

AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York, N. Y. 10017

AMS 5547B

Issued 9-15-57
Revised 9-1-65

STEEL SHEET AND STRIP, CORROSION AND MODERATE HEAT RESISTANT 15.5Cr - 4.5Ni - 2.9Mo - 0.10N Solution Heat Treated

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 parts and assemblies requiring high strength and oxidation resistance up to 800 F (427 C) and where parts require welding during fabrication.
3. **COMPOSITION:**

	min		max
Carbon	0.10	-	0.15
Manganese	0.50	-	1.25
Silicon	--		0.50
Phosphorus	--		0.040
Sulfur	--		0.030
Chromium	15.00	-	16.00
Nickel	4.00		5.00
Molybdenum	2.50	-	3.25
Nitrogen	0.07	-	0.13

- Ø 3.1 **Check Analysis:** Composition variations shall meet the requirements of the latest issue of AMS 2248.

4. **CONDITION:**

- Ø 4.1 **Sheet:** Hot or cold rolled, solution heat treated, and descaled (No. 2D Finish or equivalent).
- Ø 4.2 **Strip:** Cold rolled, solution heat treated, and descaled (No. 1 Strip Finish).

5. **TECHNICAL REQUIREMENTS:**

- 5.1 **Heat Treatment:** Unless otherwise specified, material shall be solution heat treated by heating to 1900 F $\pm$ 25 (1037.8 C $\pm$ 14), holding at heat for not less than 45 min. per inch of thickness, and quenching in water or otherwise cooling as rapidly as possible to room temperature.
- 5.2 **Hardness:** Shall be not higher than Rockwell C 35 or equivalent.
- 5.3 **Bending:** Material shall withstand, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to three times the nominal thickness, with axis of bend parallel to direction of rolling.
- 5.4 **Properties After Heat Treatment:** Material shall conform to the following requirements when heat treated as follows: Re-solution heat treat by heating to 1900 F $\pm$ 25 (1037.8 C $\pm$ 14), holding at heat for not less than 45 min. per inch of thickness, and quenching in water or otherwise cooling as rapidly as possible to room temperature; cool to not higher than -100 F (-73 C), hold at this temperature for not less than 3 hr, and warm in air to room temperature; austenite condition by heating to 1750 F $\pm$ 10 (954.4 C $\pm$ 5.6), holding at heat for not less than 10 min. but not more than 1 hr, and quenching in water or otherwise cooling as rapidly as possible to room temperature; cool to not higher than -100 F (-73 C), hold at this temperature for not less than 3 hr, and warm in air to room temperature; temper by heating to 1000 F $\pm$ 25 (537.8 C $\pm$ 14), holding at heat for not less than 3 hr, and cooling in air