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(JSSA/JSA)

**Rating method of rust and stain of  
atmospheric corrosion for stainless  
steels**

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## Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Stainless Steel Association (JSSA) / Japanese Standards Association (JSA), with a draft of Industrial Standard based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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## Rating method of rust and stain of atmospheric corrosion for stainless steels

**1 Scope** This Japanese Industrial Standard specifies the method to evaluate quantitatively the rust, which is important for the external appearance of stainless steel, generating on the surface, using the standard photograph.

**2 Standard photographs** For the evaluation of surface rust condition, ten types of standard photograph (see attached figures 1 to 10) varying the area rate of rusting area from 0 % to 100 % is applied. Rating number (hereinafter referred to as “RN”) shall be 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. RN 0 corresponds to almost 100 % of the rusted area, RN 9 corresponds to not more than 0.01 % of the rusted area. Relationship between the mean rusted area rate obtained from the image analytical processing and RN is shown in table 1.

**Table 1 Relationship between RN and rusted area rate**

| RN | Rusted area rate (%) |
|----|----------------------|
| 0  | 100                  |
| 1  | 69                   |
| 2  | 47                   |
| 3  | 32                   |
| 4  | 22                   |
| 5  | 15                   |
| 6  | 2.7                  |
| 7  | 0.41                 |
| 8  | 0.062                |
| 9  | 0.009 3              |

**3 Method of evaluation** Compare the surface rust generating rate for the surface of specimen of about 100 mm × 150 mm area with the standard photograph, read RN of the most similar standard photograph to the specimen surface, and decide, for example, RN 6 and so on.

In the case of evaluating the surface rust generating rate for the real construction surface, about 100 mm × 150 mm area of the portion to be evaluated shall be evaluated with the similar method for the specimen.

**4 Record** Decided RN shall be recorded. In the case of the real construction surface, the place to be evaluated shall be clearly recorded.



Size of specimen : 100 mm × 150 mm

Attached figure 1 Standard photograph RN 0