CLAIMS

What is claimed is:

1. A system for protecting a bond line comprising:

a downhole tool;

a plurality of rubber material bonded to a metal substrate of the downhole tool to form a plurality of the bond lines at a bonding interface between the rubber material and the metal substrate; and

a barrier applied to the rubber material and the downhole tool to encapsulate the plurality of the bond lines axially spaced along the metal substrate to isolate fluid from attacking a bonding chemistry along the bond lines during wellbore operations as a result of temperatures, pressures, and/or aqueous solutions downhole, wherein the barrier is continuous barrier configured to prevent degradation of the plurality of bond lines that are axially spaced along the metal substrate.

2. The system of claim 1, wherein the barrier is dicyclopentadiene, epoxy, polyester, urethane, elastomer latex, acrylate, cyanoacrylate, or urethane acrylate.

3. The system of claim 1, wherein the barrier is configured to be applied by spray, roll, brush, or vapor deposition.

4. The system of claim 1, wherein the barrier is cold bonded to an outside of the bond line.

5. The system of claim 1, wherein the barrier is configured to be applied in a hot melt or solvent deposition process.

6. The system of claim 5, wherein the barrier is an acrylic melt, a solvated copolymer of ethylene and propylene, a solvated copolymer of ethylene, propylene, and a diene monomer, polycarbonate, polyimide, polystyrene, polyester, or a fluoroplastic.

7. The system of claim 1, wherein the barrier is impermeable or hydrophobic.

8. The system of claim 7, wherein the barrier is configured to be applied by a film wrapped or cold bonded to an outside of the bond line.

9. The system of claim 1, wherein the barrier prevents fluid migration along the bonding interface by diffusion through the bonded material.

10. A method for protecting a bond line comprising:

bonding a plurality of rubber material to a metal substrate of a downhole tool to form a plurality of bond lines at a bonding interface between the rubber material and the metal substrate; and

applying a barrier to the rubber material and the downhole tool to encapsulate the plurality of the bond lines axially spaced along the metal substrate to isolate fluid from attacking a bonding chemistry along the bond lines during wellbore operations as a result of temperatures, pressures, and/or aqueous solutions downhole, wherein the barrier is continuous barrier configured to prevent degradation of the plurality of bond lines that are axially spaced along the metal substrate.

11. The method of claim 10, wherein the barrier is dicyclopentadiene, epoxy, polyester, urethane, elastomer latex, acrylate, cyanoacrylate, or urethane acrylate.

12. The method of claim 10, further comprising rolling the barrier on the bond line, spraying the barrier on the bond line, brushing the barrier on the bond line or applying the barrier using a vapor deposition to the bond line.

13. The method of claim 10, further comprising applying the barrier as a hot melt or using a solvent deposition process.

14. The method of claim 10, further comprising expanding the metal substrate to an outer diameter at which the rubber material is forced into sealing contact with a casing.

15. The method of claim 14, wherein the barrier is an acrylic melt, a solvated copolymer of ethylene and propylene, a solvated copolymer of ethylene, propylene, and a diene monomer, polycarbonate, polyimide, polystyrene, polyester, or a fluoroplastic.

16. The method of claim 10, wherein the barrier is impermeable or hydrophobic.

17. The method of claim 16, further comprising wrapping the barrier to an outside of the bond line or cold bonding the barrier to the outside of the bond line.