

ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

STEEL WIRE, SPRING - GENERAL PURPOSE FASTENERS

ESB-M1A26-A

1. SCOPE

The material defined by this specification is a round or flat spring steel wire.

2. APPLICATION

This specification was released originally for manufacturing fasteners for general use.

3. REQUIREMENTS

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 COMPOSITION

The material shall be either annealed, hard drawn, or oil tempered steel wire according to the design of the part and the equipment necessary to form the part, and shall conform in composition to SAE 1060 or 1065 steel.

3.3 ANNEALED WIRE

When made from annealed steel wire, the parts shall be given their spring temper by heating uniformly to a minimum temperature of 790°C in a neutral atmosphere, quenching in oil, and tempering immediately at a minimum temperature of 340°C to the desired hardness.

3.4 HARD DRAWN AND OIL TEMPERED WIRE

When made from either hard drawn steel wire or oil tempered steel wire, the parts shall be given a low temperature temper after forming at approximately 315°C for 15 minutes minimum to relieve forming strains.

Date	Action	Revisions
2002 09 24	Revised	Updated and renumbered
1978 11 10		Metricated and Retyped CAH1-RD572066-166
1963 06 05		Released AS1 #915

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3.5 HARDNESS

The finished parts shall conform in hardness to the following ranges:

Rockwell "C"	40.0 - 50.0
Rockwell "30N"	59.5 - 68.5
Rockwell "15N"	80.5 - 85.5

The scale used shall be governed by the wire size and shall be in accordance with proper practice.

3.6 TOLERANCES

The dimensions of the wire shall not vary from that specified by more than the following:

Round Wire

<u>Diameter</u>	<u>Variation</u>
0.020 - 0.027 in (0.51 - 0.69 mm)	+/- 0.00075 in (0.0191 mm)
0.028 - 0.075 in (0.70 - 1.91 mm)	+/- 0.001 in (0.03 mm)
0.076 - 0.375 in (1.92 - 9.53 mm)	+/- 0.002 in (0.05 mm)
0.376 - over (9.54 mm - over)	+/- 0.003 in (0.08 mm)

Flat Wire

<u>Thickness</u>	<u>Variation</u>
Under 0.010 in (0.25 mm)	+/- 0.0005 in (0.013 mm)
0.010 - 0.028 in (0.25 - 0.73 mm)	+/- 0.001 in (0.03 mm)
0.029 - 0.062 in (0.74 - 1.58 mm)	+/- 0.0015 in (0.038 mm)
0.0625 - 0.249 in (1.59 - 6.32 mm)	+/- 0.002 in (0.05 mm)

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification.

Thin parts and parts with difficult configurations made from annealed material are more susceptible to distortion when quenched and tempered after forming. The use of hard drawn or oil tempered material is recommended for these parts.