



CR780Y980T-CH-GI

Multi-phase steel for cold forming

- complex-phase steel with improved formability

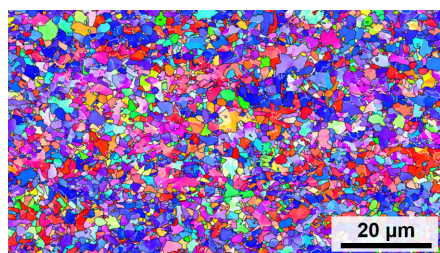
Materialinformationsblatt (MIB)

Material no. -

General Information

Complex-phase steels with improved formability (CH steels) consist of a very fine-grained structure with carefully adjusted proportions of ferrite, bainite, martensite, tempered martensite and retained austenite. Compared to dual-phase steels of the same strength class, CH steels have a higher yield strength ratio, lower work hardening and higher hole expansion, resulting in a very low tendency to crack in the edge area. They are therefore particularly suitable for complex formed components in this strength class with increased requirements on bending properties.

In addition to the excellent processing properties, the combination of chemical composition and microstructure results in very good weldability and high resistance to hydrogen-induced stress corrosion cracking. In addition, these steels show a very high insensitivity to liquid metal embrittlement (LME).



Micro structure CR780Y980T-CH

Chemical composition¹⁾

(melt analysis in percent weight)

	min. in %	max. in %
C		0.23
Si		1.2
Mn		3.0
P		0.050
S		0.010
Altotal	0.015	1.0
Cr + Mo		1.0
Nb + Ti		0.15

1) Heat analysis

Mechanical properties^{2, 3)}

Yield strength R_{p0.2} in MPa

780 - 950

Tensile strength R_m in MPa

980 - 1,140

Total elongation A₈₀ in %

≥ 10

Bake-Hardening BH₂ in MPa

≥ 30

2) Testing along the rolling direction

3) Valid up to three months after supply.

Available dimension

Thickness in mm	Width in mm
1.00 - 1.50	900 - 1,350

Form of delivery

This grade with higher tensile strength is supplied as hot-dip galvanized sheet (cold-rolled sheet carrier material) in a thickness range $\geq 1.00 \text{ mm} \leq 1.50 \text{ mm}$ in surface type MB with Pretex[®] texturing according to the dimensional standard (DIN EN 10143) or special agreements. The test unit is 20 t or each 20 t or part thereof of products of the same steel grade and nominal thickness. The test unit for strip material is the coil. The strip width depends on the sheet thickness and is a maximum of 1,350 mm. On request we can supply sample material in ZM.

Application examples

CH-steel grades are predestined for the needs of car manufacturing, especially for safety-relevant components.

The special quality of CP-steel grades can be seen in the well-balanced combination of forming capabilities and cracking resistance of the edges, which ensure its suitability for components with a complex shape (e.g. with protruding parts or rim holes).

As a consequence of the high yield strength, even slightly deformed components possess a high strength compared to dual-phase steel of the same strength class.

The CP-steel products can be processed by any common technique in the fields of pressing, jointing and painting. Moreover, the products described in this document can be welded manually or automatically by any known welding technique.

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