Table B.2 — Guidelines on the temperatures for hot forming and heat treatment [a] of austenitic-ferritic corrosion resistant steels

Steel designation		Hot forming		Heat treatment symbol	Solution annealing	
Name	Number	Temperature °C	Type of cooling		Temperature [b, c] °C	Type of cooling
Standard grades						
X2CrNiN22-2 *	1.4062 *	1100 to 950	air	+AT	980 to 1100	water, air [d]
X2CrNiN23-4	1.4362	1200 to 1000			950 to 1050	water, air
X2CrMnNiN21-5-1	1.4162	1100 to 900			1020 to 1080	water, air
X2CrMnNiMoN21-5-3	1.4482	1150 to 950			950 to 1050	water, air
X2CrNiMoN22-5-3	1.4462	1200 to 950			1020 to 1100	water, air [d]
X3CrNiMoN27-5-2	1.4460	1200 to 950			1020 to 1100	water, air [d]
Special grades						
X2CrCuNiN23-2-2 *	1.4669 *	1200 to 1000	air	+AT	950 to 1100	water, air [d]
X2CrMnNiSiN20-5-4-2 *	1.4670 *	1200 to 950			950 to 1050	water, air [d]
X2CrNiMoSi18-5-3	1.4424	1200 to 1000			1000 to 1100	water, air [d]
X2CrNiMnMoCuN24-4-3-2 *	1.4662 *	1150 to 900			1000 to 1150	water, air
X2CrNiMoCuN25-6-3	1.4507	1200 to 1000			1040 to 1120	water
X2CrNiMoN25-7-4	1.4410				1040 to 1120	water
X2CrNiMoCuWN25-7-4	1.4501				1040 to 1120	water
X2CrNiMoN29-7-2	1.4477				1040 to 1120	water
X2CrNiMoCoN28-8-5-1	1.4658				1050 to 1150	water

[a] Temperature of solution annealing 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] Solution annealing may be omitted, if the conditions for hot working and subsequent cooling are such that the requirements for the mechanical properties of the product and the resistance to intergranular corrosion as defined in EN ISO 3651-2 are obtained.

[d] Cooling sufficiently rapidly in order to avoid precipitation.

* Patented steel grade.