Steel designation		Hot forming		Heat treatment symbol	Annealing		Quenching		Tempering
Name	Number	Temperature °C	Type of cooling		Temperature [b] °C	Type of cooling	Temperature [b] °C	Type of cooling	Temperature °C
X4CrNiMo16-5-1	1.4418	1150 to 900	air	+A [e]	600 to 650	furn., air	-	-	-
				+QT760	-	-	950 to 1050	oil, air	590 to 620 [f]
				+QT900	-	-	950 to 1050	oil, air	550 to 620
X39CrMo17-1	1.4122	1100 to 800	slow cooling	+A	750 to 850	furn., air	-	-	-
				+QT750	-	-	980 to 1060	oil	650 to 750
Special grades									
X29CrS13	1.4029	1100 to 800	slow cooling	+A	740 to 820	air	-	-	-
				+QT850	-	-	950 to 1050	oil, air	625 to 675
X46CrS13	1.4035			+A	750 to 850	-	-	-	-
X70CrMo15	1.4109			+A	750 to 800	furn., air	-	-	-
X2CrNiMoV13-5-2	1.4415	1150 to 900	air	+QT750	-	-	950 to 1050	oil, air	600 to 650 + 500 to 550
				+QT850	-	-			
X53CrSiMoVN16-2	1.4150	1200 to 1000	slow cooling	+A	800 to 850	furn., air	-	-	-
				+QT	-		950 to 1050	Oil + deep freezing at −80° C	180
X40CrMoVN16-2	1.4123	1200 to 1000	slow cooling	+A	800 to 850	furn., air	-	-	-
				+QT	-		950 to 1050	Oil + deep freezing at −80° C	180
X105CrMo17	1.4125	1100 to 900	slow cooling	+A	780 to 840	furn., air	-	-	-
X90CrMoV18	1.4112	1100 to 800		+A	780 to 840		-	-	-

[a] Temperatures of annealing, quenching and tempering shall be agreed for simulated heat-treated test pieces.

[b] If heat treatment is carried out in a continuous furnace, the upper part of the range specified is usually preferred, or even exceeded.

[c] Double annealing might be advisable.

[d] In the case that the nickel is at the lower side of the range specified in Table 3, a single tempering at 620 °C to 720 °C may be sufficient.

[e] Tempering after martensitic transformation.

[f] Either 2 × 4 h or 1 × 8 h as a minimum time.