

Created by QA Engineer	
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Approved by: QA Engineer
SEC Reference:- <b>QAD29</b>

## NZTM-Q29 - Roll Cage Tube Specification

**Reference :** **MSNZ-Q29** - MSNZ Standard for seamed steel tubes for safety cages  
 Roll cage tube is manufactured by New Zealand Tube Mills from a special grade of steel.  
 When specifying please ensure to specify New Zealand Tube Mills " **Roll Cage Tube - NZTM-Q29** ".

### Compliance Note

New Zealand Tube Mills guarantee that tube sold to this specification complies with the mechanical property requirements of above Motor Sports New Zealand Safety Schedule.

### Material Grade

**NZTM-Q05F - "NZ STEEL TUBE300"** (Hot Rolled, Pickled and Oiled, designated "Semi-Bright").  
 Tube 300 material is Manufactured by New Zealand Steel.

### Grade Designation

**NZTM-Q29/C350/ERW**

### Manufacturing Process

Tube is Electric Resistance Welded (**ERW**).

### Tube Sizes available

38.10 +/- 0.20 mm Diameter x 2.60 +0.26/- 0.10 mm  
 44.50 +/- 0.20 mm Diameter x 2.60 +0.26/- 0.10 mm

Notes: 1) For other sizes contact NZTM Sales Office via Email "[sales@nztmtubemills.co.nz](mailto:sales@nztmtubemills.co.nz)"  
 2) For quality contact NZTM QA Dept via Email "[quality@nztmtubemills.co.nz](mailto:quality@nztmtubemills.co.nz)"

### Mechanical Properties of Material (minimum)- **NZTM-Q05F**

Yield Strength	250 MPa
Tensile Strength	<b>350 MPa</b>
Elongation	18%

### Chemical Composition of Material (maximum)

<b>CARBON</b>	C	0.08%
<b>MANGANESE</b>	Mn	0.40%
<b>PHOSPHORUS</b>	P	0.03%
<b>SULPHUR</b>	S	0.03%
<b>ALUMINIUM</b>	Al	0.10%
<b>SILICON</b>	Si	0.03%



Weld Integrity Test Samples

### Weld Integrity

The following weld integrity tests are carried out on a sample taken from the production batch:-

- Cold Flattening Test:-** The flattening test piece is flattened at room temperature between two parallel plane surfaces with the weld located at 0° in relation to the direction of flattening and at 90° in relation to the direction of the weld.
- Flare / Cone Test** The test piece is flared at room temperature using a cone having an included angle 60°  
 The minimum base circle diameter must be flared to the diameter shown below.

Size	Minimum diameter
Ø38.10	47.6
Ø44.45	55.6

### Sectional Properties of Tube

	X-Section Area (cm <sup>2</sup> )	Moment of Inertia - I (cm <sup>4</sup> )	Section Modulus - Z (cm <sup>3</sup> )	Radius of Gyration - R (cm)
Ø38.10 mm x 2.6 mm	2.900	4.592	2.411	1.258
Ø44.45 mm x 2.6 mm	3.418	7.513	3.380	1.482



Traceability Label

### Tube Identification & Traceability

Tube bundle is identified with the attached label printed with the product description as follows:

e.g. **CTR MED HR SB AW 2.60 X 38.10 X 6100RCAG**

- Carbon Tube, Round, **MED**ium strength, Hot Roll, Semi Bright, As Welded, **2.60** wall thickness, **38.10** nominal diameter, **6100** standard cut length, **RCAG** - Roll Cage.

Note:- Tube batch is traceable back to material test certificate.

Note: For current edition of this specification please visit NZTM website at "[www.nztubemills.co.nz](http://www.nztubemills.co.nz)"