

Material specification sheet

Saarstahl - C45EC (Cq45)

Material No.:	Former brand name:	International steel grades:
1.1192	RKS45	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
	0,45	0,20	0,70	<0,025	<0,025	<0,25

Application: Plain carbon cold heading steel for screws and nuts.

Hot forming and heat treatment:	Soft annealing:	680 - 710°C
	Hardening:	820 - 850°C/water
	Hardening:	830 - 860°C/oil
	Tempering:	530 - 670°C

Mechanical Properties:

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

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40
Tensile strength R _m [N/mm ²]	-	max. 600	max. 600
Reduction of area Z [%]	-	min. 60	min. 60

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

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40
Tensile strength R _m [N/mm ²]	max. 590	max. 580	max. 580
Reduction of area Z [%]	min. 62	min. 62	min. 62

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

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40
Tensile strength R_m [N/mm²]	max. 630	max. 620	max. 620
Reduction of area Z [%]	min. 60	min. 60	min. 60

Spheroidized annealed + cold drawn (+AC+C)

Diameter d [mm]	> 2 - 5	> 5 - 10	> 10 - 40
Tensile strength R_m [N/mm²]	-	max. 720	max. 710
Reduction of area Z [%]	-	-	-