

Table 1. Mechanical properties of lifting hooks

Strength class ¹⁾	Minimum requirements for the basic series of fine grain structural steel as in DIN 17 102 and DIN 17 103	Minimum requirements for steel for quenching and tempering as in DIN 17 200			
		Impact energy, A_v , in J (ISO-V), at a test temperature of +20°C, -20°C, with direction of sampling ³⁾	Upper yield strength, R_{eH} , or 0,2% proof stress, $R_{p0,2}$, in N/mm ²	Impact energy, A_v , in J (ISO-V), at a test temperature of +20°C, -20°C, with direction of sampling ³⁾	Upper yield strength, R_{eH} , or 0,2% proof stress, $R_{p0,2}$, in N/mm ²
M	235	L2) Q2) L Q	-	-	L2) L
P	315	(55) (31) 39 21	-	-	-
(S)	390		390	(35)	(35)
T	490		490	(35)	27
(W)	-	-	620	(30)	27

- 1) Use of strength classes given in brackets should be avoided where possible.
- 2) The values given in brackets are for information only; the test is to be carried out at -20°C.
- 3) 'L' stands for longitudinal direction, 'Q' for transverse direction. Where the sheet is wider than 600 mm, the test piece shall be taken in the transverse direction.

3 Materials

Table 2 specifies the steel grades to be used on hooks in compliance with this standard.

Table 2. Steel to be used for lifting hooks

Hook number	Shank diameter ¹⁾ , d_1 , in mm	Steel as specified in					Hook number
		DIN 17 102 and DIN 17 103	DIN 17 102, DIN 17 103 and DIN 17 200 ²⁾				
		To be used for hooks of strength class					
		M	P	S	T	V	
006	14						006
010	16				StE 500		010
012	20				34 CrMo 4		012
020	20						020
025	24						025
04	30						04
05	30						05
08	36						08
1	36						1
1.6	36						1.6
2.5	42						2.5
4	48						4
5	53						5
6	60						6
8	67						8
10	75						10
12	85						12
16	95						16
20	106						20
25	118						25
32	132						32
40	150						40

For 1) to 3), see page 3.

Table 2 (concluded).

Hook number	Shank diameter ¹⁾ , d ₁ , in mm	Steel as specified in					Hook number
		DIN 17 102 and DIN 17 103	DIN 17 102, DIN 17 103 and DIN 17 200 ²⁾				
		M	P	S	T	V	
50	170						50
63	190						63
80	212						80
100	236	StE 355	StE 420	StE 500	34 CNI Mo 4		100
125	265				34 CNI Mo 6		125
160	300					30 CNI Mo 8	160
200	335						200
250	375						250

- 1) See figures 1 and 2. The specified values have been taken from DIN 15 401 Parts 1 and 2 and DIN 15 402 Parts 1 and 2.
- 2) Where DIN 17 200 steels is used, or where the diameter of the material is greater than 250 mm (cf. *Stahl-Eisen-Werkstoffblatt* (Iron and steel materials sheet) 550), the following requirements shall also be met and be part of the contractual agreement.
- a) The total amount of aluminium in the steel shall be at least 2%, or it shall be verified in another way that the nitrogen in the steel is fixed.
- b) At a test temperature of -20°C , the impact energy shall be at least 27 J, as measured on an ISO-V notch specimen taken in the longitudinal direction.
- 3) For reasons of efficiency, it shall be permitted to use StE 355 steel in place of StE 285 steel.