



Material Specifications

Number:	MS-404
Date Issued:	A-NOV08

STEEL-TUBE – MECHANICAL – COLD DRAWN SEAMLESS (Superseded)

This specification has been superseded by CNH Material Specification, MAT1128, (87692756) Seamless, Carbon Steel Round Tubing. CNH Material Specifications shall be specified on all applicable new and updated drawings.

For information about superseded specifications refer to ENS0050 (87523699).

The controlled versions of CNH specifications and standards are published on the CNH Intranet site.

The documents are also available on the CNH electronic viewing system (e.g. eViewer). Suppliers are able to access these documents on CSCN (CNH Supplier Communications Network).

For existing drawings the superseded specification is available for viewing following this page and remains applicable until a drawing is updated to the new specification. See CNH MAT1003 (86979049) Metallic Material Designations on Engineering Drawings for additional information regarding updating specified materials.

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(Superseded)

1. SCOPE

This specification covers as-drawn round carbon steel seamless tubing which has been cold drawn on outside and inside diameter.

Seamless Mechanical Tube
1018
1026
1035

2. PRODUCT DESCRIPTION

A hot finished seamless tube is subsequently drawn through a die and over a mandrel to control both OD and ID. The tubing shall be furnished in the as drawn condition unless otherwise specified. Ends may be sawed or lathe cut depending on wall thickness and size. The standard specification is O.D. and wall (best availability).

3. QUALITY DESCRIPTION

Normally, thin wall tubing will have a smoother and more uniform surface than heavy wall tubing.

4. METALLURGICAL REQUIREMENTS

Steel may be killed or semi-killed and is normally supplied fine grain.

5. CHEMICAL COMPOSITION

	<u>Carbon</u>	<u>Manganese</u>	<u>Sulfur</u>	<u>Phosphorus</u>
1018	0.15-0.20	0.60-0.90	0.040 Max.	0.050 Max.
1026	0.22-0.28	0.60-0.90	0.040 Max.	0.050 Max.
1035	0.32-0.38	0.60-0.90	0.040 Max.	0.050 Max.

(Check analysis tolerances as in ASTM A519 Latest Issue)

6. TOLERANCES

Tolerances must conform to tolerances in ASTM A519 latest issue for cold drawn seamless mechanical tube.

7. REPORTS

The vendor shall furnish three (3) copies of the shipping notice showing Purchase Order Number, MS Number, Grade Identification, and Size.

8. MARKING

Shipment shall be suitably identified as to Purchase Order Number, Size, MS Number, Grade, and J I Case Raw Material Code Number.

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9. MATERIAL CONDITION OPTIONS

It is sometimes necessary to use material in special conditions which can generally be procured from the mill for a price extra.

J I Case Manufacturing or the part manufacturer may select and use options with the exception of those required to be specified on drawing. Any of the options may be specified on drawings and become a requirement for the part.

OPTION 21

De-burr ID only.

OPTION 22

De-burr OD only.

OPTION 23

De-burr OD and ID.

OPTION 29

Specification of OD and ID standard tubing sizes. The wall may not conform to published tolerances except that the mean or average wall (taking into account the permissible OD and ID tolerances) will not vary more than indicated under wall tolerances.

OPTION 33 - TELESCOPING APPLICATION

Print, material description and purchase description shall state "Telescopes with P/N _____. " Producing mill or supplier must also be supplied with information as the amount of engagement of the parts.

OPTION 46

Stress relief of tubing (also called finish anneal or stress relief anneal). A sub-critical thermal treatment required to be done at 500/600°C(932/1112°F).

10. PURCHASE SPECIFICATION

MS 404 Grade, dated October 1978, cold drawn seamless tubing, as drawn, and options if required.

11. SPECIFY ON DRAWING

(wall Thickness to be specified as decimal.)

MS 404, Grade, and Options if required. (e.g. MS 404-1018)

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