

L290NB 1)

Hot-rolled coils for the manufacture of large-diameter pipes

Material no.	1.0484
according to	DIN EN 10208-2
Tensile strength class	A

1) Other standards or specifications by agreement

Usage

Salzgitter Flachstahl supplies hotrolled wide coil for the manufacture of large-diameter pipes. Large-diameter pipes are predominantly used for carrying gas and liquids under high pressure and as piling pipes. There are different manufacturing processes.

The technological values of the finished pipe are laid down in the standards API 5L and EN 10208-2. Salzgitter Flachstahl warrants the hot-rolled wide coil standards. When ordering hot-rolled wide coil for pipe manufacturing, the necessary technical key data have to be coordinated. Information about pipe diameter and welding process allow an estimation of the pipe data.

The large diameter pipe qualities (according to API 5L through X70 or according to EN 10208 through L485MB) of Salzgitter Flachstahl have been tested and approved by the Technischer Überwachungsverein (TÜV) for application in longdistance pipelines (incl. DIN 2470, part 2).

Chemical composition 1) 2)

(in percent by weight)

	min.	max.
C		0.17% 3)
Si		0.40%
Mn		1.20% 3)
P		0.025%
S		0.020%
Ti		0.04%
V		0.05%
Nb		0.05%
C _E		0.42% 4)

1) Heat analysis

2) $0,015 \leq Al_{total} < 0,060$; $N \leq 0,012$; $Al/N \geq 2$; $Cu \leq 0,25$; $Ni \leq 0,30$; $Cr \leq 0,30$; $Mo \leq 0,13$

3) For a reduction by 0.01 % each below the max. carbon content an increase of the manganese content by 0.05 % above the max. value is permissible, the increase being limited to 0.2 %.

4) A max. carbon equivalent $C_E = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni)/15$ can be agreed upon. C_E is determined for the check analysis only.

Mechanical properties 1)

Nom. thick. e	Yield strength R _{10,5}
≤ 25mm	290 – 440 MPa

Nom. thick. e	Yield strength R _m
≤ 25mm	≥ 415 MPa

Nom. thick. e	Total elongation A ₅
≥ 3 mm	≥ 21 %

1) Values for pipe circumference tests

Notch impact energy

Temperature	Notch impact energy
0°C	1)

1) Mean value of three tests

Cold-forming

Cold-forming processes such as bending, flanging, expanding etc. can be easily carried out. A subsequent heat treatment is usually unnecessary.

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Available dimensions

Hot-rolled coils unpickled, mill edge

Thickness in mm	Width in mm
4,00 –12,70	900 –1650

Thicknesses between 12,70 and 24 mm on request.

Hot-rolled slit strip

Thickness in mm	Width in mm
4,00 –10,00	140 – 740

Widths <140 mm on request

Hot-forming properties

The normalised rolled steel grades L245NB - L415NB are suitable for hot-forming. Hot forming of the thermomechanically rolled steel grades L245MB - L485MB above 580 °C may cause a decrease of yield point and tensile strength and should therefore be avoided. If the pipes are intended for manufacturing inductive bends, this has to be coordinated with the producer.

Welding

Observing the general technical directions, the steel is weldable by hand as well as mechanically according to all electric processes. A preheating of the steel for welding purposes is not necessary if normal laying conditions prevail. It has to be taken into account that the behaviour of this steel during welding and thereafter depends not only on the material but also on the conditions of welding the pipeline and may thus be impaired.

The filler metals to be used for these tensile strengths are welding rods and electrodes approved accordingly.

Condition of delivery, scope of testing and certificate

Delivery and test can be agreed to be made similar to EN 10208-2 and API 5 L.