



## QStE690TM

High-strength steels for cold-forming,  
thermomechanically-rolled

Material no.	1.8974
IMDS no.	14191
Tensile strength class	D
VDA 239-100	
According to	SEW092

### General

This steel grade is a thermomechanically rolled material with high strength and at the same time very good forming behavior due to the addition of various alloying elements.

### Chemical composition<sup>1)</sup>

(in percent by weight)

	min. in %	max. in %
C <sup>3)</sup>	0.04	0.10
Si		0.50
Mn		2.10
P <sup>3)</sup>		0.020
S <sup>3)</sup>		0.005
Al <sub>total</sub>	0.015	
B		0.0020
Mo		0.30
Nb		0.090

1) Heat analysis

### Mechanical properties<sup>2)</sup>

Yield strength R <sub>eH</sub> in MPa	
690 – 880	
Tensile strength R <sub>m</sub> in MPa	
770 – 950	
Total elongation A <sup>3)</sup> in %	
2.0 ≤ e < 3.0 mm	≥ 8
3.0 ≤ e < 6.0 mm	≥ 12
6.0 ≤ e < 10.0 mm	≥ 11
10.0 ≤ e < 15.0 mm	≥ 9

2) Characteristic values are valid until three months after supply of the material.

3) It applies to nominal thickness e:  
e < 3 mm: A<sub>80</sub>  
e ≥ 3 mm: A<sub>5</sub>

The samples for the tensile test are taken transversal to the rolling direction.

### Available dimensions

Hot-rolled coils unpickles, 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 – 15.00	900 – 1,650

### Form of delivery

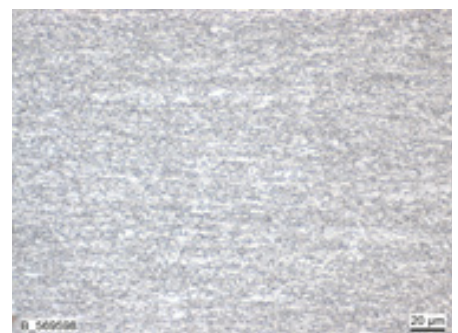
This TM rolled steel grade with high yield strength is supplied as hot-rolled wide strip or as transverse or longitudinal split strip, pickled or unpickled. Depending on the material thickness, trimmed edges can be produced. The dimensional tolerances are based on the DIN EN 10051 standard or on special agreements, or to special agreements. The test unit is normally 40 t from the same steel grade/melt and similar nominal thickness, but depends on the ordered test certificate.

### Surface finish

Hot-rolled strip pickled or unpickled according to DIN EN 10163-2.

### Micro structure

It is largely a fine-grained ferritic matrix with isolated pearlitic islands and a very good degree of purity.





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### Application examples

Typical applications for exploiting the high strength potential while at the same time reducing the weight of the component are mobile crane construction, longitudinal and transverse beams in trucks and trailers, safety parts in passenger cars and wagon construction.



### Notes

The chemical analysis available from SZFG is characterized by low C and S contents, so that forming and welding processes can be easily carried out with the usual methods.

Due to the chemical composition galvanizing ability according to Class B is given.

For the SZFG grade AndroSal®690, which is particularly suitable for formed parts in dimensions, a separate material sheet has been material sheet, which can be downloaded from the available for download on the SZFG homepage. is available for download.

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