

Material specification sheet

Saarstahl - C17E2C

Material No.: Former brand name: International steel grades:

1.1147

BS:
AFNOR:
SAE:

Material group: Steel for cold extrusion according to DIN EN 10263

Chemical composition: (Typical analysis in %)	C	Si	Mn	P	S	Cu
	0,18	0,06	0,85	<0,015	<0,015	<0,10

Application: Plain carbon steel for cold extrusion of screws and bolts

Hot forming and heat treatment:

Soft annealing:	650 - 700°C
Hardening:	870 - 900°C/water
Tempering:	530 - 670°C

Mechanical Properties:

Untreated (+U) or untreated + as hot rolled (+PE)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40	> 40 - 100
Tensile strength R_m [N/mm ²]	-	max. 530	max. 530	max. 530
Reduction of area Z [%]	-	min. 58	min. 58	min. 58

Spheroidized annealed (+AC) or spheroidized annealed + peeled (+AC+PE)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40	> 40 - 100
Tensile strength R_m [N/mm ²]	-	max. 450	max. 450	max. 450
Reduction of area Z [%]	-	min. 65	min. 65	min. 65

untreated + cold drawn (+U+C)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40	> 40 - 100
Tensile strength R_m [N/mm ²]	-	max. 630	max. 620	-
Reduction of area Z [%]	-	min. 56	min. 56	-

untreated + cold drawn + spheroidized annealed (+U+C+AC)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40	> 40 - 100
Tensile strength R_m [N/mm²]	max. 440	max. 430	max. 430	-
Reduction of area Z [%]	min. 67	min. 67	min. 67	-

Untreated + cold drawn + spheroidized annealed + stretch reduced by roll drawing (+U+C+AC+LC)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40	> 40 - 100
Tensile strength R_m [N/mm²]	max. 480	max. 470	max. 470	-
Reduction of area Z [%]	min. 65	min. 65	min. 65	-

Spheroidized annealed + cold drawn (+AC+C)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40	> 40 - 100
Tensile strength R_m [N/mm²]	-	max. 550	max. 540	-
Reduction of area Z [%]	-	min. 62	min. 62	-