

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS R 3211 : 2021

(FGMAJ/JSA)

Safety glazing materials for road vehicles

ICS 43.040.60 ; 81.040.30

Reference number : JIS R 3211 : 2021 (E)

PROTECTED BY COPYRIGHT

13 S

R 3211 : 2021

Date of Establishment: 1979-07-01

Date of Revision: 2021-04-20

Date of Public Notice in Official Gazette: 2021-04-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area

JIS R 3211 : 2021, First English edition published in 2021-08

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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

© JSA 2021

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

HT/HN

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative reference	1
3 Terms and definitions	1
4 Classification and symbols	3
5 Quality	3
5.1 General	3
5.2 Thickness	5
5.3 Fragmentation	5
5.4 Impact resistance	7
5.5 Penetration resistance	8
5.6 Head-form (human head manikin) impact	8
5.7 Abrasion resistance	10
5.8 High temperature resistance	10
5.9 Radiation resistance	11
5.10 Humidity resistance	11
5.11 Regular luminous transmission	12
5.12 Optical distortion	13
5.13 Secondary image separation	13
5.14 Chemical resistance	14
5.15 Fire resistance	14
5.16 Weathering resistance	15
5.17 Temperature dependency	15
5.18 Flexibility	15
5.19 Adhesion	16
6 Tests	16
7 Inspection	16
7.1 General	16
7.2 Fragmentation	16
7.3 Impact resistance	16
7.4 Penetration resistance	17
7.5 Head-form (human head manikin) impact	17
7.6 Abrasion resistance	18
7.7 High temperature resistance	18
7.8 Radiation resistance	18
7.9 Humidity resistance	18

7.10	Regular luminous transmission	18
7.11	Optical distortion	19
7.12	Secondary image separation	19
7.13	Chemical resistance	19
7.14	Fire resistance	19
7.15	Weathering resistance	19
7.16	Temperature dependency	19
7.17	Flexibility	19
7.18	Adhesion	19
8	Marking	19
9	Intended use	19

Foreword

This Japanese Industrial Standard has been 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 a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS R 3211:2015**), which has been technically revised.

However, **JIS R 3211: 2015** may be applied in the **JIS** mark certification based on the relevant provisions of Article 30, paragraph (1), etc. of the Industrial Standardization Act until 19 April 2022.

This **JIS** document is protected by the Copyright Act.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

Blank

Safety glazing materials for road vehicles

Introduction

This Japanese Industrial Standard was established in 1979, and has gone through five revisions including this one. The last revision was made in 2015; this revision has been initiated to add the requirements for plastic glazing products intended for the windscreen of road vehicles.

No corresponding International Standard has been established at this point.

1 Scope

This Standard mainly specifies requirements for the safety glazing materials to be used for the windows of road vehicles (hereafter referred to as safety glass).

2 Normative reference

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 R 3212 *Test methods of safety glazing materials for road vehicles*

3 Terms and definitions

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

3.1

safety glass

generic term for laminated glass, toughened glass, zone-toughened glass, plastic glazing and glass-plastics, that are glass products processed in such a way as to alleviate personal injuries caused by breakage of window glass

3.2

laminated glass

glazing material manufactured by bonding two or more layers of glass with an interlayer of plastics so as to minimize the scattering of fragments in cases of breakage due to external force

Laminated glasses are classified into laminated glass A which has an interlayer with enhanced penetration resistance, and laminated glass B which has an interlayer with enhanced adhesiveness.

3.3

toughened glass