# COMMON USED GB MATERIAL PROPERTIES

COMMON USED GB MATERIAL COMPOSITION AND MECHA NICAL PROPERTIES

| Stainless Steel & Duplex | | | CHEMICAL COMPOSITION | | | | | | | | | | | | | | MECHANICAL PROPERTIES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | C % | Mn % | P % | S % | Si % | Ni % | Cr % | Mo % | Cu % | Ti % | Nb % | W % | B % | N % | Tensile Strength MPa | Yield Strength MPa | Elongation % | Reduction of Area % | Hardness of Area HB | Impact Test (Room Temp.) (l) | (tr) |
| F304 | ASTM A182 | MIN% | | | | | | 8.00 | 18.00 | | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.060 | 2.00 | 0.045 | 0.030 | 1.00 | 11.00 | 20.00 | | | | | | | 0.10 | | | | | | | |
| F304L | ASTM A182 | MIN% | | | | | | 8.00 | 18.00 | | | | | | | | 485 | 170 | 30 | 50 | | | |
| | | MAX% | 0.030 | 2.00 | 0.045 | 0.030 | 1.00 | 13.00 | 20.00 | | | | | | | 0.10 | | | | | | | |
| F304/304L | ASTM A182 | MIN% | | | | | | 8.00 | 18.00 | | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.030 | 2.00 | 0.045 | 0.030 | 1.00 | 11.00 | 20.00 | | | | | | | 0.10 | | | | | | | |
| F304H | ASTM A182 | MIN% | 0.040 | | | | | 8.00 | 18.00 | | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.100 | 2.00 | 0.045 | 0.030 | 1.00 | 11.00 | 20.00 | | | | | | | | | | | | | | |
| F309H | ASTM A182 | MIN% | 0.040 | | | | | 12.00 | 22.00 | | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.100 | 2.00 | 0.045 | 0.030 | 1.00 | 15.00 | 24.00 | | | | | | | | | | | | | | |
| F310 | ASTM A182 | MIN% | | | | | | 19.00 | 24.00 | | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.250 | 2.00 | 0.045 | 0.030 | 1.00 | 22.00 | 26.00 | | | | | | | | | | | | | | |
| F310H | ASTM A182 | MIN% | 0.400 | | | | | 19.00 | 24.00 | | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.100 | 2.00 | 0.045 | 0.030 | 1.00 | 22.00 | 26.00 | | | | | | | | | | | | | | |
| F316 | ASTM A182 | MIN% | | | | | | 10.00 | 16.00 | 2.00 | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.080 | 2.00 | 0.045 | 0.030 | 1.00 | 14.00 | 18.00 | 3.00 | | | | | | 0.10 | | | | | | | |
| F316L | ASTM A182 | MIN% | | | | | | 10.00 | 16.00 | 2.00 | | | | | | | 485 | 170 | 30 | 50 | | | |
| | | MAX% | 0.030 | 2.00 | 0.045 | 0.030 | 1.00 | 15.00 | 18.00 | 3.00 | | | | | | 0.10 | | | | | | | |
| F316/316L | ASTM A182 | MIN% | | | | | | 10.00 | 16.00 | 2.00 | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.030 | 2.00 | 0.045 | 0.030 | 1.00 | 14.00 | 18.00 | 3.00 | | | | | | 0.10 | | | | | | | |
| F316H | ASTM A182 | MIN% | 0.040 | | | | | 10.00 | 16.00 | 2.00 | | | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.100 | 2.00 | 0.045 | 0.030 | 1.00 | 14.00 | 18.00 | 3.00 | | | | | | | | | | | | | |
| F316Ti | ASTM A182 | MIN% | | | | | | 10.00 | 16.00 | 2.00 | | 5℃% | | | | | 515 | 205 | 30 | 40 | | | |
| | | MAX% | 0.080 | 2.00 | 0.045 | 0.030 | 1.00 | 14.00 | 18.00 | 3.00 | | 0.70 | | | | | | | | | | | |
| F317L | ASTM A182 | MIN% | | | | | | 10.00 | 18.00 | 3.00 | | | | | | | 485 | 170 | 30 | 50 | | | |
| | | MAX% | 0.030 | 2.00 | 0.045 | 0.030 | 1.00 | 15.00 | 20.00 | 4.00 | | | | | | | | | | | | | |
| F321 | ASTM A182 | MIN% | | | | | | 9.00 | 17.00 | | | 5℃% | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.080 | 2.00 | 0.045 | 0.030 | 1.00 | 12.00 | 19.00 | | | 0.70 | | | | | | | | | | | |
| F321H | ASTM A182 | MIN% | 0.040 | | | | | 9.00 | 17.00 | | | 4℃% | | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.100 | 2.00 | 0.045 | 0.030 | 1.00 | 12.00 | 19.00 | | | 0.70 | | | | | | | | | | | |
| F347 | ASTM A182 | MIN% | | | | | | 9.00 | 17.00 | | | | 10℃% | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.080 | 2.00 | 0.045 | 0.030 | 1.00 | 13.00 | 20.00 | | | | 1.10 | | | | | | | | | | |
| F347H | ASTM A182 | MIN% | 0.040 | | | | | 9.00 | 17.00 | | | | 8℃% | | | | 515 | 205 | 30 | 50 | | | |
| | | MAX% | 0.100 | 2.00 | 0.045 | 0.030 | 1.00 | 13.00 | 20.00 | | | | 1.10 | | | | | | | | | | |
| F904L | ASTM A182 | MIN% | | | | | | 23.00 | 19.00 | 4.00 | 1.00 | | | | | | 490 | 215 | 35 | | | | |
| | | MAX% | 0.020 | 2.00 | 0.040 | 0.030 | 1.00 | 28.00 | 23.00 | 5.00 | 2.00 | | | | | 0.10 | | | | | | | |
| F44(S31254) | ASTM A182 | MIN% | | | | | | 17.50 | 19.50 | 6.00 | 0.50 | | | | | 0.18 | 650 | 300 | 35 | 50 | | | |
| | | MAX% | 0.020 | 1.00 | 0.030 | 0.010 | 0.80 | 18.50 | 20.50 | 6.50 | 1.00 | | | | | 0.22 | | | | | | | |
| F51S31803) | ASTM A182 | MIN% | | | | | | 4.50 | 21.00 | 2.50 | | | | | | 0.08 | 620 | 450 | 25 | 45 | | | |
| | | MAX% | 0.030 | 2.00 | 0.030 | 0.020 | 1.00 | 6.50 | 23.00 | 3.50 | | | | | | 0.20 | | | | | | | |
| F53(S32750) | ASTM A182 | MIN% | | | | | | 6.00 | 24.00 | 3.00 | | | | | | 0.24 | 800 | 550 | 15 | | | | |
| | | MAX% | 0.030 | 1.20 | 0.035 | 0.020 | 0.80 | 8.00 | 26.00 | 5.00 | 0.50 | | | | | 0.32 | | | | | 310 | | |
| F55(S32760) | ASTM A182 | MIN% | | | | | | 6.00 | 24.00 | 3.00 | 0.50 | Cr+3.3Mo+16N>=40 | | 0.50 | | 0.20 | 750 | 550 | 25 | 45 | | | |
| | | MAX% | 0.030 | 1.00 | 0.030 | 0.010 | 1.00 | 8.00 | 26.00 | 4.00 | 1.00 | | | 1.00 | | 0.30 | 895 | | | | | | |
| F60(S32205) | ASTM A182 | MIN% | | | | | | 4.50 | 22.00 | 3.00 | | | | | | 0.14 | 655 | 485 | 25 | 45 | | | |
| | | MAX% | 0.030 | 2.00 | 0.030 | 0.020 | 1.00 | 6.50 | 23.00 | 3.50 | | | | | | 0.20 | | | | | | | |
| EN1.4301 | DIN EN 10222-5 | MIN% | | | | | | 8.00 | 17.00 | | | | | | | | 500 | 200 | 45 | | | 100 | 60 |
| | | MAX% | 0.070 | 2.00 | 0.045 | 0.015 | 1.00 | 10.5 | 19.50 | | | | | | | 0.11 | 700 | | | | | | |