

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

☞ JIS A 6008 : 1997

Roofing sheets of synthetic polymer

ICS 83.140.10; 91.060.20

Descriptors : roof coverings, sheet roof coverings, plastics, concretes, structures,
waterproofing materials

Reference number : JIS A 6008 : 1997 (E)

A 6008:1996

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. JIS A 6008:1992 is replaced with this JIS A 6008:1997.

Date of Establishment: 1969-10-01

Date of Revision: 1997-12-20

Date of Public Notice in Official Gazette: 1997-12-22

Investigated by: Japanese Industrial Standards Committee
Divisional Council on Architecture

JIS A 6008:1997, First English edition published in 1998-05

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 1998

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

Contents

1	Scope	1
2	Normative references	1
3	Definitions	1
4	Classification	2
5	Quality	2
6	Dimension and unit-area mass	7
7	Appearance	7
8	Test	7
8.1	General condition of testing	7
8.2	Measurement of dimensions	8
8.3	Preparation of test piece	8
8.4	Unit-area mass	9
8.5	Tensile performance	9
8.6	Tear performance	10
8.7	Temperature dependency	12
8.8	Expansion and contraction on heating	14
8.9	Tensile performance after deterioration treatment	14
8.10	Deterioration properties when elongated	15
8.11	Bonding properties	17
8.12	Bonding tensile performance	19
8.13	Conversion of numerical value	20
9	Inspection	20
10	Marking	20
11	Precaution	21

Roofing sheets of synthetic polymer

1 Scope This Japanese Industrial Standard specifies both the roofing sheets manufactured mainly from synthetic high polymer (hereafter referred to as “uniform sheet”) and the roofing sheets manufactured composing of the polymer, fabric, and so on (hereafter referred to as “compound sheet”), to be used for water proofing of reinforced concrete structure.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

JIS A 1415	<i>Recommended practice for accelerated artificial exposure of plastics building materials</i>
JIS B 7502	<i>Micrometer callipers</i>
JIS K 6223	<i>Calcium carbonate for rubber</i>
JIS K 6250	<i>General rules of physical testing methods for rubber, vulcanized or thermoplastic</i>
JIS K 6251	<i>Tensile testing methods for vulcanized rubber</i>
JIS K 6252	<i>Tear testing methods for vulcanized rubber</i>
JIS K 6257	<i>Accelerated aging test methods for vulcanized rubber</i>
JIS K 8575	<i>Calcium hydroxide</i>
JIS K 8617	<i>Calcium carbonate</i>
JIS Z 8401	<i>Rules for rounding off of numerical values</i>
JIS Z 8703	<i>Standard atmospheric conditions for testing</i>

3 Definitions Definitions of main terms used in this Standard are as follows:

- a) **roofing sheet** Sheet-type material for composing of water proofing layer
- b) **uniform sheet** Roofing sheet composed of synthetic polymer as main material
- c) **compound sheet** Roofing sheet composed of synthetic polymer as main material with which fabric or others are compounded
- d) **general compound type** Compound roofing sheet in which dimensional stability and mechanical properties are improved due to compounding of fabric or sheet-type material having different characteristics.
- e) **reinforced compound type** Compound roofing sheet whose strength depends mainly on reinforcing fabric
- f) **mechanically fastened method** Method to fasten mechanically sheet on substrate with using of fastening metal
- g) **fully adhered method** Method to adhere fully sheet on substrate with using primer and adhesives

4 Classification

Classification shall be as shown in Table 1.

Table 1 Classification of roofing sheets of synthetic polymer

Classification		Abbreviation	Main material	
Uniform sheet	Vulcanized rubber series	Uniform vulcanized rubber	Butyl rubber, ethylene propylene rubber, chlorosulfonated polyethylene, etc.	
	Non-vulcanized rubber series	Uniform non-vulcanized rubber	Butyl rubber, ethylene propylene rubber, chlorosulfonated polyethylene, etc.	
	Polyvinyl chloride resin series	Uniform polyvinyl chloride	Polyvinyl chloride resin, vinylchloride copolymer, etc.	
	Ethylene vinylacetate copolymer series	Uniform ethylene vinylacetate copolymer	Ethylene vinyl-acetate copolymer, etc.	
Compound sheet	General compound type	Vulcanized rubber series	General compound vulcanized rubber	Butyl rubber, ethylene propylene rubber, chlorosulfonated polyethylene, etc.
		Non-vulcanized rubber series	General compound non-vulcanized rubber	Butyl rubber, ethylene propylene rubber, chlorosulfonated polyethylene, etc.
		Polyvinyl chloride resin series	General compound polyvinyl chloride	Polyvinyl chloride resin, vinyl chloride copolymer, etc.
	Reinforced compound type	—	Reinforced compound type	Polyvinyl chloride resin, vinyl chloride copolymer, chlorinated polyethylene, chlorosulfonated polyethylene, ethylene propylene rubber, etc.

5 Quality

The quality of products shall meet the requirements given in Table 2 or Table 3 when tested according to 8. In case of the products having adhesive layer, however, the thickness of products shall include the thickness of adhesive layer.

Table 2 Quality of uniform sheet

Item		Type				Applicable test subclause
		Vulcanized rubber series	Non-vulcanized rubber series	Polyvinyl chloride resin series	Ethylene vinyl-acetate copolymer series	
Tensile performance	Tensile strength	750 min.	50 min.	1 000 min. [1 800 min.] ⁽²⁾	1 000 min.	8.5
	Elongation percent	450 min.	450 min.	200 min. [250 min.] ⁽²⁾	450 min.	
Tear performance	Tear strength	250 min.	30 min.	400 min.	400 min.	8.6
Temperature dependency	Test temperature 60 °C	230 min.	7.5 min.	400 min. [720 min.] ⁽²⁾	150 min.	8.7
	Test temperature -20 °C	200 min.	100 min.	15 min.	200 min.	
Expansion or contraction on heating		2 max.	2 max.	2 max.	2 max.	8.8
		4 max.	4 max.	4 max. [6 max.] ⁽²⁾	6 max.	
Tensile performance after deterioration treatment	Tensile strength ratio %	80 min.	90 min.	80 min.	80 min.	8.9
		80 min.	90 min.	80 min.	80 min.	
		80 min.	80 min.	80 min.	80 min.	
	Elongation percent ratio %	70 min.	70 min.	70 min.	70 min.	
		70 min.	70 min.	70 min.	70 min.	
		80 min.	90 min.	90 min.	80 min.	

Table 2 (concluded)

Item	Type				Applicable test subclause
	Vulcanized rubber series	Non-vulcanized rubber series	Polyvinyl chloride resin series	Ethylene vinyl-acetate copolymer series	
Deterioration properties when elongated	Heating treatment	No cracking on any test piece			8.10
	Accelerated exposure treatment (1)	No cracking on any test piece			
	Ozone treatment (1)	No cracking on any test piece			
Bonding properties	No treatment	Shifted or peeled length from a reference line shall be 5 mm or less, and there shall be no unusual place as harmful shifting or the like.			8.11
	Heating treatment	Shifted or peeled length from a reference line shall be 5 mm or less, and there shall be no unusual place as harmful shifting or the like.			
	Alkali treatment	Shifted or peeled length from a reference line shall be 5 mm or less, and there shall be no unusual place as harmful shifting or the like.			

Note (1) This treatment shall be applied to the roofing to be used as exposed outdoors.

(2) The figure in [] for vinyl chloride resin series is applied to the uniform sheet with using of mechanically-fastened method.

Table 3 Quality of compound sheet

Item		Type			Reinforced compound type	Applicable test subclause		
		General compound type						
		Vulcanized rubber series	Non-vulcanized rubber series	Polyvinyl chloride resin series				
Tensile performance	Tensile strength	N/cm ²	80 min.	60 min.	100 min.	240 min.	8.5	
	Elongation percent	%	300 min.	250 min.	150 min.	15 min.		
Tear performance	Tear strength	N	40 min.	30 min.	50 min.	50 min.	8.6	
Temperature dependency	Test temperature 60 °C	Tensile strength	N/cm ²	32 min.	24 min.	40 min.	100 min.	8.7
	Test temperature - 20 °C	Elongation percent	%	150 min.	50 min.	10 min.	7.5 min.	
Expansion or contraction on heating		Amount of expansion or contraction mm	Expansion	2 max.	2 max.	2 max.	2 max.	8.8
			Contraction	4 max.	4 max.	4 max.	4 max.	
Tensile performance after deterioration treatment	Tensile strength ratio %	Heating treatment	80 min.	80 min.	80 min.	80 min.	80 min.	8.9
		Accelerated exposure treatment (°)	80 min.	80 min.	80 min.	80 min.	80 min.	
		Alkali treatment	80 min.	80 min.	80 min.	80 min.	80 min.	
	Elongation percent ratio %	Heating treatment	70 min.	70 min.	70 min.	70 min.	70 min.	
		Accelerated exposure treatment (°)	80 min.	80 min.	80 min.	80 min.	80 min.	
		Alkali treatment	80 min.	80 min.	80 min.	80 min.	80 min.	

 **Document**

Table 3 (concluded)

Item	Type	General compound type			Reinforced compound type	Applicable test subclause
		Vulcanized rubber series	Non-vulcanized rubber series	Polyvinyl chloride resin series		
Deterioration properties when elongated	Heating treatment	No cracking on any test piece			8.10	
	Accelerated exposure treatment (1)	No cracking on any test piece				
	Ozone treatment (1)	No cracking on any test piece				
Bonding properties	No treatment	Shifted or peeled length from a reference line shall be 5 mm or less, and there shall be no unusual place as harmful shifting or the like.			8.11	
	Heating treatment	Shifted or peeled length from a reference line shall be 5 mm or less, and there shall be no unusual place as harmful shifting or the like.				
	Alkali treatment	Shifted or peeled length from a reference line shall be 5 mm or less, and there shall be no unusual place as harmful shifting or the like.				
Bonding tensile performance	Bonding tensile strength N/cm	—			8.12	
		240 min.				
		190 min.				
		190 min.				