

AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 6353

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Revised

STEEL PLATE, SHEET AND STRIP
Chromium Molybdenum (.35 - .42 Carbon)

CANCELLED

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

2. COMPOSITION:

Individual Sheet
Check Analysis
Over or Under
(Except Carbon as Noted)

Carbon	0.35 - 0.42	0.00 Over or 0.02 Under
Manganese	0.70 - 0.90	0.03
Phosphorus	0.040 max	0.005
Sulphur	0.040 max	0.005
Silicon	0.20 - 0.35	0.02
Chromium	0.80 - 1.10	0.05
Molybdenum	0.15 - 0.25	0.03

3. GRAIN SIZE: 5 or finer as determined on the rerolling slab, ASTM E19-39T, method a, unless otherwise ordered. A heat of steel predominately 5 or finer with grains as large as 3 is permissible.

4. HARDENABILITY: Material up to a thickness of 0.499 inch, when quenched in oil from a temperature of 1600°F and tempered at not less than 900°F for 30 minutes at heat, shall develop a tensile strength of not less than 125,000 lb per sq in.

5. CONDITION: (a) Cold-finished and clean annealed, unless otherwise ordered, to conform to a maximum tensile strength of 80,000 lb per sq in.

(b) Test specimens cut in any direction shall withstand cold bending, without cracking, through the angle indicated below over a diameter equal to the thickness of the specimen, bend test not being required on plates 3/4 inch or over in thickness:

Thickness of Material, inch	Angle of Bend, degrees (min)
0.249 and less	180
Over 0.249 to 0.749, incl.	90

6. QUALITY: (a) This material must be aircraft quality, uniform in condition, free from surface or internal defects, and must not reveal defects during heat treatment or fabrication.

(b) The surface shall not be decarburized to the extent of affecting the Rockwell hardness (A scale) after heat treating.

(c) All sheets and strips shall be commercially straight, flat, clean, smooth, and free from seams, laminations, blisters, scale, and other injurious defects.

7. **TOLERANCES:** The following variations in thickness are permissible; all dimensions are in inches:

Nominal Thickness	Tolerances			
	For sheets 14 inches wide or less		For sheets over 14 inches wide	
0.018 and less	+0.002	-0.002	±0.002	
Over 0.018 to 0.028, incl.	+0.002	-0.003	±0.003	
Over 0.028 to 0.037, incl.	+0.003	-0.003	±0.003	
Over 0.037 to 0.050, incl.	+0.003	-0.003	±0.004	
Over 0.050 to 0.062, incl.	+0.004	-0.004	±0.004	
Over 0.062 to 0.078, incl.	+0.004	-0.004	±0.005	
Over 0.078 to 0.109, incl.	+0.006	-0.006	±0.006	
Over 0.109 to 0.141, incl.	+0.006	-0.006	±0.007	
Over 0.141 to 0.187, incl.	+0.006	-0.006	±0.008	
Over 0.187 to 0.250, incl.	+0.020	-0.010	+0.020	-0.010
Over 0.250 to 0.375, incl.	+0.025	-0.010	+0.025	-0.010
Over 0.375 to 0.500, incl.	+0.030	-0.010	+0.030	-0.010
Over 0.500 to 0.625, incl.	+0.035	-0.010	+0.035	-0.010
Over 0.625 to 0.750, incl.	+0.040	-0.010	+0.040	-0.010
Over 0.750 to 0.856, incl.	+0.045	-0.010	+0.045	-0.010
Over 0.875 to 1.000, incl.	+0.050	-0.010	+0.050	-0.010
Over 1.000 to 1.500, incl.	+0.065	-0.010	+0.065	-0.010

8. **REPORTS:** The manufacturer shall furnish three copies of a notarized report of the chemical composition and grain size of each size and heat on each shipment. This report shall include the purchase order number, material specification number, size, and quantity, and part numbers if parts are supplied.
9. **IDENTIFICATION:** The following information shall be legibly marked on each plate, sheet, or strip with paint or marking fluid, or by other suitable means, such that the markings produced will not rub off or be smeared by contact incident to normal handling during shipment and storage.
- (a) The heat number and the purchase order number marked at one end.
 - (b) "AMS 6353" marked on plates and sheets in lengthwise rows spaced not more than one foot apart with alternate rows staggered, on flat strips along the full length at intervals not greater than two feet, and on coiled strips at both ends.
10. **REJECTIONS:** Material not conforming to this specification, or modifications specified on the drawing or the 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 4137 is listed for information only and shall not be construed as an acceptable alternate unless all requirements of this AMS are met.