

The invention relates to the mechanical engineering, and particularly to compositions of multilayer thermobarrier coatings of part of elements of gas turbine engines. In the first embodiment the system of thermobarrier coating for component of superalloy comprises a base of superalloy able to form an adherent layer from aluminum oxide, and bond coating applied on the local surface of the base, at that a part of the base remains uncovered, and adherent layer of aluminum oxide formed on the uncovered part of the base and on bond coating, and ceramic layer applied on the coat of aluminum oxide. In the second embodiment the system comprises the base of super alloy applied on the base, and bond coating of MCrAlY, where M is selected of the group comprising nickel, cobalt, iron or combinations thereof, which is applied on the local surface of aluminide coating so that a part of the aluminide coating remains uncovered. At that on the aluminide coating and bond coating of MCrAlY an adherent layer of aluminum oxide is formed on which a ceramic layer is applied. In the third embodiment the system comprises the base of super alloy, bond coating of MCrAlY, applied on the local surface of the base in such a way that a part of the base remains uncovered, and the aluminide coating applied on the uncovered part of the base and nonbonding coating. Furthermore, on the aluminide coating and on the bond coating of MCrAlY the adherent layer of aluminum oxide is formed, on which coat a ceramic layer is applied. A process for the manufacture of the component of superalloy with coating comprises making the base of superalloy the material of which is able to form an adherent layer of aluminum oxide, application of the bond coating on at least one local surface of the base in such a way that the second part of the base remains uncovered. Then an adherent layer of aluminum oxide on a part of the base remained uncovered and on the bond coating being formed. Thereafter the layer of ceramic material is applied on the coat of aluminum oxide. As alternative the component comprises the aerodynamic profile having front and rear edges. The bond coating is applied on at least one of the edges of an aerodynamic profile. The thickness of the bond coating is at least 0.13 mm, namely the coating is applied on at least 50% of the base. The invention provides the reduction of weight of the component of super alloy with coating keeping the given life time of the component.