

Steel

perform[®] – strong yet formable.

High-strength cold forming steels
as an attractive solution for the
construction of special-purpose
vehicles.



thyssenkrupp



Strength meets formability – in perform[®] steel from thyssenkrupp.

Opposites attract – perform[®] proves it every day with widely-divergent properties that improve your processes. Its unique performance profile includes features such as:



Ideal for complex geometries



Lowest bending radii, good cutting and welding properties



High strength paired with good toughness



Outstanding surface quality



Take advantage of the properties of perform[®] steels from thyssenkrupp today to cut costs, resource consumption and environmental impact in the manufacture of special-purpose vehicles. perform[®] steels combine high strength with excellent cold forming characteristics, enabling weight reductions while offering you excellent perspectives for designing components with complex geometries.

Systematic performance.

The high strengths and qualities of perform[®] steels are the product of years of systematic development work. Their low carbon content and sophisticated micro-alloying concept with a special thermomechanical rolling process provide them with excellent cold forming characteristics and welding properties. The extremely fine-grain structure makes for excellent toughness. perform[®] steels offer the ideal combination of strength and formability.

Product profile



- 1 Minimum yield strength from 500 to 1,100 MPa coupled with excellent cold forming characteristics
- 2 Press-braking and bending with extremely low radii
- 3 Very good impact energy
- 4 Outstanding surface quality
- 5 Excellent welding characteristics (low CE/CET values)
- 6 Ideal for cutting, drilling or punching

Mechanical properties – test direction parallel to rolling direction, state of delivery: thermomechanically rolled

	Plate thickness [mm]	Max. width [mm]	Min. yield strength R_{eH} [MPa]	Tensile strength R_m [MPa]	Min. notch impact energy at -20°C CVN [J]	at -40°C CVN [J]	Min. Elongation A_5 [%] ²
Steel grade designation							
perform® 500	2.00–16.00	≤ 2,000	500	550–700	40	27	14
perform® 550	2.00–8.50	≤ 1,850	550	600–760	40	27	14
perform® 600	2.00–9.50	≤ 1,800	600	650–820	40	27	13
perform® 650	2.00–10.50	≤ 1,750	650 ¹	700–880	40	27	12
perform® 700	2.00–12.00	≤ 1,800	700 ¹	750–950	40	27	12
perform® 900	4.00–8.00	≤ 1,520	900	940–1,200	60	30	10
perform® 960	4.00–8.00	≤ 1,520	960	980–1,200	60	30	10
perform® 1100	4.00–8.00	≤ 1,520	1,100	1,200–1,550	40	30	8

Not all combinations of thickness and width are available.

¹According to EN 100149-2 the yield strength may be 20MPa lower for thicknesses lower for thicknesses > 8 mm.

²For plate thicknesses ≥ 3 mm.

Enhanced strength

perform® steels are ideal for complex component geometries in special-vehicle construction

- ⊕ Longitudinal and cross beams for trailers
- ⊕ Lifting and working platforms
- ⊕ On-board and mobile cranes and their booms
- ⊕ Dump truck side walls

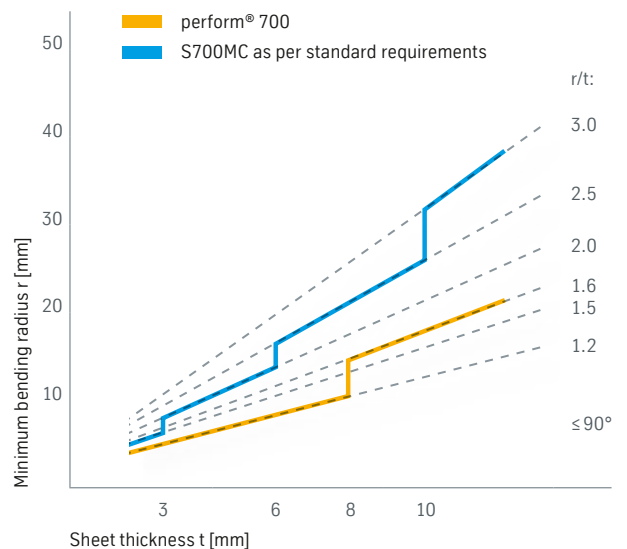
Forming with ease.

Thanks to their particularly fine-grain structure and high degree of cleanness, perform® steels deliver excellent forming characteristics. All grades are perfectly suitable for press-braking and bending at low radii. For extremely challenging forming characteristics, restricted bending radii as opposed to the standard can be agreed. The graph shows the significantly better press-brake radii for perform® 700 compared to standard requirements.

Visibly superior.

In special-purpose vehicle constructions, the good surface quality of perform® is an important advantage for the painting of exposed surfaces. perform® steels are also available in pickled and oiled conditions.

Bending radii: perform® 700 vs. S700MC



perform® 700 is significantly better suited to bending and press braking than to the comparative grade according to EN 10149-2.

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