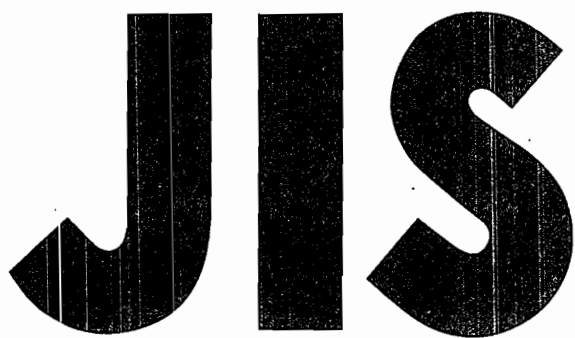




JAPANESE INDUSTRIAL STANDARD

**Adhesives for
floorcovering — P.V.C.**

 **JIS A 5536**—1996

Translated and Published

by

Japanese Standards Association

**In the event of any doubt arising,
the original Standard in Japanese is to be final authority**

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



1. Scope This Japanese Industrial Standard specifies the adhesives (hereafter referred to as “adhesives”) to be used for bonding floorcovering – P.V.C.⁽¹⁾.

Note ⁽¹⁾ These are floorcovering tiles and floorcovering sheets specified in JIS A 5705.

Remarks 1. The standards cited in this Standard are mentioned in Attached Table. 1.

2. The units and numerical values in { } in this Standard are based on the traditional units and are appended for informative reference.

2. Type

2.1 Classification by main component Adhesives are classified as shown in Table 1 by their main components.

Table 1. Classification by main components

Type	Description
Vinyl acetate resin series emulsion type	Emulsion type adhesives whose main component is vinyl acetate resin
Vinyl acetate resin series solvent type	Solvent type adhesives whose main component is vinyl acetate resin
Vinyl copolymer resin series emulsion type	Emulsion type adhesives whose main components are acrylic-vinyl acetate copolymer resin and ethylene-vinyl acetate copolymer resin
Vinyl copolymer resin series solvent type	Solvent type adhesives whose main components are acrylic-vinyl acetate copolymer resin and ethylene-vinyl acetate copolymer resin
Acrylic resin series emulsion type	Emulsion type adhesives whose main component is acrylic resin
Rubber series latex type	Latex type adhesives whose main component is natural rubber or synthetic rubber
Epoxy resin series	Two-part adhesives of which base resin is epoxy resin and of which curing agent is polyamines

2.2 Classification by uses Adhesives are classified as shown in Table 2 by their uses.

Table 2. Classification by uses

Classification		Uses
Use for general purpose	For P.V.C. floor tiles, for P.V.C. floor sheets, and for P.V.C. floor tiles and P.V.C floor sheets	After bonding, they are used where there is no influence of water.
Use for waterproof purpose		After bonding, they are used where there is influence of water.

Remarks : This includes the cases where they are used on risers of a staircase or the vertical of a baseboard.

3. Quality The quality of adhesives shall be as follows.

- (1) The adhesive shall be uniform in quality and free from alien matter thought to be harmful to bonding.
- (2) The adhesive shall not give damage to the adjoining P.V.C. floor tile, P.V.C. floor sheet, or its backing on which the adhesive is applied.
- (3) The adhesive shall be easily applied and the ridge made by comb-shaped trowel shall not seriously be destroyed when it is tested in accordance with 4.3.1.
- (4) The bond strength of the adhesive shall meet the requirements shown in Table 3.
- (5) The adhesive shall conform to the quality specified in (1) to (4) even after being kept during the term of effectiveness or until its expiration date of effectiveness at the ordinary temperature and ordinary humidity ⁽²⁾.

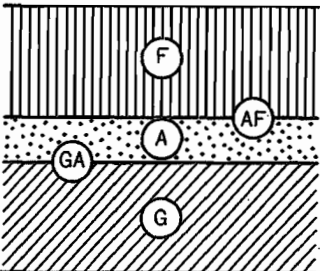
Note ⁽²⁾ The ordinary temperature and ordinary humidity mean the standard atmospheric condition specified in JIS Z 8703 [temperature $20 \pm 15^{\circ}\text{C}$ and humidity $(65 \pm 20) \%$].

Table 3. Bond strength

Kind of floorcovering material	Item for characteristic	Service	Test condition	Type of adhesives							Test sub-clause to be applied
				Vinyl acetate resin series		Vinyl copolymer resin series		Acrylic resin series emulsion type	Rubber series latex type	Epoxy resin series	
				Emulsion type	Solvent type	Emulsion type	Solvent type				
Floor tile	Tensile bond strength N/mm ² (kgf/cm ²)	Use for general purpose	Ordinary condition	0.5 {5.10} min.	0.5 {5.10} min.	0.2 {2.04} min.	0.5 {5.10} min.	0.2 {2.04} min.	0.2 {2.04} min.	0.8 {8.16} min.	4.3.2 (4) (a)
				—	—	—	—	—			
		Use for waterproof purpose	Immersion in water	—	—	—	—	—	—	0.5 {5.10} min.	4.3.2 (4) (b)
Floor sheet	90° peel bond strength N/25 mm (kgf/25 mm)	Use for general purpose	Ordinary condition	20.0 {2.04} min.	20.0 {2.04} min.	20.0 {2.04} min.	20.0 {2.04} min.	10.0 {1.02} min.	10.0 {1.02} min.	20.0 {2.04} min.	4.3.3 (5) (a)
				—	—	—	—	—	—		
		Use for waterproof purpose	Immersion in water	—	—	—	—	—	—	10.0 {1.02} min.	4.3.3 (5) (b)

Remarks : When the bond strength is not more than the value given in this Table, if the breaking spot (Fig. 1) showing the maximum area is in F, the test result shall be acceptable.

Fig. 1. Condition of breaking

P.V.C. floor tile or P.V.C. floor sheet		Symbol	Spot of breaking
Adhesive		F	P.V.C. floor tile or P.V.C. floor sheet
Backing		AF	Interface between the adhesive and P.V.C. floor tile or P.V.C. floor sheet
		A	Adhesive
		GA	Interface between backing and adhesive
		G	Backing

4. Test

4.1 General conditions for test

General condition for test shall be as follows.

- (1) Unless otherwise specified, test pieces shall be prepared under the standard atmospheric condition. The standard atmospheric condition shall be 20°C class 2, 65% class 10 [temperature of $20 \pm 2^\circ\text{C}$, humidity (65 ± 10) %] specified in JIS Z 8703.
- (2) Materials and tools to be used for adhesive and test shall be let stand at least for 24 h before preparing in the room kept at standard condition.
- (3) When being tested, adhesive shall be sufficiently stirred.
- (4) When epoxy resin series adhesive is tested, base resin and curing agent shall be taken with the rate specified by manufacturer, then be put on the glass plate measuring about 30 cm by 30 cm and about 5 mm in thickness to make the weight of the mixture about 300 g, and be immediately kneaded well to get uniform condition using a suitable spatula.
- (5) Aging condition for the test pieces for bond strength test shall be as shown in Table 4.

Table 4. Aging condition of test pieces

Test condition	Aging condition	Type of adhesives
Ordinary condition	168 h under standard condition ⁽³⁾	Vinyl acetate resin series emulsion type adhesives Vinyl copolymer resin series emulsion type adhesives Acrylic resin series emulsion type adhesives Rubber series latex type adhesives
	48 h under standard condition	Vinyl acetate resin series solvent type adhesives Vinyl copolymer resin series solvent type adhesives Epoxy resin series adhesives
Immersion in water	168 h in water ⁽⁴⁾ after 48 h under standard condition	Epoxy resin series adhesives

Notes ⁽³⁾ Standard condition is a state of $20 \pm 2^\circ\text{C}$ in temperature and (65 ± 10) % in humidity.

⁽⁴⁾ In water means a state of being immersed in pure water of the temperature of $20 \pm 2^\circ\text{C}$.