Claims

1. A porous medium screen configured for being disposed in a wellbore through a fluid-producing formation, the porous medium screen comprising:

a porous medium comprising a foam having one or more pores adapted to allow a fluid to flow through the porous medium and to prevent one or more particles from flowing through the porous medium; and

a retaining structure adapted to allow the fluid to flow from the fluid-producing formation to the porous medium and further adapted to retain the porous medium in a position circumferentially surrounding a section of a tubing string disposed in the fluid-producing formation and to prevent expansion of the porous medium.

2. The porous medium screen of claim 1, wherein the foam comprises a continuous material and wherein each of the one or more pores comprises empty space within the continuous material.

3. The porous medium screen of claim 1, wherein the porous medium comprises a carbon foam.

4. The porous medium screen of claim 1, wherein the porous medium comprises a silicone foam.

5. The porous medium screen of claim 1, wherein the porous medium comprises a metal foam.

6. The porous medium screen of claim 1, wherein the porous medium comprises a polyurethane foam.

7. The porous medium screen of claim 1, wherein the retaining structure comprises a shroud adapted to circumferentially surround the porous medium and to prevent radial expansion of the porous medium, the shroud comprising a plurality of strands, each of the plurality of strands adapted to be coupled to at least another one of the plurality of strands, each of the plurality of strands comprising a non-permeable rigid material.

8. The porous medium screen of claim 7, wherein the retaining structure further comprises a stopper at one or more edges of the porous medium, the stopper comprising an additional non-permeable rigid material, the stopper adapted to prevent axial expansion of the porous medium.

9. The porous medium screen of claim 8, wherein the stopper is adapted to circumferentially surround the section of the tubing string.

10. The porous medium screen of claim 1, wherein the porous medium screen is configured to be coupled to the section of the tubing string.

11. A production tubing system comprising:

a section of a tubing string configured to be disposed in a wellbore through a fluid-producing formation; and

a porous medium screen configured to be coupled to the section of the tubing string, the porous medium screen comprising:

a porous medium, the porous medium having one or more pores adapted to allow a fluid to flow through the porous medium and to prevent one or more particles from flowing through the porous medium, and

a retaining structure adapted to allow the fluid to flow from the fluid-producing formation to the porous medium and further adapted to retain the porous medium in a position circumferentially surrounding the section of the tubing string and to prevent expansion of the porous medium.

12. The production tubing system of claim 11, wherein the foam comprises a continuous material and wherein each of the one or more pores comprises empty space within the continuous material.

13. The production tubing system of claim 11, wherein the retaining structure of the porous medium screen comprises a shroud adapted to circumferentially surround the porous medium and to prevent radial expansion of the porous medium, the shroud comprising a plurality of strands, each of the plurality of strands adapted to be coupled to at least another one of the

plurality of strands, each of the plurality of strands comprising a non-permeable material.

14. The production tubing system of claim 13, wherein the retaining structure of the porous medium screen further comprises a stopper at one or more edges of the porous medium, the stopper comprising a non-permeable rigid material, the stopper adapted to circumferentially surround the section of the tubing string and to prevent axial expansion of the porous medium.

15. The production tubing system of claim 14, wherein the stopper comprises a ring adapted to circumferentially surround the section of the tubing string.

16. The production tubing system of claim 11, wherein the porous medium comprises a carbon foam.

17. The production tubing system of claim 11, wherein the porous medium comprises a silicone foam.

18. The production tubing system of claim 11, wherein the porous medium comprises a metal foam.

19. The production tubing system of claim 11, wherein the porous medium comprises at least one of a polyester foam and a polyurethane foam.

20. A porous medium screen configured for being disposed in a wellbore through a fluid-producing formation, the porous medium screen comprising:

a porous medium comprising a foam having one or more pores adapted to allow a fluid to flow through the porous medium and to prevent one or more particles from flowing through the porous medium; and

a retaining structure adapted to allow the fluid to flow from the fluid-producing formation to the porous medium and further adapted to retain the porous medium in a position circumferentially surrounding a section of a tubing string disposed in the wellbore through the fluid-producing formation, wherein the retaining structure comprises:

a shroud adapted to circumferentially surround the porous medium and to prevent radial expansion of the porous medium, the shroud comprising a plurality of strands, each of the plurality of strands adapted to be coupled to at least another one of the plurality of strands, each of the plurality of strands comprising a non-permeable rigid material, and

a stopper at one or more edges of the porous medium, the stopper comprising an additional non-permeable rigid material, the stopper adapted to circumferentially surround the section of the tubing string and to prevent axial expansion of the porous medium.

Claims

1. A production tubing system comprising:

a section of a tubing string configured to be disposed in a wellbore through a fluid-producing formation, the section comprising a body defining a plurality of openings;

a porous medium positioned within the plurality of openings, the porous medium comprising a porous foam having one or more pores adapted to allow a fluid to flow through the porous medium and to prevent one or more particles from flowing through the porous medium; and

a retaining structure adapted to allow the fluid to flow from the fluid-producing formation to the porous medium and to prevent radial expansion of the porous medium.

2. The production tubing system of claim 1, wherein the porous foam comprises a continuous material and wherein each of the one or more pores comprises empty space within the continuous material.

3. The production tubing system of claim 1, wherein the retaining structure comprises a shroud adapted to circumferentially surround the porous medium, the shroud comprising a plurality of strands, each of the plurality of strands adapted to be coupled to at least another one of the plurality of strands, each of the plurality of strands comprising a non-permeable material.

4. The production tubing system of claim 1, wherein the porous medium comprises a carbon foam.

5. The production tubing system of claim 1, wherein the porous medium comprises a silicone foam.

6. The production tubing system of claim 1, wherein the porous medium comprises a metal foam.

7. The production tubing system of claim 1, wherein the porous medium comprises at least one of a polyester foam and a polyurethane foam.