Solderless wrapped terminations are made by helically wrapping a solid uninsulated wire, around a specially designed termination post, to produce a mechanically and electrically stable connection.

**Class A:** Provides improved vibration characteristics, and is the required wrap style for spacecraft hardware applications. This wrap configuration, requires 1/2 to 1-1/2 turns of insulated wire in contact with a minimum of three (3) corners of the wrappost, in addition to the uninsulated wraps.

**Class B:** Wraps are prohibited.

**Acceptable: Class A — Single Termination**
The termination has the required number of insulated and uninsulated turns of wire, and is clean and free of foreign material.

**Acceptable: Class A — Multiple Terminations**
The terminations are properly spaced, with each having the required number of insulated and uninsulated turns of wire, and are clean and free of foreign material.

**Acceptable: Overlapped Turns**
The insulated conductor overwrap does not exceed one (1) turn, and the termination wrap is tight.

**Acceptable: Spiral Wrap**
The space between adjacent wrap turns shall not exceed one-half uninsulated conductor diameter. The sum of all gaps shall not exceed one wire diameter, excluding the first and last turn.

**Open Wrap**
An open wrap is an indicator of an improper termination process and may reduce the reliability of the termination.

**Unacceptable Overwrap**
Overlapping wraps reduce the reliability of the termination and may result in severed wraps.

**Damaged Wrappost**
The wrappost shall not exhibit evidence of cracking, flaking plating, bending, excessive twisting, gouging, or exposed base metal.
**DISCRETE WIRING**  
**SOLDERLESS WRAPPED ELECTRICAL CONNECTIONS - WIRE WRAP (cont.)**

**UNACCEPTABLE DAMAGED CONDUCTOR**  
After removal of the insulation, the conductor shall not exhibit nicks, cuts, exposed base metal, ringing, or reduction of cross-sectional area. Burnishing of the wire surface is acceptable.  
MIL-STD-1130B [5.3.2]

**UNACCEPTABLE DAMAGED INSULATION**  
Cut, crushed, gouged, damaged, or nicked insulation may result in reduced electrical isolation and/or short circuits. Slight scuffing or discoloration is acceptable.  
Best Workmanship Practice

**UNACCEPTABLE INSUFFICIENT INSULATION WRAP**  
The insulated section of the termination must be in contact with a minimum of three (3) corners of the wrappost.  
MIL-STD-1130B [5.3.2.1 a]

**UNACCEPTABLE END TAIL**  
An end tail is the end of the last turn of wire that is protruding in a tangential direction from the surface of the wrappost. End tails present a risk of shorting.  
MIL-STD-1130B [5.3.2.1 d]

**UNACCEPTABLE DAMAGED CONDUCTOR**  
After wrapping, the conductor shall not exhibit nicks, cuts, exposed base metal, ringing, or reduction of cross-sectional area. Burnishing of the wire surface is acceptable.  
Best Workmanship Practice

**UNACCEPTABLE SILVER UNDERPLATING**  
The use of wrapposts with silver underplating is prohibited. Gold plating over nickel is preferred.  
MIL-STD-1130B [5.3.2.1 a]

**UNACCEPTABLE IMPROPER POSITION – SINGLE WRAP**  
The first wrap should be located as low on the post as practical, providing sufficient space for additional terminations later.  
MIL-STD-1130B [5.3.2.1 b]

**UNACCEPTABLE IMPROPER POSITION – MULTIPLE WRAP**  
Terminations in a multiple wrap configuration must be properly positioned to ensure the wraps are completed within the defined termination area of the wrappost.  
MIL-STD-1130B [5.3.2.1 b]

**UNACCEPTABLE OVERLAPPING WRAPS**  
The overlapping wrap must not exceed one (1) complete turn over the last turn of uninsulated wire in a termination directly below it on the wrappost.  
MIL-STD-1130B [5.3.2.1 b]

**UNACCEPTABLE INSUFFICIENT TURNS**  
The uninsulated section of the termination shall have the minimum number of complete turns, as specified by MIL-STD-1130B, or as noted on the engineering documentation.  
MIL-STD-1130B [5.3.2]

**UNACCEPTABLE DAMAGED CONDUCTOR**  
After removal of the insulation, the conductor shall not exhibit nicks, cuts, exposed base metal, ringing, or reduction of cross-sectional area. Burnishing of the wire surface is acceptable.  
Best Workmanship Practice

**UNACCEPTABLE STRANDED CONDUCTOR**  
The use of stranded conductor for wire wrapping is prohibited.  
Best Workmanship Practice

**UNACCEPTABLE CONTAMINATION**  
Contamination reduces the reliability of the termination.  
Best Workmanship Practice

**UNACCEPTABLE DAMAGED INSULATION**  
Cut, crushed, gouged, damaged, or nicked insulation may result in reduced electrical isolation and/or short circuits. Slight scuffing or discoloration is acceptable.  
Best Workmanship Practice

**NASA WORKMANSHIP STANDARDS**

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