

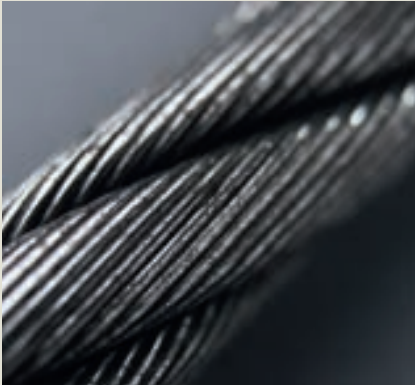
Corus Wire Rod

High tensile steel products

Endless possibilities



Premium-grade steel for high-strength engineering and construction applications.



Product in brief

Corus Wire Rod produces high-performance steel for the world's largest cable-supported bridges and deepwater mooring cables.

Corus has developed a range of high-tensile steels to meet the demands of high-strength cable applications. These steels are manufactured to exacting standards to enable them to carry the tremendous loads associated with bridge and deepwater applications. Our programme of continuous development ensures we deliver steels that allow designers and contractors to exploit new opportunities in the design and build of major infrastructure projects.

Our unrivalled knowledge and expertise in both technical and market development keep Corus ahead of the latest innovations in both steelmaking and wire rod manufacture. Advanced research, design and technical resources ensure that we continually extend the boundaries of steel innovation, keeping our customers ahead of the competition.

High-performance material

High-tensile bridge and deepwater cables demand consistent-quality wire rod with a high strength-to-weight ratio.

Savings in weight and cost are critical to the design and construction of cable-supported bridges and deepwater mooring cables. By choosing Corus high-tensile steel for the manufacture of high-tensile wire, cable cross-sections can be reduced due to the enhanced strength-to-weight ratio. This delivers:

- Reduced weight of cable and superstructure (including cable bands, clamps, hanger cables and saddles)
- Reduced cable installation and spinning time
- Reduced construction period
- Overall cost savings.

New steels are being developed by Corus that provide ultra-high strength with improved ductility, particularly torsional ductility after galvanising.



Typical high-tensile rod properties*

Typical tensile strength levels (MPa)

| Corus grade | 12mm rod as rolled | 12mm rod patented | 5mm hot-dip galvanized wire | Typical carbon (%) | Significant alloys |
|-------------|--------------------|-------------------|-----------------------------|--------------------|--------------------|
| M85V3 | 1220 | 1300 | 1850 | 0.83 | Mn, V |
| M90V3 | 1260 | 1380 | 1900 | 0.88 | Mn, V |
| M94Si3 | 1300 | 1430 | 2050 | 0.92 | Si, Cr |

* Actual wire properties depend on patenting, drawing and galvanizing practices. The table shows typical values that can be achieved.

Quality assurance

Corus Wire Rod is committed to producing high-tensile wire rod of the highest quality.

Strict process controls and the rigorous application of our quality-assurance standards provide the peace of mind that all products will fulfil your specifications.

Corus Wire Rod holds ISO9001:2000 for our quality management system and ISO14001 for our environmental management system.

Monitoring and control

Corus Wire Rod manufactures steel under strictly controlled conditions to ensure only the highest quality wire rod is supplied to customers.

- **Composition** – Raw materials are carefully chosen to maintain close control over residual elements during steelmaking, providing steel of a consistent quality for customers. Low levels of dissolved nitrogen, which are a characteristic of the basic oxygen steelmaking process, reduce the potential for both dynamic and static strain ageing effects.
- **Cleanness** – High levels of cleanness are maintained by using efficient shrouding systems during continuous casting. This ensures customers achieve consistent performance during their wire drawing and heat treatment operations.
- **Surface quality** – Corus wire rod is rolled from high-quality direct-cast feedstock. Surface integrity is maintained through to the finished wire rod by rolling under controlled conditions, ensuring that the quality of

the rod meets the requirements of the end application. Corus supplies rod to specified surface quality standards as detailed in BS EN 10221.

- **Segregation** – Our advanced casting technology ensures that segregation is maintained at exceptionally low levels to reduce the risk of fractures during wire drawing and subsequent operations.
- **Decarburisation** – This is minimised by single-cycle reheating in a state-of-the-art walking beam furnace, which directly feeds the rod mill. Our wire rod is supplied to decarburisation limits of 1.5% average maximum partial decarburisation, in line with EN 10263 – with tighter limits available on request.
- **Dimensional control** – To provide wire-drawing customers with a consistent feedstock, continuous Zumbach Gauge monitoring enables close control of rod tolerance and ovality.
- **Mechanical properties** – In addition to the closely controlled chemical composition of wire rod, the post-rolling cooling process plays a very important part in ensuring that the correct mechanical properties are achieved. Corus Wire Rod operates a Stelmor™-controlled cooling system which, combined with our modern process technology, optimises the microstructure of our products. This improves both the absolute level and the consistency of mechanical properties and ensures good drawability and high drawing reductions.

Testing and delivery

- A comprehensive testing procedure assures the quality of Corus products before they are despatched to customers. Testing in our fully equipped laboratories examines segregation, steel cleanness, scale, surface quality, decarburisation, chemical composition, size, shape and tensile strength properties.
- Despatch through our purpose-built rod service centre or automated coil warehouse allows Corus Wire Rod to offer an efficient delivery service from these streamlined despatch facilities. They are equipped with bespoke handling equipment which, combined with minimal handling and an anti-abrasive flooring system, eliminates storage and handling damage.

Product range

| | |
|-----------------|--|
| Rod diameter | 5.5-15.0mm in 0.5mm increments |
| Coil weight | Nominal 2100kg |
| Coil dimensions | Outside diameter 1250mm Inside diameter 850mm |

Technical support

A team of experienced metallurgists provides Corus Wire Rod customers with technical support, helping you to select the most appropriate steels and ensuring you receive the best possible advice.

Contact us

For more information or support on any of our products, please visit our website:

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