

# JIS

**JAPANESE INDUSTRIAL STANDARD**

**Solders for aluminium and  
aluminium alloys**

**JIS Z 3281—1996**

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**by**

**Japanese Standards Association**



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Errata are also provided to subscribers of JIS (English edition) in *Monthly Information*.

## Solders for aluminium and aluminium alloys

**1 Scope** This Japanese Industrial Standard specifies solder alloys (hereafter referred to as "solders") principally used for aluminium, aluminium alloys, and the jointing of those and dissimilar metals.

Remarks: The following standards are cited in this Standard:

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

JIS H 2102 *Virgin aluminium ingots*

JIS H 2107 *Zinc metal*

JIS H 2108 *Tin metal*

JIS H 2113 *Cadmium metal*

**2 Types and symbols** The types and symbols of solders are classified according to its chemical composition as given in Table 1.

**Table 1** Types and symbols of solders

| Alloy system | Type       | Symbol   | Informative reference value    |                                 |                                       |                 |
|--------------|------------|----------|--------------------------------|---------------------------------|---------------------------------------|-----------------|
|              |            |          | Solidus line temperature<br>°C | Liquidus line temperature<br>°C | Tensile strength<br>N/mm <sup>2</sup> | Elongation<br>% |
| Zn-Al system | S-Zn95Al5  | Zn95Al5  | Approx. 382                    | Approx. 382                     | Approx. 170                           | Approx. 1       |
| Sn-Zn system | S-Sn91Zn9  | Sn91Zn9  | Approx. 198                    | Approx. 198                     | Approx. 50                            | Approx. 90      |
|              | S-Sn85Zn15 | Sn85Zn15 | Approx. 198                    | Approx. 250                     | Approx. 50                            | Approx. 75      |
|              | S-Sn80Zn20 | Sn80Zn20 | Approx. 198                    | Approx. 280                     | Approx. 50                            | Approx. 75      |
| Cd-Zn system | S-Cd70Zn30 | Cd70Zn30 | Approx. 266                    | Approx. 292                     | Approx. 130                           | Approx. 50      |
|              | S-Cd50Zn50 | Cd50Zn50 | Approx. 266                    | Approx. 326                     | Approx. 130                           | Approx. 50      |
|              | S-Zn70Cd30 | Zn70Cd30 | Approx. 266                    | Approx. 350                     | Approx. 130                           | Approx. 15      |
|              | S-Zn90Cd10 | Zn90Cd10 | Approx. 266                    | Approx. 395                     | Approx. 120                           | Approx. 2       |

**3 Quality** The quality shall be as follows:

- (1) The solders shall be uniform in quality and free from defects harmful to use.
- (2) The chemical composition of solders shall conform to the requirements specified in Table 2.