

## Docol Tube R8

### General Product Description

Docol<sup>®</sup> Tube R8 is a product range of welded cold formed circular tubes in high strength steel, specifically targeted at the requirements of the Motor Sport industry and similar producers. It is intended for applications requiring a combination of extremely high performance and lean design. Docol Tube R8 is produced using tube designated SSAB high strength steel, with high yield strength in combination with excellent bending and welding properties. Docol Tube R8 tubes are produced with narrow tolerances, including inside weld bead height. Delivery condition of Docol Tube R8 is according to EN 10305-3 and R8 tubes are always accompanied by inspection certificate 3.1. Docol Tube R8 is approved as an allowable material in the SFI specifications for roll cages in different types of drag racing vehicles.

### Dimension Range

Docol Tube R8 is available in circular shape.

Shapes	Dimensions
Circular (in)	1 - 2 <sup>1)</sup>
Wall thickness (in)	0.049 - 0.095 <sup>2)</sup>
Mill length (ft)	19 <sup>3)</sup>

Other shapes, sizes and lengths are available upon request.

<sup>1)</sup> (25.4 - 50.8 mm)

<sup>2)</sup> (1.24 - 2.41 mm)

<sup>3)</sup> (5791 mm)

### Circular Dimensions

Diameter	0.049" (1.24mm) [lb/ft]	0.065" (1.64mm) [lb/ft]	0.083" (2.11mm) [lb/ft]	0.095" (2.41mm) [lb/ft]
1" (25.4 mm)	0.497	0.649	—	—
1.250" (31.8 mm)	0.628	0.822	1.034	1.172
1.500" (38.1 mm)	0.759	0.996	1.256	1.426
1.750" (44.5 mm)	—	1.170	1.478	1.679
2.000" (50.8 mm)	—	1.343	1.699	1.933

### Mechanical Properties

	Yield strength R <sub>p0.2</sub> <sup>1)</sup> (min ksi)	Tensile strength R <sub>m</sub> <sup>2)</sup> (min ksi)	Elongation A <sup>3)</sup> (min %)
Docol Tube R8	100	116	8

<sup>1)</sup> Yield strength 100 ksi = 690 MPa

<sup>2)</sup> Tensile strength 116 ksi = 800 MPa

<sup>3)</sup> Typical elongation value 10-12% (A<sub>50</sub>)

### Chemical Composition (ladle analysis)

	C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Al <sub>tot</sub> (min %)	Cr (max %)	Cr+Mo (max %)
Docol Tube R8	0.15	0.30	1.70	0.020	0.010	0.015	0.105	0.155

## Tolerances

### Tolerance Circular

Characteristic	Circular precision tubes Tolerances meet or exceed the requirements of EN 10305-3
Outside diameter (D) <sup>(1)</sup> 1.000" ≤ D < 1.125" (25.4 mm ≤ D < 31.8 mm) 1.125" ≤ D ≤ 1.500" (31.8 mm ≤ D ≤ 38.1 mm) 1.500" < D ≤ 2.000" (38.1 mm < D ≤ 50.8 mm)	±0.0059" (±0.15 mm) ±0.0079" (±0.20 mm) ±0.0098" (±0.25 mm)
Out-of-roundness	The diameter tolerances include the out-of-roundness
Thickness (T)	T ≤ 0.083" (2.11 mm): ±0.0059" (±0.15 mm) T > 0.083" (2.11 mm): ±10%
Straightness	Maximum 0.10% of measured length
Height of internal weld bead (g)	D > 1.000" (25.4 mm): g ≤ 0.012" (0.3 mm) D = 1.000" (25.4 mm): g ≤ 0.040" (1.0 mm)
Mill length	0/+0.1641 ft (0/+50 mm)

<sup>1)</sup>For a maximum distance of 0.3281 ft (100 mm), the ends may, due to residual stresses, have diameters outside the tolerance

## Coating and Surfaces

### Surface designation and general usability

Designation	Definition	Usability
UC	Uncoated (cold rolled), T ≤ 0.083" (2.11 mm)	Suitable surface condition if painted or chromium plated
UC	Uncoated (hot rolled), T > 0.083" (2.11 mm)	Suitable surface condition if painted

Surface is slightly oiled to protect it from corrosion during transportation and short-term storage. By request, tubes can be delivered dry, however in that case SSAB will not be responsible for any possible rust.

### Surface roughness, Ra

Designation	Ra value
UC, cold rolled	< 0.6 μm
UC, hot rolled	< 2.0 μm

## Delivery Conditions

The tubes are not intended to undergo any heat treatment after welding and sizing as that may alter the mechanical properties of the material.

The tubes are oiled with anti-corrosive oil.

## Fabrication and Other Recommendations

For information concerning fabrication, see SSAB's brochures on [www.ssab.com](http://www.ssab.com) or consult Tech Support.

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the products.

## Contact Information

[www.ssab.com/contact](http://www.ssab.com/contact)