## CLAIMS

What is claimed is:

1. A system for use in a borehole, comprising:

an electric submersible progressive cavity pump system having:

a motor;

a gearbox driven by the motor; and

a progressive cavity pump having a rotor driven by the gearbox and a stator surrounding the rotor, the stator comprising:

an outer metal housing;

a first layer located within the outer metal housing, the first layer being formed from a thermoset resin secured to the outer metal housing and having a first layer interior surface formed as an internal thread; and

a second layer located within the first layer and secured to the first layer along the internal thread, the second layer being formed from an elastomer in a shape which follows the internal thread such that a second layer interior surface generally matches the shape of the first layer interior surface,

wherein the second layer is secured to the thermoset resin of the first layer via an elastomer bonding layer located between the elastomer and the thermoset resin, and

wherein the elastomer bonding layer comprises a polybutadiene.

2. The system as recited in claim 1, wherein the outer metal housing comprises steel.

3. The system as recited in claim 1, wherein the thermoset resin of the first layer comprises a thermosetting epoxy.

4. The system as recited in claim 3, wherein the second layer is an extruded tube.

5. The system as recited in claim 1, wherein the second layer is an extruded tube comprising at least one of nitrile rubber, hydrogenated nitrile rubber, or fluoroelastomer.

6. The system as recited in claim 1, wherein the thermoset resin is secured to the outer metal housing via a bonding layer between the thermoset resin and the outer metal housing.

7. The system as recited in claim 6, wherein the bonding layer comprises an adhesive.

8. The system as recited in claim 1, wherein the elastomer bonding layer forms a chemical bond with both the thermoset resin and the elastomer of the second layer.

9. The system as recited in claim 1, wherein the internal thread is helical.

10. A method, comprising:

assembling a stator for an electric submersible progressive cavity pump with a composite structure having an outer housing; a thermoset resin disposed along an interior of the outer housing and presenting an interior surface formed in a helical thread pattern; and an elastomeric layer of generally uniform thickness disposed along the helical thread pattern of the interior surface of the thermoset resin, wherein the elastomeric layer is secured to the thermoset resin via an

elastomer bonding layer located between the elastomeric layer and the thermoset resin, the elastomer bonding layer comprising a polybutadiene; and

inserting a rotor into the stator such that an outer surface of the rotor engages the elastomeric layer and cooperates with the helical thread pattern to create cavities along which a fluid can be pumped when the rotor is rotated relative to the stator.

11. The method as recited in claim 10, further comprising coupling a gearbox to the rotor.

12. The method as recited in claim 11, further comprising connecting a motor to the gearbox.

13. The method as recited in claim 12, further comprising deploying the stator, the rotor, the gearbox, and the motor downhole into a borehole.

14. The method as recited in claim 13, further comprising operating the rotor within the stator to pump oil from downhole.

15. The method as recited in claim 13, wherein deploying comprises replacing an electric submersible pumping system.

16. The method as recited in claim 10, further comprising forming the thermoset resin from a thermosetting epoxy.

17. The method as recited in claim 10, further comprising forming the elastomeric layer as an extruded tube.

18. A system, comprising:

a composite stator for use in an electric submersible progressive cavity pump, the composite stator comprising:

an outer housing;

a thermoset resin layer located within the outer housing and secured to the outer housing, the thermoset resin layer having an internal surface formed as an internal thread; and

an elastomeric layer located within the thermoset resin layer, the elastomeric layer being formed as an extruded tube of generally uniform thickness, the extruded tube being positioned within the thermoset resin layer so as to have a shape which follows the internal thread,

wherein the elastomeric layer is secured to the thermoset resin layer via an elastomer bonding layer located between the elastomeric layer and the thermoset resin layer, and

wherein the elastomer bonding layer comprises a polybutadiene.

19. The system as recited in claim 18, further comprising a rotor rotatably mounted within the elastomeric layer such that rotation of the rotor causes a pumping action along cavities created by the shape of the internal thread.