CLAIMS:

1. An optical communication assembly, comprising:

optical fibers comprising a high temperature silicon-based glass that withstands temperatures in excess of 800 °F;

one or more buffer tubes for grouping the optical fibers into channels;

dual layer, opposing direction, bias woven aramid type fibers surrounding the one or more buffer tubes; and

an outer jacket surrounding the dual layer, opposing direction, bias woven aramid type fibers, wherein the outer jacket is a thermal and mechanical protection layer comprising silicone rubber.

2. The optical communication assembly of claim 1, wherein each of the one or more buffer tubes comprises between two and four optical fibers.

3. The optical communication assembly of claim 1 or claim 2, wherein the optical fibers withstand smaller diameter radius bends with a resilience to bend radius reduction on a magnitude of 5 to 10 times more turns.

4. The optical communication assembly of any one of the preceding claims, wherein the outer jacket comprises an application of silicon rubber.

5. The optical communication assembly of any one of the preceding claims,

wherein the optical fibers are grouped into multiple paired channels, with each paired channel surrounded by the one or more buffer tubes, and

wherein the multiple paired channels are surrounded by the dual layer, opposing direction bias woven aramid type fibers.

6. The optical communication assembly of any one of the preceding claims, wherein a nominal maximum tensile load of each of a one or more optical communication cable assemblies is 450 N during installation and 200 N in service.

7. The optical communication assembly of any one of the preceding claims, further comprising an aramid type cord within the center of the dual layer, opposing direction, bias woven aramid type fibers.

8. The optical communication assembly of claim 7, wherein the cord is approximately 3.5 mm in diameter.

9. The optical communication assembly of any one of the preceding claims, wherein the optical communication cable assembly is approximately 3 mm in nominal diameter or approximately 9 mm in nominal diameter.

10. The optical communication assembly of any one of the preceding claims, wherein each of a one or more optical communication cable assemblies has a minimum bend radius 15 times the nominal diameter of the cable assemblies during installation, or 10 times the nominal diameter of the cable assemblies while in service.

11. The optical communication assembly of any one of the preceding claims, wherein at least 24 pairs or higher of optical fibers are within the dual layer, opposing direction, bias woven aramid type fibers.

12. The optical communication assembly of any one of the preceding claims, wherein the one or more buffer tubes are heat resistant silicon.

13. The optical communication assembly of any one of the preceding claims, wherein each of the optical fibers are of up to 3000 feet in length and joined one to another through a media converter.