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**Sealants for sealing and glazing in
buildings**

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In the event of any doubts arising as to the contents,
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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 Japan Sealant Industry Association (JSIA)/ 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 A 5758 : 2004** is replaced with this Standard.

However, **JIS A 5758 : 2004** may be applied in the **JIS** mark certification based on the relevant provisions of Article 19 Clause 1, etc. of the Industrial Standardization Law until October 19th, 2010.

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Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

Sealants for sealing and glazing in buildings

Introduction

This Japanese Industrial Standard has been prepared based on the second edition of **ISO 11600** published in 2002 and the first edition of **ISO 6927** published in 1981, but modifying some of their technical contents so as to reflect the realities of current tradings in Japan.

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

A comparison table between the previous and the current editions of this Standard on technically significant revisions is given in Annex JB.

1 Scope

This Standard specifies sealants for buildings, which are applied in an unformed state to the of joints of building component materials, such as of metal, concrete or glass and which, after curing, ensure water tightness and air tightness by adhering to the building members.

NOTE : The International Standards corresponding to this Standard are as follows.

ISO 11600 : 2002 *Buildings construction—Jointing products—Classification and requirements for sealants*

ISO 6927 : 1981 *Building construction—Jointing products—Sealants—Vocabulary* (overall evaluation : MOD)

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

2 Normative references

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

JIS A 1439 *Testing methods of sealants for sealing and glazing in buildings*

NOTE : Corresponding International Standards : **ISO 6927** : 1981 *Building construction—Jointing products—Sealants—Vocabulary*, **ISO 7389** : 2002 *Building construction—Jointing products—Determination of elastic recovery of sealants*, **ISO 7390** : 2002 *Building construction—Jointing products—Determination of resistance to flow of sealants*, **ISO 8339** :

2005 *Building construction—Sealants—Determination of tensile properties (Extension to break)*, **ISO 8340** : 2005 *Building construction—Sealants—Determination of tensile properties at maintained extension*, **ISO 8394** : 1988 *Building construction—Jointing products—Determination of extrudability of one-component sealants*, **ISO 9046** : 2002 *Building construction—Jointing products—Determination of adhesion/cohesion properties of sealants at constant temperature*, **ISO 9047** : 2001 *Building construction—Jointing products—Determination of adhesion/cohesion properties of sealants at variable temperatures*, **ISO 9048** : 1987 *Building construction—Jointing products—Determination of extrudability of sealants using standardized apparatus*, **ISO 10563** : 2005 *Building construction—Sealants—Determination of change in mass and volume*, **ISO 10590** : 2005 *Building construction—Sealants—Determination of tensile properties of sealants at maintained extension after immersion in water*, **ISO 10591** : 2005 *Building construction—Sealants—Determination of adhesion/cohesion properties of sealants after immersion in water*, **ISO 11431** : 2002 *Building construction—Jointing products—Determination of adhesion/cohesion properties of sealants after exposure to heat, water and artificial light through glass*, **ISO 11432** : 2005 *Building construction—Sealants—Determination of resistance to compression* and **ISO 13640** : 1999 *Building construction—Jointing products—Specifications for test substrates* (Overall evaluation : MOD)

3 Terms and definitions

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

3.1 to seal

to place the appropriate products in the joint in order to prevent the penetration of moisture and/or the passage of air between the elements, components and assemblies made of the same or dissimilar materials

3.2 sealant

a material which, applied in an unformed state to a joint, seals it by adhering to appropriate surfaces within the joint

3.3 elastic sealant

sealant which after application exhibits predominantly elastic behaviour, i.e. remaining stresses induced in the sealant as a result of joint movement are almost proportional to the strain

3.4 plastic sealant

sealant which after application retains predominantly plastic properties, i.e. remaining stresses induced in the sealant as a result of joint movement are rapidly relieved

3.5 one component sealant

sealant ready for use

3.6 two-component sealant

sealant supplied in the form of not less than two separate components to be mixed together before use, with the addition of colouring agent or the like, in accordance with the manufacturer's instructions

3.7 movement capability

quantitative statement of the ability of a sealant to accommodate movement of the joint into which it has been filled, while maintaining an effective seal

3.8 primer

surface coating applied to the faces of the joint before placing the sealant in order to ensure its adhesion

3.9 back-up material

material inserted in a joint, which limits the depth of sealant applied, and which defines the back profile of the sealant

3.10 cohesion

property of a sealant subjected to tensile strain to hold together by intermolecular attraction

3.11 cohesion failure

rupture in the body of a sealant

3.12 adhesion

property of a sealant to stick to a given substrate

3.13 adhesion failure

rupture at the interface between a sealant and a substrate

3.14 elastic recovery

property of a sealant whereby the initial shape and dimensions of the material are wholly or partially restored on removal of the forces causing deformation

3.15 slump

flow of a sealant out of a joint having a vertical surface

3.16 cure

irreversible transformation of a sealant from a liquid or paste-like state into a hardened or rubber-like solid state

3.17 sealant durability

probable service life of a sealant during the given conditions of use

3.18 service life

period of time during which a sealant fulfils its functions

In practice, the period between the date of the first application of a sealant to a joint and the date when the product ceases to fulfil its functions.

3.19 joint movement capability

numerical value taking the safety factor into account on the basis of movement capability, used for design of joint width

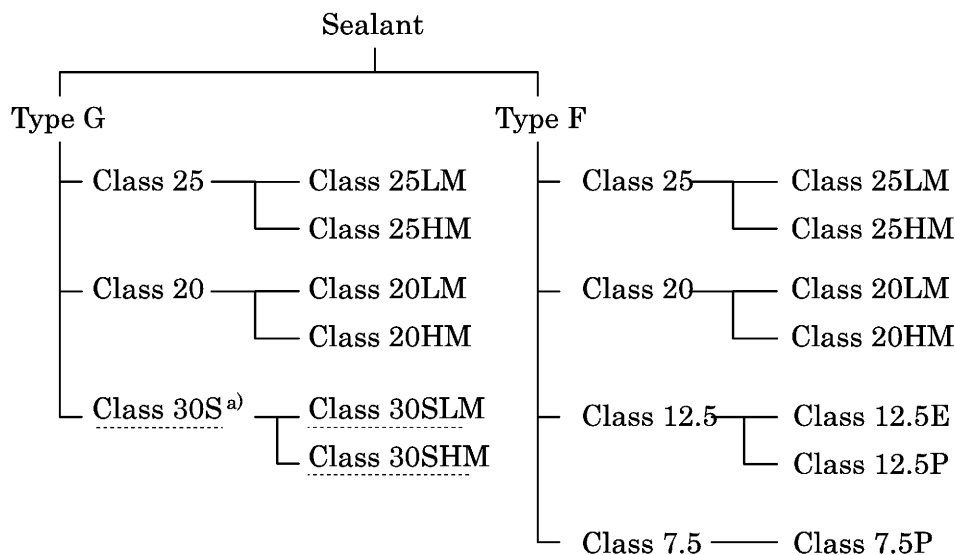
3.20 glazing

application method to insert glass into a window frame and fix it

4 Classification

4.1 General

Sealants are classified according to the type and class as shown in figure 1.



Note ^{a)} The letter “S” stands for shearing.

Figure 1 Classification of sealants

4.2 Types

According to their applications, sealants are separated into two types :

- a) **Type G** : glazing sealants for use in glazing joints ;
- b) **Type F** : construction sealants for use in building joints other than glazing.

4.3 Classes

Sealants are classified according to their ability to fulfil sealing functions in joints with the ratio of extension/compression as given in table 1.

Table 1 Sealant classes

Unit : %	
Class	Amplitude of extension/compression of joint width in test
25	±25
20	±20
12.5	±12.5
7.5	±7.5
30S	In both directions 30 ^{a)}
Note ^{a)} Coefficient of shear deformation relative to joint width is indicated.	

The shown values of extension and compression are given as a percentage of the initial joint width (12.0 mm).