

**AEROSPACE
MATERIAL
SPECIFICATION**

AMS5533A

Issued 7-1-48
Revised 10-1-82

UNS R30590

ALLOY SHEET, STRIP, AND PLATE, CORROSION AND HEAT RESISTANT
Iron Base - 20Cr - 20Ni - 20Co - 4Mo - 4W - 4Cb

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 10-1-82. It is recommended, therefore, that this specification not be specified for new designs.

This cover sheet should be attached to the "A" revision of the subject specification.

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This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of 1-15-81. By this action, subject specification number and title will be deleted from the active specification index of Aerospace Material Specifications.

This specification is under the jurisdiction of AMS Committee "F".

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AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 5533A

Issued 7-1-48

Revised 6-15-50

ALLOY SHEET AND STRIP, CORROSION AND HEAT RESISTANT
Iron Base - 20Cr - 20Ni - 20Co - 4Mo - 4W - 4Cb

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Sheet, strip, and plate.
3. **APPLICATION:** Parts and assemblies, such as welded turbine nozzle assemblies, burner liner parts, tail pipes, exhaust cone assemblies, and hollow turbine buckets or blades, requiring high strength up to 1500 F and oxidation resistance up to 1800 F.

4. **COMPOSITION:**

Check Analysis			
Under Min or Over Max			
Carbon	0.38 - 0.48	0.00	0.00
Manganese	2.00 max	--	0.04
Silicon	1.00 max	--	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	19.00 - 22.00	0.25	0.25
Nickel	18.50 - 21.50	0.20	0.20
Cobalt	18.50 - 21.50	0.10	0.10
Molybdenum	3.50 - 4.50	0.10	0.10
Tungsten	3.50 - 4.50	0.05	0.05
Columbium + Tantalum	3.50 - 4.50	--	0.03
Copper	0.50 max	--	--
Iron	remainder		

5. **CONDITION:** Unless otherwise specified, material shall be hot rolled with or without subsequent cold reduction, solution heat treated, and pickled, having a surface appearance as close as possible to a commercial corrosion resistant steel No. 2D finish; standards for acceptance and rejection shall be as agreed upon by purchaser and vendor.

6. **TECHNICAL REQUIREMENTS:**

- 6.1 **Heat Treatment:** Material shall be heated to 2150 F $\pm$ 20, followed by air cooling.

6.2 **Physical Properties:**

Tensile Strength, psi	130,000 max
Elongation, % in 2 in.	25 min
Hardness, Rockwell B	105 max

Note: For widths 9 inches and over, tensile test specimens shall be taken with the axis perpendicular to the direction of rolling. For widths less than 9 inches, tensile test specimens shall be taken with the axis parallel to the direction of rolling.