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**Cold-reduced high strength steel
sheet and strip with improved
formability for automobile uses**

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japan Iron and Steel Federation (JISF) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS G 3135**:2006 is replaced with this Standard.

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Cold-reduced high strength steel sheet and strip with improved formability for automobile uses

1 Scope

This Japanese Industrial Standard specifies cold-reduced high strength steel sheet (hereafter referred to as steel sheet) and cold-reduced high strength steel strip (hereafter referred to as steel strip) with improved formability mainly used for automobiles, electric equipment, construction materials and so on.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS G 0320 *Standard test method for heat analysis of steel products*

JIS G 0404 *Steel and steel products—General technical delivery requirements*

JIS G 0415 *Steel and steel products—Inspection documents*

JIS Z 2241 *Metallic materials—Tensile testing—Method of test at room temperature*

JIS Z 2248 *Metallic materials—Bend test*

JIS Z 8401 *Guide to the rounding of numbers*

3 Symbol of grade and applicable thickness

The steel sheets and strips shall be classified into thirteen grades, and their symbols and applicable thicknesses shall be as given in Table 1.

Table 1 Symbol of grade and applicable thickness

Category	Symbol of grade	Applicable thickness mm
Drawing use	SPFC340	0.6 or over up to and incl. 2.3
	SPFC370	
Forming use	SPFC390	0.6 or over up to and incl. 2.3
	SPFC440	
	SPFC490	
	SPFC540	
	SPFC590	
Lower yield ratio type	SPFC490Y	0.6 or over up to and incl. 2.3
	SPFC540Y	
	SPFC590Y	
	SPFC780Y	0.8 or over up to and incl. 2.0
	SPFC980Y	
Bake hardenable type	SPFC340H	0.6 or over up to and incl. 1.6

4 Chemical composition

The chemical composition is not specified.

If necessary, the chemical analysis shall be performed by the heat analysis in accordance with **JIS G 0320**. General requirements for chemical analysis and sampling method shall be in accordance with Clause 8 of **JIS G 0404**.

5 Mechanical properties

5.1 Tensile strength, yield point or proof stress, elongation and bake hardening amount¹⁾

Tensile strength, yield point or proof stress, elongation and bake hardening amount shall be as follows.

- When the steel sheet and strip are tested in accordance with **11.1** and **11.2**, the tensile strength, yield point or proof stress and elongation shall be as given in Table 2.
- When the steel sheet and strip of SPFC340H are tested in accordance with **11.1** and **11.4**, the bake hardening amount shall be as given in Table 2.

Note ¹⁾ The bake hardening amount refers to the increase in yield stress determined by the test specified in **11.4** performed by the manufacturer before shipment.