Crimping is an efficient and highly reliable method to assemble and terminate conductors, and typically provides a stronger, more reliable termination method than that achieved by soldering.

Crimp terminations are available in different styles, depending upon the design application and connectivity requirements. This section details the generic accept / reject criteria of commonly used crimp termination styles. See 2.02 – 2.10 for specific accept / reject criteria applicable to individual crimp styles.

The minimum insulation clearance for all crimped connections is 0.25 mm (0.010 in.).

Crimping of solid wire, component leads, or stranded wire that has been solder-tinned, is prohibited.

Crimp terminations should be centered between the wire entry shoulder of the crimp barrel and the inspection hole / wire exit shoulder. Crimp indents shall not encroach on the wire entry shoulder or the inspection hole / wire exit shoulder.

Modifying the crimp, to accommodate an undersized / oversized conductor (A) or termination (B), reduces the mechanical strength and reliability of the conductor-crimp termination.

The heat shrink tubing has been exposed to excessive heat, resulting in charring and splitting of the sleeve and possible damage to the conductor. Slight discoloration is acceptable.

Contamination and connectivity requirements. See 2.02 – 2.10 for specific accept / reject criteria applicable to individual crimp styles.

This section details the generic accept / reject criteria of commonly used crimp termination styles. See 2.02 – 2.10 for specific accept / reject criteria applicable to individual crimp styles.

The minimum insulation clearance for all crimped connections is 0.25 mm (0.010 in.).

Crimping of solid wire, component leads, or stranded wire that has been solder-tinned, is prohibited.

Crimp terminations should be centered between the wire entry shoulder of the crimp barrel and the inspection hole / wire exit shoulder. Crimp indents shall not encroach on the wire entry shoulder or the inspection hole / wire exit shoulder.

Modifying the crimp, to accommodate an undersized / oversized conductor (A) or termination (B), reduces the mechanical strength and reliability of the conductor-crimp termination.

The heat shrink tubing has been exposed to excessive heat, resulting in charring and splitting of the sleeve and possible damage to the conductor. Slight discoloration is acceptable.
UNACCEPTABLE
DISTURBED LAY
Disturbing the lay of wire strands during crimping may reduce the reliability of the crimp termination.
Best Workmanship Practice

UNACCEPTABLE
EDGE FLASH / INSULATION WHISKERS
Excessive edge flash or insulation whiskers that extend into the conductor crimp section may interfere with the proper mechanical and electrical termination of the crimp.
NASA-STD-8739.4 [19.6.2.c.10]

UNACCEPTABLE
EXCESSIVE CONDUCTOR LENGTH
The conductor should extend a minimum of flush with, and a maximum of one (1) wire diameter beyond the conductor crimp edge.
Best Workmanship Practice

UNACCEPTABLE
EXPOSED BASE METAL
Exposed base metal reduces the reliability of the crimp.
NASA-STD-8739.4 [12.2.5], [19.6.2.c.6]

UNACCEPTABLE
IMPROPER CRIMP LOCATION (INSPECTION HOLE)
The indents shall not encroach on or distort the inspection hole.
NASA-STD-8739.4 [19.6.2.c.7]

UNACCEPTABLE
IMPROPER CRIMP LOCATION (INSPECTION HOLE)
The indents shall not encroach on or distort the inspection hole.
NASA-STD-8739.4 [19.6.2.c.7]

UNACCEPTABLE
IMPROPER HEAT SHRINK LENGTH
Heat shrink tubing conforms to the crimp outline, but does not extend over the wire to provide any sealing or strain relief to the conductor.
NASA-STD-8739.4 [9.9]

ACCEPTABLE
DISCOLORATION
Slight discoloration of the shrink tubing is acceptable. Evidence of burning or charring is not acceptable.
Best Workmanship Practice

UNACCEPTABLE
DISCOLORATION
Slight discoloration of the shrink tubing is acceptable. Evidence of burning or charring is not acceptable.
Best Workmanship Practice

UNACCEPTABLE
EATING STRANDS
Birdcaged strands reduce the conductor’s overall strength and increase the possibility of shorting.
NASA-STD-8739.4 [19.6.2.c.3]

ACCEPTABLE
HEAT SHRINK INSTALLATION
Tubing is tight, symmetrical, undamaged (slight discoloration is acceptable). Overlaps meet minimum electrical spacing and provide strain relief. Termination is visible and inspectable.
NASA-STD-8739.4 [9.8.1], [9.9]

UNACCEPTABLE
BIRDCAGED STRANDS
Birdcaged strands reduce the conductor’s overall strength and increase the possibility of shorting.
NASA-STD-8739.4 [19.6.2.c.3]
Heat shrink tubing is opaque, prohibiting visual inspection of the termination. Heat shrink tubing shall be transparent or translucent, allowing visual inspection of termination.

**UNACCEPTABLE INCOMPLETE SHRINKAGE**

The heat shrink tubing conforms to the crimp outline and extends over the wire the proper length, but does not follow the contour of the wire, or provide any sealing or strain relief.

NASA-STD-8739.4 [9.8.1]

**UNACCEPTABLE PEELING / FLAKING PLATING**

A contact exhibiting peeling or flaking plating indicates a component of questionable quality and, shall be rejected.

NASA-STD-8739.4 [12.2.3], [19.6.2.c.5]

**UNACCEPTABLE INCOMPLETE CONDUCTOR CRIMP**

An incomplete or improper conductor crimp will produce a conductor-crimp termination with reduced mechanical strength and reduced reliability.

NASA-STD-8739.4 [19.6.2.c.6]

**UNACCEPTABLE INCOMPLETE INSULATION CRIMP (MULTIPLE CRIMP PINS / SOCKETS)**

An incomplete or improperly set insulation crimp will produce a termination with reduced mechanical strength and reduced reliability.

NASA-STD-8739.4 [19.6.2.c.6]

**UNACCEPTABLE OPAQUE HEAT SHRINK**

Heat shrink tubing is opaque, prohibiting visual inspection of the termination. Heat shrink tubing shall be transparent or translucent, allowing visual inspection of termination.

Best Workmanship Practice

**UNACCEPTABLE INCOMPLETE CONDUCTOR CRIMP**

Protruding strands reduce the current capacity of the termination, and present a puncture, sharp object damage, or shorting risk.

Best Workmanship Practice

**UNACCEPTABLE PROTRUDING STRANDS**

Protruding strands reduce the current capacity of the termination, and present a puncture, sharp object damage, or shorting risk.

NASA-STD-8739.4 [19.6.2.c.6]

**UNACCEPTABLE INCOMPLETE INSULATION CRIMP (MULTIPLE CRIMP PINS / SOCKETS)**

An incomplete or improperly set insulation crimp will produce a termination with reduced mechanical strength and reduced reliability.

NASA-STD-8739.4 [19.6.2.c.6]
UNACCEPTABLE
WIRE MODIFIED TO FIT
Modifying wires to fit the crimp barrel reduces the current carrying capacity and mechanical reliability of the conductor-crimp termination.

NASA-STD-8739.4 [4.3.5.a], [12.3.3], [19.6.2.a.2]

UNACCEPTABLE
WIRE STRANDS NOT VISIBLE
(PIN / CLOSED BARREL CRIMPS)
Wire strands not visible in the inspection hole indicate that the conductor may not be properly inserted and shall be cause for rejection.

NASA-STD-8739.4 [19.6.2.c.4]