WHAT IS CLAIMED IS:

1. A method of forming a coating system (22) on a surface (13) of a superalloy component (5) having film holes (15) defined therein, the method comprising:

applying NiCoCrAlY on the surface (13) of the superalloy component (5) to form a NiCoCrAlY layer (20) while keeping the film holes (15) open, wherein the NiCoCrAlY layer (20) has a chromium content that is higher than the superalloy component (5);

thereafter, heating the NiCoCrAlY layer (20) to a treatment temperature of 900 °C to 1200 °C;

thereafter, forming a platinum-group metal layer (30) on the NiCoCrAlY layer (20); and

thereafter, forming an aluminide coating (34) over platinum-group metal layer (30).

2. The method as in claim 1, wherein the NiCoCrAlY layer (20) is heated to a treatment temperature of 1000 °C to 1100 °C.

3. The method as in either of claim 1 or 2, wherein the NiCoCrAlY layer (20) is heated to the treatment temperature for 30 minutes to 5 hours.

4. The method as in any preceding claim, wherein up to 30% of thickness of the NiCoCrAlY layer (20) diffuses into the surface (13) of the superalloy component (5).

5. The method as in claim 4, wherein 5% to 25% of thickness of the NiCoCrAlY layer (20) diffuses into the surface (13) of the superalloy component (5).

6. The method as in either of claim 4 or 5, wherein, after heat treatment, the NiCoCrAlY layer (20) has a thickness extending from the surface (13) of 10 μm to 100 μm

while keeping the film holes (15) defined within the surface (13) of the superalloy component (5) open.

7. The method as in claim 6, wherein, after heat treatment, the NiCoCrAlY layer (20) has a thickness extending from the surface (13) of 25 μm to 50 μm while keeping the film holes (15) defined within the surface (13) of the superalloy component (5) open.

8. The method as in any preceding claim, wherein the NiCoCrAlY layer (20), prior to forming the platinum-group metal layer (30), has a composition comprising, by weight percent, 16% to 20% Cr, 9% to 11% Al, 19% to 24% Co, 0.05% to 0.2% Y, up to 0.5% Hf, up to 1% Si, and the balance Ni.

9. The method as in claim 8, wherein the NiCoCrAlY layer (20), prior to forming the platinum-group metal layer (30), has a composition comprising, by weight percent, 17% to 19% Cr, 9.5% to 10.5% Al, 21% to 23% Co, 0.07% to 0.15% Y, 0.05% to 0.3% Hf, 0.5% to 0.9% Si, and the balance Ni.

10. The method as in any preceding claim, further comprising:

after forming the platinum-group metal layer (30), heating the platinum-group metal layer (30) to a second heat treatment temperature of 900 °C to 1200 °C.

11. The method as in claim 10, further comprising:

after forming the platinum-group metal layer (30), heating the platinum-group metal layer (30) to a second heat treatment temperature of 1000 °C to 1100 °C.

12. The method as in any preceding claim, wherein the surface (13) of the superalloy component (5) defines a plurality of film holes (15) therein, and wherein the film holes (15) remain open after applying NiCoCrAlY on the surface (13) of the superalloy component (5) to form a NiCoCrAlY layer (20).

13. The method as in any preceding claim, wherein the aluminide coating (34) is deposited to a thickness of 25 µm to 100 µm.

14. The method as in any preceding claim, further comprising:

after forming the aluminide coating (34), forming a thermal barrier coating (36) over the bond coating.

15. The method as in any preceding claim, further comprising:

prior to applying the NiCoCrAlY on the surface (13), removing at least a portion of an existing coating system (22) on the surface (13) of the superalloy component (5).