

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 5043

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Revised

STEEL, SHEET AND STRIP Forming (Special Quality) Low Carbon

1. ACKNOWLEDGMENT: A vendor must mention this specification number in all quotations and when acknowledging purchase orders.

2. COMPOSITION: The composition by ladle analysis shall be as follows:

Carbon	0.15 max
Manganese	0.80 max
Phosphorus	0.040 max
Sulphur	0.050 max

3. CONDITION: (a) Killed, special requirement quality, cold rolled and oiled.

(b) Tensile test specimens, cut across the direction of rolling, except from strip less than nine inches wide which may be cut lengthwise, shall conform to the following physical properties:

Tensile Strength, lb per sq in.	52,000 min
Yield Strength (0.2% Offset), lb per sq in.	40,000 - 50,000
Equivalent Extension Under Load, inch in 2 in.	0.0067 - 0.0073
Elongation, % in 2 in.	
For Thicknesses, inch:	
0.008 - 0.0019 incl.	20 min
0.012 - 0.0179 incl.	23 min
0.018 - 0.0359 incl.	25 min
0.036 and Over	28 min

(c) Bend test specimens, cut transverse to the direction of rolling, shall withstand cold bending flat on themselves, without cracking, and without showing evidence of coarse grain.

4. QUALITY: The material shall consist of primes only, unless otherwise specified, and must be uniform in quality and temper, non-fluting, flat, clean, smooth, and free from seams, laminations, blisters, scale and other injurious defects within the limits of best commercial manufacturing methods. Material revealing defects during fabrication is subject to rejection.



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5. **TOLERANCES:** The following variations in thickness are permissible for widths shown; all dimensions are in inches.

THICKNESS TOLERANCES, PLUS OR MINUS

WIDTH RANGE

Thickness		Over	Over	Over	Over	Over	Over	Over	Over
Inch	Up	24	32	40	48	60	70	80	90
To &	to	to	to	to	to	to	to	to	--
From	24	32	40	48	60	70	80	90	--
Incl.	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.	
.1875 & Over	.007	.008	.009	.010	.011	.012	.013	.014	.015
.1874 .1420	.007	.008	.009	.010	.010	.011	.012	.012	.012
.1419 .0972	.007	.008	.009	.009	.010	.010	.011	.012	.012
.0971 .0822	.006	.006	.007	.007	.008	.009	.009	--	--
.0821 .0710	.005	.006	.006	.006	.007	.007	.007	--	--
.0709 .0578	.005	.005	.005	.005	.006	.006	.006	--	--
.0567 .0509	.005	.005	.005	.005	.005	.006	.006	--	--
.0508 .0389	.004	.004	.004	.004	.004	.005	.005	--	--
.0388 .0314	.003	.003	.0035	.0035	.0035	.004	.004	--	--
.0313 .0255	.003	.003	.003	.003	.0035	.004	.004	--	--
.0254 .0195	.003	.003	.003	.003	.003	--	--	--	--
.0194 .0142	.002	.002	.002	.002	.002	--	--	--	--
.0141 .0113	.002	.002	.002	.002	--	--	--	--	--
.0112 & Under	.0015	.0015	.0015	--	--	--	--	--	--

6. **REPORTS:** Unless otherwise specified, the vendor shall furnish three copies of a notarized report of the chemical composition of each heat and the physical properties for each gauge and size in each heat. This report shall include the purchase order number, material specification number, size, quantity and part numbers, if parts are supplied.

7. **IDENTIFICATION:** (a) Unless otherwise specified, each plate or sheet shall be marked with the manufacturer's identification and, in addition, AMS 5043 and the thickness in inches. The characters shall be not less than 3/8 inch in height and shall be applied in rows of constantly recurring symbols from edge of the sheet to the opposite edge, with rows spaced approximately three inches apart with alternate rows staggered. The characters shall be clearly legible and applied to the material by suitable means and suitable marking fluid, and shall not be obliterated by normal handling. The marking fluid used shall be capable of being removed in a hot alkaline cleaning solution without rubbing.

(b) Strip shall be marked on the outside end of the coil and, when practicable, on the inside end also.

8. **REJECTIONS:** Material not conforming to this specification, or modifications specified on the drawing or purchase order, is subject to rejection. If samples for verification are desired by the vendor, they must be claimed within three weeks. Rejected material or parts will be held a reasonable time, at vendor's risk, awaiting shipping instructions for the return of same for credit or replacement, as specified. Vendor shall pay all transportation charges.

NOTE. SIMILAR SPECIFICATION: SAE 1010 is listed for information only and shall not be construed as an acceptable alternate unless all requirements of this AMS are met.