

Domex Wear 360

Hot rolled abrasion resistant steel

Product

Domex Wear 360 is a quenched wear resistant steel with minimum hardness of 360 HBW. The material's chemical composition is specially developed for our modern plant where the heating, rolling and cooling processes are carefully controlled. Due to the iron ore based metallurgy in combination with an advanced production process, Domex Wear 360 is not only a martensitic abrasion resistant material, but also a material that shows good bending properties, high impact toughness and is very easy to weld.

Applications

Domex Wear 360 is well suited for applications subjected to abrasion wear that also requires high material strength and impact toughness. Typical applications are: pipes for grain, abrasive slurry or concrete pumps, conveyers, truck bodies, feeders, loader buckets, concrete mixers, timber grapples, etc.

Mechanical properties

Hardness min - max HBW	Yield Strength $R_{p0.2}$ typical MPa (N/mm ²)	Ultimate Tensile Strength R_m typical MPa (N/mm ²)	Elongation A_5 typical %
360 - 420	1000	1250	10

The tensile test is performed along the rolling direction.

Testing

The hardness is tested according to EN ISO 6506-1, Brinell hardness test.

Dimensions

Domex Wear 360 is available in the following range of sizes:

Thickness mm	Width mm	Length mm
4,00 - 6,00	1260	1500 - 13000
4,00 - 6,00	1500	1500 - 13000
4,00 - 6,00	1600	1500 - 13000

Cut-to-length with mill edge only.

Delivery conditions

Domex Wear 360 is delivered quenched.

Impact toughness

The stated impact toughness for Domex Wear 360 is a typical value for 6 mm material thickness, tested as Charpy V-notch test, on a longitudinal test specimen, in accordance with EN 10045-1.

Test temperature Degrees Celsius	Impact energy Joule/cm ²
- 40°C	44

Note: 44 Joule/cm² corresponds to approximately 35 Joule for a full size Charpy V-notch test specimen

Bending

Minimum recommended punch radius is 3,0 x material thickness for a 90° bend in any direction. The inner bending radius will normally be equal to, or smaller than, the used punch radius.

Heat treatment and fabrication

Domex Wear 360 has obtained its mechanical properties by a quenching process and is not suited for applications requiring hot working or heat treatments at temperatures above 200° C since the material then may lose its guaranteed properties. The material is not suited for pickling since this may cause hydrogen embrittlement.

Tolerances

The tolerances conform to EN 10051. More narrow tolerances are available on request.

Surface condition

Domex Wear 360 is supplied as black material, i.e. a thin layer of iron oxide.

Chemical composition

C	Si	Mn	P	S	B	CEV	CET
%	%	%	%	%	%	%	%
max	max	max	max	max	max	typical	typical
0,15	0,50	1,60	0,020	0,005	0,004	0,40	0,27

The steel is grain refined.

In addition Nb, V, Cr, Mo, Ni, Ti may be used.

$$CEV = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$$

$$CET = C + \frac{Mn+Mo}{10} + \frac{Cr+Cu}{20} + \frac{Ni}{40}$$

Welding

The low contents of carbon, phosphorus and sulphur enable all conventional welding methods to be readily used for Domex Wear 360.

Domex Wear 360 has low carbon equivalent relative its strength.

As a result of the lean chemistry, no preheating is necessary when welding.

To reduce the risk of hydrogen embrittlement, filler materials which give a hydrogen content of maximum 5 ml/100 gram in the weld metal are recommended.

Examples of recommended filler materials are

Filler material Yield strength	MMA Manual metal arc	SAW Submerged arc welding	MIG/MAG Gas metal arc	FCAW Flux cored arc welding
480 MPa	AWS: A5.1 E 7018	AWS: A5.17 F 7AX-EX	AWS: A5.18 ER 70S-X	AWS: A5.20 E 7XT-X
620 MPa	AWS: A5.5 E 9018	AWS: A5.23 F 9AX-EX	AWS: A5.28 ER 90S-X	AWS: A5.29 E 9XT-X
760 MPa	AWS: A5.5 E 11018	AWS: A5.23 F 11AX-EX	AWS: A5.28 ER 110S-X	AWS: A5.29 E 11XT-X

Note: X stands for one or more characters.

For more detailed information regarding welding, please contact our Knowledge Service Centre.

Technical service and information

Knowledge Service Center will be pleased to assist with additional information regarding Domex Wear 360 and other products from SSAB Swedish Steel.

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.

SSAB Tunnpålat AB
781 84 Borlänge
Tel +46 243 700 00
Fax +46 243 720 00
office@ssabtunnplat.com
www.ssabtunnplat.com
www.ssabdirect.com

Denmark
SSAB Svensk Stål A/S
Tel +45 4320 5000
ssab.dk

Finland
OY SSAB Svenskt Stål AB
Tel +358 9 686 6030
ssab.fi

Czech Republic
SSAB Swedish Steel s.r.o.
Tel +420 545 210 550

France
SSAB Swedish Steel SA
Tel +33 1 55 61 91 00
ssab.fr

Germany
SSAB Swedish Steel GmbH
Tel +49 211 912 50
Tel +49 211 912 51 29
ssab.de

Great Britain
SSAB Swedish Steel Ltd
Tel +44 1905 795794
swedishsteel.co.uk

Italy
SSAB Swedish Steel S.p.A
Tel +39 030 905 881 1
ssab.it

The Netherlands
SSAB Swedish Steel BV
Tel +31 24 679 05 50
ssab.nl

Norway
SSAB Svensk Stål A/S
Tel +47 23 11 85 80
ssab.no

Poland
SSAB Swedish Steel Sp.
z o.o.
Tel +48 22 723 03 80
Tel +48 22 723 00 49

Portugal
SSAB Swedish Steel
Tel +351 256 371 610
ssab.pt

Spain
SSAB Swedish Steel S.L.
Tel +34 91 300 54 22
ssab.es

USA
SSAB Swedish Steel Inc
Tel +1 412-269 21 20
swedishsteel.us

Brazil
SSAB Swedish Steel Ltda.
Tel + 55 41 3014 9070
ssab.com.br

South Africa
SSAB Swedish Steel Pty Ltd
Tel +27 11 822 2570
swedishsteel.co.za

China
SSAB Swedish Steel
Tel +86 10 6440 3550
swedishsteel.cn

Korea
SSAB Swedish Steel Ltd
Tel +82 2 369 7272

Australia
SSAB Swedish Steel Pty.Ltd
Tel +61 3 9548 8455

Russia
SSAB Swedish Steel
Tel + 7 495 781 39 33

Turkey
SSAB Swedish Steel
Tel + 90 216 372 63 70