

Grouping system of steel according to TR / ISO 15608.

| Group number | Sub-group number | Examples of steel designation | |
|--|---|--|--|
| | | Grade | Reference standard |
| 1 | 2 | 3 | 4 |
| Steels with a specified minimum yield point $R_e \leq 460 \text{ MPa}^{1)}$ and with analysis in %: C $\leq 0.25\%$; Si $\leq 0.60\%$; Mn $\leq 1.0\%$; Mo $\leq 0.70\%^{2)}$; S $\leq 0.045\%$; P $\leq 0.045\%$; Cu $\leq 0.40\%^{2)}$; Ni $\leq 0.5\%^{2)}$; Cr $\leq 0.3\%^{2)}$; Nb $\leq 0.05\%$; V $\leq 0.12\%^{2)}$; Ti $\leq 0.05\%$ | | | |
| 1 | Steels with a specified minimum yield strength $R_e \leq 275 \text{ MPa}$ | | |
| | 1.1 | S235JR, S235J0, S235J2, S275JR, S275J0, S275J2 | EN 10025-2 |
| | | S275N, S275NL | EN 10025-3 |
| | | S275M, S275ML | EN 10025-4 |
| | | P235GH, P265GH, 16Mo3 | EN 10028-2 |
| | | P275N, P275NH, P275NL1, P275NL2 | EN 10028-3 |
| | | L210GA, L235GA, L245GA | EN 10208-1 |
| | | L245NB, L245MB, 16Mo3 | EN 10208-2 |
| | | S235JRH, S275J0H, S275J2H, S275NH, S275NLH | EN 10210-1 |
| | | GP240GR, G17Mn5 | EN 10213 |
| | | P195TR1, P195TR2, P235TR1, P235TR2, P265TR1, P265TR2 | EN 10216-1, EN 10217-1 |
| | | P195GH, P235GH, P265GH, 16Mo3 | EN 10216-2, EN 10217-2, EN 10217-5 |
| | | P275NL1, P275NL2 | EN 10216-3, EN 10217-3 |
| | | P215NL, P255QL, P265NL | EN 10216-4, EN 10217-6 |
| | | P245GHX | EN 10222-2 |
| | | E235, E275, E275K2 | EN 10297-1 |
| | | A, B, D, E | Part IX of PRS Rules |
| | | R35, R45 | PN-89/H-84023/07 |
| | | K10, K18, 16M | PN-75/H-84024 |
| | Steels with a specified minimum yield strength $275 \text{ MPa} < R_e \leq 360 \text{ MPa}$ | | |
| | 1.2 | S355JR, S355J0, S355J2, S355K2 | EN 10025-2 |
| | | S355N, S355NL | EN 10025-3 |
| | | P295GH, P355GH, 18MnMo4-5 | EN 10028-2 |
| | | P355N, P355NH, P355NL1, P355NL2 | EN 10028-3 |
| | | P355M, P355ML1, P355ML2 | EN 10028-5 |
| | | P355Q, P355QH, P355QL1, P355QL2 | EN 10028-6 |
| | | L290GA, L360GA | EN 10208-1 |
| | | L290NB, L290MB, L360NB, L360MB, L360QB | EN 10208-2 |
| | | S355J0H, S355J2H, S355NH, S355NLH, S460NH, S460NLH | EN 10210-1 |
| | | GP280GH, G20Mn5, G18Mo5 | EN 10213 |
| | | 20MnNb6 | EN 10216-2 |

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| | | P355N, P355NH, P355NL1, P355NL2 | EN 10216-3, EN 10217-3 |
| | | P285NH, P355NH, P285QH, P355QH | EN 10222-4 |
| | | S355N1, S355N2, S355M1, S355M2, S355N3, S355M3, S355N3Z, S355M3Z | EN 10225 |
| | | E315, E355 | EN 10297-1 |
| | | AH32, DH32, EH32, AH36, DH36, EH36 | Part IX of PRS Rules |
| | Normalized fine-grain steels with a specified minimum yield strength $R_e > 360$ MPa | | |
| | 1.3 | S420N, S420NL, S460N, S460NL | EN 10025-3 |
| | | P460N, P460NH, P460NL1, P460NL2 | EN 10028-3 |
| | | L415NB | EN 10208-2 |
| | | 8MoB5-4 | EN 10216-2 |
| | | P460N, P460NH, P460NL1, P460NL2 | EN 10216-3, EN 10217-3 |
| | | P420NH | EN 10222-4 |
| | | AH40, DH40, EH40 | Part IX of PRS Rules |
| | Steels with improved atmospheric corrosion resistance | | |
| | 1.4 | S235J0W, S235J2W, S355J0WP, S355J2WP, S355J2W, S355K2W | EN 10025-5 |
| Thermomechanically treated fine grain steels with a specified minimum yield strength $R_e > 360$ MPa | | | |
| 2 | Thermomechanically treated fine grain steels with a specified minimum yield strength $360 \text{ MPa} < R_e \leq 460 \text{ MPa}$ | | |
| | 2.1 | P420M, P420ML1, P420ML2, P460M, P460ML1, P460ML2 | EN 10028-5 |
| | | L415MB, L450MB | EN 10208-2 |
| | | S420MH, S420MLH, S460MH, S460MLH | EN 10219-1 |
| | | P420NH | EN 10222-4 |
| | | S390GP, S430GP | EN 10248-1 |
| | Thermomechanically treated fine grain steels with a specified minimum yield strength $R_e > 460 \text{ MPa}$ | | |
| | 2.2 | L485MB, L555MB | EN 10208-2 |
| Quenched and tempered steels and precipitation hardened steels with a specified minimum yield strength $R_e > 360$ MPa, except stainless steels | | | |
| 3 | Quenched and tempered steels with a specified minimum yield strength $360 \text{ MPa} < R_e \leq 690 \text{ MPa}$ | | |
| | 3.1 | S460Q, S460QL, S460QL1, S500Q, S500QL, S500QL1, S550Q, S550QL, S550QL1, S620Q, S620QL, S620QL1 | EN 10025-6 |
| | | P460Q, P460QH, P460QL1, P460QL2, P500Q, P500QH, P500QL1, P500QL2, P690Q, P690H, P690QL1, P690QL2 | EN 10028-6 |
| | | C35E, C35R, C40E, C40R, C45E, C45R, C50E, C50R, C55E, C55R, C60E, C60R, 28Mn6 | EN 10083-2 |
| | | L415QB, L450QB, L485QB, L555QB | EN 10208-2 |
| | | 38Cr2, 46Cr2 | EN 10208-3 |
| | | P620Q, P620QH, P620QL, P690Q, P690QH, P690QL1, P690QL2 | EN 10216-3 |
| | | P420QH | EN 10222-4 |

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| | | A420, D420, E420, F420, A460, D460, E460, F460, A500, D500, E500, F500, A550, D550, E550, F550, A620, D620, E620, F620, A690, D690, E690, F690, | Part IX of PRS Rules |
| | Quenched and tempered steels with a specified minimum yield strength $R_e > 690$ MPa | | |
| | 3.2 | 34Cr4, 34CrS4, 37Cr4, 37CrS4, 41Cr4, 41CrS4, 25CrMo4, 25CrMoS4, 34CrMo4, 34CrMoS4, 42CrMo4, 42CrMoS4, 50CrMo4, 34CrNiMo6, 30CrNiMo8, 36CrNiMo16, 51CrV4 | EN 10083-3 |
| | | S690QH, S690QL, S690QL1, S890Q, S890QL, S890QL1, S960Q, S960QL, S890Q, S890QL, S890QL1, S960Q, S960QL | EN 10025-6 |
| Low-vanadium alloyed Cr-Mo-(Ni) steels with $Mo \leq 0.7\%$ and $V \leq 0.1\%$ | | | |
| 4 | Steels with a content of $Cr \leq 0.3\%$ and $Ni \leq 0.7\%$ | | |
| | 4.1 | P215NL, P255QL, P265NL | EN 10216-4 |
| | Steels with $Cr \leq 0.7\%$ and $Ni \leq 1.5\%$ | | |
| | 4.2 | 15NiCuMoNb5-6-4 | PN-EN 10216-2 |
| Cr-Mo steels ³⁾ free of vanadium with $C \leq 0.35\%$ | | | |
| 5 | Steels with $0.75\% \leq Cr \leq 1.5\%$; $Mo \leq 0.7\%$ | | |
| | 5.1 | 13CrMo4-5, 13CrMoSi5-5 | EN 10028-2 |
| | | 34CrMoS4, 25CrMoS4 | EN 10208-2 |
| | | 10CrMo5-5, 13CrMo4-5, 25CrMo4 | EN 10216-2 |
| | | 26CrMo4-2 | EN 10216-4 |
| | | 15HM | PN-75/H-84024 |
| | Steels with $1.5\% < Cr \leq 3.5\%$; $0.7\% < Mo \leq 1.2\%$ | | |
| | 5.2 | 10CrMo9-10, 12CrMo9-10 | EN 10028-2 |
| | | 11CrMo9-10 | EN 10216-2 |
| | | 10H2M | PN-75/H-84024 |
| | Steels with $3.5\% < Cr \leq 7.0\%$; $0.4\% < Mo \leq 0.7\%$ | | |
| | 5.3 | X16CrMo5-1 | EN 10222-2 |
| | | X12CrMo5 | EN 10028-2 |
| | | X11CrMo5+I, X11CrMo5+NT1, X11CrMo5+NT2 | EN 10216-2 |
| | Steels with $7.0\% < Cr \leq 10.0\%$; $0.7\% < Mo \leq 1.2\%$ | | |
| | 5.4 | X11CrMo9-1+I, X11CrMo9-1+NT | EN 10216-2 |
| High vanadium alloyed Cr-Mo-(Ni) steels | | | |
| 6 | Steels with $0.3\% \leq Cr \leq 0.75\%$; $Mo \leq 0.7\%$; $V \leq 0.35\%$ | | |
| | 6.1 | 14MoV6-3 | EN 10216-2 |
| | | 13HMF | PN-75/H-84024 |
| | Steels with $0.75\% < Cr \leq 3.5\%$; $0.7\% < Mo \leq 1.2\%$; $V \leq 0.35\%$ | | |
| | 6.2 | 13CrMoV9-10, 12CrMoV12-10 | EN 10028-2 |
| | Steels with $3.5\% < Cr \leq 7.0\%$; $Mo \leq 0.7\%$; $0.45\% \leq V \leq 0.55\%$ | | |
| | 6.3 | 20CrMoV13-5-5 | EN 10216-2 |
| | Steels with $7.0\% < Cr \leq 12.5\%$; $0.7\% < Mo \leq 1.2\%$; $V \leq 0.35\%$ | | |
| | 6.4 | X10CrMoVNb9-1 | EN 10028-2 |
| | | X20CrMoV11-1 | EN 10216-2 |
| Ferritic, martensitic or precipitation hardened stainless steels with $C \leq 0.35\%$; $10.5\% \leq Cr \leq 30\%$ | | | |
| 7 | Ferritic stainless steels | | |
| | 7.1 | X2CrNi12, X2CrTi12, X6CrNiTi12, X6Cr13, X6CrAl13, X2CrTi17, X6CrTi17, X6Cr17, X3CrTi17, X3CrNb17, X6CrMo17-1, X6CrMoS17, X2CrMoTi17-1, X2CrMoTi18-2, X2CrMoTiS18-2, X6CrNi17-1, X6CrMoNb17-1, X2CrNbZr17, X2CrAlTi18-2, X2CrTiNb18, X2CrMoTi29-4 | EN 10088-1 |

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| | Martensitic stainless steels | | |
| | 7.2 | X12Cr13, X12CrS13, X20Cr13, X30Cr13, X29CrS13, X39Cr13, X46Cr13, X50CrMoV15, X70CrMo15, X14CrMoS17, X39CrMo17-1, X105CrMo17, X90CrMoV18, X17CrNi16-2, X3CrNiMo13-4, X4CrNiMo16-5-1 | EN 10088-1 |
| | Precipitation hardened stainless steels | | |
| | 7.3 | X5CrNiCuNb16-4, X7CrNiAl17-7, X5CrNiMoCuNb14-5, | EN 10088-1 |
| Austenitic stainless steels | | | |
| 8 | Austenitic stainless steels with $Cr \leq 19\%$ | | |
| | 8.1 | X2CrNi18-7, X2CrNi18-9, X2CrNi19-11, X5CrNi18-10, X6CrNi18-10, X6CrNiTi18-10, X2CrNiMo17-12-2, X6CrNiMoTi17-12-2, X2CrNiMo17-12-3, X2CrNiMo18-14-3, X2CrNiMoN17-13-5, X6CrNiNb18-10, X2CrNiMoN17-13-3, X3CrNiMo17-13-3, X2CrNiMoN18-12-4 | EN 10028-7 |
| | | X10CrNi18-8, X8CrNiS18-9, X4CrNi18-12, X1CrNiSi18-15-4, X3CrNiCu19-9-2, X6CrNiCuS18-9-2, X3CrNiCu18-9-4, X3CrNiCuMo17-11-3-2 | EN 10088-1 |
| | | X7CrNiNb18-10, X3CrNiMo18-12-3 | EN 10222-5 |
| | | X7CrNiTi18-10, X7CrNiTiB18-10, X6CrNiMo17-13-2, X8CrNiMoNb16-16, X10CrNiMoMnNbVB15-10-1 | EN 10216-5 |
| | | 1H18N9, 1H18N10T, 0H18N12Nb | PN-71/H-86020 |
| | Austenitic stainless steels with $Cr > 19\%$ | | |
| | 8.2 | X6CrNi23-13, X6CrNi25-20, X1NiCrMoCu25-20-5, X5NiCrAlTi31-20, X8NiCrAlTi32-21, X1CrNi25-21, X1CrNiMoN25-22-2, | EN 10028-7 |
| | | X2CrNi18-9, X2CrNi18-10, X5CrNi18-10, X2CrNiCu19-10 | EN 10222-5 |
| | | X5NiCrAlTi31-20, X8NiCrAlTi32-21 | EN 10216-5 |
| | Manganese austenitic stainless steels with $4.0\% < Mn \leq 12.0\%$ | | |
| | 8.3 | X12CrMnNiN17-7-5, X2CrMnNi17-7-5, X12CrMnNiN18-9-5, | EN 10088-1 |
| Nickel alloy steels with $Ni \leq 10.0\%$ | | | |
| 9 | Nickel alloy steels with $Ni \leq 3.0\%$ | | |
| | 9.1 | 11MnNi5-3, 13MnNi6-3, 15NiMn6 | EN 10028-4 |
| | | 13MnNi6-3, 15NiMn6 | EN 10222-3 |
| | Nickel alloy steels with $3.0\% < Ni \leq 8.0\%$ | | |
| | 9.2 | 12Ni14, X12Ni5 | EN 10028-4 |
| | Nickel alloy steels with $8.0\% < Ni \leq 10.0\%$ | | |
| | 9.3 | X8Ni9, X7Ni9 | EN 10028-4 |
| X10Ni9 | | EN 10216-4 | |
| Austenitic-ferritic stainless steels (duplex) | | | |
| 10 | Austenitic-ferritic steels with $Cr \leq 24.0\%$ | | |
| | 10.1 | X2CrNiMoN22-5-3, X2CrNiN23-4 | EN 10088-1 |
| | | X2CrNiMo22-5-3 | EN 10222-5 |
| | | X2CrNiMoSi18-5-3 | EN 10216-5 |
| | Austenitic-ferritic steels with $Cr > 24.0\%$ | | |
| 10.2 | X2CrNiMoN25-7-4, X3CrNiMoN27-5-2, X2CrNiMoCuN25-6-3, X2CrNiMoCuWN25-7-4 | EN 10088-1 | |
| Steels with a specified minimum yield strength $R_e \leq 460$ MPa with $0.25\% < C \leq 0.50\%$; $Si \leq 0.60\%$; $Mn \leq 1.70\%$; $Mo \leq 0.70\%$ ⁴⁾ ; $S \leq 0.045\%$; $P \leq 0.045\%$; $Cu \leq 0.40\%$ ⁴⁾ ; $Ni \leq 0.5\%$ ⁴⁾ ; $Cr \leq 0.3\%$ ⁴⁾ ; $Nb \leq 0.05\%$; $V \leq 0.12\%$ ⁴⁾ ; $Ti \leq 0.05\%$ | | | |

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| 11 | Steels with $0.25\% < C \leq 0.35\%$ | | |
| | 11.1 | C35 | EN 10083-2 |
| | Steels with $0.35\% < C \leq 0.50\%$ | | |
| | 11.2 | C40, C45 | EN 10083-2 |

¹⁾ In accordance with the specification of the steel product standards, R_e may be replaced by $R_{0.2}$.

²⁾ Higher content is permitted, provided that $Cr + Mo + Ni + Cu + V \leq 0.75\%$.

³⁾ "Free of vanadium" means that vanadium has not been added deliberately.

⁴⁾ Higher content is permitted, provided that $Cr + Mo + Ni + Cu + V \leq 1\%$.