

ISD DUNAFERR PRODUCT CATALOGUE

HEAVY PLATES

PRODUCT GROUPS

1. HOT ROLLED UNALLOYED CONSTRUCTIONAL STEELS

Strength grade	MSZ EN 10025:1998*	MSZ EN 10025-2:2005	MSZ EN 10025-3:2005
—	S185	S185	—
A	S235JRG2	S235JR	—
	S235J0	S235J0	—
	S235J2G3 S235J2G4	S235J2	—
B	S275JR	S275JR	—
	S275J0	S275J0	—
	S275J2G3 S275J2G4	S275J2	S275N *
	—	—	S275NL *
C	S355JR	S355JR	—
	S355J0	S355J0	—
	S355J2G3 S355J2G4	S355J2	—
	S355K2G3 S355K2G4	S355K2	S355N *
	—	—	S355NL *
D	—	—	S420N *
	—	—	S420NL *
	—	—	S460N *
	—	—	S460NL *

* marked grades can only be produced based on previous agreement on technical conditions.

2. STEELS SUITABLE FOR MANUFACTURING BOILERS AND PRESSURE VESSELS

Strength grade	MSZ EN 10207:1991/A1:2000	MSZ EN 10028-2:2004	MSZ EN 10028-3:2004
A	P235S	P235GH*	—
	P265S	P265GH	P275NH
B	P275SL *	—	P275NL1 *
	—	—	P275NL2 *
	—	P295GH	—
C	—	P355GH	P355NH
	—	—	P355N
	—	—	P355NL1 *
	—	—	P355NL2 *
	—	16Mo3	—
D	—	—	P460NH *
	—	—	P460NL1 *
	—	—	P460NL2 *

* marked grades can only be produced based on previous agreement on technical conditions.

3. STEEL GRADES FOR SHIP BUILDING

Strength grade	Germanischer Lloyd**	Llyod's Register of Shipping	Bureau Veritas**	American Bureau of Shipping**
	(GL)	(LR)	(BV)	(ABS)
A	GL-A	A	A	A
	GL-B	B	B	B
	GL-D	D	D	D
	GL-E*	E*	E*	E*
C	GL-A32	AH32	AH32	AH32
	GL-D32	DH32	DH32	DH32
	GL-E32	EH32	EH32	EH32
	GL-A36	AH36	AH36	AH36
	GL-D36	DH36	DH36	DH36
	GL-E36	EH36	EH36	EH36

* Grades marked by * can only be produced based on previous agreement on technical conditions.

** According to GL-BV and ABS can only be produced based on previous agreement on technical conditions.

4. TEMPERING AND CASE-HARDENING STEELS

CLASSIFICATION			STANDARDS		
Application	Strength grade	Composition	MSZ EN 10084:2000	MSZ EN 10083-1:1991 + A1:2000	MSZ EN 10083-2:1991 + A1:2000
case-hardening	A	unalloyed	C10*	—	—
			C15	—	—
	D	alloyed	16MnCr5*	—	—
tempering	D	unalloyed	—	—	C45
			—	—	C60*
		alloyed	—	28Mn6*	—
			—	34CrMo4*	—

* Grades marked by * can only be produced based on previous agreement on technical conditions.

PLATE DIMENSIONS

„A” strength grade (37) heavy plates dimensions

Thickness [mm]	Plate width [mm]															Thickness [mm]									
	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400		2500*								
8*	6	8	6	8	6	8	6	8	6	8	6	8	7	7	6	6	6	N	N	N	N	N	8		
9	6	8	6	8	6	8	6	8	6	8	6	8	7	7	6	6	6	N	N	N	N	N	9		
10	8	9	8	9	8	9	8	9	8	9	8	9	8	8	8	8	8	8	8	N	N	N	10		
11	8	9	8	9	8	9	8	9	8	9	8	9	8	8	8	8	8	8	8	N	N	N	11		
12	10	12	10	12	10	12	10	12	10	12	10	12	10	12	12	12	12	10	10	10	10	10	12		
13	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	12	12	10	10	10	10	10	13		
14	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	12	11	10	10	10	14		
15	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	12	10	12	8	11	8	10	15		
16-17	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	12	10	12	8	11	8	10	16-17		
18-19	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	12	10	12	8	11	8	10	18-19		
20	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	12	10	12	8	11	8	10	20		
21-22	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	12	10	11	10	11	9	10	21-22		
23-24	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	11	10	11	10	11	9	10	23-24		
25	12	12	12	12	12	12	12	12	12	12	12	12	12	11	10	11	10	11	10	10	8	9	25		
26-27	12	12	12	12	12	12	12	12	12	12	12	12	11	11	10	10	10	9	9	8	8	8	26-27		
28-29	12	12	12	12	12	12	12	12	12	12	12	11	11	10	10	9	9	9	8	8	8	8	28-29		
30	12	12	12	12	12	12	12	12	12	12	11	10	10	10	9	9	8	8	8	8	8	8	30		
31-32	12	12	12	12	12	12	12	11	11	10	10	10	9	9	8	8	8	8	8	7	7	7	31-32		
33-34	12	12	12	12	12	12	12	11	10	10	10	9	9	8	8	8	7	7	7	7	7	7	33-34		
35	12	12	12	12	12	12	11	10	10	10	9	9	8	8	7	7	7	7	7	7	7	7	35		
36-37	12	12	12	12	12	11	11	10	10	9	9	8	8	7	7	7	7	6	6	6	6	6	36-37		
38-39	12	12	12	12	12	11	10	9	9	8	8	7	7	7	7	6	6	6	6	6	6	6	38-39		
40	11	11	11	11	10	10	10	9	9	8	8	7	7	6	6	6	6	6	6	5	5	5	40		
41-45	10	10	10	10	9	9	8	8	7	7	6	6	6	5	5	5	5	5	5	5	5	5	41-45		
46-50	9	9	9	9	8	8	7	7	6	6	6	5	5	5	5	5	5	5	5	5	5	5	46-50		
51-55	8	8	8	8	7	7	6	6	6	5	5	5	5	5	5	5	4	4	4	4	4	4	51-55		
56-60	7	7	7	7	7	6	6	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	56-60		
61-65	2.6	7.0	2.6	7.0	2.6	7.0	2.6	6.0	2.6	6.0	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.0	2.6	3.5	2.6	3.5	61-65
66-70	2.6	6.0	2.6	6.0	2.6	6.0	2.6	6.0	2.6	6.0	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.0	2.6	3.5	2.6	3.5	66-70
71-75	2.6	6.0	2.6	6.0	2.6	6.0	2.6	6.0	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.0	2.6	3.5	2.6	3.5	2.6	3.0	71-75
76-80	2.6	6.0	2.6	5.0	2.6	5.0	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.0	2.6	3.5	2.6	3.5	2.6	3.0	2.6	3.0	76-80
81-85	2.6	5.0	2.6	5.0	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.0	2.6	4.0	2.6	3.5	2.6	3.5	2.6	3.0	2.6	3.0	81-85
86-90	2.6	5.0	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.0	2.6	4.0	2.6	3.5	2.6	3.5	2.6	3.0	2.6	3.0	2.6	2.8	86-90
91-95	2.6	5.0	2.6	5.0	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.0	2.6	3.5	2.6	3.5	2.6	3.0	2.6	3.0	2.6	2.9	2.6	2.7	91-95
96-100	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.0	2.6	4.0	2.6	3.5	2.6	3.5	2.6	3.0	2.6	3.0	2.6	2.9	2.6	2.8	2.6	2.7	96-100
[mm]	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500								[mm]	

The figures indicated in this table represent the maximum producible plate length (unit: meter)!

* Flatness requirements of 8 mm thick, resp. 2500 mm wide plates may change depending on further technical conditions.

Note:

■ Producibile with restrictions to flatness

N Not producibile dimensions

„B” and „C” strength grade (52) heavy plates dimensions

Thickness [mm]	Plate width [mm]																Thickness [mm]
	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
8	8	8	8	8	8	8	7	7	6	6	6	N	N	N	N	N	8
9	6	8	6	8	6	8	6	8	6	8	6	8	N	N	N	N	9
10	8	9	8	9	8	9	8	9	8	9	8	9	8	8	N	N	10
11	8	9	8	9	8	9	8	9	8	9	8	9	8	8	N	N	11
12	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	12
13	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	13
14	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	14
15	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	15
16-17	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	16-17
18-19	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	18-19
20	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	20
21-22	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	21-22
23-24	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	10	23-24
25	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	9	25
26-27	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	9	26-27
28-29	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	8	28-29
30	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	8	30
31-32	6	12	6	12	6	12	6	12	6	12	6	12	6	12	6	7	31-32
33-34	6	12	6	12	6	12	6	12	6	12	6	12	6	12	6	7	33-34
35	6	12	6	12	6	12	6	12	6	12	6	12	6	12	6	7	35
36-37	6	12	6	12	6	12	6	12	6	12	6	12	6	12	6	6	36-37
38-39	6	12	6	12	6	12	6	12	6	12	6	12	6	12	6	6	38-39
40	6	11	6	11	6	11	6	11	6	11	6	11	6	11	6	5	40
41-45	4	10	4	10	4	10	4	10	4	10	4	10	4	10	4	5	41-45
46-50	4	9	4	9	4	9	4	9	4	9	4	9	4	9	4	4	46-50
51-55	4	8	4	8	4	8	4	8	4	8	4	8	4	8	4	4	51-55
56-60	4	7	4	7	4	7	4	7	4	7	4	7	4	7	4	4	56-60
61-65	2.6	7	2.6	7	2.6	7	2.6	7	2.6	7	2.6	7	2.6	7	2.6	3.5	61-65
66-70	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	3.5	66-70
71-75	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	3.0	71-75
76-80	2.6	6	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	3.0	76-80
81-85	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	2.9	81-85
86-90	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	2.8	86-90
91-95	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	2.6	91-95
96-100	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.5	2.6	N	96-100

The figures indicated in this table represent the maximum producible plate length (unit: meter)

Note:

- Producible with restrictions to quality and flatness
- Producible with restrictions to flatness
- N Not producible dimensions

„D” strength grade (460) heavy plates dimensions

Thickness [mm]	Plate width [mm]														Thickness [mm]														
	1000		1100		1200		1300		1400		1500		1600			1700		1800		1900		2000		2100		2200*			
12*	6	8	6	8	6	8	6	8	6	8	6	8	6	8	N	N	N	N	N	N	N	N	N	N	N	N	12		
13	6	8	6	8	6	8	6	8	6	8	6	8	6	8	N	N	N	N	N	N	N	N	N	N	N	N	13		
14	6	8	6	8	6	8	6	8	6	8	6	8	6	8	8	N	N	N	N	N	N	N	N	N	N	N	14		
15	6	8	6	8	6	8	6	8	6	8	6	8	6	8	6	8	8	N	N	N	N	N	N	N	N	N	15		
16-17	8		8		8		8		8		8		8		6	8	8	8	8	8	8	8	N	N	N	N	16-17		
18-19	8		8		8		8		8		8		8		8		7	8	6	8	6	8	6	8	8	8	18-19		
20	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	20		
21-22	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	21-22		
23-24	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	9	8	9	23-24
25	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	9	8	9	8	25	
26-27	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	9	8	9	8	9	8	8	8	8	8	26-27	
28-29	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	9	8	9	8	9	8	8	8	8	8	28-29	
30	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	9	7	9	7	9	7	9	7	7	7	7	7	30	
31-32	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	9	7	9	7	9	7	9	7	7	7	7	7	31-32	
33-34	7	10	7	10	7	10	7	10	7	10	7	9	7	9	7	8	7	8	7	8	7	7	7	6	6	6	6	33-34	
35	6	10	6	10	6	10	6	10	6	10	6	9	6	9	6	9	7	8	7	8	7	7	7	6	6	6	35		
36-37	6	10	6	10	6	10	6	10	6	9	6	9	6	8	6	7	6	7	6	6	6	6	6	6	6	5	5	36-37	
38-39	5	10	5	10	5	9	5	9	5	9	5	8	5	8	5	7	5	7	5	6	5	6	5	6	5	4	4	38-39	
40	4	9	4	9	4	9	4	8	4	8	4	7	4	7	4	6	4	6	4	6	4	6	4	5	4	5	4	40	
41-45	4	8	4	8	4	8	4	8	4	7	4	7	4	6	4	6	4	6	4	5	4	5	4	5	4	5	4	41-45	
46-50	2.6	7	2.6	7	2.6	7	2.6	7	2.6	6	2.6	6	2.6	6	2.6	6	2.6	5	2.6	5	2.6	5	2.6	5	2.6	4.5	2.6	4	46-50
51-55	2.6	7	2.6	7	2.6	7	2.6	6	2.6	6	2.6	6	2.6	6	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	4	2.6	4	51-55
56-60	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	4	2.6	4	2.6	4	56-60
61-65	2.6	6	2.6	6	2.6	6	2.6	6	2.6	6	2.6	5	2.6	5	2.6	4.5	2.6	4.5	2.6	4	2.6	4	2.6	3.5	2.6	3.5	2.6	3.5	61-65
66-70	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	4.5	2.6	4.5	2.6	4	2.6	4	2.6	3.5	2.6	3.5	2.6	3.5	2.6	3	66-70
71-75	2.6	5	2.6	5	2.6	5	2.6	5	2.6	5	2.6	4.5	2.6	4.5	2.6	4	2.6	4	2.6	3.5	2.6	3.5	2.6	3	2.6	3	2.6	3	71-75
76-80	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4.5	2.6	4	2.6	4	2.6	3.5	2.6	3.5	2.6	3	2.6	3	2.6	3	2.6	3	2.6	2.9	76-80
[mm]	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	[mm]															

The figures indicated in this table represent the maximum producible plate length (unit: meter)!

* Flatness requirements of 12 mm thick, resp. 2200 mm wide plates may change depending on further technical conditions.

Note:

■ Producibile with restrictions to flatness

N Not producibile dimensions

MAXIMUM PLATE THICKNESS FOR CUTTING BY SHEARS

Strength grade	Steel grades				Maximum dimensions for cutting			
	Structural	Boiler-plate	Ship-plate	Case-hardening and tempering	Plate width [mm]	Plate thickness [mm]		
A, B	S185	P235GH	GL-A	C10	➔	1000–2050	36	
	S235JR	P235N	GL-B	C15				
	S235JRG2	P235NH	GL-D					
	S235J0	P235S	GL-E					
	S235J2	P265GH	A					
	S235J2G3	P265S	B					
	S235J2G4	P275N	D		➔	2051–2500	30	
	S275JR	P275NH	E					
	S275J0	P275NL1						
	S275J2	P275NL2						
	S275J2G3	P275SL						
	S275J2G4							
C	S355JR	P295GH	AH32		➔	1000–2050	33	
	S355J0	P355GH	DH32					
	S355J2	P355N	EH32					
	S355J2G3	P355NH	GL-A32					
	S355J2G4	P355NL1	GL-D32					
	S355K2	P355NL2	GL-E32					
	S355K2G3	16Mo3	AH36		➔	2051–2500	25	
	S355K2G4		DH36					
	S355N		EH36					
	S355NL		GL-A36					
			GL-D36					
			GL-E36					
D	S420N	P460N		16MnCr5	➔	1000–2050	30	
	S420NL	P460NH						
	S460N	P460NL1				➔	2051–2500	20
	S460NL	P460NL2						
				C45				
					1000–2050	20		
					2051–2500	16		

Other steel grades of class „D“ not listed in the table are not possible to cut by shears!

APPROBATED (CERTIFIED) PRODUCTS

1. Ship plate grades at normal and increased yield point categories

According to the special regulations of Lloyd's Register of Shipping (LR), Germanischer Lloyd (GL) and American Bureau of Shipping (ABS).

2. Base material of unalloyed structural steels, boilers and pressure vessels

According to the Technischer Überwachungsverein (TÜV) AD-MERKBLATT WO/TRD 100, complemented with the TÜV PED 97/23/EC certification for pressure vessels that certified the conformity with the European Union Directives.

Quality grades according to DIN EN 10025/DIN 17100, DIN EN 10028 part 2 and 3/DIN 17155 standards.

Undertaking of these qualities is subject to technical agreement.

3. Products bound to CE-mark for applications in the building industry

Quality grades according to EN 10025-2:2004 standard on the basis of certification of TÜV Rheinland Group.

ISD DUNAFERR DANUBE IRONWORKS PRIVATE COMPANY LIMITED BY SHARES

HEADQUARTERS

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