

Table 5a - Materials-EN

Group	Forgings			Castings			Hot rolled products		
	Symbol	Standard	Material number	Symbol	Standard	Material number	Symbol	Standard	Material number
1E0	S235JR	EN 10025	1.0037	-	-	-	S235JR	EN 10025	1.0037
1E1	S235JRG2	EN 10025	1.0038	-	-	-	S235JRG2	EN 10025	1.0038
2E0	-	-	-	GP240GR	EN 10213-2	1.0621	-	-	-
3E0	P245GH	EN 10222-2	1.0352	GP240GH	EN 10213-2	1.0619	P245GH	EN 10028-2	1.0425
3E1	P280GH	EN 10222-2	1.0426	-	-	-	P295GH	EN 10028-2	1.0481
4E0	17Mn6	EN 10222-2	1.5445	G20Mo5	EN 10213-2	1.5419	16Mo3	EN 10028-2	1.5415
5E0	14CrMo4-5	EN 10222-2	1.7335	G17CrMo5-5	EN 10213-2	1.7357	13CrMo4-5	EN 10028-2	1.7335
6E0	11CrMo9-10	EN 10222-2	1.7383	G17CrMo9-10	EN 10213-2	1.7379	11CrMo9-10	EN 10028-2	1.7383
6E1	X16CrMo5-1+NT	EN 10222-2	1.7366	GX15CrMo5	EN 10213-2	1.7365	-	-	-
7E0	13MnNi6-3	EN 10222-3	1.6217	G17Mn5	EN 10213-3	1.1131	P275NL1	EN 10028-3	1.0488
-	-	-	-	G20Mn5	EN 10213-3	1.6220	P275NL2	EN 10028-3	1.1104
7E1	-	-	-	-	-	-	11MnNi5-3	EN 10028-4	1.6212
-	-	-	-	-	-	-	P355NL1	EN 10028-3	1.0566
-	-	-	-	-	-	-	P355NL2	EN 10028-3	1.1106
7E2	15NiMn6	EN 10222-3	1.6228	G9Ni14	EN 10213-3	1.5638	15NiMn6	EN 10028-4	1.6228
7E3	12Ni14	EN 10222-3	1.5637	-	-	-	12Ni14	EN 10028-4	1.5637
-	-	-	-	-	-	-	12Ni19	EN 10028-4	1.5680
-	-	-	-	-	-	-	X8Ni9	EN 10028-4	1.5662
-	-	-	-	-	-	-	11MnNi5-3	EN 10028-4	1.6212
-	-	-	-	-	-	-	12Ni14	EN 10028-4	1.5637
-	-	-	-	-	-	-	12Ni19	EN 10028-4	1.5680
8E0	X8Ni9	EN 10222-3	1.5662	-	-	-	X8Ni9	EN 10028-4	1.5662
8E1	-	-	-	-	-	-	P275N	EN 10028-3	1.0486
8E2	P285NH	EN 10224-4	1.0487	-	-	-	P355N	EN 10028-3	1.0562
8E3	P355NH	EN 10222-4	1.0565	-	-	-	P275NH	EN 10028-3	1.0487
9E0	X20CrMoV11-1	EN 10222-2	1.4922	GX23CrMoV12-1	EN 10213-2	1.4931	P355NH	EN 10028-3	1.0565
10E0	X2CrNi18-9	EN 10222-5	1.4307	GX2CrNi19-11	EN 10213-4	1.4309	-	-	-
10E1	X2CrNi18-10	EN 10222-5	1.4311	-	-	-	X2CrNi18-9	EN 10028-7	1.4306
11E0	X5CrNi18-10	EN 10222-5	1.4301	GX5CrNi19-10	EN 10213-4	1.4308	X2CrNi18-10	EN 10028-7	1.4311
12E0	X6CrNiTi18-10	EN 10222-5	1.4541	-	-	-	X5CrNi18-10	EN 10028-7	1.4301
13E0	X2CrNiMo17-12-2	EN 10222-5	1.4404	GX5CrNiNb19-11	EN 10213-4	1.4552	X6CrNiTi18-10	EN 10028-7	1.4541
13E1	X2CrNiMoN17-11-2	EN 10222-5	1.4406	GX2CrNiMo19-11-2	EN 10213-4	1.4409	X6CrNiNb18-10	EN 10028-7	1.4550
14E0	X5CrNiMo17-12-2	EN 10222-5	1.4401	-	-	-	X2CrNiMo17-12-2	EN 10028-7	1.4404
15E0	X6CrNiMoTi17-12-2	EN 10222-5	1.4571	GX5CrNiMo19-11-2	EN 10213-4	1.4408	X5CrNiMo17-12-2	EN 10028-7	1.4401
2	-	-	-	-	-	-	X6CrNiMoTi17-12-2	EN 10028-7	1.4571
16E0	-	-	-	GX5CrNiMoNb19-11-2	EN 10213-4	1.4581	X6CrNiMoNb17-12-2	EN 10028-7	1.4580
-	-	-	-	GX2CrNiMoCuN25-6-3-3	EN 10213-4	1.4517	-	-	-
-	-	-	-	GX2CrNiMoN26-7-4	EN 10213-4	1.4469	-	-	-

Table 5b - Materials - ASTM

Material group	Specification and grade									
	Casting			Forging			Plate			
	Standard	Grade	Standard	Grade	Standard	Grade	Standard	Grade	Standard	Grade
1C1	ASTM A216 ^{a,b}	WCB	ASTM A105 ^{a,b} ASTM A350	LF2 ^c	ASTM A515 ASTM A516 ASTM A537	70 ^{a,b} 70 ^{a,d} CL1 ^c				
1C2	ASTM A216 ASTM A352	WCC ^{a,b} LC2 ^c , LC3 ^c , LCC ^c	ASTM A350	LF3 ^c	ASTM A203	B ^{a,b} , E ^{a,b}				
1C3	ASTM A352 ^a	LCB	-	-	ASTM A203 ASTM A515 ASTM A516	A ^{a,b} D ^{a,b} 65 ^{a,b} 65 ^{a,d}				
1C4	-	-	ASTM A350 ^c	LF1	ASTM A515 ASTM A516	60 ^{a,b} 60 ^{a,d}				
1C5	ASTM A217 ^{b,e} ASTM A325 ^c	WC1 LC1	ASTM A182 ^{b,g}	F1	ASTM A204	A ^{b,g} , B ^{b,e}				
1C7	ASTM A217	WC4 ^b , WC5 ^f	ASTM A182 ^b	F2	ASTM A204 ^d	C				
1C9	ASTM A217 ^g	WC6	ASTM A182	F11 ^h , F12 ^h	ASTM A387 ^h	11CL2				
1C10	ASTM A217 ^g	WC9	ASTM A182 ^g	F22	ASTM A387 ^h	22CL2				
1C13	ASTM A217	C5	ASTM A182	F5, F5A	-	-				
1C14	ASTM A217	C12	ASTM A182	F9	-	-				
2C1	ASTM A351	CF8, CF3 ⁱ	ASTM A182	F304, F304H	ASTM A240	304, 304H ⁱ				
2C2	ASTM A351	CF8M, CF3M ^d	ASTM A182	F316, F316H	ASTM A240	316, 317, 316H ^e				
2C3	-	-	ASTM A182	F304L ⁱ , F316L ^d	ASTM A240	304L ⁱ , 316L ^d				
2C4	-	-	ASTM A182	F321 ^p , F321H	ASTM A240	321 ^p , 321H				
2C5	-	-	ASTM A182	F347 ^b , F347H, F348 ^b , F348H	ASTM A240	347 ^b , 347H, 348 ^b , 348H				
2C6	ASTM A351	CH8, CH20	-	-	ASTM A240	309S				
2C7	ASTM A351	CK20	ASTM A182 ⁱ	F310	ASTM A240 ⁱ	310S				

^a Permissible but not recommended for use above 425 °C.

^b Not to be used over 540 °C.

^c Not to be used over 345 °C.

^d Not to be used over 455 °C.

^e Permissible but not recommended for prolonged use above about 455 °C.

^f Not to be used over 565 °C.

^g Not to be used over 590 °C.

^h Permissible but not recommended for prolonged use above about 590 °C.

ⁱ Not to be used over 425 °C.

^j For service temperature 565 °C and above, should be used only when assurance is provided that grain size is not greater than ASTM No 6.