
**Welding — Grouping systems for
materials — Japanese materials**

*Soudage — Systèmes de groupement des matériaux — Matériaux
japonais*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 20174 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding*, in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Welding — Grouping systems for materials — Japanese materials

1 Scope

This Technical Report provides a Japanese grouping system for materials for welding purposes, classified in accordance with the grouping system of ISO/TR:15608.

It may also apply for other purposes, such as heat treatment, forming, and non-destructive testing.

This Technical Report covers grouping systems for the following standardized materials:

- steel;
- aluminium and its alloys;
- titanium and its alloys.

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2 Japanese grouping system for materials

2.1 Types of steels in accordance with the grouping system of ISO/TR 15608:2000, Table 1

See Table 1.

Table 1 — Japanese grouping system for steels

| Group | Reference standard | Designation |
|------------|--------------------|-------------|
| 1.1 | JIS G 3101 | SS330 |
| | | SS400 |
| | JIS G 3103 | SB410 |
| | | SB450 |
| | | SB480 |
| | | SB450M |
| | | SB480M |
| | JIS G 3106 | SM400A |
| | | SM400B |
| | | SM400C |
| | JIS G 3113 | SAPH310 |
| | JIS G 3116 | SG255 |
| | JIS G 3115 | SPV235 |
| | JIS G 3118 | SGV410 |
| | | SGV450 |
| | | SGV480 |
| | JIS G 3126 | SLA235A |
| | | SLA235B |
| | JIS G 3131 | SPHC |
| | | SPHD |
| | | SPHE |
| | JIS G 3135 | SPFC340 |
| | | SPFC370 |
| | | SPFC390 |
| | | SPFC440 |
| | | SPFC490Y |
| | | SPFC540Y |
| | | SPFC590Y |
| | | SPFC340H |
| | JIS G 3136 | SN400A |
| SN400B | | |
| SN400C | | |
| JIS G 3444 | STK290 | |
| | STK400 | |
| | STK500 | |
| | STK490 | |

Table 1 (continued)

| Group | Reference standard | Designation |
|------------|--------------------|-------------|
| 1.1 | JIS G 3452 | SGP |
| | JIS G 3454 | STPG370 |
| | | STPG410 |
| | JIS G 3455 | STS370 |
| | | STS410 |
| | | STS480 |
| | JIS G 3456 | STPT370 |
| | | STPT410 |
| | | STPT480 |
| | JIS G 3457 | STPY400 |
| | JIS G 3458 | STPA12 |
| | JIS G 3460 | STPL380 |
| | JIS G 3461 | STB340 |
| | | STB410 |
| | JIS G 3462 | STBA12 |
| | | STBA13 |
| | JIS G 3464 | STBL380 |
| | JIS G 3467 | STF410 |
| | | STFA12 |
| | JIS G 3472 | STAM290GA |
| | | STAM290GB |
| | | STAM340G |
| | | STAM390G |
| JIS G 3473 | STC370 | |
| JIS G 3475 | STKN400W | |
| | STKN400B | |
| JIS G 3201 | SF340A | |
| | SF390A | |
| | SF440A | |
| | SF490A | |
| | SF540A | |

Table 1 (continued)

| Group | Reference standard | Designation |
|------------|--------------------|-------------|
| 1.1 | JIS G 3202 | SFVC1 |
| | | SFVC2A |
| | | SFVC2B |
| | JIS G 3203 | SFVAF1 |
| | JIS G 3205 | SFL1 |
| SFL2 | | |
| 1.2 | JIS G 3101 | SS490 |
| | JIS G 3106 | SM490A |
| | | SM490B |
| | | SM490C |
| | | SM490YA |
| | | SM490YB |
| | JIS G 3115 | SPV315 |
| | | SPV355 |
| | JIS G 3116 | SG295 |
| | | SG325 |
| | JIS G 3119 | SBV1A |
| | | SBV1B |
| | | SBV2 |
| | JIS G 3120 | SQV1A |
| | | SQV2A |
| | JIS G 3126 | SLA325A |
| | | SLA325B |
| | JIS G 3134 | SPFH490 |
| | | SPFH540 |
| | | SPFH540Y |
| | | SPFH590Y |
| | JIS G 3135 | SPFC490 |
| | | SPFC540 |
| SPFC590 | | |
| JIS G 3136 | SN490B | |
| | SN490C | |
| JIS G 3461 | STB510 | |

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Table 1 (continued)

| Group | Reference standard | Designation |
|------------|--------------------|-------------|
| 1.2 | JIS G 3472 | STAM440G |
| | | STAM470G |
| | | STAM500G |
| | | STAM440H |
| | JIS G 3473 | STC440 |
| | JIS G 3475 | STKN490B |
| | JIS G 3201 | SF540B |
| | | SF590A |
| SF590B | | |
| JIS G 3204 | SFVQ1A | |
| 1.3 | JIS G 3106 | SM520BN |
| | | SM520CN |
| | JIS G 3113 | SAPH370 |
| | | SAPH400 |
| | | SAPH440 |
| | JIS G 3115 | SPV450N |
| | | SPV490N |
| | JIS G 3124 | SEV245N |
| SEV295N | | |
| SEV345N | | |
| 1.4 | JIS G 3114 | SMA400AW |
| | | SMA400AP |
| | | SMA400BW |
| | | SMA400BP |
| | | SMA400CW |
| | | SMA400CP |
| | | SMA490AW |
| | | SMA490AP |
| | | SMA490BW |
| | | SMA490BP |
| | | SMA490CW |
| | | SMA490CP |

Table 1 (continued)

| Group | Reference standard | Designation | |
|------------|--------------------|-------------|-----------|
| 2.1 | JIS G 3106 | SM490YATMC | |
| | | SM490YBTMC | |
| | | SM520BTMC | |
| | | SM520CTMC | |
| | | SM570TMC | |
| | JIS G 3114 | SMA490AWTMC | |
| | | SMA490APTMC | |
| | | SMA490BWTMC | |
| | | SMA490BPTMC | |
| | | SMA490CWTMC | |
| | | SMA490CPTMC | |
| | JIS G 3114 | SMA570WTMC | |
| | | SMA570PTMC | |
| | JIS G 3115 | SPV410TMC | |
| | | SPV450TMC | |
| | JIS G 3129 | SH590P-TMC | |
| | | SH590S-TMC | |
| | 2.2 | JIS G3115 | SPV490TMC |
| | 3.1 | JIS G 3106 | SM570Q |
| JIS G 3114 | | SMA570WQ | |
| | | SMA570PW | |
| JIS G 3115 | | SPV410Q | |
| | | SPV450Q | |
| | | SPV490Q | |
| JIS G 3120 | | SQV1B | |
| | | SQV2B | |
| | | SQV3A | |
| | | SQV3B | |
| JIS G 3128 | | SHY685 | |
| | | SHY685N | |
| | | SHY685NS | |
| | | SHY685NS-F | |
| JIS G 3201 | | SF640B | |

Table 1 (continued)

| Group | Reference standard | Designation |
|------------|--------------------|-------------|
| 3.1 | JIS G 3204 | SFVQ1B |
| | | SFVQ2B |
| | | SFVQ3 |
| 4.2 | JIS G 3458 | STPA20 |
| | JIS G 3462 | STBA20 |
| | JIS G 3203 | SFVAF2 |
| 5.1 | JIS G 3458 | STPA22 |
| | | STPA23 |
| | JIS G 3462 | STBA22 |
| | | STBA23 |
| | JIS G 3467 | STFA22 |
| | | STFA23 |
| | JIS G 4109 | SCMV11 |
| | | SCMV12 |
| | | SCMV21 |
| | | SCMV22 |
| | | SCMV31 |
| | JIS G 3203 | SFVAF12 |
| SFVAF11A | | |
| SFVAF11B | | |
| 5.2 | JIS G 3458 | STPA24 |
| | JIS G 3462 | STBA24 |
| | JIS G 3467 | STFA24 |
| | JIS G 4109 | SCMV41 |
| | | SCMV42 |
| | | SCMV51 |
| | | SCMV52 |
| | JIS G 4110 | SCMQ4E |
| | JIS G 3203 | SFVAF22A |
| | | SFVAF22B |
| | | SFVAF21A |
| SFVAF21B | | |
| JIS G 3206 | SFVCMF22B | |

Table 1 (continued)

| Group | Reference standard | Designation |
|-----------|--------------------|-------------|
| 5.3 | JIS G 3458 | STPA25 |
| | JIS G 3462 | STBA25 |
| | JIS G 3467 | STFA25 |
| | JIS G 4109 | SCMV61 |
| | | SCMV62 |
| | JIS G 3203 | SFVAF5A |
| | | SFVAF5B |
| | | SFVAF5C |
| SFVAF5D | | |
| 5.4 | JIS G 3458 | STPA26 |
| | | STBA26 |
| | JISN G 3467 | STFA26 |
| | JIS G 3203 | SFVAF9 |
| 6.2 | JIS G 4110 | SCMQ4V |
| | | SCMQ5V |
| | JIS G 3206 | SFVCMF22V |
| | | SFVCMF3V |
| 7.1 | JIS G 4304 | SUS405 |
| | | SUS410L |
| | | SUS429 |
| | | SUS430 |
| | | SUS430LX |
| | | SUS430J1L |
| | | SUS434 |
| | | SUS436L |
| | | SUS436J1L |
| | | SUS444 |
| | | SUS445J1 |
| | | SUS445J2 |
| | | SUS447J1 |
| | SUSXM27 | |
| JIS G4305 | SUS405 | |
| | SUS410L | |

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