



SZBS800x[®]expand[®] 40

Multiphase steels: Bainitic grade

Materialinformationsblatt (MIB)

Material no.	-
Tensile strength class	D

General informations

The steel grade SZBS800 is characterized by a very high yield strength and tensile strength of more than 800 MPa with sufficiently high elongation for cold forming processes.

In addition to the conventional hot strip design, hot strip grade SZBS800 can also be produced with the surface coatings ZM (StronSal[®]), Z (hot-dip galvanized) and ZE (electrolytically galvanized).

Due to the chemical composition of the carrier material and the coatings, good weldability is ensured.

The characteristic values correspond to a HR660Y760T-CP with the exception of the BH₂ value.

x[®]expand[®]

Compared SZBS800, the steel grade SZBS800x[®]expand[®]40 guarantees a hole expansion value.

The edge crack sensitivity is significantly reduced compared to conventional material, thus reducing the risk of failure during processing.

Hole expansion ratio	HET ¹⁾ in %
	≥ 40

1) Hole expansion test according to ISO 16630.

Chemical composition²⁾

(in percent by weight)

	min. in %	max. in %
C		0.18
Si		1.00
Mn		2.20
P		0.050
S		0.010
Al	0.015	1.20
B		0.005
Cu		0.20
Ti + Nb		0.25
Cr + Mo		1.00

2) Heat analysis

Mechanical properties^{3,4)}

Testing direction	Yield strength R _{p0,2} in MPa
longitudinal	660 - 820
transversal	680 - 840

Testing direction	Tensile strength R _m in MPa
longitudinal	760 - 960
transversal	800 - 980

Testing direction	Total elongation A ₈₀ ⁵⁾ in %
longitudinal	≥ 10
transversal	≥ 10

Testing direction	Total elongation A ₅ ⁵⁾ in %
longitudinal	≥ 12
transversal	≥ 11

3) The mechanical properties are in the testing directions longitudinal and transversal for information. Please select the desired testing direction (longitudinal or transversal) when ordering.

4) Salzgitter Flachstahl does not confirm the BH₂ value according to VDA 239-100.

5) It applies to nominal thickness e:

e < 3 mm: A80

e ≥ 3 mm: A5

Available dimensions

Hot-rolled coils unpickled, mill edge

Thickness in mm	Width in mm
2.00 - 2.24	900 - 1,300
2.25 - 2.99	900 - 1,350
3.00 - 3.99	900 - 1,450
4.00 - 4.99	900 - 1,500
5.00 - 5.99	900 - 1,650

Hot-rolled coils pickled, mill edge

Thickness in mm	Width in mm
2.00 - 2.24	900 - 1,300
2.25 - 2.99	900 - 1,350
3.00 - 3.99	900 - 1,450
4.00 - 4.99	900 - 1,500
5.00 - 5.99	900 - 1,530

Hot-rolled coils, slit lengthwise

Thickness in mm	Width in mm
2.00 - 2.99	100 - 640
3.00 - 4.60	100 - 690
4.61 - 5.99	140 - 740

Thicknesses ≤ 2 mm as well as widths ≥ 1,530 mm up on request.

Trimmed material up on request.

Microstructure

The microstructure of SZBS800 typically consists of bainite. Occasionally, small amounts of other phases (e.g. martensite, ferrite) may be present.





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Application examples

Typical applications for making maximum use of the great tensile strength, at the same time as minimising the weight of the component, are chassis components, such as single-shell handlebars.



Above: Handlebars

Below: transverse control arm



Control arm in automotive engineering

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