

WHAT IS CLAIMED IS:

1. A full-face flare joint for a lined piping system, comprising:

a connector portion of a metal piping being flared radially outwardly at a predetermined angle to form a pipe lap having a first surface and a second surface, wherein the first surface is configured to engage a pipe flange;

a pipe lining extending out of the connector portion, wherein the pipe lining is flared radially outwardly over the second surface of the pipe lap thereby forming a liner flare; and

a full-face flare component attached to the liner flare and having a bottom portion that forms an angle of about 90° with an inner surface of the pipe lining.

2. The full-face flare joint of claim 1, wherein the pipe lining is manufactured from polytetrafluoroethylene (PTFE) resin.

3. The full-face flare joint of claim 1, wherein the full-face flare component is attached to the pipe liner by fluoropolymer fusion welding.

4. The full-face flare joint of claim 1, wherein the full-face flare component further comprises a rearward facing side having a machined circular edge that coincides with the predetermined angle.

5. The full-face flare joint of claim 1, wherein the full-face flare component is a squared corner ring.

6. A full-face flare joint for a polytetrafluoroethylene (PTFE) lined piping system, comprising:

a connector portion of a metal piping being flared radially outwardly at a predetermined angle to form a pipe lap having a first surface and a second surface, wherein the first surface is configured to engage a pipe flange;

a PTFE pipe lining extending out of the connector portion, wherein the pipe lining is flared radially outwardly over the second surface of the pipe lap thereby forming a liner flare; and

a backing-corner component placed between the second surface of the pipe lap and the liner flare, wherein the liner flare forms an angle of about 90°.

7. A joint for a lined piping system, comprising:

a connector portion of a metal piping being flared radially outwardly at a predetermined angle to form a pipe lap having a first surface and a second surface, wherein the first surface is configured to engage a pipe flange;

a polytetrafluoroethylene (PTFE) pipe lining extending out of the connector portion, wherein the pipe lining is wrapped by a perfluoroalkoxy alkane (PFA) film, and wherein the pipe lining is flared radially outwardly over the second surface of the pipe lap thereby forming a liner flare, wherein the liner flare forms an angle of about 90°.

8. The joint of claim 7, wherein the perfluoroalkoxy alkane (PFA) film is welded on to the polytetrafluoroethylene (PTFE) pipe lining.

9. A method for manufacturing a joint for a polytetrafluoroethylene (PTFE) lined piping system, comprising the steps of:

flaring a connector portion of a metal piping outwardly at a predetermined angle to form a pipe lap having a first surface and a second surface, wherein the first surface is configured to engage a pipe flange;

extending a pipe lining out of the connector portion, wherein the pipe lining is flared radially outwardly over the second surface of the pipe lap thereby forming a liner flare; and

attaching a full-face flare component to the liner flare, wherein the full-face flare component has a bottom portion that forms an angle of about 90° with an inner surface of the pipe lining.

10. The method of claim 9, wherein the full-face flare component is attached to the liner flare by fluoropolymer fusion welding.

11. The method of claim 9, further comprising manufacturing the full-face flare component by using computer control numerical (CNC) process.

12. The method of claim 9, further comprising manufacturing the full-face flare component by compression molding process.

13. The method of claim 9, further comprising grounding the bottom portion of the full-face flare component to achieve the angle of about 90°.