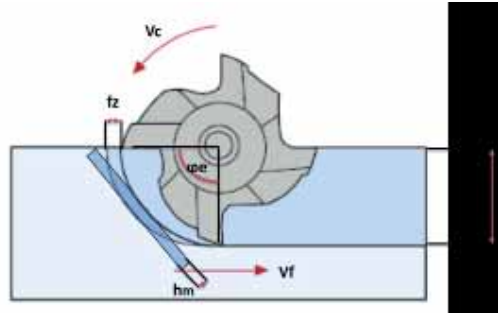


Advanced Roughing, what does it mean?

These CAM-based rough-machining, or dynamic milling, strategies are ones that centre on a cutting tool's arc of contact and its average chip load.

When reducing the arc of contact, the amount of heat generated during roughing operations is reduced. As the radial depth of cut decreases, so does a cutter's arc of contact. A smaller amount of contact results in less friction and, therefore, less heat between the tool's cutting edges and the workpiece it is machining. These lower machining temperatures, in turn, allow for increased cutting speeds shorter cycle times.

JS554-3C Cutter designs for advanced roughing machining methods



To cover a wide range of workpiece materials, Seco recently modified the geometries of its Jibro®-Solid² 550 line of cutters specifically for optimised rough-machining strategies.

Within the JS550 Series are longer length tools that the company determined work best for deep pocket and 3D shape roughing/dynamic milling.

When a steady arc of contact is maintained, these tools experience consistent and evenly distributed wear along their flutes and provide a long and predictable tool life.

To create chips that are smaller and more manageable, Seco modified its JS554 L (long version) cutter design by adding chip splitters. The modified cutter, now known as the JS554 3C (C indicating chip splitters).



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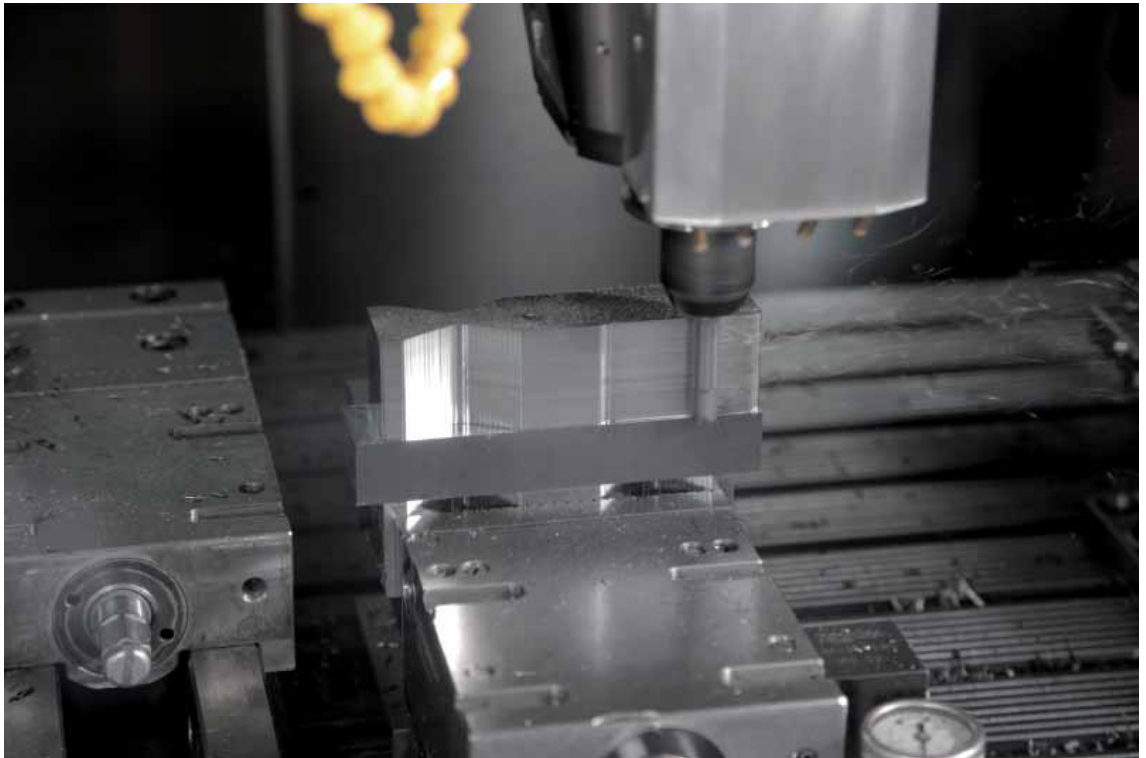


JS554-3C applied in Advanced roughing

Today's CAM packages offer toolpath strategies specifically for inside/outside radii shapes where changing arcs of contact are common when using conventional toolpaths. These software packages automatically apply different feeds to control arc of contact and keep chip loads consistent.

In advanced roughing, to maintain arc of contact, CAM packages need to employ trochoidal machining and peel milling techniques when entering a radius.

When using an optimised roughing toolpath and maintaining consistent arc of contact, the cutter's radius can match that of the inside radius being cut without risk of cutter overload, grabbing or overcutting. This capability allows the JS554-3C to remove more stock in the roughing pass, thus reducing the amount of stock the finish pass has to cut – all of which translates to faster machining cycle times.



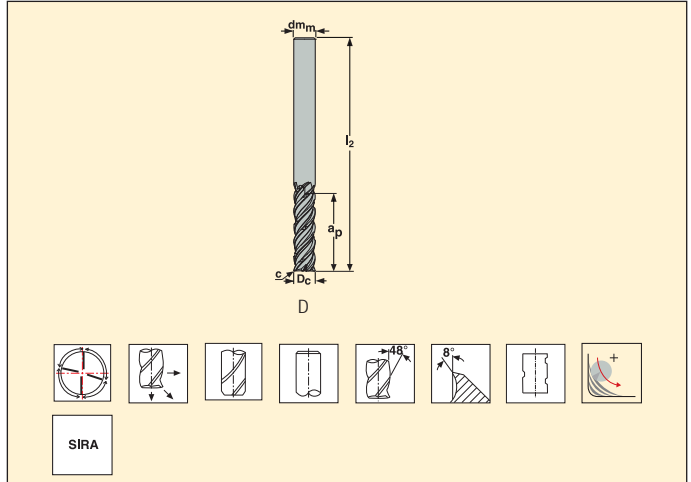
JS554 – Solid carbide end mill – cylindrical – four flute – chip splitters – advanced roughing



Tolerances:

$dm_m = h5$

$D_c = e7$



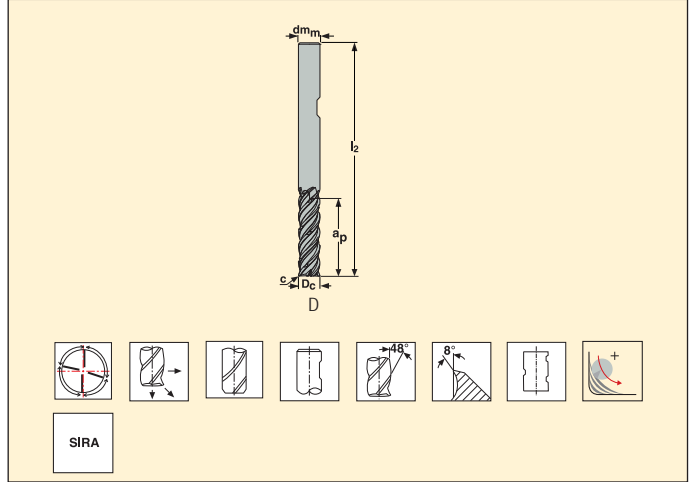
| Part No. | Length index | Tool shape | Dimensions in mm | | | | c x 45° | z _n | Cylindrical |
|-----------------------|--------------|------------|------------------|-----------------|----------------|----------------|---------|----------------|-------------|
| | | | D _c | dm _m | a _p | l ₂ | | | |
| JS554060D3C.0Z4C-SIRA | 3 | D | 6 | 6 | 23 | 65 | 0,075 | 4 | ■ |
| JS554080D3C.0Z4C-SIRA | 3 | D | 8 | 8 | 32 | 75 | 0,1 | 4 | ■ |
| JS554100D3C.0Z4C-SIRA | 3 | D | 10 | 10 | 40 | 85 | 0,125 | 4 | ■ |
| JS554120D3C.0Z4C-SIRA | 3 | D | 12 | 12 | 45 | 100 | 0,15 | 4 | ■ |
| JS554160D3C.0Z4C-SIRA | 3 | D | 16 | 16 | 55 | 115 | 0,2 | 4 | ■ |
| JS554200D3C.0Z4C-SIRA | 3 | D | 20 | 20 | 65 | 125 | 0,25 | 4 | ■ |
| JS554250D3C.0Z4C-SIRA | 3 | D | 25 | 25 | 85 | 150 | 0,3 | 4 | ■ |
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■ Stock standard. Subject to change refer to current price-and stock-list.

JS554 – Solid carbide end mill – Weldon – four flute – chip splitters – advanced roughing



Tolerances:
 $dm_m = h5$
 $D_c = e7$



| Part No. | Length index | Tool shape | Dimensions in mm | | | | c x 45° | Z_n | Weldon |
|-----------------------|--------------|------------|------------------|--------|-------|-------|---------|-------|--------|
| | | | D_c | dm_m | a_p | l_2 | | | |
| JS554060D3C.3Z4C-SIRA | 3 | D | 6 | 6 | 23 | 65 | 0,075 | 4 | ■ |
| JS554080D3C.3Z4C-SIRA | 3 | D | 8 | 8 | 32 | 75 | 0,1 | 4 | ■ |
| JS554100D3C.3Z4C-SIRA | 3 | D | 10 | 10 | 40 | 85 | 0,125 | 4 | ■ |
| JS554120D3C.3Z4C-SIRA | 3 | D | 12 | 12 | 45 | 100 | 0,15 | 4 | ■ |
| JS554160D3C.3Z4C-SIRA | 3 | D | 16 | 16 | 55 | 115 | 0,2 | 4 | ■ |
| JS554200D3C.3Z4C-SIRA | 3 | D | 20 | 20 | 65 | 125 | 0,25 | 4 | ■ |
| JS554250D3C.3Z4C-SIRA | 3 | D | 25 | 25 | 85 | 150 | 0,3 | 4 | ■ |
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■ Stock standard. Subject to change refer to current price-and stock-list.

Cutting data – JS554_3C Opti $a_p/D_c = 0,1$

| SMG | | a_p / D_c | f_z | | | | | | | v_c |
|-----|---------|-------------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| | | | 6 | 8 | 10 | 12 | 16 | 20 | 25 | |
| P1 | M/A/D/E | 3,5 | 0,065 | 0,085 | 0,11 | 0,13 | 0,16 | 0,18 | 0,20 | 420 (350 – 630) |
| P2 | M/A/D/E | 3,5 | 0,065 | 0,090 | 0,11 | 0,13 | 0,16 | 0,19 | 0,22 | 410 (345 – 610) |
| P3 | M/A/D/E | 3,5 | 0,065 | 0,085 | 0,10 | 0,12 | 0,15 | 0,18 | 0,20 | 360 (300 – 540) |
| P4 | M/A/D/E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,20 | 315 (265 – 470) |
| P5 | M/A/D/E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 300 (255 – 450) |
| P6 | M/A/D/E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 340 (285 – 510) |
| P7 | M/A/D/E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 320 (270 – 475) |
| P8 | M/A/D/E | 3,5 | 0,065 | 0,085 | 0,10 | 0,12 | 0,15 | 0,18 | 0,20 | 300 (255 – 450) |
| P11 | M/A/D/E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 310 (260 – 465) |
| M1 | E | 3,5 | 0,085 | 0,11 | 0,14 | 0,16 | 0,20 | 0,24 | 0,26 | 175 (145 – 260) |
| M2 | E | 3,5 | 0,075 | 0,10 | 0,13 | 0,15 | 0,19 | 0,22 | 0,24 | 140 (120 – 215) |
| M3 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 115 (95 – 170) |
| M4 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 85 (70 – 130) |
| M5 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 70 (60 – 105) |
| K1 | E | 3,5 | 0,065 | 0,090 | 0,11 | 0,13 | 0,16 | 0,19 | 0,22 | 345 (290 – 510) |
| K2 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 305 (255 – 455) |
| K3 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 260 (215 – 385) |
| K4 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 245 (205 – 370) |
| K5 | E | 3,5 | 0,055 | 0,075 | 0,090 | 0,11 | 0,13 | 0,15 | 0,17 | 150 (125 – 225) |
| K6 | E | 3,5 | 0,060 | 0,080 | 0,10 | 0,12 | 0,15 | 0,17 | 0,19 | 215 (180 – 325) |
| K7 | E | 3,5 | 0,055 | 0,075 | 0,090 | 0,11 | 0,13 | 0,15 | 0,17 | 190 (160 – 285) |
| N1 | E | 3,5 | 0,085 | 0,11 | 0,14 | 0,17 | 0,20 | 0,24 | 0,28 | 1075 (910 – 1625) |
| N2 | E | 3,5 | 0,085 | 0,11 | 0,14 | 0,17 | 0,20 | 0,24 | 0,28 | 700 (590 – 1050) |
| N3 | E | 3,5 | 0,085 | 0,11 | 0,14 | 0,17 | 0,20 | 0,24 | 0,28 | 465 (390 – 700) |
| N11 | E | 3,5 | 0,085 | 0,11 | 0,14 | 0,17 | 0,20 | 0,24 | 0,28 | 350 (295 – 520) |
| H5 | M/A/D | 3,5 | 0,026 | 0,034 | 0,044 | 0,050 | 0,065 | 0,075 | 0,085 | 230 (195 – 345) |
| H8 | M/A/D | 3,5 | 0,030 | 0,040 | 0,050 | 0,060 | 0,075 | 0,085 | 0,095 | 225 (190 – 340) |
| H11 | M/A/D | 3,5 | 0,026 | 0,034 | 0,044 | 0,050 | 0,065 | 0,075 | 0,085 | 295 (250 – 445) |
| H12 | M/A/D | 3,5 | 0,026 | 0,034 | 0,044 | 0,050 | 0,065 | 0,075 | 0,085 | 480 (400 – 720) |
| H21 | M/A/D | 3,5 | 0,030 | 0,040 | 0,050 | 0,060 | 0,075 | 0,085 | 0,095 | 225 (190 – 340) |

Cutting data – JS554_3C optirough $a_p/D_c = 0,05$

| SMG | | a_p / D_c | f_z | | | | | | | v_c |
|-----|---|-------------|-------|-------|-------|-------|-------|-------|------|-----------------|
| | | | 6 | 8 | 10 | 12 | 16 | 20 | 25 | |
| S1 | E | 3,5 | 0,046 | 0,060 | 0,075 | 0,090 | 0,11 | 0,13 | 0,15 | 48 (40 – 70) |
| S2 | E | 3,5 | 0,046 | 0,060 | 0,075 | 0,090 | 0,11 | 0,13 | 0,15 | 48 (40 – 70) |
| S3 | E | 3,5 | 0,042 | 0,055 | 0,070 | 0,085 | 0,11 | 0,12 | 0,14 | 24 (20 – 36) |
| S11 | E | 3,5 | 0,036 | 0,046 | 0,060 | 0,070 | 0,085 | 0,10 | 0,11 | 190 (160 – 285) |
| S12 | E | 3,5 | 0,036 | 0,046 | 0,060 | 0,070 | 0,085 | 0,10 | 0,11 | 145 (125 – 220) |
| S13 | E | 3,5 | 0,030 | 0,040 | 0,050 | 0,060 | 0,075 | 0,085 | 0,10 | 115 (100 – 175) |

SMG = Seco material group

Coolant = A=air D=dry E=emulsion M=mist spray

v_c = m/min

f_z = mm

a_p (mm)/ D_c (mm)= factor

a_s (mm)/ D_c (mm)= factor

All cutting data are target values

See JS554 3C in action



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Steels, ferritic and martensitic stainless steels

| SMG | Description | Properties | Reference |
|-----|---|--------------------|--|
| P1 | Free-cutting steels | $360 < R_m < 880$ | 11 SMn30 $R_m = 385 \text{ N/mm}^2$ |
| P2 | Low alloy ferritic steels, $C < 0.25\% \text{wt}$ Low alloy weldable general structural steels | $320 < R_m < 600$ | S235JRG2 $R_m = 420 \text{ N/mm}^2$ |
| P3 | Ferritic & ferritic/pearlitic steels, $C < 0.25\% \text{wt}$ Weldable general structural steels Case hardening steels | $430 < R_m < 610$ | 16 MnCr 5 $R_m = 550 \text{ N/mm}^2$ |
| P4 | Low alloy general structural steels, $0.25\% < C < 0.67\% \text{wt}$ Low alloy Quench & Temper steels | $520 < R_m < 1200$ | C 45E $R_m = 660 \text{ N/mm}^2$ |
| P5 | Structural steels, $0.25\% < C < 0.67\% \text{wt}$ Quench & Temper steels | $550 < R_m < 1200$ | 42 CrMo 4 $R_m = 700 \text{ N/mm}^2$ |
| P6 | Low alloy through hardening steels, $C > 0.67\% \text{wt}$ Low alloy spring and bearing steels | $520 < R_m < 1200$ | C 100S $R_m = 600 \text{ N/mm}^2$ |
| P7 | Through hardening steels, $C > 0.67\% \text{wt}$ Spring and bearing steels | $600 < R_m < 1200$ | 100 Cr 6 $R_m = 650 \text{ N/mm}^2$ |
| P8 | Tool steels High Speed Steels (HSS) | $600 < R_m < 1200$ | X 40 CrMoV 5 1 $R_m = 700 \text{ N/mm}^2$ |
| P11 | Ferritic & martensitic stainless steels | $415 < R_m < 1200$ | X 20 Cr 13 $R_m = 675 \text{ N/mm}^2$ |

Free-cutting, austenitic and duplex stainless steels

| SMG | Description | Properties | Reference |
|-----|---|------------|--------------------|
| M1 | Free-cutting austenitic stainless steels | | X 10 CrNiS 18 9 |
| M2 | Low alloy austenitic stainless steels | | X 5 CrNi 18 9 |
| M3 | Medium alloy austenitic stainless steels | | X 2 CrNiMo 18 14 3 |
| M4 | High alloy austenitic and duplex stainless steels | | X 2 CrNiMoN 22 5 3 |
| M5 | Difficult high alloy austenitic and duplex stainless steels | | X 2 CrNiMoN 25 7 4 |

Cast irons

| SMG | Description | Properties | Reference |
|-----|---------------------------------|------------|-----------------------|
| K1 | Grey cast irons (GCI) | | EN-GJL-250 |
| K2 | Compacted graphite irons (CGI) | | EN-GJV-400 |
| K3 | Malleable cast irons (MCI) | | EN-GJMB-550-4 |
| K4 | Nodular cast irons (SGI) | | EN-GJS-500-7 |
| K5 | Austempered ductile irons (ADI) | | EN-GJS-1000-5 |
| K6 | Austenitic lamellar cast irons | | EN-GJLA-XNiCuCr15-6-2 |
| K7 | Austenitic nodular cast irons | | EN-GJSA-XNiMn23-4 |

Non-ferrous metals

| SMG | Description | Properties | Reference |
|-----|---------------------------------|------------|----------------------|
| N1 | Aluminium alloys, Si < 9% | | AW-7075 |
| N2 | Aluminium alloys, 9% < Si < 16% | | AC-44200 Si = 12% |
| N3 | Aluminium alloys, Si > 16% | | AlSi17Cu5 |
| N11 | Copper alloys | | CW614N |

Superalloys and titanium

| SMG | Description | Properties | Reference |
|-----|---|------------|-------------|
| S1 | Iron based superalloys | | Disalloy |
| S2 | Cobalt based superalloys | | Stellite 21 |
| S3 | Nickel based superalloys | | Inconel 718 |
| S11 | Titanium, low alloyed, (α) | | Ti |
| S12 | Titanium, medium alloyed, (α + β) | | TiAl6V4 |
| S13 | Titanium, high alloyed, (near β and β) | | Ti10V2Fe3Al |

Hard materials

| SMG | Description | Properties | Reference |
|-----|--|---------------|-------------------------------|
| H3 | Case hardened steels | 58 < HRC < 62 | 16 MnCr 5 60 HRC |
| H5 | Quenched & Tempered steels | 38 < HRC < 56 | 42 CrMo 4 50 HRC |
| H7 | Quenched & Tempered steels Bearing steels | 56 < HRC < 64 | 100 Cr 6 60 HRC |
| H8 | Tool steels High Speed Steels | 38 < HRC < 64 | X 40 CrMoV 5 1 50 HRC |
| H11 | Martensitic stainless steels | 38 < HRC < 50 | X 20 Cr 13 45 HRC |
| H12 | Precipitation hardened stainless steels | 33 < HRC < 50 | X 5 CrNiCuNb 16 4 35 HRC |
| H21 | Manganese steels | 23 < HRC < 64 | X 120 Mn 12 50 HRC |
| H31 | White cast irons | 50 < HRC < 64 | EN-GJN-HV600(XCr11) 55 HRC |

Other difficult materials

| SMG | Description | Properties | Reference |
|-----|---|------------|-----------------------------------|
| PM1 | Low alloy PM materials | | F-0008 Fe-0.7C |
| PM2 | Medium alloy PM materials | | FLC-4608 Fe2Cu1.8Ni0.5Mo0.2Mn0.8C |
| PM3 | High alloy PM materials Exhaust valve seat materials | | |
| HF1 | Hard facing alloys Welded or plasma deposited iron based alloys | | |
| HF2 | Hard facing alloys Welded or plasma deposited cobalt and nickel based alloys | | |
| CC1 | Sintered tungsten carbide | | G50 |

Plastics and Composites

| SMG | Description | Properties | Reference |
|-----|--|------------|---|
| TS1 | Thermosetting polymers | | Urea formaldehyde (UF) |
| TS2 | Thermosetting Carbon fibre composites | | T300 T700 T800 HTA-S IMA - Epoxy (M21)... |
| TS3 | Thermosetting Glass fibre composites | | Epoxy - HX..(42..)/E glass (7781...)... |
| TS4 | Thermosetting Aramide fibre composites | | Kevlar 49 |
| TP1 | Thermoplastic polymers | | Polycarbonate (PC) |
| TP2 | Thermoplastic Carbon fibre composites | | PPS/PEEK - T300.. |
| TP3 | Thermoplastic Glass fibre composites | | PPS/PEEK - E glass or A glass... |
| TP4 | Thermoplastic Aramide fibre composites | | |

Graphite

| SMG | Description | Properties | Reference |
|-----|-------------|------------|-----------|
| GR1 | Graphite | | R 8500 |

SMG

| SMG | EN | EN-Nr | W.-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|----------------|-------------|--------|---------------|-------------------|-----------------|------------------|---------------------|------------|------------|--------|
| P1 | 11 SMn30 | 1.0715 | 1.0715 | 9 SMn 28 | S 250 | 230 M 07 | CF 9 SMn 28 | SUM 22 | 1912 | G12130 |
| | 11 SMnPb30 | 1.0718 | 1.0718 | 9 SMnPb 28 | S 250 Pb | | CF 9 SMnPb 28 | SUM 22 L | 1914 | G12134 |
| | 10 S 20 | 1.0721 | 1.0721 | 10 S 20 | 10 F 1 | 210 M 15 | CF 10 S 20 | | | |
| | | | 1.0722 | 10 SPb 20 | 10 PbF 2 | | CF 10 SPb 20 | | | |
| | 15 SMn13 | 1.0725 | 1.0723 | 15 S 20 | | 210 A 15 | | SUM 32 | 1922 | |
| | 35 S 20 | 1.0726 | 1.0726 | 35 S 20 | 35 MF 4 | 212 M 36 | | | 1957 | G11400 |
| | 46 S 20 | 1.0727 | 1.0727 | 46 S 20 | 45 MF 4 | 212 M 44 | | | 1973 | G11460 |
| | 11 SMn37 | 1.0736 | 1.0736 | 9 SMn 36 | S 300 | 240 M 07 | CF 9 SMn 36 | | | G12150 |
| | 11 SMnPb 37 | 1.0737 | 1.0737 | 9 SMnPb 36 | S 300 Pb | | CF 9 SMnPb 36 | | 1926 | G12144 |
| | S235JR | 1.0037 | 1.0037 | St 37-2 | E 24-2 | | Fe 360 B | STKM 12 C | 1311 | |
| | S235JRG2 | 1.0038 | 1.0116 | St 37-3 | E 24-3, E 24-4 | 4360-40 C | Fe 360 D FF | | 1312, 1313 | |
| S275J2G3 | 1.0144 | 1.0144 | St 44-3 N | E 28-3, E 28-4 | 4360-43 C | Fe 430 D FF | SM 41 C | 1412, 1414 | | |
| C 10 | 1.0301 | 1.0301 | C 10 | AF 34 C 10, XC 10 | 045 M 10 | C 10 | S 10 C | | G10100 | |
| | | 1.0401 | C 15 | AF3 7 C 12, XC 18 | 080 M 15 | C 15, C 16 | | 1350 | G10170 | |
| C22+N | 1.0402 | 1.0402 | C 22 | C 20 | 050 A 20 | C 20, C 21 | | 1450 | G10200 | |
| S355JR | 1.0570 | 1.0570 | St 52-3 | E 36-3, E 36-4 | 4360-50 C | Fe 510 B | SM 50 YA | 2172, 2132 | | |
| C 15R | 1.1141 | 1.1141 | Ck 15 | XC 15, XC 18 | 080 M 15 | C 15, C 16 | S 15 C, S 15 CK | 1370 | G10170 | |
| | | 1.1158 | Ck 25 | XC 25 | 060 A 25 | C 25 | S 25 C | | G10250 | |
| | | 1.2162 | 21 MnCr 5 | 20 NC 5 | | | SCR 420 H | | | |
| 16 Mo 3 | 1.5415 | 1.5415 | 15 Mo 3 | 15 D 3 | 1501-240 | 16 Mo 3 | | 2912 | | |
| | | 1.5423 | 16 Mo 5 | | 1503-245-420 | 16 Mo 5 | SB 450 M | | G45200 | |
| 14 NiCr 14 | 1.5752 | 1.5752 | 14 NiCr 14 | 12 NC 15 | 655 M 13 | | SNC 815 (H) | | G33106 | |
| | | 1.5919 | 15 CrNi 6 | 16 NC 6 | S 107 | 16 CrNi 4 | | | | |
| 18 NiCrMo 7 6 | 1.6587 | 1.6587 | 18 CrNiMo 7 6 | 18 NCD 6 | 820 A 16 | 18 NiCrMo 7 | | | | |
| 16 MnCr 5 | 1.7131 | 1.7131 | 16 MnCr 5 | 16 MC 5 | 527 M 17 | 16 MnCr 5 | SCR 415 | 2511 | G51170 | |
| 16 MnCrS 5 | 1.7139 | 1.7139 | 16 MnCrS 5 | | | | | | | |
| 20 MnCr 5 | 1.7147 | 1.7147 | 20 MnCr 5 | 20 MC 5 | | 20 MnCr 5 | SMnC 420 (H) | | G51200 | |
| 20 MnCrS 5 | 1.7149 | 1.7149 | 20 MnCrS 5 | 20 MnCrS 5 | | | SMnC 21 H | | | |
| 13 CrMo 4 5 | 1.7335 | 1.7335 | 13 CrMo 4 4 | 15 CD 3,5 | 1501-620 Gr. 27 | 14 CrMo 4 5 | | 2216 | | |
| | | 1.7337 | 16 CrMo 4 4 | 15 CD 4,5 | 1501-620 Gr. 27 | 14 CrMo 4 5 | | 2216 | | |
| 10 CrMo 9 10 | 1.7380 | 1.7380 | 10 CrMo 9 10 | 10 CD 9,10 | 1501-622 Gr. 31 | 12 CrMo 9 10 | | 2218 | J21890 | |
| C35+N | | 1.0501 | C 35 | AF 55 C 35 | 060 A 35 | C 35 | | 1550 | G10350 | |
| E 335 | 1.0503 | 1.0503 | C 45 | AF 65 C 45 | 80 M 46 | C 45 | S 45 C | 1650 | G10430 | |
| C40+N | | 1.0511 | C 40 | AF 60 C 40 | 080 M 40 | C 40 | S 40 C | | | |
| E 360 | 1.0070 | 1.0535 | St 70-2 | A 70-2 | | Fe 690 | | 1655 | | |
| C60+N | 1.0601 | 1.0601 | C 60 | CC 55 | 080 A 62 | C 60 | | | G10600 | |
| | | 1.1157 | 40 Mn 4 | 35 M 5 | 150 M 36 | | | | G10390 | |
| G 28 Mn6 | 1.1165 | 1.1165 | 30 Mn 5 | | 120 M 36 | | SMn 1 H, SCMn 2 | | G13300 | |
| G 28 Mn6+QT | 1.1165 | 1.1167 | 36 Mn 5 | 40 M 5 | 150 M 36 | | SMn 438 (H), SCMn 3 | 2120 | G13350 | |
| C 35E | 1.1181 | 1.1181 | Ck 35 | XC 38 H1 | 080 M 36 | C 35 | S 35 C | 1572 | G10340 | |
| C 45E | 1.1191 | 1.1191 | Ck 45 | XC 42 | 080 M 46 | C 45 | S 45 C | 1672 | G10420 | |
| C 60E | 1.1221 | 1.1221 | Ck 60 | XC 60 | 080 A 62 | C 60 | S 58 C | 1665, 1678 | G10640 | |
| | | 1.1740 | C 60 W | Y3 55 | | | SK 7 | | | |
| 55 SiCr7 | 1.7100 | 1.0904 | 55 Si 7 | 55 S 7 | 250 A 53 | 55 Si 8 | | 2085, 2090 | | |
| 42 CrMo 4 | 1.7225 | 1.1201 | 42 CrMo 4 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 2244 | G41400 | |
| 42 CrMo 4 | 1.7225 | 1.1201 | 42 CrMo 4 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 2244 | G41400 | |
| | | 1.2330 | 35 CrMo 4 | 34 CD 4 | 708 A 37 | 35 CrMo 4 | | 2234 | T51620 | |
| | | 1.2542 | 45 WCrV 7 | | BS 1 | 45 WCrV 8 KU | | 2710 | T41901 | |
| | | 1.2714 | 56 NiCrMoV 7 | | BH 224-5 | 56 NiCrMoV7-KU | SKT 4 | | T61206 | |
| | | 1.5121 | 46 MnSi 4 | | | | | | | |
| | | 1.5710 | 36 NiCr 6 | 35 NC 6 | 640 A 35 | | | SNC 236 | | |
| | | 1.5736 | 36 NiCr 10 | 35 NC 11 | | 35 NiCr 9 | SNC 631 (H) | | | |
| 36CrNiMo4+TA | 1.6511 | 1.6511 | 36 CrNiMo 4 | 40 NCD 3 | 816 M 40 | 38 NiCrMo 4 (KB) | | | G98400 | |
| 34 CrNiMo 6 | 1.6582 | 1.6582 | 34 CrNiMo 6 | 35 NCD 6 | 817 M 40 | 35 NiCrMo 6 (KW) | SNCM 447 | 2541 | | |
| 34 Cr 4 | 1.7033 | 1.7033 | 34 Cr 4 | 32 C 4 | 530 A 32 | 34 Cr 4 (KB) | SCR 430 (H) | | G51320 | |
| 41 Cr 4 | 1.7035 | 1.7035 | 41 Cr 4 | 42 C 4 | 530 M 40 | 41 Cr 4 | SCR 440 (H) | | G51400 | |
| 25 CrMo 4 | 1.7218 | 1.7218 | 25 CrMo 4 | 25 CD 4 S | 708 M 25 | 25 CrMo 4 (KB) | SCM 425 | 2225 | G41300 | |
| | | 1.7361 | 32 CrMo 12 | 30 CD 12 | 722 M 24 | 32 CrMo 12 | | 2240 | | |
| 50 CrV 4 | 1.8159 | 1.8159 | 50 CrV 4 | 50 CV 4 | 735 A 50 | 51 CrV 4 | SUP 10 | 2230 | H61500 | |
| 41 CrAlMo 7 10 | 1.8509 | 1.8509 | 41 CrAlMo 7 | 40 CAD 6.12 | 905 M 39 | 41 CrAlMo 7 | SACM 645 | 2940 | K24065 | |
| C 67S | 1.1231 | 1.1231 | Ck 67 | XC 68 | 060 A 67 | C 70 | | 1770 | G10700 | |
| C 100S | 1.1274 | 1.1274 | Ck 101 | | 060 A 96 | | SUP 4 | 1870 | G10950 | |
| C 105U | 1.1545 | 1.1545 | C 105 W1 | Y1 105 | | C 100 KU | | 1880 | | |
| | | 1.1645 | C 105 W2 | Y1 105 | | C 100 KU | SK 3 | | | |
| | | 1.1663 | C 125 W | Y2 120 | | C 120 KU | SK 2 | | | |

SMG

| U.N.E./I.H.A. | AISI / ASTM | GOST | Misc. Brands | Condition | Structure |
|---------------|--------------------|----------|--------------|---------------------|-----------|
| | 1213 | | | Annealed | |
| | 12 L 13 | | | Annealed | |
| | 1108 | | | Annealed | |
| | 11 L 08 | | | Annealed | |
| | | | | Annealed | |
| | 1140 | 40 | | Annealed | |
| | 1146 | | | Annealed | |
| | 1215 | | | Annealed | |
| | 12 L 14 | | | Annealed | |
| | | 16D | | Annealed | |
| | A 573 Gr. 58 | 18kp | | Annealed | |
| | A 573 Gr. 70 | St14kP | | Annealed | |
| | 1010 | 10 | | Annealed | |
| F.1110 | 1015 | 15 | | Annealed | |
| | 1023 | 20 | | Annealed | |
| | | 17G1S | | Annealed | |
| F.1511 | 1015 | 15 | | Annealed | |
| F.1120 | 1025 | 25 | | Annealed | |
| | | | | Annealed | |
| | A 204 Gr. A | | | Annealed | |
| | 4520 | | | Annealed | |
| | 3310, 9314 | 20X2H4A | | Annealed | |
| | 4320 | | | Annealed | |
| | | | | Annealed | |
| F.1516 | 5115 | 12KHn2 | | Annealed | |
| | | 18HG | | Annealed | |
| | 5120 | 20KH | | Annealed | |
| | 5120 H | 20KH | | Annealed | |
| | A 182-F11, F12 | 12KHM | | Annealed | |
| | A 387 Gr. 12 Cl. 2 | | | Annealed | |
| F.155 | A 182-F22 | 12KH8 | | Annealed | |
| F.1130 | 1035 | 35 | | Annealed | |
| F.5110 | 1045 | 45 | | Annealed | |
| | 1040 | 40 | | Annealed | |
| F.1150 | 1055 | 55 | | Annealed | |
| | 1060 | 60 | | Annealed | |
| | 1039 | 40G | | Annealed | |
| | 1330 | 30G2 | | Annealed | |
| F.411 | 1335 | 35G2 | | Annealed | |
| F.1135 | 1035 | 35 | | Annealed | |
| F.1140 | 1045 | 45 | | Annealed | |
| F.1150 | 1064 | 60 | | Annealed | |
| | 1060 | 60 | | Annealed | |
| F.144 | 9255 | 55S2 | | Annealed | |
| F.1252 | 4142, 4140 | 38HM | | Annealed | |
| F.1252 | 4142, 4140 | 38HM | | Quenched & Tempered | |
| F.1250 | 4135 | 35KHM | | Annealed | |
| F.5241 | S1 | 5KHV2S | | Annealed | |
| | L6 | 5KHNV | | Annealed | |
| | 5045 | | | Annealed | |
| | 3135 | | | Quenched & Tempered | |
| | 3435 | | | Annealed | |
| | 9840 | | | Quenched & Tempered | |
| F.1280 | 4340 | 38H2N2MA | | Annealed | |
| | 5132 | 35KH | | Quenched & Tempered | |
| | 5140 | 40H | | Quenched & Tempered | |
| F.1251 | 4130 | 20KHM | | Quenched & Tempered | |
| | | | | Quenched & Tempered | |
| F.143 | 6150 | 50KHFA | | Quenched & Tempered | |
| F.1740 | A 355 Cl. A | | | Annealed | |
| F.5103 | 1070 | 70 | | Annealed | |
| F.5117 | 1095 | | | Annealed | |
| F.5118 | W1 | U10A | | Annealed | |
| | | U10 | | Annealed | |
| | W1 | U13 | | Annealed | |

SMG

| SMG | EN | EN-Nr | W.-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|---------------------|----------------------|--------|---------------------|------------------------|---------------------------|-----------|---------------------|--------------------|--------|--------|
| P7 | 107 CrV 3 | 1.2210 | 1.2210 | 115 CrV 3 | 100 C 3 | | 107 CrV 3 KU | | | T61202 |
| | | | 1.2510 | 100 MnCrV 4 | 90 MWCV 5 | BO 1 | 95 MnWCr 5 KU | SKS 3 | 2140 | T31501 |
| | 90 MnCrV 8 | 1.2842 | 1.2842 | 90 MnCrV 8 | 90 MV 8 | BO 2 | 90 MnVCr 8 KU | | | T31502 |
| | 100 Cr 6 | 1.3505 | 1.3505 | 100 Cr 6 | 100 C 6 | 534 A 99 | 100 Cr 6 | SUJ 2 | 2258 | G51986 |
| P8 | X 210 Cr 12 | 1.2080 | 1.2080 | X 210 Cr 12 | Z 200 C 12 | BD 3 | X 210 Cr 13 KU | SKD 1 | | T30403 |
| | | | 1.2343 | X 38 CrMoV 5 1 | Z 38 CDV 5 | BH 11 | X 37 CrMoV 5 1 KU | SKD 6 | | T20811 |
| | X 40 CrMoV 5 1 | 1.2344 | 1.2344 | X 40 CrMoV 5 1 | Z 40 CDV 5 | BH 13 | X 40 CrMo 5 1 1 KU | SKD 61 | 2242 | T20813 |
| | X 100 CrMoV 5 | 1.2363 | 1.2363 | X 100 CrMoV 5 1 | Z 100 CDV 5 | BA 2 | X 100 CrMoV 5 1 KU | SKD 12 | 2260 | T30102 |
| | | | 1.2365 | X 32 CrMoV 3 3 | 32 DCV 28 | BH 10 | 30 CrMoV 12 27 KU | SKD 7 | | T20810 |
| | | | 1.2436 | X 210 CrW 12 | | | X 215 CrW 12 1 KU | SKD 2 | | 2312 |
| | | | 1.2601 | X 165 CrMoV 12 | | | X 165 CrMoV 12 KU | | | 2310 |
| | | | 1.2713 | 55 NiCrMoV 6 | 55 NCDV 7 | | | SKT 4 | | T61206 |
| | HS 6-5-2-5 | 1.3243 | 1.3243 | S 6-5-2-5 | Z 85 WDKCV 06-05-05-04-02 | | HS 6-5-2-5 | SKH 55 | | 2723 |
| | HS 2-10-1-8 | 1.3247 | 1.3247 | S 2-10-1-8 | Z 110 DKCWV 09-08-04 | BM 42 | HS 2-9-1-8 | SKH 51 | | T11342 |
| | HS 18-1-2-5 | 1.3255 | 1.3255 | S 18-1-2-5 | Z 80 WKCV 18-05-04-01 | BT 4 | HS 18-1-1-5 | SKH 3 | | T12004 |
| | HS 6-5-2 | 1.3343 | 1.3343 | S 6-5-2 | Z 85 WDCV 06-05-04-02 | BM 2 | HS 6-5-2 | SKH 9, SKH 51 | 2722 | T11302 |
| HS 2-9-2 | 1.3348 | 1.3348 | S 2-9-2 | Z 100 DCWV 09-04-02-02 | | HS 2-9-2 | SKH 58 | | 2782 | |
| HS 18-0-1 | 1.3355 | 1.3355 | S 18-0-1 | Z 80 WCV 18-04-01 | BT 1 | HS 18-0-1 | SKH 2 | | T12001 | |
| P11 | X 6 Cr 13 | 1.4000 | 1.4000 | X 6 Cr 13 | Z 6 C 12 | 403 S 17 | X 6 Cr 13 | SUS 403 | 2301 | S41008 |
| | X 12 Cr 13 | 1.4006 | 1.4006 | X 10 Cr 13 | Z 10 C 13 | 410 S 21 | X 12 Cr 13 | SUS 410 | 2302 | S41000 |
| | X 6 Cr 17 | 1.4016 | 1.4016 | X 6 Cr 17 | Z 8 C 17 | 430 S 15 | X 8 Cr 17 | SUS 430 | 2320 | S43000 |
| | X 20 Cr 13 | 1.4021 | 1.4021 | X 20 Cr 13 | Z 20 C 13 | 420 S 37 | X 20 Cr 13 | SUS 420 J 1 | 2303 | S42000 |
| | X 39 Cr 13 | 1.4031 | 1.4031 | X 40 Cr 13 | Z 40 C 14 | 420 S 45 | X 40 Cr 14 | SUS 420 | 2304 | S40280 |
| | X 70 CrMo 15 | 1.4109 | 1.4109 | X 65 CrMo 14 | Z 70 D 14 | | | SUS 440 A | | S44002 |
| | X 90 CrMoV 18 | 1.4112 | 1.4112 | X 90 CrMoV 18 | Z 2 CND 18 05 | 409 S 19 | X CrTi 12 | SUS 440 B | 2327 | S44003 |
| | X 105 CrMo 17 | 1.4125 | 1.4125 | X 105 CrMo 17 | Z 100 CD 17 | | X 105 CrMo 17 | SUS 440 C | | S44004 |
| | X 3 CrNiMo 13 3 | 1.4313 | 1.4313 | X 5 CrNi 13 4 | Z 5 CN 13.4 | 425 C 11 | X 6 CrNi 13 04 | SCS 5 | | 2385 |
| | X 18 CrN 28 | 1.4749 | 1.4749 | X 18 CrN 28 | Z 18 C 25 | | | | | 2322 |
| M1 | X 10 CrNiS 18 9 | 1.4305 | 1.4305 | X 10 CrNiS 18 9 | Z 10 CNF 18.09 | 303 S 31 | X 10 CrNi 18 09 | SUS 303 | 2346 | S30300 |
| M2 | X 12 CrNi 18 8 | 1.4300 | 1.4300 | X 12 CrNi 18 8 | Z 12 CN 18 | 302 S 25 | | SUS 302 | 2331 | S30200 |
| | X 5 CrNi 18 9 | 1.4301 | 1.4301 | X 6 CrNi 18 10 | Z 6 CN 18.09 | 304 S 31 | X 5 CrNi 18 11 | SUS 304 | 2333 | S30400 |
| | X 2 CrNi 19 11 | 1.4306 | 1.4306 | X 2 CrNi 19 11 | Z 2 CN 18.10 | 304 S 12 | X 3 Cr Ni 18 11 | SUS 304 L | 2352 | S30403 |
| | X 9 CrNi 18 8 | 1.4310 | 1.4310 | X 12 CrNi 17 7 | Z 12 CN 17.07 | 301 S 21 | X 12 CrNi 17 07 | SUS 301 | (2331) | S30100 |
| | X 5 CrNiMo 17 12 2 | 1.4401 | 1.4401 | X 5 CrNiMo 17 12 2 | Z 3 CND 17.11.1 | 316 S 31 | X 5 CrNiMo 17 12 | SUS 316 | 2347 | S31600 |
| | X 6 CrNiNb 18 10 | 1.4550 | 1.4550 | X 6 CrNiNb 18 10 | Z 6 CNNb 18.10 | 347 S 31 | X 6 CrNiNb 18 11 | SUS 347 | 2338 | S34700 |
| M3 | X 2 CrNiN 18 10 | 1.4311 | 1.4311 | X 2 CrNiN 19 11 | Z 2 CN 18 10 Az | 304 S 62 | X 2 CrNiN 18 11 | SUS 304 LN | 2371 | S30453 |
| | X 12 CrNi 25 21 | 1.4335 | 1.4335 | X 12 CrNi 25 21 | Z 12 CN 25.20 | 310 S 24 | X 6 CrNi 26 20 | SUH 310, SUS 310 S | 2361 | S31008 |
| | X 2 CrNiMoN 17 13 3 | 1.4429 | 1.4429 | X 2 CrNiMoN 17 13 3 | Z 2 CND 17.13 Az | 316 S 62 | X 2 CrNiMoN 17 13 3 | SUS 316 LN | 2375 | S31653 |
| | X 2 CrNiMo 18 14 3 | 1.4435 | 1.4435 | X 2 CrNiMo 18 14 3 | Z 2 CND 17.13 | 316 S 12 | X 2 CrNiMo 17 13 2 | SCS 16, SUS 316 L | 2353 | S31603 |
| | X 3 CrNiMo 18 12 3 | 1.4466 | 1.4466 | X 5 CrNi 18 15 | | 317 S 16 | X 5 CrNi 18 15 | SUS 317 | | 2366 |
| X 9 CrNiSiN 21 11 2 | 1.4835 | 1.4893 | X 9 CrNiSiN 21 11 2 | | 310 S 31 | | | | 2368 | |
| M4 | X 2 CrNiMoSi 19 5 | 1.4424 | 1.4417 | X 2 CrNiMoSi 19 5 | Z 2 CND 18.05.03 | | | | | 2376 |
| | X 3 CrNiMo 27 5 2 | 1.4460 | 1.4460 | X 4 CrNiMo 27 5 2 | Z 3 CND 25.7 Az | | X 3 CrNiMo 27 5 2 | SUS 329 J 1 | 2324 | S32900 |
| | X 2 CrNiMoN 22 5 3 | 1.4462 | 1.4462 | X 2 CrNiMoN 22 5 | Z 2 CND 22.05 Az | 332 S 15 | X 2 CrNiMoN 22 5 | | | 2377 |
| | X 2 NiCrMoCu 25 20 5 | 1.4539 | 1.4539 | X 2 NiCrMoCu 25 20 5 | Z 2 NCDU 25 20 | 904 S 13 | | | | 2562 |
| M5 | X 2 CrNiMoN 25 7 4 | 1.4410 | 1.4410 | X 2 CrNiMoN 25 7 4 | Z 3 CND 25.07 Az | | X 2 CrNiMoN 25 7 4 | | 2328 | S32750 |
| | X 1 CrNiMoN 20 18 7 | 1.4547 | 1.4529 | X 1 CrNiMoN 20 18 7 | Z 1 CNDU 20.18.05 Az | | X 1 CrNiMoN 20 18 7 | | 2778 | S31254 |
| | X 6 NiCrTiMoV 25 15 | 1.4534 | 1.4534 | X 3 CrNiMoAl 13 8 2 | | | | | | S13800 |
| | | 1.4540 | 1.4540 | X 4 CrNiCuNb 16 4 | Z 4 CNUNb 16.4 M | | | | | S15500 |
| | X 3 CrNiMoAl 13 8 2 | 1.4568 | 1.4568 | X 7 CrNiAl 17 7 | Z 9 CAN 17.7 | 301 S 81 | X 7 CrNiAl 17 7 | SUS 631 | 2388 | S17700 |
| | X 1 CrNiMoN 25 22 8 | 1.4652 | 1.4652 | X 2 CrNiMoN 25 22 7 | | | | | | S32654 |
| X 10 NiCrAlTi 32 20 | 1.4876 | 1.4876 | X 10 NiCrAlTi 32 20 | Z 10 NC 32.21 | | | NCF 800 | | N08800 | |
| X 5 CrNiCuNb 16 4 | 1.4980 | 1.4943 | X 4 NiCrTi 25 15 | Z 6 NCTDV 25.15 | HR 51 | | SUH 660 | 2570 | S66286 | |

SMG

| U.N.E./ I.H.A. | AISI / ASTM | GOST | Misc. Brands | Condition | Structure |
|----------------|-------------|----------------|--------------|------------------|-------------------|
| F.520L | L2 | 11KHF | | Annealed | |
| F.5220 | O1 | 9KHVG | | Annealed | |
| | O2 | 9G2F | | Annealed | |
| F.5230 | 52100 | SHKH15 | | Annealed | |
| F.5212 | D3 | KH12 | | Annealed | |
| | H11 | 4KH5MFS | | Annealed | |
| F.5318 | H13 | 4KH5MF1S | | Annealed | |
| F.5227 | A2 | 9KH5VF | | Annealed | |
| | H10 | 3KH3M3F | | Annealed | |
| F.5213 | | KH12 | | Annealed | |
| | | KH12MF | | Annealed | |
| F.520.S | L6 | 5KHNM | | Annealed | |
| F.5613 | M35 | R6M5K5 | | Annealed | |
| | M42 | R2AM9K5 | | Annealed | |
| | T4 | R18K5F2 | | Annealed | |
| F.5603 | M2 | R6M5 | | Annealed | |
| | M7 | | | Annealed | |
| | T1 | R18 | | Annealed | |
| | 403 | 08KH13 | | Annealed | Ferrite |
| F.3401 | 410, CA-15 | 12KH13, 08KH13 | | Annealed | Martensite |
| F.3113 | 430 | 12KH17 | | Annealed | Ferrite |
| F.5261 | 420 | 20KH13 | | Annealed | Martensite |
| F.3404 | 420 | 40KH13 | | Annealed | Martensite |
| | 440 A | | | Annealed | Martensite |
| | 440 B | 95KH18 | | Annealed | Martensite |
| | 440 C | 95KH18 | | Annealed | Martensite |
| | | | F6NM | Annealed | Martensite |
| | 446 | 15KH28 | | Annealed | Ferrite |
| F.3508 | 303 | 12KH19N9 | | Annealed | Austenite |
| | 302 | 12KH18N9 | | Annealed | Austenite |
| F.3504 | 304, 304 H | 08KH18N10 | | Annealed | Austenite |
| F.3504 | 304 L | 03KH18N11 | | Annealed | Austenite |
| F.3517 | 301 | 07KH16N6 | | Annealed | Austenite |
| F.3534 | 316 | 08KH17H13M2T | | Annealed | Austenite |
| F.3524 | 347 | 08KH18N12B | | Annealed | Austenite |
| F.3541 | 304 LN | 03KH18N11 | | Annealed | Austenite |
| | 310 S | 12KH25N20 | | Annealed | Austenite |
| | 316 LN | 03KH16N15M3 | | Annealed | Austenite |
| F.3533 | 316 L | 03KH17N14M3 | | Annealed | Austenite |
| | 317 | 08KH17H15M3T | | Annealed | Austenite |
| | | | 253 MA | Annealed | Austenite |
| | | | 3RE60 | Annealed | Duplex |
| | 329 | | | Annealed | Duplex |
| | 329 LN | | SAF 2205 | Annealed | Duplex |
| | 904L | | | Annealed | Super austenite |
| | F 53 | | SAF 2507 | Annealed | Super duplex |
| | | | 254 SMO | Annealed | Super austenite |
| | XM-13 | | PH13-8Mo | Solution treated | Austenite |
| | XM-12 | | 15-5-PH | Solution treated | Martensite |
| | AMS 5528 | 09KH17N7YU1 | 17-7-PH | Solution treated | Austenite/ferrite |
| | | | 654 SMO | Annealed | Super austenite |
| | | | Alloy 800 | Annealed | Austenite |
| | 660 | | A286 | Solution treated | Austenite |

SMG

| SMG | EN | EN-Nr | W.-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|-------------------|-----------------------|--------------|---------------|-------------------|------------------|---------------|-----------|-------------|-------------|-------------|
| K1 | EN-GJL-150 | 0.6150 | 0.6150 | GG-15 | Fl 15 D | Grade 150 | G15 | FC 150 | 01 15-00 | F11601 |
| | EN-GJL-200 | 0.6200 | 0.6200 | GG-20 | Fl 20 D | Grade 220 | G20 | FC 200 | 01 20-00 | F12101 |
| | EN-GJL-215 | | | GG-220 HB | | | | | 02 19 | |
| | EN-GJL-250 | 0.6250 | 0.6250 | GG-25 | Fl 25 D | Grade 260 | G25 | FC 250 | 01 25-00 | F12401 |
| | EN-GJL-300 | 0.6300 | 0.6300 | GG-30 | Fl 30 D | Grade 300 | G30 | FC 300 | 01 30-00 | F13101 |
| EN-GJL-350 | 0.6350 | 0.6350 | GG-35 | Fl 35 D | Grade 350 | G35 | FC 350 | 01 35-00 | F13502 | |
| K2 | EN-GJV-300 | | | GJV-300 | | | | | | |
| | EN-GJV-350 | | | GJV-350 | | | | | | |
| | EN-GJV-400 | | | GJV-400 | | | | | | |
| | EN-GJV-450 | | | GJV-450 | | | | | | |
| EN-GJV-500 | | | GJV-500 | | | | | | | |
| K3 | EN-GJMB-550-4 | 0.8155 | | GTS-55-04 | P 540/5 | P 540/5 | P 55-04 | PCMP55-04 | 08 54-00 | F24130 |
| K4 | EN-GJS-350-22 | 0.7033 | 0.7033 | GGG-35.3 | FGS 370-17 | Grade 350/22 | | FCD 350-22L | 07 17-15 | |
| | EN-GJS-400-15 | 0.7040 | 0.7040 | GGG-40 | FGS 400-12 | Grade 420/12 | GS 400-12 | FCD 400-18L | 07 17-02 | F32800 |
| | EN-GJS-400-18 | 0.7043 | 0.7043 | GGG-40.3 | FGS-370-17 | Grade 370/17 | GSO 42/17 | | 07 17-12 | F32800 |
| | EN-GJS-500-7 | 0.7050 | 0.7050 | GGG-50 | FGS 500-7 | Grade 500/7 | GS 500-7 | FCD 500-7 | 07 27-02 | F33800 |
| | EN-GJS-600-3 | 0.7060 | 0.7060 | GGG-60 | FGS 600-3 | Grade 600/3 | GS 600-3 | FCD 600-3 | 07 32-03 | F34100 |
| | EN-GJS-700-2 | 0.7070 | 0.7070 | GGG-70 | FGS 700-2 | Grade 700/2 | GS 700-2 | FCD 700-2 | 07 37-01 | F34800 |
| K5 | - | | | | | | | | | ADI grade 5 |
| | EN-GJS-1000-5 | | | GJS-1000-5 | | | | | | ADI grade 2 |
| | EN-GJS-1200-2 | | | GJS-1200-2 | | | | | | ADI grade 3 |
| | EN-GJS-1400-1 | | | GJS-1400-1 | | | | | | ADI grade 4 |
| EN-GJS-800-8 | | | GJS-800-8 | | | | | | ADI grade 1 | |
| K6 | EN-GJLA-XNiCr 20-2 | 0.6660 | 0.6660 | GGL-NiCr 20 2 | FGL N120 Cr2 | Grade F2 | | | 05 23-00 | F41002 |
| | EN-GJLA-XNiCr 30-3 | 0.6676 | 0.6676 | GGL-NiCr 30 3 | FGL N130 Cr3 | Grade F3 | | | | F41004 |
| | EN-GJLA-XNiCuCr15-6-2 | 0.6655 | 0.6655 | GGL-NiCuCr 15 6 2 | FGL N115 Cu6 Cr2 | Grade F1 | | | | F41000 |
| K7 | EN-GJSA-XNi35 | 0.7683 | 0.7683 | GGG-Ni 35 | FGS N135 | | | | | F43006 |
| | EN-GJSA-XNiCr20-2 | 0.7660 | 0.7660 | GGG-NiCr 20 2 | FGS N120 Cr2 | Grade S2 | | | | F43000 |
| | EN-GJSA-XNiCr30-3 | 0.7676 | 0.7676 | GGG-NiCr 30 3 | FGS N130 Cr3 | Grade S3 | | | | F43003 |
| | EN-GJSA-XNiMn13-7 | 0.7652 | 0.7652 | GGG-NiMn 13 7 | FGS N113 Mn7 | Grade S6 | | | 07 72-00 | - |
| EN-GJSA-XNiMn23-4 | 0.7673 | 0.7673 | GGG-NiMn 23 4 | FGS N123 Mn4 | Grade S2M | | | | F43010 | |
| N1 | AW-1050A | Al99.5 | 3.0255 | Al99.5 | A-5/1050A | 1B | | (A1050) | 4007 | AA1050A |
| | AW-3103 | AlMn1 | 3.0515 | AlMn1 | | N3 | | | 4054 | AA3103 |
| | AW-3003 | AlMn1Cu | 3.0517 | AlMn1Cu | A-M1/3003 | | | A3003 | | AA3003 |
| | AW-2014 | AlCuSiMn | 3.1255 | AlCuSiMn | A-U4SG/2014 | H15 | | | 4338 | AA2014 |
| | AW-2011 | AlCuBiPb | 3.1655 | AlCuBiPb | A-USPbBi/2011 | FC1 | | A2011 | 4355 | AA2011 |
| | AC-46200 | AlSi8Cu3(Si) | 3.2161 | G-AlSi8Cu3 | | | | | 4251 | A13800 |
| | AC-42000 | | 3.2341 | G-AlSi6Mg | A-S7G | LM25 | 3599 | AC 4C | 4244 | |
| | AW-6060 | AlMgSi0.5 | 3.3206 | AlMgSi0.5 | A-GS/6060 | (H9) | | | 4103 | AA6060 |
| | AW-6063 | AlMgSi0.7 | 3.3210 | AlMgSi0.7 | A-GSUC/6061 | (H10) | | (A6063) | 4104,4107 | AA6005 |
| | AW-5005 | AlMg1 | 3.3315 | AlMg1 | A-G0.6 | N41 | | | 4106 | AA5005 |
| | AW-7020 | AlZn4.5Mg1 | 3.4335 | AlZn4.5Mg1 | A-Z5G/7020 | H17 | | | 4425 | AA7020 |
| | AW-7075 | | 3.4365 | AlZnMgCu1.5 | A-Z5GU/7075 | 2L95/2L96 | | A7075 | | AA7075 |
| | MN65120 | MgSe3Zn2Zr1 | 3.5103 | G-MgSe3Zn2Zr1 | ZRE1 | MAG6-TE | | | | M12330 |
| | MG-P-63 | MgAl6Zn | 3.5612 | G-MgAl6Zn | G-A6-Z1 | MAG-E-121 | | | | M11600 |
| | MG-P-61 | MgAl8Zn | 3.5812 | G-MgAl8Zn | (G-A7-Z1) | | | | | |
| | N2 | AW-6082 | AlMgSi1 | 3.2315 | AlMgSi1 | A-SGM0.7/6082 | H30 | | | 4212 |
| AC-43400 | | AlSi10Mg(Fe) | 3.2381 | G-AlSi10Mg | A-S10G | LM9 | | | 4253 | A13600 |
| AC-44200 | | AlSi12 | 3.2382 | GD-AlSi12 | | | | | | |
| N3 | | AlSi17Cu5 | | | | | | ADC14 | | |
| N11 | CC331G | | 2.0940.01 | CuAl10Fe | CuAl10Fe | AB1 | | | 5710 | C95200 |
| | CC333G | | 2.0975.01 | CuAl10Ni | CuAl10Ni5Fe5 | AB2 | | | 5716 | C95500 |
| | | | 2.0872 | CuNi10Fe1Mn | CuNi10Fe1Mn | CN102 | | | 5667 | C70600 |
| | | | | CuNi10Zn45 | | | | | | |
| | | | 2.0790 | CuNi18Zn19Pb | CuNi18Zn19Pb1 | | | | | C76300 |
| | CW352H | | 2.1176 | CuPb10Sn | CuSn10Pb10 | LB2 | | | 5640 | C93700 |
| | CC480K | | 2.1050.01 | CuSn10 | CuSn10 | CT1 | | | 5443 | C90700 |
| | | | 2.1087 | CuSn10Zn | | | | | 5458 | C90500 |
| | CW452K | CuSn6 | 2.1020 | CuSn6 | CuSn6 | PB103 | | C5191 | 5428 | C51900 |
| | CW502L | CuZn15 | 2.0240 | CuZn15 | CuZn15 | CZ102 | | C2300 | 5112 | C23000 |
| | CW706R | CuZn28Sn1 | 2.0470 | CuZn28Sn1 | CuZn29Sn1 | | | | 5220 | C44300 |
| | CW508L | CuZn37 | 2.0321 | CuZn37 | | | | | 5150 | C27200 |
| | CW717R | CuZn38Sn1 | 2.0530 | CuZn38Sn1 | | | | | | C46400 |
| | CW614N | CuZn39Pb3 | 2.0401 | CuZn39Pb3 | CuZn39Pb3 | CZ121 | | | 5170 | C38500 |
| | CW612N | CuZn40Pb2 | 2.0402 | CuZn40Pb2 | CuZn39Pb2 | CZ120 | | | 5168 | C37800 |
| | CW622N | CuZn44Pb2 | 2.0410 | CuZn44Pb2 | | CZ104 | | | 5272 | C68700 |

SMG

| U.N.E./ I.H.A. | AISI / ASTM | GOST | Misc. Brands | Condition | Structure |
|----------------|----------------|----------------|----------------|-----------|--------------------------------|
| | A48 25 B | Sc 15 | | | Grey cast iron (GCI) |
| | A48 30 B | Sc 20 | | | Grey cast iron (GCI) |
| | G 3500 | | | | Grey cast iron (GCI) |
| | A48 35 B | Sc 25 | | | Grey cast iron (GCI) |
| | A48 45 B | Sc 30 | | | Grey cast iron (GCI) |
| | A48 50 B | Sc 35 | | | Grey cast iron (GCI) |
| | Grade 350 | | | | Compacted graphite irons (CGI) |
| | Grade 400 | | | | Compacted graphite irons (CGI) |
| | Grade 400-15 | | | | Compacted graphite irons (CGI) |
| | Grade 450 | | | | Compacted graphite irons (CGI) |
| | Grade 500 | | | | Compacted graphite irons (CGI) |
| | A220 60004 | | | Tempered | Malleable cast irons (MCI) |
| | | | | | Nodular cast irons (SGI) |
| FGE 38-17 | 60-40-18 | Vc 42-12 | | | Nodular cast irons (SGI) |
| | 60-40-18 | Vc 42-12 | | | Nodular cast irons (SGI) |
| FGE 50-7 | A536 80-55-6 | Vc 50-2 | | | Nodular cast irons (SGI) |
| FGE 60-2 | A476 80-60-03 | Vc 60-2 | | | Nodular cast irons (SGI) |
| FGE 70-2 | A536 100-70-03 | Vc 70-2 | | | Nodular cast irons (SGI) |
| | 1600/1300/- | | | | Austempered cast irons (ADI) |
| | 1050/700/7 | | | | Austempered cast irons (ADI) |
| | 1200/850/4 | | | | Austempered cast irons (ADI) |
| | 1400/1100/1 | | | | Austempered cast irons (ADI) |
| | 850/550/10 | | | | Austempered cast irons (ADI) |
| | A436 Type 2 | | Ni-Resist 2 | | Austenitic lamellar cast irons |
| | A436 Type 3 | | Ni-Resist 3 | | Austenitic lamellar cast irons |
| | A436 Type 1 | | Ni-Resist 1 | | Austenitic lamellar cast irons |
| | A439 Type D-5 | | Ni-Resist D-5 | | Austenitic nodular cast irons |
| | A436 Type D-2 | | Ni-Resist D-2 | | Austenitic nodular cast irons |
| | A436 Type D-3 | | Ni-Resist D-3 | | Austenitic nodular cast irons |
| | - | | Nodumag | | Austenitic nodular cast irons |
| | A439 Type D-2M | | Ni-Resist D-2M | | Austenitic nodular cast irons |
| | | | | | |
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| | A380 | | | | |
| | B26 | | | | |
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| | AMS 4442 | | | | |
| | AZ61A | | | | |
| | AZ80A | | | | |
| | | | | | |
| | B85 | | | | |
| | A413.2 | | | | |
| | B390.0 | | | | |
| | CA952 | BrA9ZH3L | | | |
| | CA955 | BrA10ZH4N4L | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | CA937 | | | | |
| | | | | | |
| | | BrOF6.5-0.15 | | | |
| | | L90 | | | |
| | | LOMsh70-1-0.05 | | | |
| | | | | | |
| | | LO60-1 | | | |
| | | | | | |
| | | | | | |
| | | LAMsh77-2-0.05 | | | |

SMG

| SMG | EN | EN-Nr | W.-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|-----------|---------------------|--------|---------------------|----------------------|---------------------------|-----------------|---------------------|-----------------|------------|--------|
| S1 | | | | | | | | | | |
| S2 | | | | | | | | | | |
| S3 | NiMo30 | | 2.4810 | | | | | | | N10002 |
| | NiMo16Cr15W | | 2.4819 | | | | | | | N10276 |
| | NiCr19Fe19Nb5Mo3 | | 2.4668 | | | | | | | N07718 |
| | | | 2.4669 | | | | | | | N07750 |
| | NiCr20TiAl | | 2.4631 | | | | | | | N07080 |
| | NiCr19Co18Mo4Ti3Al3 | | | | | | | | | N07500 |
| | | | 2.4654 | | | | | | | N07001 |
| | | | 3.7024 | | | | | | | |
| S11 | | | | | | | | | | R54620 |
| | | | | | | | | | | R56320 |
| S12 | TiAl6V4 | | 3.7164 | | | | | | | R56400 |
| S13 | | | | TiV10Fe2Al3 | | | | | | |
| H3 | 16 MnCr 5 | 1.7131 | 1.7131 | 16 MnCr 5 | 16 MC 5 | 527 M 17 | 16 MnCr5 | SCR 415 | 2511 | G51170 |
| H5 | 42 CrMo 4 | 1.7225 | 1.1201 | 42 CrMo 4 | 42 CD 4 | 708 M40 | 42 CrMo 4 | SCM 440 (H) | 2244 | G41400 |
| | C 67S | 1.1231 | 1.1231 | Ck 67 | XC 68 | 060 A 67 | C 70 | | 1770 | G10700 |
| | C 75S | 1.1248 | 1.1248 | Ck 75 | XC 75 | 060 A 78 | C 75 | | 1774, 1778 | G10780 |
| | C 100S | 1.1274 | 1.1274 | Ck 101 | | 060 A 96 | | SUP 4 | 1870 | G10950 |
| | C 105U | 1.1545 | 1.1545 | C 105 W1 | Y1 105 | | | | 1880 | |
| | | | 1.2550 | 60 WCrV 7 | 55 WC 20 | | | 55 WCrV 8 KU | | |
| 55 Cr 3 | 1.7176 | 1.7176 | 55 Cr 3 | 55 C 3 | 527 A 60 | 55 Cr 3 | SUP 9 (A) | 2253 | G51550 | |
| H7 | 107 CrV 3 | 1.2210 | 1.2210 | 115 CrV 3 | 100 C 3 | | 107 CrV 3 KU | | | T61202 |
| | | | 1.2510 | 100 MnCrW 4 | 90 MWCV 5 | BO 1 | 95 MnWCr 5 KU | SKS 3 | 2140 | T31501 |
| | 90 MnCrV 8 | 1.2842 | 1.2842 | 90 MnCrV 8 | 90 MV 8 | BO 2 | 90 MnVCr 8 KU | | | T31502 |
| 100 Cr 6 | 1.3505 | 1.3505 | 100 Cr 6 | 100 C 6 | 534 A 99 | 100 Cr 6 | SUJ 2 | 2258 | G51986 | |
| H8 | X 40 CrMoV 5 1 | 1.2344 | 1.2344 | X 40 CrMoV 5 1 | Z 40 CDV 5 | BH 13 | X 40 CrMo 5 1 1 KU | SKD 61 | 2242 | T20813 |
| | X 100 CrMoV 5 | 1.2363 | 1.2363 | X 100 CrMoV 5 1 | Z 100 CDV 5 | BA 2 | X 100 CrMoV 5 1 KU | SKD 12 | 2260 | T30102 |
| | X 155 CrVMo 12 1 | | 1.2379 | X 155 CrVMo 12 1 | Z 160 CDV 12 | BD 2 | X 155 CrVMo 12 1 KU | SKD 11 | | T30402 |
| | | | 1.2436 | X 210 CrW 12 | | | X 215 CrW 12 1 KU | SKD 2 | 2312 | |
| | | | 1.2601 | X 165 CrMoV 12 | | | X 165 CrMoW 12 KU | | 2310 | |
| | | | 1.2713 | 55 NiCrMoV 6 | 55 NCDV 7 | | | SKT 4 | | T61206 |
| | HS 6-5-2-5 | 1.3243 | 1.3243 | S 6-5-2-5 | Z 85 WDKCV 06-05-05-04-02 | | HS 6-5-2-5 | SKH 55 | 2723 | |
| | HS 2-10-1-8 | 1.3247 | 1.3247 | S 2-10-1-8 | Z 110 DKCWV 09-08-04 | BM 42 | HS 2-9-1-8 | SKH 51 | | T11342 |
| HS 6-5-2 | 1.3343 | 1.3343 | S 6-5-2 | Z 85 WDCV 06-05-04-0 | BM 2 | HS 6-5-2 | SKH 9, SKH 51 | 2722 | T11302 | |
| HS 18-0-1 | 1.3355 | 1.3355 | S 18-0-1 | Z 80 WCV 18-04-01 | BT 1 | HS 18-0-1 | SKH 2 | | T12001 | |
| H11 | X 20 Cr 13 | 1.4021 | 1.4021 | X 20 Cr 13 | Z 20 C 13 | 420 S 37 | X 20 Cr 13 | SUS 420 J 1 | 2303 | S42000 |
| | X 70 CrMo 15 | 1.4109 | 1.4109 | X 65 CrMo 14 | Z 70 D 14 | | | SUS 440 A | | S44002 |
| | X 90 CrMoV 18 | 1.4112 | 1.4112 | X 90 CrMoV 18 | Z 2 CND 18 05 | 409 S 19 | X CrTi 12 | SUS 440 B | 2327 | S44003 |
| | X 105 CrMo 17 | 1.4125 | 1.4125 | X 105 CrMo 17 | Z 100 CD 17 | | X 105 CrMo 17 | SUS 440 C | | S44004 |
| | X 3 CrNiMoAl 13 8 2 | 1.4534 | 1.4534 | X 3 CrNiMoAl 13 8 2 | | | | | | S13800 |
| H12 | X 5 CrNiCuNb 16 4 | 1.4548 | 1.4542 | X 5 CrNiCuNb 17 4 | Z 6 CNU 17.4 | | | SCS 24, SUS 630 | | S17400 |
| | X 7 CrNiAl 17 7 | 1.4568 | 1.4568 | X 7 CrNiAl 17 7 | Z 9 CAN 17.7 | 301 S 81 | X 7 CrNiAl 17 7 | SUS 631 | 2388 | S17700 |
| | X 6 NiCrTiMoV 25 15 | 1.4980 | 1.4943 | X 4 NiCrTi 25 15 | Z 6 NCTDV 25.15 | HR 51 | | SUH 660 | 2570 | S66286 |
| | X 120 Mn 12 | 1.3401 | 1.3401 | X 120 Mn 12 | Z 120 M 12 | BW 10 | | SC MnH 1 | 2183 | |
| H31 | EN-GJN-HV520 | 0.9620 | G-X330 NiCr 4 2 | FB Ni4 Cr2 BC | Grade 2 A | Grade 2 A | | | 05 12-00 | F45001 |
| | EN-GJN-HV550 | 0.9625 | G-X260 NiCr 4 2 | FB Ni4 Cr2 HC | Grade 2 B | Grade 2 B | | | 05 13-00 | F45000 |
| | EN-GJN-HV600(XCr11) | 0.9630 | G-X300 CrNiSi 9 5 2 | FB Cr9 Ni5 | Grade 2 C, D, E | Grade 2 C, D, E | | | 04 57-00 | F45003 |

SMG

| U.N.E./ I.H.A. | AISI / ASTM | GOST | Misc. Brands | Condition | Structure |
|----------------|-------------------|-------------|---------------------|------------------------|-------------------|
| | | | Discalloy | Precipitation hardened | |
| | | | Haynes 25 | | |
| | | | Stellite 21 | | |
| | | | Stellite 31 | | |
| | | | Hastelloy C | | |
| | | KHN65MV | Hastelloy C-276 | | |
| | | | IN 100 | | |
| | | | Inconel 718 | | |
| | | | Inconel X-750 | Solution treated | |
| | | | Nimonic 80A | | |
| | | | René 41 | | |
| | | | Udimet 500 | | |
| | | | Waspalloy | | |
| | | | Ti | Commercially pure | Ti (α) |
| | AMS 4919 | | Ti 6-2-4-2 | Annealed | Ti (α) |
| | AMS 4943 | | Ti 3Al-2.5V (grd 9) | Annealed | Ti (α+β) |
| | AMS 4920, Grd 5 | VT6 | Ti 6Al-4V | Annealed | Ti (α+β) |
| | AMS 4986 | | Ti 10V-2Fe-3Al | Annealed | Ti (β) |
| F.1516 | 5115 | 12KH2 | | Case hardened | |
| F.1252 | 4142, 4140 | 38HM | | Quenched & Tempered | |
| F.5103 | 1070 | 70 | | Quenched & Tempered | |
| F.5107 | 1078, 1080 | 75 | | Quenched & Tempered | |
| F.5117 | 1095 | | | Quenched & Tempered | |
| F.5118 | W 1 | U10A | | Quenched & Tempered | |
| | S1 | 5KHV2SF | | Quenched & Tempered | |
| | 5155 | | | Quenched & Tempered | |
| F.520L | L2 | 11KHF | | Quenched & Tempered | |
| F.5220 | O1 | 9KHVG | | Quenched & Tempered | |
| | O2 | 9G2F | | Quenched & Tempered | |
| F.5230 | 52100 | SHKH15 | | Quenched & Tempered | |
| F.5318 | H13 | 4KH5MF1S | | Quenched & Tempered | |
| F.5227 | A2 | 9KH5VF | | Quenched & Tempered | |
| F.5211 | D2 | KH12MF | | Quenched & Tempered | |
| F.5213 | | KH12 | | Quenched & Tempered | |
| | | KH12MF | | Quenched & Tempered | |
| F.520.S | L6 | 5KHNM | | Quenched & Tempered | |
| F.5613 | M35 | R6M5K5 | | Quenched & Tempered | |
| | M42 | R2AM9K5 | | Quenched & Tempered | |
| F.5603 | M2 | R6M5 | | Quenched & Tempered | |
| | T1 | R18 | | Quenched & Tempered | |
| F.5261 | 420 | 20KH13 | | Quenched & Tempered | Martensite |
| | 440 A | | | Quenched & Tempered | Martensite |
| | 440 B | 95KH18 | | Quenched & Tempered | Martensite |
| | 440 C | 95KH18 | | Quenched & Tempered | Martensite |
| | XM-13 | | PH13-8Mo | Precipitation hardened | Martensite |
| | 630 | | 17-4-PH | Precipitation hardened | Martensite |
| | AMS 5528 | 09KH17N7YU1 | 17-7-PH | Precipitation hardened | Austenite/ferrite |
| | 660 | | A286 | Precipitation hardened | Austenite |
| | A128 Grade A | | | | |
| | A532 IB (NiCr-LC) | | Ni-Hard 2 | | White cast iron |
| | A532 IA (NiCr-HC) | | Ni-Hard 1 | | White cast iron |
| | A532 ID (Ni-HiCr) | | Ni-Hard 4 | | White cast iron |