

Cold-rolled DP600-UC

High strength, high ductility, high formability

DP600-UC is a cold-rolled, uncoated dual phase steel with a strength of approximately 600 MPa and a formability that makes it suitable for deep drawn components. The material is often used for body-in-white structural and reinforcement components like pillar reinforcements, crash structures, longitudinal and cross members as well as for light weight

seat structures. The good formability of DP600-UC allows the user to increase the strength of the finished component by exploiting the high work hardening characteristics. Substitution of standard grades with DP600-UC provides opportunities to reduce thickness while maintaining the in-service performance, and offers potential cost and mass savings.

Legend

CR = cold-rolled DP = dual phase LY = low yield UC = uncoated

Mechanical properties

Grade	Test direction	Yield strength R_p (MPa)	Tensile strength R_m (MPa)	Elongation A_{80} (%) min
Typical Tata Steel product properties	L	400	640	23
	T	390	650	22
prEN 10338: 2010, HCT600X	L or T	340-420	≥600	≥20
VDA 239-100:CR330Y590T-DP	L	330-430	590-700	≥20

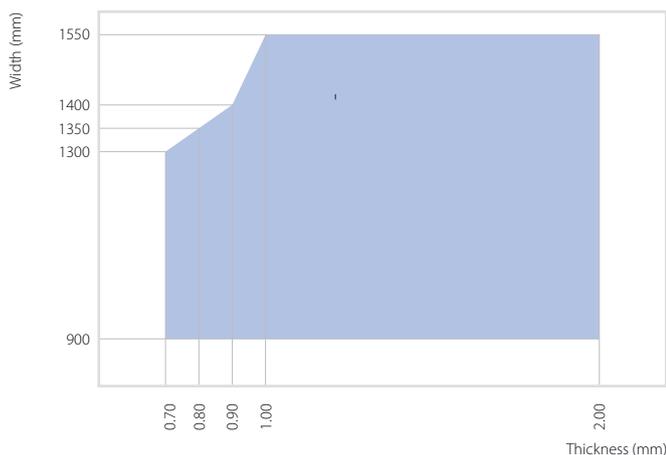
The index of elongation (A_{80}) indicates the original thickness length used, expressed in millimetres e.g. 80mm

Chemical composition

	C	Si	Mn	P	S	Al _{tot}	Cr+Mo	Nb+Ti	V	B
Typical Tata Steel product properties	0.10	0.25	1.70	0.02	0.005	0.040	0.50	0.02	0.002	0.003
prEN 10338:2010, HCT600X	≤0.17	≤0.80	≤2.20	≤0.08	≤0.015	≤2.00	≤1.00	≤0.15	≤0.20	≤0.0050
VDA 239-100: CR330Y590T-DP	≤0.15	≤0.50	≤2.00	≤0.08	≤0.015	≤1.50	≤1.00	≤0.15		≤0.0050

Values provided in mass percentages

Dimensional window of CR DP600-UC



Relevant performance of DP600-UC within the uncoated AHSS/UHSS product portfolio

Grade	Bending/ Roll forming	Deep drawing	Weldability	Crash performance/ lightweighting potential
DP600-UC	+++	+++	+	o
DP800-UC	++	++	+	+
DP1000LY-UC	+	++	+	++

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

Our material experts are there to support the deployment of DP600-UC 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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