

GROUP STANDARD

Prod. by: I Utbult

Approved by: M Sjöberg

Date:

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MTL No	Swedish Standard SS	Euro standard EN Material No Denomination	German standard DIN	Chinese standard GB	Japane standard JIS	USA standard ASTM	USSR standard GOST
1. STEEL, plates, roundbars and pipes							
MTL 10	1312-00	EN 10025 S235JRG2	RSt 37-2	Q235B (Plates, profiles) GB 700-88	SM400B ¹⁾ G 3106	A 284 Grade D	Vst 3 SP3
	Pipes			20 (Pipes, tubes) GB 699-88			
	1412-00		St 44-2	Q345B (Plates, profiles) GB/T 1591	SM490B G 3106	A 572 Grade 42	Vst 4 SP3
MTL 11	Pipes	EN 10025 S275JR		25 (Pipes, tubes) GB 699-88	S25C G 3106		
	2172-00		St 52-3	Q345 or 16 Mn	SM490A G 3106	A 572 Grade 50	-
	Pipes			Q345B			
MTL 12	1572	EN 10083 C35E	17212 Ck35		S35C G 4051	A 29 1034	1050 35
	1672		17212 Ck45		S45C G 4051	A 29 1045	
	2174-00		17100 St 52-3N	Q345D (Plates, profiles) GB/T 1591	SM490C ²⁾ G 3106	A 572 Grade 50 ²⁾	5058 18 G 2
MTL 40	2134-04	EN 10210-1 S355NH					
2. STRUCTURAL STEEL Class Society Material							
MTL 23/A	Normal shipbuilding steel 'NS 24' ≤ 25 thickness.						
MTL 23/D	Material > 25 mm thickness D 24.						
MTL 23/E	Material > 50 mm thickness E 24.						
MTL 23/F	Material F 24 for arctic use only.						
MTL 24/A	High-tensile shipbuilding steel 'HT 32' ≤ 25 thickness.						
MTL 24/D	Material > 25 mm thickness DH 32.						
MTL 24/E	Material > 50 mm thickness EH 32.						
MTL 24/F	Material FH 32 for arctic use only.						
MTL 25/A	High-tensile shipbuilding steel 'HT 36' ≤ 25 thickness.						
MTL 25/D	Material > 25 mm thickness DH 36.						
MTL 25/E	Material > 50 mm thickness EH 36.						
MTL 25/F	Material FH 36 for arctic use only.						

1) SS400 (G3101) can be used for welded structure in case Ceq < 0,4 can be secured

2) impact values to be specified as in -20°C

REMARKS:

This table must ONLY be used as a reference tool for finding possible alternative material STANDARD for MacGREGOR's material standard (MTL) stated in the drawings.

In case any property of the material described in alternative material standard does not comply with MTL, this material must not be used without MacGREGOR's written permission.

If deviating material (compared to respective MTL standard) is used by supplier without MacGREGOR's permission, the supplier has a full responsibility of any consequences.

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3. HARDENED AND TEMPERED STEEL									
MTL 26	2541-03	1.6582		34CrNiMo6		34CrNiMo6 GB/T17107	SNCM439 G4103	4340	40ChNMA
MTL 27	2225-05	1.7218		25CrMo4	25CrMo4	30CrMo GB/T3077	SCM430 G4105	4130	30ChM
MTL 28	2244	1.7225		42CrMo4	42CrMo4	42CrMo4 GB/T17107	SCM440 G4105	4140	
MTL 29		1.6580		30CrNiMo8	30CrNiMo8	42CrMo ³⁾ GB/T17107	SNCM431 G4103 1979		
4. CAST STEEL									
MTL 30	2172-21	1.1120		G20Mn5 EN10213	G20Mn5 DIN 17182		ScMn1B G5111	A216-84 WCC	
MTL 31	2225-23	1.7218		G25CrMo4 EN 10083	25CrMo4	ZG40Cr JB/ZQ4297	ScCrM1 G5111	A487-80 Class 90	
MTL 32							SC450 G5101		
MTL 33	2174	1.0570-cast		GS355J2G3 EN 10025	1623T.2	ZGD345-570 ²⁾ GB/T14408	SCW550 ²⁾ G5102	A572 Gr.50	18G2 GOST5058
5. STAINLESS STEEL									
MTL 50	2333-02	1.4301		X5CrNi18-10	X5CrNi18-10	GB0Cr18Ni9	SUS304 G4303-4305	304	08Ch18N10
MTL 52	2321-03	1.4057+QT		X17CrNi16-2+ QT800	X17CrNi16-2+ QT800	1Cr17Ni2 GB1220-92	SUS431 G4303-1998	431	ICr17N2
MTL 54	2377-02	1.4462+AT		X2CrNiMoN22-5-3	X2CrNiMoN-22-5-2	00Cr19Ni11 GB1220-92	SUS329J1 G4303-1998	UNS S31803	-
MTL 55	2352-02	1.4306		X2CrNi19-11		00Cr19Ni11 GB1220-92	SUS304L G4303-1998	304 L	
MTL 57	2353-02	1.4401		X5CrNiMo17-12-2		0Cr17Ni12Mo2 GB/T4238	SUS316 G4303-4318	UNS S31600	

- 2) impact values to be specified as in -20°C
3) break load test to be done for the battering bolts

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6. NODULAR IRON							
MTL 60	0727-02	0.7050 GJS 500-5	GGG-50	QT 500-7	FCD 500-7	65-45-12	Vch50-2
MTL 61	0737-01	0.7070 GJS 700-2-HB240-H	GGG-70	QT 700-2	FCD 700-2	100-70-03	Vch70-3
MTL 62	0717-02	0.7040 GJS 400-15	GGG-40	QT 400-15	FCD 400-15	60-40-18	-
7. COPPER ALLOYS							
MTL 70	5150	CW508L EN 12163	DIN 17660 CuZn37	QA19-4	H 3260	C 27200	L63
MTL 71	5170	CuZn39Pb3 EN 12164	CuSn39Pb3	HPb59-1	H 3250 C3601-3604	C 36000	-
MTL 72	5204	EN 1982-CC491K	CuSn5ZnPb DIN 1705	ZH62	H 5111 BC6	C 83600	Br.0TSS5-5-5
MTL 73	5465	EN 1982-CC483K	CuSn12 DIN 1705		H 5113 PBC 38	C 90800	

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Valid from: 050301

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1. INTRODUCTION

The main use for this cast steel is for sheaves and wheels.

2. COMPARABLE MATERIALS

MTL 30; - EN 10213 G20Mn5
- 1.1120 Material number

Materials within brackets must only be used as a reference tool to find possible alternative material.

- (SS 2172-21)
- (G5111 ScMn1B)

3. DESIGNATION

Cast steel MTL 30

4. CHEMICAL COMPOSITION, according to EN 10213 G20Mn5, for information only

Cast Steel	C	Si	Mn	P	Ni	S	Mo	Cr
	% ca	% max	%	% max	% max	% max	% max	% max
MTL 30	0,17-0,23	0,6	1,0-1,5	0,02	0,5	0,05	0,15	0,30

5. MECHANICAL PROPERTIES, below values must be obtained

Cast Steel	Min yield strength $R_{p0,2}$ in N/mm ²	Min.tensile strength R_m in N/mm ²	Min elongation A5% min	Hardness HB min	Impact strength KV Temp °C Min. energy J	
MTL 30	355	500	22	-	-20	27

6. DELIVERY CONDITION

Hardened and tempered.

7. WELDING

Weldable

8. PREHEATING TEMPERATURE

Preheating is requested if the combined thickness of the plates is more than 60 mm.
Preheating temperature is 150°C.