

Cold-rolled DP1000-GI

Ultra high-strength steels with good stretch, bending and edge formability

Tata Steel has a portfolio of cold-rolled coated ultra high-strength steels with a very high yield and tensile strength. The dual phase steels in this range combine high strength with good stretch, bending and edge formability. These properties make the products suitable for cold forming of relatively complex components produced by light deep drawing and/or roll forming. Typical applications are pillar reinforcements, sills, crossbeams and cross members.

Tata Steel offers two DP1000-GI products with different yield strengths and formability, DP1000LY-GI and DP1000HY-GI. Dependent on the application one or the other product can be applied to save weight compared to other high or advanced high-strength steels. Both DP1000LY-GI and DP1000HY-GI come with a hot-dip galvanised coating making it cost effective body structure solutions compared to electrogalvanised products.

Legend

CR = cold-rolled UHSS = ultra high-strength steel DP = dual phase LY = low yield HY = high yield GI = galvanised

Mechanical properties

Grade	Specification	Direction	Yield strength R_p (MPa)	Yield strength R_m (MPa)	Total elongation A_{80} (%)	BH_2 (MPa)
CR DP1000LY-GI	Tata Steel specification	L	590-740	980-1130	≥ 10	≥ 30
	Tata Steel typical	L	695	1005	14	51
CR590Y980T-DP	VDA 239-100	L	590-730	980-1130	≥ 10	≥ 30
CR DP1000HY-GI	Tata Steel specification	L	700-850	980-1130	≥ 8	≥ 30
	Tata Steel typical	L	765	1015	11	40
CR700Y980T-DP	VDA 239-100	L	700-850	980-1130	≥ 8	≥ 30

Chemical composition

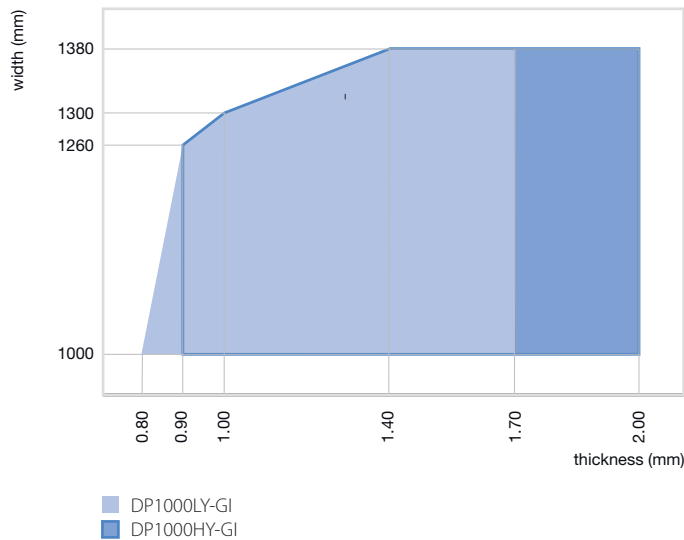
	C	Mn	Si	P	S	Al	Cr + Mo
DP1000LY-GI according to CR590Y980T-DP (VDA 239-100)	< 0.20	< 2.9	< 1.0	< 0.040	< 0.010	0.015 - 1.0	< 1.4
DP1000HY-GI according to CR700Y980T-DP (VDA 239-100)	< 0.23	< 2.9	< 1.0	< 0.040	< 0.010	0.015 - 1.0	< 1.4

Values provided in mass percentages

Application properties

	Bending angle at $t = 1.0$ mm VDA 238-100 (°)	Hole expansion coefficient ISO 16630 (%)
DP1000LY-GI Typical properties	75	15
DP1000HY-GI Typical properties	75	20

Dimensional window of CR DP1000-GI



Mechanical and dimensional properties are according to VDA 239-100 requirements. Please contact us for other dimensions.

Relevant performance of CR DP1000-GI within the coated AHSS/ UHSS product portfolio

Grade	Bending/ Roll forming	Deep drawing	Weldability	Crash performance/ lightweighting potential
DP600-GI	+++	+++	+	o
DP800-GI	++	++	+	+
DP800-GI HyperForm	++	+++	+	+
CP800-GI	+++	+	+	++
DP1000LY-GI	+	++	+	++
DP1000HY-GI	+	o	+	+++

o = neutral + = good ++ = excellent +++ = best

Our material experts are there to support the deployment of DP1000-GI grades in your specific application area. Our online material database Aurora Online provides our customers with comprehensive data sheets and ready to run input decks.

For more information (also for access to Aurora Online):

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