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**Welding — Grouping systems for  
materials — European materials**

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

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Published in Switzerland

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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is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.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 20172 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).

## Introduction

This Technical Report reflects the situation as of June 2004. Changes in European material standards will be taken into account at the next revision of this Technical Report.

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# Welding — Grouping systems for materials — European materials

## 1 Scope

This Technical Report provides a European 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 as heat treatment, forming, non destructive testing. Types of steels in accordance with the grouping system of ISO/TR 15608:2005, Table 1.

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

- steel;
- aluminium and its alloys;
- copper and its alloys;
- cast iron.

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2 International grouping system for European materials

2.1 Types of steel in accordance with the grouping system of ISO/TR 15608:2005, Table 1

See Table 1.

Table 1 — Steel materials

Group	Reference standard	Designation	
		Name	Number
1.1	EN 10025-2	S235JR	1.0037
		S235JRG1	1.0036
		S235JRG2	1.0038
		S235JO	1.0114
		S235J2G3	1.0116
		S235J2G4	1.0117
		S235J2G3C	1.0118
		S235J2G4C	1.0119
		S275JR	1.0044
		S275JO	1.0143
		S275J2G3	1.0144
		S275J2G4	1.0145
		S275J2G3C	1.0141
	S275J2G4C	1.0142	
	EN 10028-2	P235GH	1.0345
		P265GH	1.0425
	EN 10028-3	P275N	1.0486
		P275NH	1.0487
		P275NL1	1.0488
		P275NL2	1.1104
	EN 10113-2	S275N	1.0486
S275NL		1.0488	
EN 10113-3	S275M	1.8818	
	S275ML	1.8819	



Table 1 (continued)

Group	Reference standard	Designation	
		Name	Number
1.1	EN 10120	P245NB	1.0111
	EN 10149-3	P265NB	1.0423
		S260NC	1.0971
	EN 10207	P235S	1.0112
		P265S	1.0130
		P275SL	1.1100
	EN 10208-1	L210GA	1.0319
		L235GA	1.0458
		L245GA	1.0459
	EN 10208-2	L245NB	1.0457
		L245MB	1.0418
		16Mo3	1.5415
	EN 10210-1	S235JRH	1.0039
		S275JOH	1.0149
		S275J2H	1.0138
		S275NH	1.0493
	EN 10213-2	S275NLH	1.0497
		GP240GR	1.0621
	EN 10213-3	GP240GH	1.0619
		G17Mn5	1.1131
EN 10216-1	P195TR1	1.0107	
	P195TR2	1.0108	
	P235TR1	1.0254	
	P235TR2	1.0255	
EN 10219-1	P265TR1	1.0258	
	S235JRH	1.0039	
	S275JOH	1.0149	
	S275J2H	1.0138	
	S275NH	1.0493	
EN 10224	S275NLH	1.0497	
	S275MH	1.8843	
	S275MLH	1.8844	
EN 10248-1	L235	1.0252	
	L275	1.0260	
EN 10216-2	S240GP	1.0021	
	S270GP	1.0023	
EN 10216-2	P195GH	1.0348	
	P235GH	1.0345	
	P265GH	1.0425	
	16Mo3	1.5415	

Table 1 (continued)

Group	Reference standard	Designation	
		Name	Number
1.1	EN 10216-3	P275NL1	1.0488
		P275NL2	1.1104
	EN 10217-1	P195TR1	1.0107
		P195TR2	1.0108
		P235TR1	1.0254
		P235TR2	1.0255
		P265TR1	1.0258
		P265TR2	1.0259
	EN 10217-2	P195GH	1.0348
		P235GH	1.0345
		P265GH	1.0425
		16Mo3	1.5415
	EN 10217-3	P275NL 1	1.0488
		P275NL2	1.1104
EN 10217-4	P215NL	1.0451	
	P265NL	1.0453	
EN 10217-5	P235GH	1.0345	
	P265GH	1.0425	
	16Mo3	1.5415	
EN 10217-6	P215NL	1.0451	
	P265NL	1.0453	
1.2	EN 10025	S355JR	1.0045
		S355JO	1.0553
		S355J2G3	1.0570
		S355J2G4	1.0577
		S355K2G3	1.0595
		S355K2G4	1.0596
		S355J2G3C	1.0569

Table 1 (continued)

Group	Reference standard	Designation	
		Name	Number
1.2		S355J2G4C	1.0579
		S355K2G3C	1.0593
		S355K2G4C	1.0594
	EN 10028-2	P295GH	1.0481
		P355GH	1.0473
	EN 10028-3	P355N	1.0562
		P355NH	1.0565
		P355NL1	1.0566
		P355NL2	1.1106
	EN 10028-5	P355M	1.8821
		P355ML1	1.8832
		P355ML2	1.8833
	EN 10113-2	S355N	1.0562
		S355NL	1.0566
	EN 10113-3	S355M	1.8823
		S355ML	1.8834
	EN 10120	P310NB	1.0437
		P355NB	1.0557
	EN 10149-2	S315MC	1.0972
		S355MC	1.0976
	EN 10149-3	S315NC	1.0973
S355NC		1.0977	
EN 10208-1	L290GA	1.0483	
	L360GA	1.0499	
EN 10208-2	L290NB	1.0484	
	L290MB	1.0429	
	L360NB	1.0582	
	L360MB	1.0578	
	L360QB	1.0590	
EN 10210-1	S355JOH	1.0547	
	S355J2H	1.0576	
	S355NH	1.0539	
	S355NLH	1.0549	
	S460NH	1.8953	
	S460NLH	1.8956	
EN 10213-2	GP280GH	1.0625	
EN 10213-3	G20Mn5	1.6220	
	G18Mo5	1.5422	

Table 1 (continued)

Group	Reference standard	Designation	
		Name	Number
1.2	EN 10219-1	S355JOH	1.0547
		S355J2H	1.0576
		S355NH	1.0539
		S355NLH	1.0549
		S355MH	1.8845
		S355MLH	1.8846
		S460NH	1.8953
		S460NLH	1.8956
	EN 10028-6	P355Q	1.8866
		P355QH	1.8867
		P355QL1	1.8868
		P355QL2	1.8869
	EN 10224	L355	1.0419
	EN 10225	S355N1	—
		S355N2	—
		S355M1	—
		S355M2	—
		S355N3	—
		S355M3	—
		S355N3Z	—
	EN 10248-1	S320GP	1.0046
		S355GP	1.0083
	EN 10222-4	P285NH	1.0477
		P285QH	1.0478
		P355NH	1.0565
		P355QH	1.0571
	EN 10216-2	20MnNb6	1.0471
EN 10216-3	P355N	1.0562	
	P355NH	1.0565	
	P355NL 1	1.0566	
	P355NL2	1.1106	