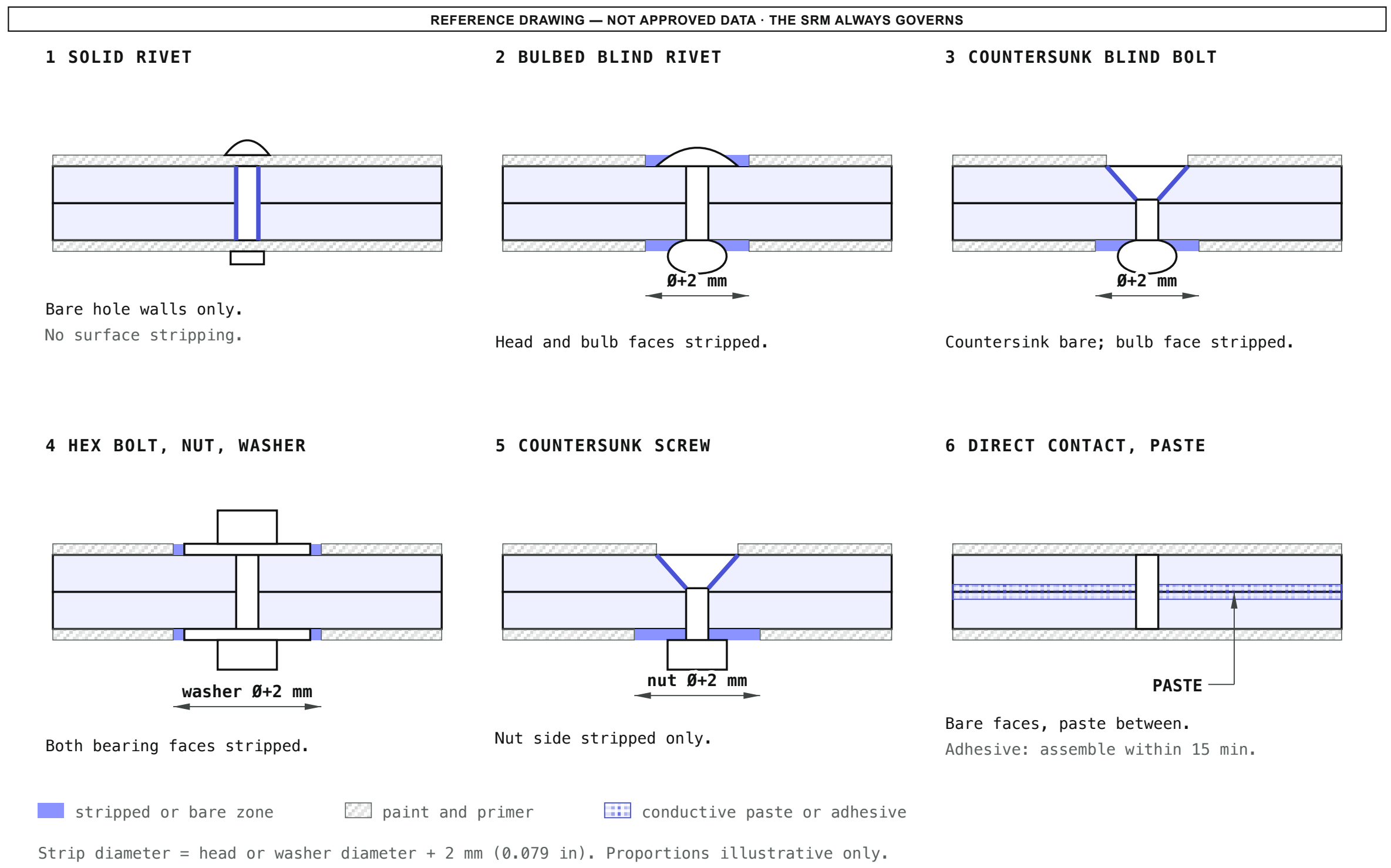
THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT

Electrical Bonding: Stripping, Paste, Limits and How to Measure

Strip rules · paste · protection · public limits · measuring



NOTES

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on Production bonding practice.

REVISIONS

REV	DESCRIPTION	YEAR
A	First issue	2026

The Aviation Point.	Structural repair reference		
TITLE: Electrical bonding			
DRAWING NO.: TAP-DWG-129	REV: A · 2026	SCALE: NTS	SHEET: 1 OF 1
APPLIES TO: Fastened joints			
DO NOT SCALE DRAWING			

Simplified bonding cases: the stripped zone is shown in accent, the paint and primer as hatching.

How much finish to strip

Case	What is stripped	Size, inch first
`Plain head`	Screw or bolt, head not countersunk: a circle of head diameter + 2 mm	Head Ø + 0.079 in (2 mm)
`With a washer`	The same screw or bolt: a circle of washer diameter + 2 mm	Washer Ø + 0.079 in (2 mm)
`Drawn area`	The contact area on the drawing is 2 mm larger than the real contact surface, so the margin is already in it	0.079 in (2 mm)
`Countersunk screw`	Only the nut side. The countersink stays as it is	—
`Solid rivets`	In primed, painted or anodised parts only the holes, the countersinks and the dimples are left bare. No surface stripping	—
`Bulbed blind`	Bulbed blind rivets: the bearing faces of the head and of the bulb, to head or bulb Ø + 2 mm	Ø + 0.079 in (2 mm)
`Countersunk blind`	Blind rivets and bolts: the countersink left bare; the bulb side stripped to bulb Ø + 2 mm	Ø + 0.079 in (2 mm)

Bond classes and public resistance limits

Class	Public limit	Where it is written
`R (radio frequency, EMI)`	2.5 mΩ per joint	MIL-STD-464C 5.10.3; NASA-STD-4003A
`L (lightning)`	2.5 mΩ per joint on the outer mould line. Jumpers of at least 12 AWG (6,530 circular mils) stranded copper or 10 AWG (10,380 circular mils) stranded aluminium; 40,000 circular mils where arcing is possible	NASA-STD-4003A 4.1.5, 5.1.2; AC 43.13-1B 11-193
`H (shock and fault)`	0.1 Ω (NASA-STD-4003A). Aircraft: 0.01 Ω (1/100 ohm) or less between structure and metallic conduits or equipment, enough to carry the fault current without sparking, fusing or dangerous heating	NASA-STD-4003A 4.1.3; AC 43.13-1B 11-192
`S (static)`	1.0 Ω; for parts over 3 in² area and 3 in in any dimension, less than 1 Ω, clean and dry	NASA-STD-4003A 4.1.6; AC 43.13-1B 11-187c
`C (current return)`	Set by voltage drop; the default is 3.5 % of the bus voltage	NASA-STD-4003A 4.1.2.1
`Equipment frames`	Exposed conducting frames under 2.5 mΩ to structure; each jumper connection not more than 0.003 Ω	AC 43.13-1B 11-188f, 11-189
`Fuel systems`	1 Ω or less to structure for small metallic objects in a tank and other fuel-system parts	AC 43.13-1B, chapter 11, section 15

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT

Key points

- **Strip a circle of head or washer Ø + 2 mm** (0.079 in); countersunk screw: nut side only.
- **Strip:** primer, paint, anodic film. **Do not strip:** zinc, tin, cadmium, conversion coat.
- **Aluminium:** conductive chemical film within 24 h of stripping; refinish within 24 h.
- **Conductive adhesive:** assemble within 15 minutes.
- **Public limits:** 2.5 mΩ per joint (R, L), 0.1 Ω (H), 1 Ω (S).
- **Measure** with a bonding tester or millivolt drop, never a multimeter.

Step by step

1. Strip the case's circle.
2. Treat bare aluminium within 24 h.
3. Add paste or adhesive between bare faces.
4. Fasten; no self-tapping screws.
5. Measure and record.
6. Seal and refinish.

SOURCES · FAA AC 43.13-1B, Change 1, Chapter 11, Section 15, Grounding and Bonding · NASA-STD-4003A, Electrical Bonding for NASA Launch Vehicles, Spacecraft, Payloads and Facilities · MIL-STD-464C, Electromagnetic Environmental Effects Requirements for Systems · FAA-H-8083-31B, Aviation Maintenance Technician Handbook: Airframe, Chapter 7

SCAN · OPEN THIS GUIDE
theaviationpoint.com/sheet-metal/electrical-bonding/

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT