

Dogal 600 and 800 DP

Extra and Ultra High Strength Steels

General

Dogal 600 DP and 800 DP are extra and ultra high strength steels that are hot-dip galvanized for protection against corrosion.

Dogal DP grades are dual phase steels that contain ferrite, which is soft and contributes to good formability, and martensite, which is hard and contributes to the strength of the material. The gap between the yield strength and the tensile strength is normally high in the unworked condition, but decreases rapidly on cold working.

Dogal DP grades show less spring-back after cold forming compared to HSLA steels with the same tensile strength due to a large gap between the yield strength and the tensile strength, i.e. a high work hardening exponent.

Dogal DP steels are easy to cold form, and they are excellent for stretch-forming.

Dimensions

Dogal DP steels are available in thicknesses between 0.5 and 2.0 mm, and in widths up to 1500 mm.

Limitations may occur depending on grade and thickness.

Applications

Extra and ultra high strength steels can be used for example in the automotive industry. Strength can be increased and weight can be saved by replacing mild steel or conventional high strength steels with extra and ultra high strength steel grades.

Tolerances

Dogal DP are supplied to tolerances in accordance with EN 10143.

Zinc coating

The various coating thicknesses are classified into weight classes which specify the minimum zinc weight in g/m² on both sides, as determined by means of the triple-spot test in accordance with EN 10327.

Weight class	Coating thickness per side *	Weight determination g/m ² on two sides,	
		Triple-spot-test min	Singel test min
Z100	7	100	85
Z120	8	120	100
Z140	10	140	120
Z200	14	200	170
Z275	20	275	235

* The values are calculated on the basis of the minimum values for the triple-spot test (1 μm = 7,14 g/m²).

Surface appearance

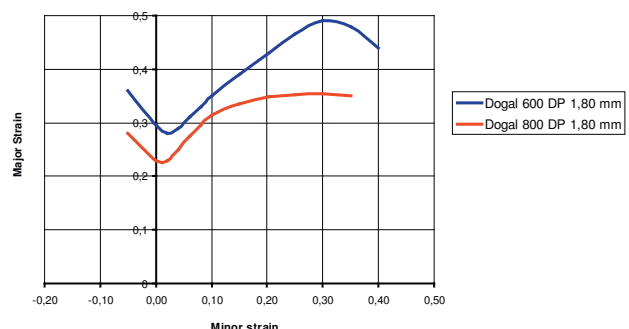
The surface is skin-passed.

Surface treatment

DP steels are provided with chemical and/or oiling passivation as surface protection. The chemical passivation are chromate free and fulfil the demands in the End-of-life Vehicles Directive (2000/53/EC) and the Directive on the restriction of the use of ceratin hazardous substances in electrical and electronic equipment (2002/95/EC).

Forming limit curves

(typical values)



Mechanical properties

(transverse to rolling direction)

Steel grade	Yield strength R_{p02} or R_{eL} N/mm min - max	Tensile strength R_m N/mm min-max	Elongation A_{80} % min	Bake Hardening index BH ₂ MPa min
Dogal 600 DP	350 - 480	600 - 700	16	30
Dogal 800 DP	500 - 640	800 - 950	12	30

Chemical composition

Steel grade	% by mass						
	C % max	Si % max	Mn % max	P % max	S % max	Cr % max	Al % tot min
Dogal 600 DP	0,120	0,300	1,660	0,020	0,004	0,500	0,020
Dogal 800 DP	0,160	0,250	1,90	0,020	0,004	0,500	0,015

Welding

Dogal 600 and 800 DP can be welded with all conventional fusion welding methods. The steel can be spot welded to itself and also to other steels (soft steels and high strength steels). When spot welding is used it is recommended that increased electrode forces and longer weld times are used.

Technical service and information

Knowledge Service Center will be pleased to assist with additional information concerning this product from SSAB Tunnpåt.

Specifications herein are for general reference only. They are valid at date of publication and are subjects to change without notice due to ongoing product development.
Specifications are binding only if confirmed in writing.

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