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Sandvik 3R64

(Billets)

Sandvik 3R64 is an austenitic stainless steel with a high molybdenum content. Significant properties are improved such as general and pitting corrosion resistance in comparison with ASTM 316L.

STANDARDS

- ASTM 317L
- UNS S31703
- EN number 1.4438
- W.Nr. 1.4438
- SS 2367
- BS 317S16

Product standards
- EN 10088-3
- ASTM A-314

Suitable for production of flanges etc. according to ASTM A-182

Certificates
Status according to EN 10 204 3.1

CHEMICAL COMPOSITION (NOMINAL) %

C max	Si	Mn	P max	S max	Cr	Ni	Mo	Others
0.030	0.4	1.8	0.030	0.010	18.5	14.5	3.1	-

FORMS OF SUPPLY

Sizes and tolerances
Round-cornered square, as well as round billets, are produced in a wide range of sizes according to the following tables. Larger sizes offered on request.

Surface conditions
Square billets
Unground, spot ground or fully ground condition.

Round billets
Peel turned or black condition.

SQUARE BILLETS

Size mm	Tolerance mm	Length m
80	+/-2	4 - 6.3
100, 114, 126, 140, 150	+/-3	4 - 6.3
160, 180, 195, 200	+/-4	4 - 6.3
>200 - 350	+/-5	3 - 5.3

Sizes and tolerances apply to the rolled/forged condition.

PEEL TURNED ROUND BILLETS

Size mm	Tolerance mm	Length m
75 - 200 (5 mm interval)	+/-1	max 10
>200 - 450	+/-3	3 - 8

UNGROUND ROUND BILLETS

Size	Tolerance	Length
mm	mm	m
77 - 112 (5 mm interval)	+/-2	max 10
124, 134	+/-2	max 10
127, 147, 157	+/-2	max 10
142, 152, 163	+/-2	max 10
168, 178, 188	+/-2	max 10
183, 193	+/-2	max 10

Other products
- Hollow bar
- Welding wire
- Covered electrodes

MECHANICAL PROPERTIES

At 20°C (68°F)

METRIC UNITS

Proof strength		Tensile strength	Elong.	Hardness
$R_{p0.2}$[a]	$R_{p1.0}$[a]	R_m	A[b]	Vickers
MPa	MPa	MPa	%	
min.	min.		min.	approx.
220	250	515-690	35	155

IMPERIAL UNITS

Proof strength		Tensile strength	Elong.	Hardness
$R_{p0.2}$[a]	$R_{p1.0}$[a]	R_m	A[b]	Vickers
MPa	MPa	MPa	%	
min.	min.		min.	approx.
32	36	75-100	35	155

1 MPa = 1 N/mm^2
a) $R_{p0.2}$ and $R_{p1.0}$ correspond to 0.2% offset and 1.0% offset yield strength, respectively.
b) Based on $L_0 = 5.65 \sqrt{S_0}$ where L_0 is the original gauge length and S_0 the original cross-section area.

Impact strength
Due to its austenitic microstructure, Sandvik 3R64 has very good impact strength both at room temperature and at cryogenic temperatures.

Tests have demonstrated that the steel fulfils the requirements according to the European standards prEN 13445-2 (UFPV-2) ((min. 60 J (44 ft-lb) at -270 °C (-455 °F)) and prEN 10216-5 (min. 60 J (44 ft-lb) at -196 °C (-320°F).

At high temperatures

METRIC UNITS

Temperature	Proof strength	
	$R_{p0.2}$[a]	$R_{p1.0}$[a]
°C	MPa	MPa
	min.	min.
50	196	221
100	172	197
150	155	180
200	144	169
250	136	161
300	129	154
350	123	148
400	119	144
450	115	140
500	110	135

IMPERIAL UNITS

Temperature	Proof strength	
	$R_{p0.2}$[a]	$R_{p1.0}$[a]
°F	MPa	ksi
	min.	min.
200	25.4	29.0
400	20.8	24.4
600	18.4	22.1
800	17.0	20.6
1000	15.4	19.0

DISCLAIMER:
Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Sandvik materials.