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Lead sheets and plates and hard lead sheets and plates

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Foreword

This translation has been made based on the original Japanese Industrial Standard 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 All Japan Lead Pipe and Sheet Industrial Association / Japanese Standards Association (JSA) 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 H 4301 : 2006** is replaced with this Standard.

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Lead sheets and plates and hard lead sheets and plates

1 Scope

This Japanese Industrial Standard specifies the rolled lead sheets and plates and hard lead sheets and plates (hereafter referred to as “sheets and plates”) used for the apparatus for radiation protection and sound insulation at medical treatment facilities, nuclear facilities and so on, and the apparatus for architecture, chemical industries and so on.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall apply but the revisions (including amendments) made thereafter shall not apply. The normative references without the indication of the year shall apply only to the most recent editions (including amendments).

JIS H 0321 *General rules for inspection of non-ferrous metal materials*

JIS H 1121 *Methods for chemical analysis of lead metal*

JIS H 1123 *Method for photoelectric emission spectrochemical analysis of lead metal*

JIS H 1501 *Methods for chemical analysis of white metal*

JIS H 2105 : 1995 *Pig lead*

JIS Z 8401 *Guide to the rounding of numbers*

3 Terms and definitions

For the purposes of this Standard, the following term and definition apply.

3.1 hard lead sheets and plates

lead alloy sheets and plates to which antimony is added to improve the mechanical properties of lead

4 Classes and symbols

Classes and symbols of sheets and plates shall be as given in table 1.

Table 1 Classes and symbols of sheets and plates

Class	Symbol	Composition	Applicable dimension	Characteristics (informative)
Lead sheets and plates	PbP ^{a)}	Lead sheets and plates of fineness of 99.9 % or over	Thickness : 0.3 mm or over up to and incl. 70.0 mm Width : 2 000 mm max. Length : 5 000 mm max.	Lead is good at corrosion resistance to sulfuric acid, sulfurous acid and so on, and shows good corrosion resistance in atmosphere, fresh water and sea water. High density (11.34 g/cm ³) gives high sound insulation and radiation shielding. Tensile strength is 10.5 MPa, and elongation is around 60 %.
Hard lead sheets and plates Class 4	HPbP4 ^{b)}	Lead alloy sheets and plates to which 4 % of anti-mony is added.	Thickness : 3.0 mm or over up to and incl. 6.0 mm Width : 1 000 mm max. Length : 2 000 mm max.	At the using temperature area of ordinary temperature to 120 °C, it shows high strength and high hardness as lead alloy.
Hard lead sheets and plates Class 6	HPbP6 ^{c)}	Lead alloy sheets and plates to which 6 % of anti-mony is added.		As for hard lead sheets and plates of Class 4, tensile strength is 25.5 MPa, and elongation is around 50 %. As for hard lead sheets and plates of Class 6, tensile strength is 28.5 MPa, and elongation is around 50 %.
Notes ^{a)} Pb shows lead and P shows sheets and plates. ^{b)} H shows hard and 4 shows antimony % (mass fraction). ^{c)} 6 shows antimony % (mass fraction).				

5 Quality

5.1 Appearances

The appearances of sheets and plates shall be smooth, free from crack and blister, and shall have no inclusion such as oxides on the surface.

5.2 Chemical composition

The chemical composition of sheets and plates shall be tested in accordance with clause 8 and shall be as given in table 2 and table 3.

Further, as for table 2, special class, Class 1, Class 2 and Class 3 shall be applied among those specified in 3.2 of JIS H 2105 : 1955.