

# AERONAUTICAL MATERIAL SPECIFICATIONS

## AMS5036D

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### STEEL SHEET AND STRIP, ALUMINUM COATED Low Carbon

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for low stressed parts, such as brackets, clips, and sheathing, requiring corrosion resistance and oxidation resistance up to 1200 F.
3. **COMPOSITION (Basis Steel):**

	Check Analysis	
	Under	Over
Carbon	0.10 max	0.03
Manganese	0.25 - 0.50	0.03
Phosphorus	0.04 max	0.01
Sulfur	0.05 max	0.01

4. **CONDITION:** Aluminum killed, cold rolled, then rerolled after coating.
5. **TECHNICAL REQUIREMENTS:**
  - 5.1 **Coating:** Shall consist of a uniform layer of aluminum on each side of the steel sheet. The weight of this coating shall be 0.30 - 0.50 oz per sq ft as determined by the following triple spot test.
    - 5.1.1 **Specimen Preparation:** Cut three specimens from the material to be tested. Each specimen shall be 5.06 sq in. in area (2.250 in. square, or equivalent rectangle, or 2.540 in. diameter) or weight losses (see 5.1.2) shall be corrected for the actual areas of specimens. Specimens shall be cut to represent the center and, where width permits, the two edges of the material. Specimens representing the edges shall be taken at diagonally opposite corners of the sample at least 4 in. from the end and, where width permits, at least 2 in. from the edges of the sample, as follows:
      - 5.1.1.1 **Material Over 12 in. Wide:** Cut specimens from one flat sheet from each lot. For coiled material, cut a sample approximately 18 in. long by the full width of the coil from one end of one coil and cut the specimens from this sample.
      - 5.1.1.2 **Material 12 in. and Less in Width:** Cut samples at least 18 in. long from one end of from one to three coils from each lot. Cut specimens from the sample or samples, observing the end distance and, insofar as width permits, the edge distance, requirements of 5.1.1.

5.1.2 Procedure: The three specimens shall be weighed individually to the nearest 0.005 gram. Immerse each specimen in hot 20% sodium hydroxide solution until action ceases. Remove, scrub under water, blot with a towel to remove most of the water, and immerse for 2 - 3 sec in cold concentrated hydrochloric acid. Remove, scrub under water, and re-immerses in the sodium hydroxide solution until action again ceases. Repeat this cycle until immersion in the sodium hydroxide shows no visible reaction. Remove, scrub, dry, and reweigh. The average weight loss in grams of the specimen is the weight of the coating in oz per sq foot.

5.2 Corrosion Resistance: Material shall show no evidence of corrosion of the basis steel when subjected to salt spray test in accordance with ASIM B117-44T for 200 hours. Corrosion of basis steel at cut edges shall be disregarded.

5.3 Bending:

5.3.1 Material shall withstand, without flaking or peeling of the coating, bending at room temperature through an angle of 180 deg around a diameter equal to twice the nominal thickness of the material, with axis of bend parallel to the direction of rolling.

5.3.2 Material shall withstand, without cracking of the basis steel, bending at room temperature flat on itself, with axis of bend parallel to the direction of rolling.

6. QUALITY: Material shall be uniform in quality and condition, commercially straight and flat, clean, sound, smooth, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, thickness and width tolerances shall conform to the following:

7.1 Thickness:

Nominal Thickness Inch	Tolerance, Inch Plus and Minus
0.020 and under	0.003
Over 0.020 to 0.029, incl	0.004
Over 0.029 to 0.049, incl	0.005
Over 0.049 to 0.069, incl	0.006
Over 0.069 to 0.079, incl	0.007
Over 0.079 to 0.089, incl	0.008
Over 0.089	0.009

∅ 7.2 Width: The latest issue of AMS 2232, Table IV.