[0022] A further embodiment may additionally and/or alternatively include the blade comprising a nickel-base superalloy.

[0023] A further embodiment may additionally and/or alternatively include the blade comprising a single crystal or directionally solidified microstructure extending across two zones of different composition and a transition therebetween.

[0024] A further embodiment may additionally and/or alternatively include the blade having a density variation of at least 3%.

[0025] A further embodiment may additionally and/or alternatively include the blade having a density variation of 6-10%.

[0026] A further embodiment may additionally and/or alternatively include the introducing and varying comprising a bottom-feed pour followed by at least one top feed pour.

[0027] A further embodiment may additionally and/or alternatively include the introducing and varying comprising a series of top feed pours without any bottom-feed pour.

[0028] A further embodiment may additionally and/or alternatively include the introducing and varying comprising introducing a first alloy to a mold cavity via along a first flow path through a first port and introducing a second alloy, differing in composition from the first alloy, to the mold cavity along a second flow path through a second port but not through the first port.

[0029] A further embodiment may additionally and/or alternatively include the first flow path and second flow path partially overlapping along a portion of a downsprue.

[0030] A further embodiment may additionally and/or alternatively include the first flow path passing through a grain starter and the second flow bypassing the grain starter.

[0031] A further embodiment may additionally and/or alternatively include the first alloy having solidified to block the first port by the time the second alloy is introduced.

[0032] A further embodiment may additionally and/or alternatively include the introducing and varying further comprising introducing a third alloy, differing in composition from the first alloy and second alloy, to the mold cavity along a third flow path through a third port but not through the first port or second port.

[0033] Another aspect of the disclosure involves an alloy comprising, by weight percent: nickel as a largest content; 4.5-8.5 Cr; 0.5-1.5 Mo; ~~2-5-3.5 W;~~ 2.5-3.5 W; 1.5-2.5 Ta; 5.5-7.5 Al; 4.5-5.5 Co; 0-4.0 Re; and 0.05-0.20 Hf.

CLAIMS

~~What is claimed is:~~

1. A component comprising:

a component body including at least a first section of a first material and a second section of a second material that differs from the first material in composition, the first section and the second section being metallurgically bonded to each other in a boundary zone (540; 540-1, 540-2) having a mixture of the first material and the second material.

2. The component of claim 1 wherein the component body further comprises:

a third section of a third material that differs from the first material and the second material, the third section and the second section being metallurgically bonded to each other in a boundary zone (540-2; 540-1) having a mixture of the third material and the second material.

3. The component~~, gas turbine engine component, gas turbine engine or method related thereto,~~ of claim 2 wherein:

the first material is a Group C alloy of Table I or an alloy having a compositional range for a Group C alloy above;

the second material is a Group A alloy of Table I or an alloy having a compositional range for a Group A alloy above; and

the third material is a Group B alloy of Table I or an alloy having a compositional range for a Group B alloy above.

4. A method of casting, comprising:

introducing a first molten alloy into a mold (210);

partially solidifying the first molten alloy to form a solidified section, with a remaining molten portion on the solidified section; and

introducing a second molten alloy into the mold such that the remaining molten portion and the second molten alloy at least partially mix, the first molten alloy and second molten alloy differing in chemistry.

26. The method of claim 24 wherein:

the first flow path passes through a grain starter (256) and the second flow path bypasses the grain starter.

27. The method of claim 24 wherein:

the first alloy has solidified to block the first port by the time the second alloy is introduced.

28. The method of claim 24 wherein:

the introducing and varying further comprise:

introducing a third alloy, differing in composition from the first alloy and second alloy, to the mold cavity along a third flow path through a third port but not through the first port or second port.

29. An alloy comprising, by weight percent:

nickel as a largest content;

4.5-8.5 Cr;

0.5-1.5 Mo;

~~2.5-3.5 W;~~ 2.5-3.5 W;

1.5-2.5 Ta;

5.5-7.5 Al;

4.5-5.5 Co;

0-4 Re; and

0.05-0.20 Hf.

30. The alloy of claim 29 comprising, by weight percent:

5-8 said Cr; and

0.5-1.0 said Mo.

31. The alloy of claim 29 consisting essentially of said composition.

32. The alloy of claim 29 further comprising no more than trace amounts of other elements, if any.

33. The alloy of claim 29 used along a first portion of a blade airfoil, with a denser and/or less oxidation resistant alloy along a second portion of the airfoil inboard of the first portion.

34. The alloy of claim 29 used along a first portion of a blade airfoil, with an at least 5% denser alloy along a second portion of the airfoil inboard of the first portion.

35. An alloy comprising, by weight percent:

nickel as a largest content;

~~5-8.Cr;~~ 5-8 Cr;

0.5-1.0 Mo;

~~2-5-3.5 W;~~ 2.5-3.5 W;

1.5-2.5 Ta;

5.5-7.5 Al;

4.5-5.5 Co;

0-4 Re; and

0.05-0.20 Hf.