WHAT IS CLAIMED IS:

1. A method for modifying a composite component, comprising:

positioning a barrier segment between an infiltrated segment of the composite component and a green segment to form an assembly, wherein a particle size distribution varies from the barrier segment to the green segment; and

initiating an infiltration process,

wherein the barrier segment has a barrier segment permeability that is lower than an infiltrated segment permeability of the infiltrated segment, a green segment permeability of the green segment, or both the infiltrated segment permeability and the green segment permeability.

2. The method of claim 1, wherein the particle size distribution varies from smaller particles in the barrier segment to larger particles in the green segment.

3. The method of claim 1, wherein the composite component is a ceramic matrix composite (CMC) component, and wherein the infiltration process is a silicon infiltration process.

4. The method of claim 3, wherein the silicon infiltration process is a melt-infiltration process.

5. The method of claim 3, wherein initiating the infiltration process comprises positioning a source of silicon in contact with at least the green segment.

6. The method of claim 5, wherein initiating the infiltration process further comprises disposing the assembly and the source of silicon in a furnace and raising a temperature within the furnace above a melting point of silicon.

7. The method of claim 1, wherein the infiltrated segment was infiltrated prior to initiating the infiltration process such that initiating the infiltration process comprises initiating a second infiltration of the infiltrated segment.

8. The method of claim 1, wherein the barrier segment permeability is one-half or less of the green segment permeability.

9. A method for modifying a composite component, comprising:

positioning a barrier segment between an infiltrated segment of the composite component and a green segment to form an assembly; and

initiating an infiltration process,

wherein the barrier segment has a barrier segment permeability that is lower than an infiltrated segment permeability of the infiltrated segment, a green segment permeability of the green segment, or both the infiltrated segment permeability and the green segment permeability, and wherein the barrier segment permeability is a reactive permeability such that the barrier segment permeability is lower when the barrier segment reacts during the infiltration process.

10. The method of claim 9, wherein the reactive permeability of the barrier segment is lower than a reactive permeability of the green segment.

11. A method for modifying a ceramic matrix composite (CMC) component, comprising:

positioning a barrier segment between an infiltrated segment of the CMC component and a green segment, wherein a particle size distribution varies from the barrier segment to the green segment;

positioning a source of silicon in contact with the green segment; and

initiating a melt infiltration process,

wherein the barrier segment has a reactive permeability lower than a reactive permeability of the infiltrated segment, a reactive permeability of the green segment, or both the reactive permeability of the infiltrated segment and the reactive permeability of the green segment.

12. The method of claim 11, wherein the particle size distribution varies from smaller particles in the barrier segment to larger particles in the green segment.

13. The method of claim 11, wherein the melt infiltration process comprises positioning a source of silicon in contact with at least the green segment.

14. The method of claim 13, wherein initiating the melt infiltration process is performed within a furnace by raising a temperature within the furnace above a melting point of silicon.