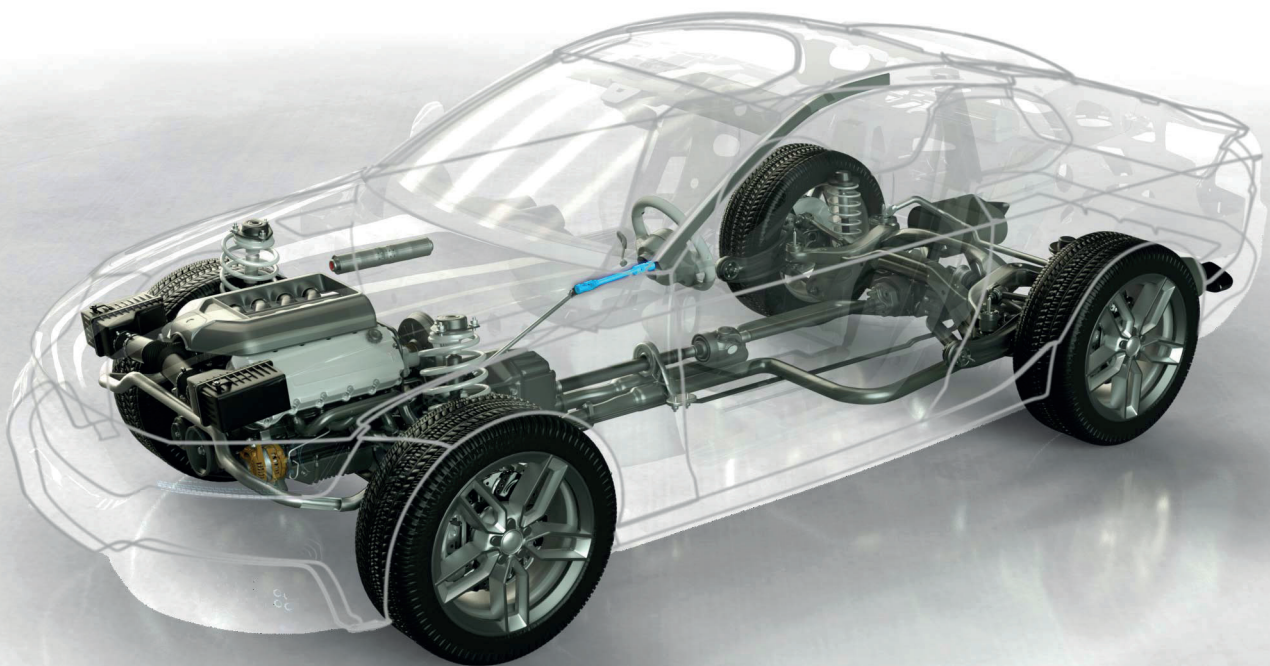


# Steering

## Mubea

PRECISION STEEL TUBES



### Product information | Technical data sheet

Mubea Precision Steel Tubes produce welded and welded-drawn precision steel tubes and profiles for steering systems made of standard materials as well as high-tensile materials.

Quality is paramount in steering applications and construction. Tight tolerances and very good reforming properties of the tubes ensure smooth component construction. The use of modern high-

tensile materials allows for weight savings by reducing the wall thickness while still maintaining the component's strength.



## Tube requirements

Excellent formability
High torsional strength and durability
Excellent welding properties
High geometrical accuracy
Excellent surface condition

## Material properties

High torsional strength and fatigue strength
Excellent reforming properties
Homogeneous strength properties and ductility
Excellently suitable for welding
Potential to reduce wall thickness

## Structure

Homogeneous, fine-grain structure in weld seam and basic material
Minimised surface decarburisation of inner and outer surfaces (< 50 µm)
Very good weld seam quality
Very good reforming properties

## Geometry

Minimised fluctuations in wall thickness and inner/outer diameter
Minimised deviations in straightness
Minimised deviations in concentricity and axial run-out
Minimised eccentricity
Specific tube end processing: sawn/brushed; chamfered, completely processed/chamfered

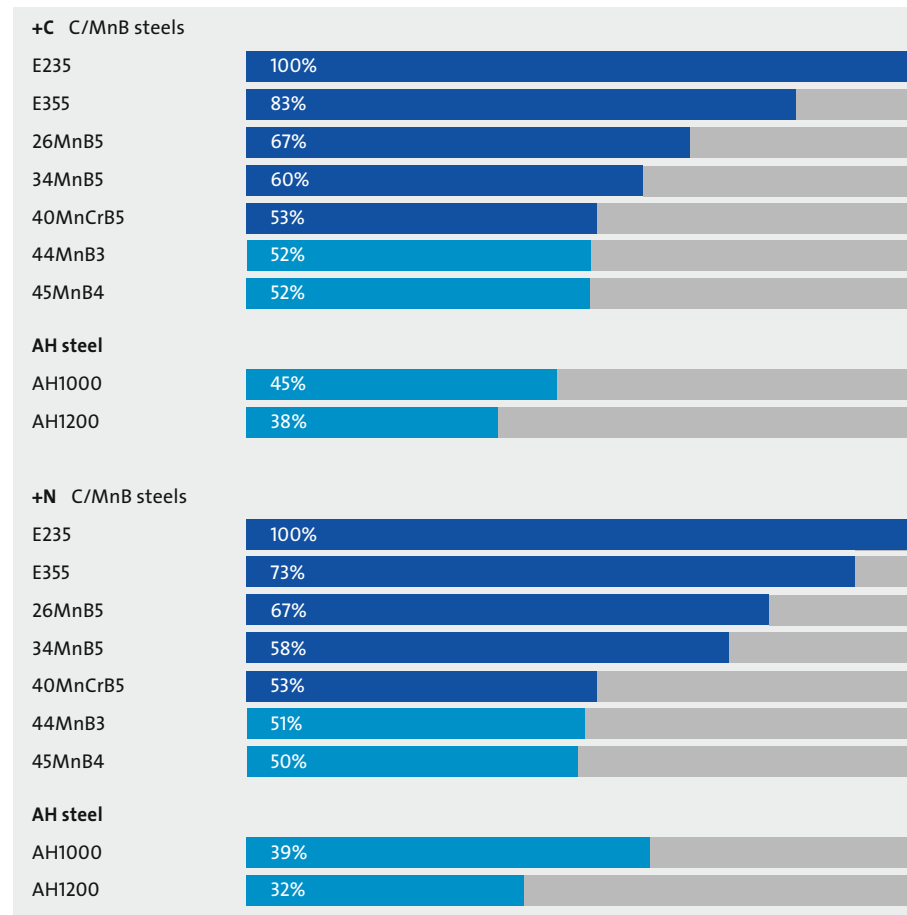
## Surface

Excellent surface condition
Minimised surface flaws (adhesions, scratches, dents, etc.)
Minimised corrosion protection, optionally specific corrosion protection

## Materials & dimensions

Application	Tube standard	Steel grades	Delivery condition	Dimensions range mm
Steering shafts	✓ EN 10305-2	✓ E235 ✓ E355 ✓ 26MnB5 ✓ 34MnB5 ✓ 40MnCrB5 * 44MnB3 * 45MnB4	✓ +C ✓ +N	✓ OD 20 - 35 ✓ WT 1.5 - 3
Steering spindles		* AH1000 * AH1200		✓ OD 25 - 40 ✓ WT 2 - 4

## Extract from achievable weight-savings



✓ Series production  
\* In validation

AH: air hardening

OD: outside diameter  
WT: wall thickness