



St37.2	1.0037	-	Optional	0.17	0.20	0.20	0.20	0.20		0.050	0.050	0.009	-	0.21	0.25	0.25	0.25	0.25		0.065	0.065	0.010	St37.2
USt37.2	1.0036	1.0112	U	0.17	0.20	0.20	0.20	0.20		0.050	0.050	0.007	-	0.21	0.25	0.25	0.25	0.25		0.065	0.065	0.09	USt37.2
RSt37.2	1.0038	1.0114	P	0.17	0.17	0.17	0.20	0.20		0.050	0.050	0.009	-	0.19	0.19	0.19	0.22	0.33		0.060	0.060	0.010	RSt37.2
St37.3	1.0116	1.0116	RR	0.17	0.17	0.17	0.17	0.17		0.040	0.040	-	yes	0.19	0.19	0.19	0.19	0.19		0.050	0.050	-	St37.3
St44.2	1.0044	-	R	0.21	0.21	0.21	0.22	0.22		0.050	0.050	0.009	-	0.24	0.24	0.24	0.25	0.25		0.060	0.060	0.010	St44.2
St44.3	1.0144	-	RR	0.20	0.20	0.20	0.20	0.20		0.040	0.040	-	yes	0.23	0.23	0.23	0.23	0.23		0.050	0.050	-	St44.3
St52.3 <sup>3)</sup>	1.0570	1.0841	RR	0.20 <sup>4)</sup>	0.20 <sup>4)</sup>	0.22	0.22	0.22		0.040	0.040	-	yes	0.22 <sup>6)</sup>	0.22 <sup>6)</sup>	0.24	0.24	0.24		0.050	0.060	-	St52.3
St50.2	1.0050	1.0532	R	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>		0.050	0.050	0.009	-	-	-	-	-	-		0.060	0.060	0.010	St50.2
St60.2	1.0060	1.0542	R	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>		0.050	0.050	0.009	-	-	-	-	-	-		0.060	0.060	0.010	St60.2
St70.2	1.0070	1.0632	R	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>	- <sup>5)</sup>		0.050	0.050	0.009	-	-	-	-	-	-		0.060	0.060	0.010	St70.2

<sup>1)</sup> U rimming. R killed (including balanced steel), RR special killed

<sup>2)</sup> It is permissible to exceed the maximum value indicated, provided a phosphorous content per 0.001% N of 0.005% P below the maximum value indicated is maintained. The nitrogen content may not, however, exceed a value of 0.0012%N in the ladle analysis and 0.0014%N in the sample analysis.

<sup>3)</sup> The content may not exceed 0.55%Si and 1.60% Mn in the ladle analysis or 0.60%Si and 1.70% Mn in the sample analysis.

<sup>4)</sup> Maximum 0.22% C for steels KSt 52-3 and RoSt 52-3 according to Table 3

<sup>5)</sup> In the case of steels suitable for bright drawing according to Table 3 the following guide values for the carbon content can be assumed:  
 0.30% C for Z St 50-2, 0.40% C for ZSt 60-2, 0.50% C for Z St 70-2  
 Maximum 0.24% C for steels KSt 52-3 and RoSt 52-3 according to Table3

Table 1. Grade classification and chemical composition of the steels

Steel grade		Type of deoxidation <sup>1)</sup>	Chemical composition in % by wt.				Steel Grade
Code number	Material number		Ladle analysis	P	S	N <sup>2)</sup>	
			C				
			for product thicknesses in mm				

	new	previous		16Max	>16 32Max	>30 40Max	>40 63Max	>63 100Max	>100				g. at least 0.020% Al (total)	
St33	1.0035	1.0033	Optional	-	-	-	-	-	-	-	-	-	-	-
St37.2	1.0037	-	Optional	0.17	0.20	0.20	0.20			0.050	0.050	0.009	-	St37.2
USt37.2	1.0036	1.0112	U	0.17	0.20	0.20	0.20	0.20 0.20		0.050	0.050	0.007	-	USt37.2
RSt37.2	1.0038	1.014	P	0.17	0.17	0.17	0.20	0.20 0.17		0.050	0.050	0.009	-	RSt37.2
St37.3	1.0116	1.0116	RR	0.17	0.17	0.17	0.17		by	0.040	0.040	0.009	yes	St37.3
St44.2	1.0044	-	R	0.21	0.21	0.21	0.22		agreement	0.050	0.050	0.009	-	St44.2
St44.3	1.0144	-	RR	0.20	0.20	0.20	0.20	0.22 0.20		0.040	0.040	0.009	yes	St44.3
St52.3 <sup>3)</sup>	1.0570	1.0841	RR	0.20 <sup>4)</sup>	0.20 <sup>4)</sup>	0.22	0.22	0.22		0.040	0.040	-	yes	St52.3
St50.2	1.0050	1.0532	R	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>		0.050	0.050	0.009	-	St50.2
St60.2	1.0060	1.0542	R	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>		0.050	0.050	0.009	-	St60.2
St70.2	1.0070	1.0632	R	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>	<sup>-5)</sup>		0.050	0.050	0.009	-	St70.2

<sup>1)</sup> U rimming. R killed (including balanced steel), RR special killed

<sup>2)</sup> It is permissible to exceed the maximum value indicated, provided a phosphorous content per 0.001% N of 0.005% P below the maximum value indicated is maintained. The nitrogen content may not, however, exceed a value of 0.0012%N in the ladle analysis and 0.0014%N in the sample analysis.

<sup>3)</sup> The content may not exceed 0.55%Si and 1.60% Mn in the ladle analysis or 0.60%Si and 1.70% Mn in the sample analysis.

<sup>4)</sup> Maximum 0.22% C for steels KSt 52-3 and RoSt 52-3 according to Table 3

<sup>5)</sup> In the case of steels suitable for bright drawing according to Table 3 the following guide values for the carbon content can be assumed:  
0.30% C for Z St 50-2, 0.40% C for ZSt 60-2, 0.50% C for Z St 70-2  
Maximum 0.24% C for steels KSt 52-3 and RoSt 52-3 according to Table3

Steel grade		Type of deoxidation <sup>1)</sup>	Chemical composition in % by wt.			Steel Grade
Code number	Material number		Sample analysis	P	S	
			C			
			for product thicknesses in mm			

	new	previous		16Max	>16 32Max	>30 40Max	>40 63Max	>63 100Max	>100				
St33	1.0035	1.0033	Optional	-<	-	-	-	-	-	-	-	-	-
St37.2	1.0037	-	Optional						by agreement	0.065	0.065	0.010	St37.2
USt37.2	1.0036	1.0112	U	0.21 0.21	0.25 0.25	0.25 0.25	0.25 0.25	0.25 0.25		0.065	0.065	0.09	USt37.2
RSt37.2	1.0038	1.014	P	0.19 0.19	0.19 0.19	0.19 0.19	0.22 0.19	0.33 0.19		0.060	0.060	0.010 -	RSt37.2
St37.3	1.0116	1.0116	RR							0.050	0.050		St37.3
St44-2	1.0044	-	R							0.060	0.060	0.010 -	St44.2
St44-3	1.0144	-	RR	0.24 0.23	0.24 0.23	0.24 0.23	0.25 0.23	0.25 0.23	0.050	0.050		St44.3	
St52-3 <sup>3)</sup>	1.0570	1.0841	RR	0.22 <sup>6)</sup>	0.22 <sup>6)</sup>	0.24	0.24	0.24	0.050	0.060	-	St52.3	
St50-2	1.0050	1.0532	R	-	-	-	-	-	0.060	0.060	0.010	St50.2	
St60-2	1.0060	1.0542	R	-	-	-	-	-	0.060	0.060	0.010	St60.2	
St70-2	1.0070	1.0632	R	-	-	-	-	-	0.060	0.060	0.010	St70.2	

<sup>1)</sup> U rimming. R killed (including balanced steel), RR special killed

<sup>2)</sup> It is permissible to exceed the maximum value indicated, provided a phosphorous content per 0.001% N of 0.005% P below the maximum value indicated is maintained. The nitrogen content may not, however, exceed a value of 0.0012%N in the ladle analysis and 0.0014%N in the sample analysis.

<sup>3)</sup> The content may not exceed 0.55%Si and 1.60% Mn in the ladle analysis or 0.60%Si and 1.70% Mn in the sample analysis.

<sup>4)</sup> Maximum 0.22% C for steels KSt 52-3 and RoSt 52-3 according to Table 3

<sup>5)</sup> In the case of steels suitable for bright drawing according to Table 3 the following guide values for the carbon content can be assumed:  
0.30% C for Z St 50-2, 0.40% C for ZSt 60-2, 0.50% C for Z St 70-2

Maximum 0.24% C for steels KSt 52-3 and RoSt 52-3 according to Table3

Table 2. Mechanical and technological properties of the steels in the as-delivered condition and/or condition of treatment according to Section 8.4.1.2

Steel grade according to Table 1		Mechanical and technological properties 1)									
		Tensile strength Rm for product thicknesses in mm					Upper yield point ReH. for product thicknesses in mm				
Code number	Material number	< 3	≥ 3 ≤ 100	> 100	≤ 16	> 16 ≤ 40	≥ 40 ≤ 63	≥ 63 ≤ 80	>80 ≤ 100	> 100	
		N/mm <sup>2</sup>					N/mm <sup>2</sup>				
St33	1.0035	310 up to 540	290	-	185	175 5)	-	-	-	-	

St37.2 USt37.2	1.0037 1.0035	360 up to 510	340 up to 470	by agreement	235	225	215	205	195	by agreement
RSt37.2 St37.3	1.0038 1.0116				235	225	215	215	215	
St44-2 St44-3	1.0044 1.0144	430 up to 580	410 up to 540		275	265	255	245	235	
St52-3	1.0570	510 up to 680	490 up to 630		355	345	335	325	315	
St50-2	1.0050	490 up to 660	470 up to 610		295	285	275	265	255	
St60-2	1.0060	590 up to 770	570 up to 710		335	325	315	305	295	
St70-2	1.0070	690 up to 900	670 up to 830		365	355	345	335	325	

- 1) The values of the tensile test and the bending test apply to longitudinal specimens apart from flat products  $\geq 600$ mm width from which transverse specimens are to be taken.
- 2) U hot formed, untreated, N normalized. Section 8.4.1.2 applies also.
- 3) For notched-bar impact specimens with a width of less than 10mm the specifications according to Section 8.4.1.4 and Fig. 1 apply.
- 4) The test result is the average value from three tests. Only one individual value may be lower than the minimum average value of 23 or 27J, and then only by a maximum of 30%.
- 5) This value applies only to thicknesses up to 25mm.

Table 2. (continued)

Mechanical and technological properties 1)																				
Steel grade	Code-number	Position of specimen	Elongation at rupture						Bending test (180°)				ISO V-notch specimens (Longitudinal)							
			(Gauge length $L_0 = 80$ mm)			(Gauge length $L_0 = 5d_0$ )			Position of specimen	(a Thickness of specimen) for product thicknesses in mm			Condition of treatment 2)	Test temperature °C	for product thicknesses in mm					
			$\geq 0.5$	$\geq 1$	$\geq 1.5$	$\geq 2$	$\geq 2.5$	$\geq 3$		$\geq 40$	$\geq 63$	$\geq 100$			$< 3$	$\geq 3$	$\geq 63$	$\leq 100$	$> 100$	10
			$< 1$	$< 1.5$	$< 2$	$< 2.5$	$< 3$	$\leq 40$	$\leq 63$	$\leq 100$							16	63	100	
			% min.						Mandrel diameter				J min.							

St 33	longitudinal transverse	10 8	11 9	12 10	13 11	14 12	18 16	-	-	-	2.5a 3a	2.5a 3a	-	-	U,N	-	-	-	-		
St 37.2		longitudinal transverse	17 15	18 16	19 17	20 18	21 19	26 24	25 23	24 22	longitudinal transverse	0.5a 1a 1.5a	1a 2a 2.5a	1.5a 2a 2.5a	by agreement	U,N	+20	27	-	-	
USt 37.2																U,N	+20	27	-	-	
RSt 37.2																U,N	+20	27	27	-	
St 37.3																U	±0	27	27	23	by
St 44.2																N	-20	27	27	23	agreement
St 44.3																U	±0	27	27	23	by
																N	-20	27	27	23	agreement
St 52.3																U	±0	27	27	23	by
																N	-20	27	27	23	agreement
St 50.2	12 10															13 11	14 12	15 13	16 14	20 18	19 17
St 60.2	8 6	9 7	10 8	11 10	12 10	16 14	15 13	14 12	-	-	-	-	-	-	U,N	-	-	-	-		
St 70.2	4 3	5 4	6 5	7 6	8 7	11 10	10 9	9 8	-	-	-	-	-	-	U,N	-	-	-	-		

1), 2), 3) and 4) see page 4

Table 6. Comparison of steel grades according to DIN 17 100 with the steels for general structural purposes covered in the Euronorm and in the ISO Standards.

Steel grade according to DIN 17 100	Comparable steel grade according		
	Euronorm 25 1)	ISO 630 2)	ISO 1052 3)
St 33	Fe 310 -0	Fe 310-0	-
(St 37-1 4)	Fe 360-A	Fe 360-A	-
St 37-2	-	Fe 360-B 5)	-
USt 37-2	Fe 360-BFU	Fe 360-B	-
RSt 37-2	Fe 360-BFN	Fe 360-B 5)	-
St 37-3 U	Fe 360-C	Fe 360-C	-
St 37-3 N	Fe 360-D	Fe 360-D	-

-	Fe 430-A	Fe 430-A	-
St 44.2	Fe 430-B	Fe 430-B	-
St 44.3 U	Fe 430-C	Fe 430-C	-
St 44.3 N	Fe 430-D	Fe 430-D	-
-	Fe 510-B	Fe 510-B	-
St 52.3 U	Fe 510-C	Fe 510-C	-
St 52.3 N	Fe 510-D	Fe 510-D	-
(St 50.1) 4)	Fe 490-1	-	-
St 50.2	Fe 490-2	-	Fe 490-2
St 60.1) 4)	Fe 590-1	-	-
St 60.2	Fe 590-2	-	Fe 590-2
St 70.2	Fe 690-2	-	Fe 690-2
1) November 1972 edition			
2) Current ISO Draft (ISO DISI February 1976			
3) New version of ISO/R 1052 - 1969, current document 1713 N 307 of September 1977			
4) No longer covered in the present edition of DIN 17 100			
5) The type of cooxication can be agreed at the time of ordering			

Table 3 gives a survey of the steel grades with special service properties (see also Section 5.4.3).

By comparison with the September 1965 edition of the DIN Standard, this edition also contains the grades which are suitable for rolled section shapling and for the manufacture of cold forming hollow sections with their own code letter (k) and their own material number.