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**Glass in building — Silvered, flat-glass
mirror**

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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 Flat Glass Manufacturers Association of Japan (FGMAJ)/ 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 R 3220:1999** is replaced with this Standard.

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Glass in building — Silvered, flat-glass mirror

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 25537** published in 2008 with some modifications of the technical contents.

The portions given sidelines or dotted underlines are the matters in which the contents of the original International Standard have been modified. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies the silvered, flat-glass mirror used for manufacture of a glass mirror (hereafter referred to as “silvered glass mirror”). This Standard is not applicable to silvered glass mirror for external glazing applications.

Silvered glass mirror covered by this Standard is not intended for use in corrosive environments where high humidity or airborne corrosion promoters, or both, are consistently present.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 25537 : 2008 *Glass in building — Silvered, flat-glass mirror* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

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 B 7516 *Metal rules*

JIS H 8502 *Methods of corrosion resistance test for metallic coatings*

NOTE : Corresponding International Standard : **ISO 9227** *Corrosion tests in artificial atmospheres — Salt spray tests* (MOD)

JIS R 3106 *Testing method on transmittance, reflectance and emittance of flat glasses and evaluation of solar heat gain coefficient*

NOTE : Corresponding International Standard : **ISO 9050** *Glass in building — Determination of light transmittance, solar direct transmittance, total solar energy transmittance, ultraviolet transmittance and related glazing factors* (MOD)

JIS R 3202 *Float glass and polished plate glass*

JIS R 3208 *Heat absorbing glass*

JIS Z 1522 *Pressure sensitive adhesive cellophane tapes*

JIS Z 8401 *Guide to the rounding of numbers*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1 fault

imperfection in the body, edge, or on the surface of the mirror

3.2 linear fault

scratch, hairline scratch, rub, dig, extended spot fault and other similar imperfections

3.3 spot fault

halo, colour spot, inclusion, pinhole, stone, gaseous inclusion, deposit and other similar imperfection

3.4 centre zone

central part of a mirror defined by 80 % of the length and 80 % of the width dimensions

3.5 chip

imperfection on the edge of a mirror due to breakage of a small fragment

3.6 cloud

frosted appearance in the reflected image from a silver coating

3.7 cluster

group of not fewer than three spot faults separated by not more than 50 mm

3.8 colour spot

alteration of the silver coating in the form of a small, generally coloured spot

3.9 dig

deep, short scratch in the glass surface

3.10 dirt

small particle of foreign material imbedded in the glass surface

3.11 edge corrosion

change in the colour or level of reflectance along the mirror edge as a result of degradation of the silver coating from external sources

3.12 edge fault

fault that affects the as-cut edge of the silvered glass, which includes slicing on/off, corners on/off, chips, shell chips, and flare, etc.

3.13 edgework

fabrication of the mirror edge

3.14 flare

protrusion in the length or width direction of the edge of a piece of mirror from the cut line

3.15 gaseous inclusion

round or elongated bubble at the surface or within the body thickness leaving a cavity in the mirror

3.16 hairline scratch

very fine, linear or circular scratch that can barely be seen

3.17 halo

distortion zone around gaseous inclusion, inclusion, or stone

3.18 silvered mirror

clear or heat-absorbing flat glass, the rear surface of which has been coated with a protected reflective silver layer

3.19 mirror stock size

mirror of sizes¹⁾ provided by agreement between the manufacturers who perform chemical silver plating on flat glasses, where trimming or re-cutting is required

Note ¹⁾ The size may be different according to the manufacturer.

3.20 mirror cut size

mirror cut to a stock/standard size that is intended for final use in the size ordered, i.e. mirror not intended for re-cutting

NOTE : These mirrors can be subject to further processing, e.g. chamfering, edge working, drilling, face decoration, etc.

3.21 optical fault

fault directly associated with the distortion of the reflected image

3.22 protective coating(s) fault

pinhole, burst bubble, scratches or loss of adhesion of the protective coating(s)

3.23 reflective silver-coating fault

fault in the reflective silver layer, altering the appearance of the silvered glass, e.g. scratches, colour spots, stains, edge corruptions, clouds, etc.

3.24 rub

abrasion of the mirror surface producing a frosted appearance

3.25 scratch

damage on the glass surface in the form of a line

3.26 shell chip

circular indentation in the mirror edge due to breakage of a small fragment

3.27 silver coating

metallic silver layer in a silvered mirror product

3.28 stain

colouration or alteration, due to corrosion, of the whole surface or some parts of the silver coating

NOTE : Stain can cover the whole surface of the silver coating. In other cases, stain can be composed of densely generated colour spots.

3.29 stone

crystalline inclusion in the silver

3.30 inclusion

included foreign matters, and colouration of the silver coating due to inclusion of foreign matters

3.31 pinhole

holes in a silver coating or protective coating

3.32 drip

spot faults generated due to dropping and adhering of tin on the glass surface

3.33 slicing on/off

protrusion or indentation in the depth direction of the edge of a piece of mirror from the cut line

3.34 corners on/off

protrusion or indentation in the length or width direction of the edge of a corner of mirror from the cut line

3.35 paint peel off

loss of the silver coating or the protective coating

3.36 blister

separation of the silver coating or the protective coating

3.37 weathering

discolouration of the silver coating caused due to the surface properties of a material flat glass

3.38 glass mirror

a flat glass used for viewing the image reflected on its smooth surface

3.39 silvered glass mirror

material obtained by chemically coating the rear surface of a flat glass and further applying a protective coating(s) over it

It is used for the manufacture of glass mirrors for internal use in buildings.

4 Classification

Silvered glass mirrors are classified by the thickness of the material flat glass in to the following five classes.

- a) 2 mm
- b) 3 mm
- c) 4 mm
- d) 5 mm
- e) 6 mm

5 Quality

5.1 Reflectance

When inspected in accordance with 8.1, the reflectance of silvered glass mirror shall be at least 83 % in the visible light reflectance. Those made from the heat-absorbing flat glass are exempted from this requirement.

5.2 Appearance

When inspected in accordance with 8.2, the appearance of silvered glass mirror shall satisfy the following requirements.

5.2.1 Flat glass faults

Acceptance level for flat glass faults shall be as given in table 1.

5.2.2 Spot and linear faults of silver coating

Acceptance level for spot and linear faults of silver coating shall be as given in table 1.

5.2.3 Stain, cloud and weathering

The mirror surface shall be free from stain, cloud and weathering.

5.2.4 Protective coating(s) faults

The presence of protective coating(s) faults shall be assessed by seeing if the silver coating has been reached and exposed.

Acceptance level for protective coating(s) faults shall be as given in table 1.