

Domex 420 MC D

Hot rolled, high strength, cold forming steel

Product

Domex 420 MC D* is steel corresponding to grade S420 MC in EN 10149-2. This grade also meets the demands for S355J2 in EN 10025-2.

Besides this it also meets the demands on higher tensile strength for S355J2G3 in EN 10025 (St 52-3, DIN 17100; 50B, BS 4360). The steel is thermo-mechanically rolled and therefore not aimed for normalization.

Applications

The steel is intended for use throughout the engineering industry as a superior alternative, with better weld- and forming properties, to the commonly used grade S355J2. The steel is also used for pressed and formed parts in the automotive industry.

Dimension range

Domex 420 MC D is available in the range of sizes tabulated below in as rolled or pickled condition with mill edge.

For material with trimmed edges, the width is reduced by 35 mm.

Some exceptions may occur.



Thickness (mm)	Width (mm)	Length (mm)
3,00 - (3,25)	800 - 1350	1500 - 13000
3,25 - (3,75)	800 - 1400	1500 - 13000
3,75 - (4,00)	800 - 1450	1500 - 13000
4,00 - (4,50)	800 - 1550	1500 - 13000
4,00 - (12,00)	800 - 1600	1500 - 13000

Chemical composition

	C % max	Si % max	Mn % max	P % max	S % max	Al % min	Nb % max	V % max	Ti % max
Domex 420 MC D S355J2	0,10 0,20	0,03 ¹⁾ 0,55	1,50 1,60	0,025 0,025	0,010 0,025	0,015 -	0,09 ²⁾ -	0,20 ²⁾ -	0,15 ²⁾ -

1) If a thicker Zn layer is required, the Si content should be about 0.20%. If the material is to be hot-dip galvanized, this must be specified in the order

2) Sum of Nb, V and Ti = 0.22% max.

Mechanical properties

	Test piece direction	Yield strength	Tensile strength	Elongation on failure ≥ 3 mm
		R _{eh} N/mm ² min	R _m N/mm ² min - max	A ₅ % min
Domex 420 MC D S355J2	Transverse	420	490 - 620	20
	Longitudinal	420	490 - 620	22
	Transverse	355	470 - 630	20

Bendability

	Nominal sheet thickness, t		
	≤3 mm	3 mm < t ≤ 6 mm	>6 mm
Min. recommended bending radius (≤90°)	0,4 x t	0,5 x t	0,8 x t

Impact strength

The Charpy V-notch test is carried out according to EN 10045-1.

Designation	Test temperature	Energy level
D	-20°C	40J

1) Other test temperatures and impact strengths are available subject to special agreement.

Welding

The low contents of carbon, phosphorus and sulphur in Domex 420 MC D enable all conventional welding methods to be readily used. No preheating is necessary.

There are a large number of filler metals that can be used for welding of Domex 420 MC D, which gives a weld that can meet the same minimum tensile strength requirements as the base metal. Some examples of different filler metals that can be used are tabulated below.

Heat treatment

Stress relief annealing should be carried out within the temperature range of 530 - 580°C. Heat treatment above this range, e.g. normalizing and hot forming, reduces the strength and should be avoided.

Technical service and information

Knowledge Service Center will be pleased to assist with additional information concerning this product and other products from SSAB Tunnpått.

Examples on different filler metals

Manual metal arc welding coated electrode	Gas shielded metal arc welding		Submerged arc welding Wire/powder	Manufacturer
	Cored electrode	Wire electrode		
OK 48.00 Filarc 88 S P 48 S, Maxeta 22 Supercord	OK Tubrod 15.00 Filarc PZ6103 DWA 50 Fluxofil 12	OK Autrod 12.51 Filarc PZ6000S Elgamatic 100 Spoolcord 21	OK 12.24/OK Flux 10.62 - - Fluxocord 40/Powder OP 121TT	ESAB Filarc ELGA Oerlikon

The particulars in this data sheet are correct at the time of going to print and are intended to give general guidance for the use of the product. Subject to changes arising from continual product development. The information and data must not be regarded as guaranteed values, unless specially confirmed in writing.



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