SSAB SWEDISH STEEL

DOMEX®

05-04-01 GB8416Domex

Domex 460 MC
Hot rolled, extra high strength, cold forming steel

Product

Domex cold forming steels are thermo-mechanically rolled in modern plants where the heating, rolling and cooling processes are carefully controlled.

The chemical analysis, consisting of low levels of carbon and manganese has precise addition of grain refiners such as niobium, titanium or vanadium. This together with a clean structure, makes Domex Steels the most competitive alternative for cold formed and welded products.

Domex 460 MC with designation D and E meet and exceed the demands for steel S460 MC in EN-10149-2.

Applications

The extra high strength steel grades are used in applications such as truck chassis, cranes and earthmoving machines. In these applications, the high strength of the steels is used to save weight and/or to increase the payload.

As a result of this and the good formability of the steels, the total costs can be reduced.

Dimension range

Domex 460 MC 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)
2,00 - (2,50)	1000 - 1035	1500 - 13000
2,50 - (2,75)	800 - 1100	1500 - 13000
2,75 - (3,00)	800 - 1200	1500 - 13000
3,00 - (3,50)	800 - 1350	1500 - 13000
3,50 - (4,00)	800 - 1400	1500 - 13000
4,00 - (4,50)	800 - 1500	1500 - 13000
4,50 - (5,00)	800 - 1550	1500 - 13000
5,00 - (11,00)	800 - 1600	1500 - 13000
11,00 - 12,00	800 - 1400	1500 - 13000

Chemical composition

C % max	Si % max	Mn % max	P % max	S % max	Al % min	Nb % max	V % max	Ti % max
0,10	0,10[1)]	1,50	0,025	0,010	0,015	0,09[2)]	0,20[2)]	0,15[2)]

1) 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

Yield strength R_{eH} N/mm² min	Tensile strength R_m N/mm² min - max	Elongation on failure < 3 mm A_{80} % min	Elongation on failure ≥ 3 mm A_5 % min
460	520 - 670	15	19

Bendability

	Nominal sheet thickness, t ≤3 mm	3 mm <t ≤6 mm	>6 mm
Min. recommended bending radius (≤90°)	0,5 x t	0,7 x t	0,9 x t

Impact strength

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

Designation	Test temperature	Energy level
B	Not impact tested	
D	-20°C	40J
E	-40°C	27J

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

Welding

The low contents of carbon, phosphorus and sulphur enable all conventional welding methods to be readily used for Domex 460 MC. No preheating is necessary.

There are a large number of filler metals that can be used for welding of Domex 460 MC, 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 Tunnplåt.

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 74.78	OK Tubrod 15.17	OK Autrod 12.51	OK 12.24/OK Flux 10.62	ESAB
Filarc 88 S	Filarc PZ6145	Filarc PZ6041; PZ6047	-	Filarc
P 48 S, Maxeta 21	DWA 50, DWA 55E	Elgamatic 103	-	ELGA
Tenacito 70	Fluxofil 41	Carbofil CrMo-1	Fluxocord 41/Powder OP 121TT	Oerlikon

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