

Dogal 1000 DPX

Ultra high strength steel

General

Dogal 1000 DPX is an ultra high strength steel that is hot-dip galvanized for corrosion protection.

Dogal DPX 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.

Generally DPX steels are easy to coldform and excellent for stretch forming and roll forming.

Compared to normal dual phase steels the DPX steels have improved formability properties especially at bending and are superior at reverse bending operations.

Dimensions

Dogal 1000 DPX steels are available in thicknesses between 1,0 mm and 2,0 mm and in widths up to 1500 mm. Limitations may occur depending on combination of width and thickness.

Applications

Ultra high strength steels can be used for example in the automotive and transport industry. Dogal 1000 DPX is especially favourable for safty details when the need for high energy absorption is required. The improved bendability properties makes more complicated design solutions possible. Strength can be increased and weight can be saved by replacing mild steels with extra and ultra high strength grades.

Tolerances

Dogal DPX 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 * µm | 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

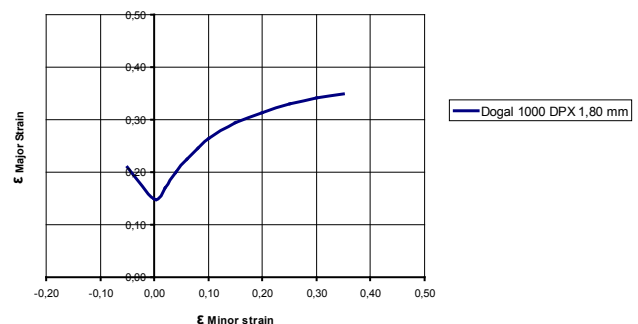
The surface is skin-passed.

Surface treatment

DPX steels are provided with oiling passivation as surface protection.

Forming limit curves

(typical values)



Mechanical properties

(transverse to rolling direction)

| Steel grade | Yield Strength $R_{p0.2}$ MPa min - max | Tensile strength R_m MPa min - max | Elongation A_{80} % min |
|----------------|--|---|------------------------------------|
| Dogal 1000 DPX | 800 - 1000 | 1000 - 1200 | 6 |

Chemical composition

| Steel grade | % by mass | | | | | | | | | |
|----------------|-----------|-----------|-----------|----------|----------|------------------|----------------|----------------|----------|----------|
| | C max | Si max | Mn max | P max | S max | Al tot min | Cr - Mo max | Nb - Ti max | V max | B max |
| Dogal 1000 DPX | 0,195 | 0,25 | 1,90 | 0,020 | 0,0040 | 0,020 | 0,80 | 0,030 | 0,020 | 0,001 |

Formability properties

| Steel grade | Stretch-forming H/d | Deep drawing LDR | Inside radius for 90° bend (t=thickness) | Flanging | |
|----------------|------------------------|---------------------|--|----------|----------|
| | | | | Burr in | Burr out |
| Dogal 1000 DPX | 0,25 | 1,9 | 2,5 x t | 1,25 | 1,20 |

Welding

Dogal 1000 DPX can be welded with all conventional fusion welding methods. The steel can be spot welded to other soft steels and to itself. 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 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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