Claims

1. A method for filling cooling holes in a component of a gas turbine engine, the component having an outer surface and an inner surface and a plurality of first cooling holes, the plurality of first cooling holes extending between the outer surface and the inner surface of the component, the method comprising:

removing a first thermal barrier coating from the outer surface of the component;

filling the plurality of first cooling holes with a filling agent;

removing excess filling agent from the outer surface of the component to level the outer surface of the component;

curing the filling agent to block the plurality of first cooling holes;

applying a second thermal barrier coating on the outer surface of the component and completely covering the cured filling agent; and

installing a plurality of second cooling holes, the plurality of second cooling holes penetrating through the second thermal barrier coating and extending between the outer surface and the inner surface of the component.

2. The method of claim 1 wherein the first thermal barrier coating comprises a first ceramic top coating overlying a first metallic bond coating.

3. The method of claim 1 wherein the second thermal barrier coating comprises a second ceramic top coating overlying a second metallic bond coating.

4. The method of claim 1 wherein the step of curing the filling agent to block the plurality of first cooling holes obstructs cooling fluid flow through the plurality of first cooling holes.

5. The method of claim 1 wherein the filling agent is a ceramic paste.

6. The method of claim 5 wherein the ceramic paste is waterglass.

7. The method of claim 5 wherein the filling agent comprises a metal alloy powder to provide surface uniformity between the plurality of filled first cooling holes and the component.

8. The method of claim 5 wherein the filling the plurality of first cooling holes with the filling agent is performed by dipping the component in the filling agent.

9. A method for filling cooling holes in a component of a gas turbine engine, the component having an outer surface and an inner surface and a plurality of first cooling holes, the plurality of first cooling holes extending between the outer surface and the inner surface of the component, the method comprising the steps of:

removing a first thermal barrier coating from the outer surface of the component;

filling the plurality of first cooling holes with a filling agent;

curing the filling agent to block the plurality of first cooling holes;

applying a second thermal barrier coating on the outer surface of the component and completely covering the cured filling agent;

installing a plurality of second cooling holes, the plurality of second cooling holes penetrating through the second thermal barrier coating and extending between the outer surface and the inner surface of the component.

10. The method of claim 9 wherein the filling agent is a ceramic paste.