

## Dogal 600 and 780 CP

### Advanced High Strength Steel

#### General

Dogal CP steels are cold reduced advanced high strength steels, which are hot-dip, galvanized for corrosion protection.

Dogal CP grades are multiphase steels. The structure of the steels is a ferrite/bainite matrix containing martensite and small amounts of retained austenite and/or perlite. This creates a high yield strength - tensile strength ratio. Generally CP steels are easy to cold form and excellent for stretch forming and roll forming. The steel grades are supplied in accordance with EN 10336.

#### Dimensions

Dogal CP steels are available in thicknesses between 0,7 and 2,0 mm and in widths up to 1500 mm. Limitations may occur depending on combination of width and thickness.

#### Applications

Extra high strength steels can be used for example in the automotive and transport industry. Dogal 600 and 780 CP are very suitable for any application with stretch forming. The improved bendability properties make more complicated design solutions possible. Strength can be increased and weight can be saved, by replacing mild or conventional high strength steels with advanced high strength grades.

#### Tolerances

Dogal CP grades are supplied with 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/m<sup>2</sup> on both sides, as determined by means of the triple-spot test in accordance with EN 10327.

Weight class	Coating thickness per side * µm	Weight determination g/m <sup>2</sup> 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/m<sup>2</sup>).

#### Surface appearance

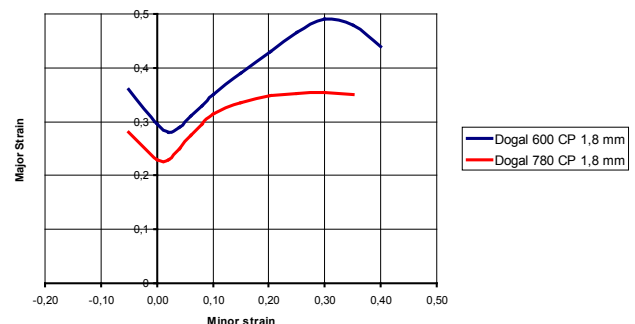
The surface is skin-passed.

#### Surface treatment

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

#### Forming limit diagrams

(true strain)



## Mechanical properties

(transverse to rolling direction)

Steel grade	Yield strength	Tensile strength	Elongation	Bake Hardening index BH <sub>2</sub>
	R <sub>p02</sub> or R <sub>eL</sub> MPa min - max	R <sub>m</sub> MPa min - max	A <sub>80</sub> % min	MPa min
Dogal 600 CP	350 - 500	600 - 750	16	30
Dogal 780 CP	500 - 700	780 - 950	10	30

## Chemical composition

Steel grade	% by mass						
	C max	Si max	Mn max	P max	S max	Cr max	Al <sub>tot</sub> min
Dogal 600 CP	0,120	0,300	1,660	0,020	0,004	0,500	0,020
Dogal 780 CP	0,160	0,250	1,90	0,020	0,004	0,500	0,015

## Forming

Dogal CP steels are meant for cold forming, and can be formed in a traditional way.

## Bending

The bendability of CP steels is good even at higher strength levels. At advanced bending it is preferred to bend transverse the rolling direction since the bendability is somewhat better than in the longitudinal direction.

## Rollforming

Roll forming is very suitable for CP steels and this also permits smaller radii compared to bending.

## Welding

Dogal 600 and 780 CP 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 welding times are used.

## Technical service and information

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

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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