AERONAUTICAL MATERIAL SPECIFICATION

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AMS 7301

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STEEL SPRINGS, HIGHLY STRESSED
1.0Cr - 0.2V

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

2. FORM: Coil springs made of round wire.

3. APPLICATION: Primarily for valve springs, clutch springs and other highly stressed springs on which a case is required as assurance that surfaces will not be decarburized.

4. COMPOSITION: Wire from which springs are made shall conform to the following:

		Check Analysis Under Min or Over Max	
Carbon	0.47 - 0.53	0.02	0.02
Manganese	0.70 - 0.90	0.03	0.03
Silicon	0.15 - 0.30	0.02	0.02
Phosphorus	0.025 max	--	0.005
Sulfur	0.025 max	--	0.005
Chromium	0.80 - 1.10	0.05	0.05
Vanadium	0.15 min	0.03	--

5. GRAIN SIZE: Five or finer, ASTM E19-46, excluding method a.

6. FABRICATION:

6.1 Material shall not be removed from any active coil; special care shall be exercised during burring of spring ends to insure that this requirement is met.

6.2 Springs shall be heat treated by carburizing, cyaniding or carbonitraiding above the transformation range of the steel, quenching and tempering. All possible care shall be exercised during heat treatment to prevent surface and internal cracking.

6.3 After heat treatment, springs shall be uniformly blasted all over, with grit of suitable size, for such time and in such manner as will produce springs which are satisfactorily cleaned and which the surface effect is not lower than that agreed upon by purchaser and vendor.

6.4 Grit blasted springs shall subsequently be uniformly blasted, preferably in automatic equipment, with sand of suitable size, for sufficient time to produce smooth surfaces.

7. CONDITION:

7.1 Unless otherwise specified, core hardness of finished springs shall be Rockwell C 43-46, or equivalent.