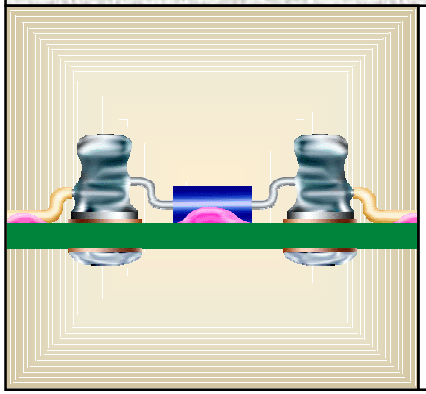
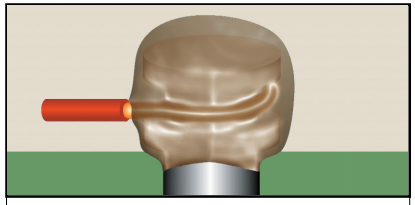
THROUGH-HOLE SOLDERING
HIGH-VOLTAGE TERMINATIONS



HIGH VOLTAGE TERMINATIONS

High-voltage terminations, where coronal suppression is necessary, will require special design. All aspects of the soldered joints shall be covered by smooth fillets, free of discontinuities or severe change in surface contour (i.e.: sharp edges, points, angles, etc.).

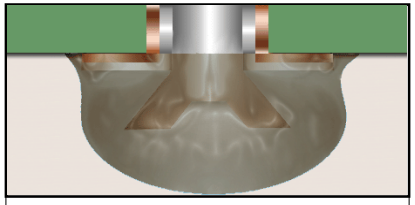
See Section 6.01 “Through-Hole Soldering, General Requirements”, for common accept / reject criteria.



PREFERRED

The solder connection has a completely rounded, continuous, and smooth profile. No evidence of sharp edges, points, icicles, inclusions (foreign material), or wire strands. Insulation clearance is as close to the solder connection as possible without embedment.

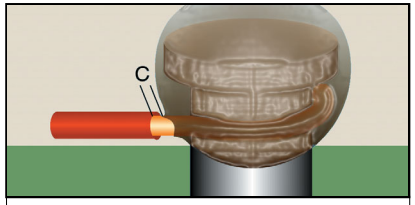
NASA-STD-8739.3 [10.3]



PREFERRED
FLARED FLANGE (TERMINAL)

All edges of the terminal flange are completely covered with a continuous, smooth layer of solder to form a solder ball. The balled connection does not exceed specified height requirements.

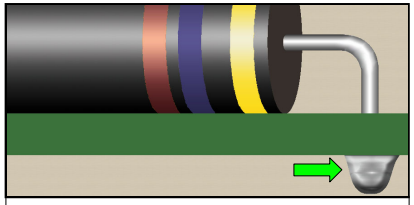
Best Workmanship Practice



PREFERRED
INSULATION CLEARANCE

The insulation gap is minimal, with the insulation as close to the solder connection as practical without embedment or damage.

NASA-STD-8739.3 [9.1.1]

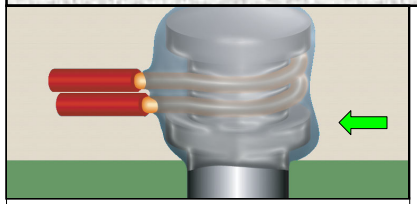


PREFERRED
THROUGH HOLE TERMINATION

All sharp edges of the component lead end are completely covered with a continuous, smooth, rounded layer of solder to form a solder ball. The balled connection does not exceed specified height requirements.

Best Workmanship Practice

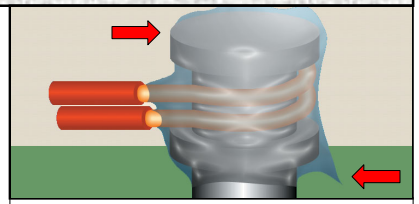
THROUGH-HOLE SOLDERING
HIGH-VOLTAGE TERMINATIONS (cont.)



ACCEPTABLE
TERMINALS / WIRE LEAD

The connection has an egg-shaped, spherical, or oval profile that follows the contour of the terminal and wire wrap. No evidence of sharp edges, points, icicles, inclusions (foreign material), or wire strands. Insulation clearance is acceptable.

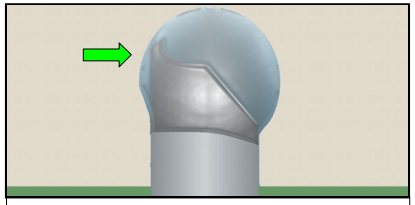
NASA-STD-8739.3 [10.3]



UNACCEPTABLE
SHARP EDGES

The solder follows the contour of the terminal and wrap, BUT there is evidence of the sharp edge of the terminal protruding through the solder surface.

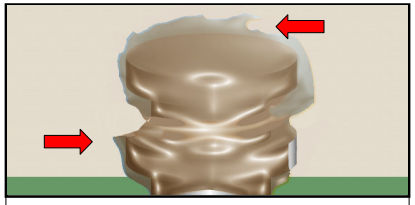
NASA-STD-8739.3 [10.3]



ACCEPTABLE
UNUSED SOLDER CUPS

The solder connection has an egg-shaped, spherical, or oval profile. No evidence of sharp edges, points, icicles, inclusions (foreign material), or wire strands.

Best Workmanship Practice



UNACCEPTABLE
UNUSED TERMINAL, SHARP EDGES

The solder is continuous, BUT there is evidence of solder peaks, icicles, or sharp turret edges protruding.

Best Workmanship Practice

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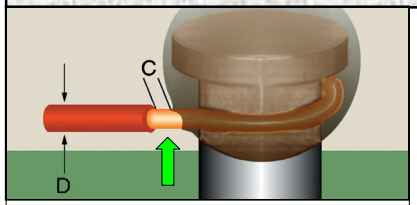
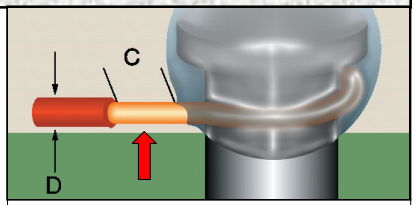


ACCEPTABLE
INSULATION CLEARANCE (C)
(MAXIMUM)

The insulation gap (C) is less than two insulated wire diameters (D).

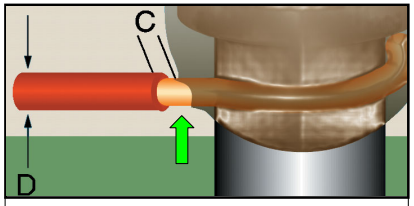
NASA-STD-8739.3 [9.1.2]



UNACCEPTABLE
IMPROPER INSULATION CLEARANCE (C)

The insulation gap (C) is greater than two insulated wire diameters, which may result in coronal formation and short circuits.

NASA-STD-8739.3 [9.1.2], [13.6.2.a.2]



ACCEPTABLE
INSULATION CLEARANCE (C)
(MINIMUM)

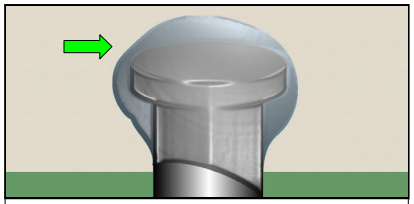
The insulation gap (C) is less than one insulated wire diameter (D), but is not embedded in the solder joint.

NASA-STD-8739.3 [9.1.1]

ACCEPTABLE
SOLDER CUP TERMINATIONS

The connection has an egg-shaped, spherical, or oval profile following the contour of the terminal and wire wrap. No evidence of sharp edges, points, icicles, inclusions (foreign material), or wire strands. Insulation clearance is acceptable.

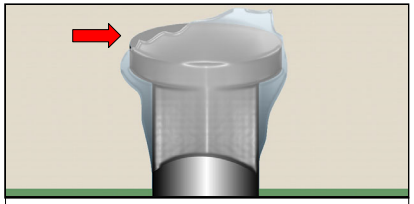
NASA-STD-8739.3 [10.3]



ACCEPTABLE
UNUSED TERMINAL

All sharp edges of the terminal are completely covered with a smooth, continuous ball of solder.

Best Workmanship Practice



UNACCEPTABLE
UNUSED TERMINAL
NO SOLDER / PARTIAL SOLDER

All sharp edges of the terminal shall be completely covered with a smooth, continuous ball of solder.

Best Workmanship Practice