

METHOD FOR APPLYING OR REPAIRING THERMAL BARRIER COATINGS

ABSTRACT

A method applying a thermal barrier coating (150) to a metal substrate (100), or for repairing a thermal barrier coating (128) previously applied by physical vapor deposition to an underlying aluminide diffusion coating (106) that overlays the metal substrate (106). The aluminide diffusion coating (106) is treated to make it more receptive to adherence of a plasma spray-applied overlay alloy bond coat layer (142). An overlay alloy bond coat material is then plasma sprayed on the treated aluminide diffusion coating (136) to form an overlay alloy bond coat layer (142). A ceramic thermal barrier coating material is plasma sprayed on the overlay alloy bond coat layer (142) to form the thermal barrier coating (150). In the repair embodiment of this method, the physical vapor deposition-applied thermal barrier coating (128) is initially removed from the underlying aluminide diffusion coating (106).

Figure 6