and metallurgical requirements. These materials create robust repaired components having a dense, isothermally solidified structure having minimal borides and a high re-melt temperature.