

What is Claimed is:

1. A termination arrangement for securing an overhead electrical cable comprising a strength member and an electrical conductor disposed around the strength member, the termination arrangement comprising:

a connector comprising a fastener disposed at a first end of the connector and a connector body extending from the fastener toward an end of the connector that lies opposite the fastener;

a longitudinally-extending sheath having a central bore extending therethrough that is configured to receive a strength member within the central bore; and

a conductive sleeve configured to be disposed over: (i) an end of the electrical cable, (ii) the sheath, and (iii) at least a portion of the connector body when the termination arrangement is operatively assembled.

2. The termination arrangement recited in Claim 1, wherein the connector is formed from steel.

3. The termination arrangement recited in any one of Claims 1 to 2, wherein the sheath is fabricated from steel.

4. The termination arrangement recited in any one of Claims 1 to 3, wherein the central bore has a substantially circular cross-section.

5. The termination arrangement recited in any one of Claims 1 to 4, wherein the central bore has a bore surface that is substantially smooth.

6. The termination arrangement recited in any one of Claims 1 to 4, wherein the central bore has a bore surface comprising surface features that are configured to improve the grip of the sheath onto the strength member when the sheath is operatively placed over the strength member.

7. The termination arrangement recited in Claim 6, wherein the surface features are selected from surface grit and surface scoring.

8. The termination arrangement recited in any one of Claims 1 to 7, wherein the steel sheath has an outer diameter and a length, and wherein the length is at least 20 times greater than the outer diameter.

9. The termination arrangement recited in any one of Claims 1 to 8, wherein the sheath has an outer diameter and a length, and wherein the length is not greater than about 30 times greater than the outer diameter.

10. The termination arrangement recited in any one of Claims 1 to 9, wherein the sheath comprises at least a first longitudinal slit through a first end of the sheath and extending toward a second end of the sheath.

11. The termination arrangement recited in Claim 10, wherein the sheath comprises at least a second longitudinal slit through the second end of the sheath and extending toward the first end of the sheath.

12. The termination arrangement recited in Claim 11, wherein the sheath comprises at least a third longitudinal slit through the first end of the sheath and extending toward the second end of the sheath.

13. The termination arrangement recited in Claim 12, wherein the steel sheath comprises at least a fourth longitudinal slit through the second end of the sheath and extending toward the first end of the sheath.

14. The termination arrangement recited in any one of Claims 11 to 13, wherein the slits are disposed around the sheath in a substantially equidistant manner.

15. The termination arrangement recited in Claim 13, wherein the slits are disposed around the sheath at about 90° from adjacent slits.

16. The termination arrangement recited in any one of Claims 1 to 15, wherein the connector body comprises a longitudinally-extending internal chamber that is accessible through a chamber inlet, where the internal chamber is configured to receive the steel sheath therein when the termination arrangement is operatively assembled.

17. The termination arrangement recited in Claim 16, further comprising an aluminum sleeve that is configured to be disposed in the internal chamber and between

the chamber wall and the steel sheath when the termination arrangement is operatively assembled.

18. The termination arrangement recited in any one of Claims 1 to 17, wherein the conductive sleeve is configured to operatively receive the steel sheath therein when the termination arrangement is operatively assembled.

19. The termination arrangement recited in any one of Claims 1 to 18, wherein the conductive sleeve is formed from aluminum.

20. A termination arrangement secured to an overhead electrical cable comprising a strength member and an electrical conductor disposed around the strength member, the termination arrangement comprising:

- a connector comprising a fastener disposed at a first end of the connector and a connector body extending from the fastener toward an end of the connector that lies opposite the fastener;

- a longitudinally-extending sheath having a central bore extending therethrough that is operatively disposed over and compressed onto a portion of the strength member to operatively grip the strength member; and

- a conductive sleeve that is disposed over (i) an end of the electrical cable, (ii) the sheath, and (iii) at least a portion of the connector body;

wherein the sheath is operatively attached to the connector body by one of;

- (i) being disposed within a chamber in the connector body and having the connector body crimped onto the sheath; or

- (ii) being disposed within the conductive sleeve and having the conductive sleeve crimped onto the sheath.

21. The termination arrangement recited in Claim 20, wherein the strength member comprises longitudinally-extending reinforcing fibers in a binding matrix.

22. The termination arrangement recited in Claim 21, wherein the reinforcing fibers comprise fibers selected from the group consisting of carbon fibers, glass fibers, ceramic fibers and combinations thereof.

23. The termination arrangement recited in any one of Claims 21 or 22, wherein the binding matrix comprises a material selected from an epoxy resin, a thermoplastic resin and a metal.

24. The termination arrangement recited in any one of Claims 20 to 23, wherein the connector is formed from steel.

25. The termination arrangement recited in any one of Claims 20 to 24, wherein the sheath is formed from a material selected from the group consisting of steel and a fiber-reinforced composite.

26. The termination arrangement recited in any one of Claims 20 to 25, wherein the sheath comprises at least a first longitudinally extending slit through a first end of the sheath and toward a second end of the sheath.

27. The termination arrangement recited in Claim 26, wherein the sheath comprises at least a second longitudinally extending slit through the second end of the sheath and toward the first end of the sheath.

28. The termination arrangement recited in any one of Claims 20 to 27, wherein the sheath is operatively attached to the connector body by being disposed within a chamber in the connector body and having the connector body crimped onto the sheath.

29. The termination arrangement recited in Claim 28, wherein an aluminum sleeve is disposed between the connector body and the sheath.

30. The termination arrangement recited in any one of Claims 28 or 29, wherein the connector body is crimped onto the sheath along substantially the entire length of the sheath.

31. The termination arrangement recited in any one of Claims 20 to 27, wherein the sheath is operatively attached to the connector body by being disposed within the conductive sleeve and having the conductive sleeve crimped onto the steel sheath.

32. The termination arrangement recited in Claim 31, wherein the conductive sleeve is formed from aluminum.

33. The termination arrangement recited in any one of Claims 31 to 32, wherein the conductive sleeve is crimped onto the sheath along substantially the entire length of the sheath.

34. The termination arrangement recited in any one of Claims 31 to 33, wherein the conductive sleeve is attached to the connector body by crimping the conductive sleeve onto the connector body.

35. The termination arrangement recited in any one of Claims 20 to 34, wherein the termination arrangement is secured to an overhead electrical cable.

36. A method for the termination of an overhead electrical cable comprising a strength member and an electrical conductor disposed around the strength member, the method comprising the steps of:

removing the electrical conductor from a termination end of the electrical cable to expose an end portion of the strength member;

placing the exposed end portion of the strength member through a central bore disposed within a longitudinally extending sheath;

operatively attaching the sheath to a connector, the connector comprising a fastener disposed at a first end of the connector and a connector body extending from the fastener toward an end of the connector that lies opposite the fastener, the attaching comprising one of;

(i) disposing the sheath within a chamber in the connector body and crimping the connector body onto the steel sheath, or

(ii) disposing the sheath within a conduit of a conductive sleeve and crimping the conductive sleeve onto the sheath.

37. The method recited in Claim 36, wherein the strength member comprises longitudinally-extending reinforcing fibers in a binding matrix.

38. The method recited in Claim 37, wherein the reinforcing fibers comprise fibers selected from the group consisting of carbon fibers, glass fibers, ceramic fibers and combinations thereof.

39. The method recited in any one of Claims 37 or 38, wherein the binding matrix comprises a material selected from the group consisting of an epoxy resin, a thermoplastic resin and a metal.

40. The method recited in any one of Claims 36 to 39, wherein the connector is formed from steel.

41. The method recited in any one of Claims 36 to 40, wherein the sheath is formed from steel.

42. The method recited in any one of Claims 36 to 41, wherein the sheath comprises at least a first longitudinally extending slit through a first end of the sheath and toward a second end of the sheath.

43. The method recited in Claim 42, wherein the sheath comprises at least a second longitudinally extending slit through the second end of the sheath and toward the first end of the sheath.

44. The method recited in any one of Claims 36 to 43, wherein the step of operatively attaching the sheath to the connector body comprises disposing the sheath within a chamber in the connector body and crimping the connector body onto the steel sheath.

45. The method recited in Claim 44, wherein an aluminum sleeve is disposed between the connector body and the sheath prior to crimping the connector body onto the sheath.

46. The method recited in any one of Claims 44 or 45, wherein the connector body is crimped onto the sheath along substantially the entire length of the sheath.

47. The method recited in any one of Claims 44 to 46, further comprising the step of placing a conductive sleeve over the connector body and sheath, and crimping the conductive sleeve onto the connector body.

48. The method recited in any one of Claims 36 to 43, wherein the step of operatively attaching the sheath to the connector body comprises disposing the steel sheath within the conductive sleeve and crimping the conductive sleeve onto the sheath.

49. The method recited in Claim 48, wherein the conductive sleeve is formed from aluminum.

50. The method recited in any one of Claims 48 to 49, wherein the conductive sleeve is crimped onto the steel sheath along substantially the entire length of the sheath.

51. The method recited in any one of Claims 48 to 50, wherein the conductive sleeve is attached to the connector body by crimping the conductive sleeve onto the connector body.

52. The method secured to an overhead electrical cable as recited in any one of Claims 36 to 51, wherein the termination arrangement is selected from a termination arrangement as recited in any one of Claims 1 to 19.