



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 6349 : 2012

(JRMA/JSA)

**Rubber hoses — Wire- or textile-
reinforced single-pressure types for
hydraulic applications**

ICS 23.040.70

Reference number : JIS K 6349 : 2012 (E)

PROTECTED BY COPYRIGHT

 **Documents**
Document Sharing Hub
13 S

K 6349 : 2012

Date of Establishment: 2012-08-20

Date of Public Notice in Official Gazette: 2012-08-20

Investigated by: Japanese Industrial Standards Committee

Standards Board

Technical Committee on Chemical Products

JIS K 6349 : 2012, First English edition published in 2013-12

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 2013

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

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Classification	3
4.1 Class	3
4.2 Grade	3
4.3 Type	3
5 Materials and construction of hoses	4
6 Dimensions and tolerances	4
6.1 Hose inside diameter and maximum outside diameter	4
6.2 Hose length	5
6.3 Concentricity	7
7 Performance requirements of hoses	7
8 Test methods	8
8.1 Oil resistance test of rubber	8
8.2 Burst pressure test	8
8.3 Test of change in length	8
8.4 Minimum bend radius test	9
8.5 Impact resistance test	11
8.6 Pressure resistance test	11
8.7 Cold bend test	11
8.8 Adhesion test	11
8.9 Vacuum resistance test	12
8.10 Ozone resistance of cover	12
9 Inspection	12
9.1 General	12
9.2 Type inspection	12
9.3 Acceptance inspection	13
9.4 Other tests	13
10 Marking	13
11 Storage and packaging	13
11.1 General	13
11.2 Packaging	14
11.3 Corrosion treatment	14

11.4	Storage place	14
11.5	Storage state	14
11.6	Order of use	14
Annex A (informative)	Other tests	15
Annex JA (informative)	Comparison table between JIS and corresponding International Standard	16

Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by The Japan Rubber Manufacturers Association (JRMA) /Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Consequently, **JIS K 6349-1:1999**, **JIS K 6349-2:1999** and **JIS K 6349-3:1999** have been withdrawn and replaced with this Standard.

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

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

Rubber hoses — Wire- or textile-reinforced single-pressure types for hydraulic applications

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 18752** published in 2006 with some modifications of the technical contents.

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

1 Scope

This Standard specifies the wire-or textile-reinforced rubber hoses for hydraulic applications (hereafter referred to as the “hoses”).

It is applicable to hoses of nominal sizes ranging from 5 to 102, that are suitable for uses at maximum working pressure 3.5 MPa to 56 MPa and at temperatures ranging from $-40\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$ (for Grade A and Grade B) or $-40\text{ }^{\circ}\text{C}$ to $+120\text{ }^{\circ}\text{C}$ (for Grade C and Grade D). These hoses are typically used with hydraulic fluids HH, HL, HM, HR and HV.

NOTE 1 In **ISO 6743-4**, hydraulic fluids HH, HL, HM, HR and HV are classified as follows.

HH : Mineral lubricants without corrosion inhibitors

HL : Lubricants HH with oxidation reduction and anticorrosive additives

HM : HL lubricants with wear reducing additives

HR : HL lubricants with high viscosity index

HV : HM lubricants with high viscosity index

NOTE 2 The International Standard corresponding to this Standard and the symbol of degree of correspondence is as follows.

ISO 18752 : 2006 *Rubber hoses and hose assemblies — Wire- or textile-reinforced single-pressure types for hydraulic applications — Specification* (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 (in-

cluding amendments) indicated below shall be applied.

JIS B 8360 *Wire reinforced rubber hose assemblies for hydraulic use*

JIS K 6200 *Rubber — Vocabulary*

JIS K 6258 *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

NOTE : Corresponding International Standard : **ISO 1817** *Rubber, vulcanized — Determination of the effect of liquids* (MOD)

JIS K 6330-1 *Testing methods for rubber and plastics hoses — Part 1 : Methods of measurement of dimensions for hoses and hose assemblies*

NOTE : Corresponding International Standard : **ISO 4671** *Rubber and plastics hoses and hose assemblies — Methods of measurement of dimensions* (MOD)

JIS K 6330-2 *Testing methods for rubber and plastics hoses — Part 2 : Hydrostatic testing*

NOTE : Corresponding International Standard : **ISO 1402** *Rubber and plastics hoses and hose assemblies — Hydrostatic testing* (MOD)

JIS K 6330-3 *Testing methods for rubber and plastics hoses — Part 3 : Determination of suction resistance*

NOTE : Corresponding International Standard : **ISO 7233** *Rubber and plastics hoses and hose assemblies — Determination of resistance to vacuum* (MOD)

JIS K 6330-4 *Testing methods for rubber and plastics hoses — Part 4 : Sub-ambient temperature flexibility tests*

NOTE : Corresponding International Standard : **ISO 4672** *Rubber and plastics hoses — Sub-ambient temperature flexibility tests* (MOD)

JIS K 6330-6 *Rubber and plastics hoses — Part 6 : Determination of adhesion between components*

NOTE : Corresponding International Standard : **ISO 8033** : 2006 *Rubber and plastics hoses — Determination of adhesion between components* (MOD)

JIS K 6330-7 *Rubber and plastics hoses — Part 7 : Assessment of ozone resistance under static conditions*

NOTE : Corresponding International Standard : **ISO 7326** : 1991 *Rubber and plastics hoses — Assessment of ozone resistance under static conditions* (MOD)

JIS K 6330-8 *Testing methods for rubber and plastics hoses — Part 8 : Hydraulic-pressure impulse test without flexing*

NOTE : Corresponding International Standard : **ISO 6803** *Rubber or plastics hoses and hose assemblies — Hydraulic-pressure impulse test without flexing* (IDT)

JIS K 6330-9 *Testing methods for rubber and plastics hoses — Part 9 : Bending*

properties of hoses and tubing

NOTE : Corresponding International Standard : **ISO 1746** *Rubber or plastics hoses and tubing — Bending tests* (IDT)

ISO 8330 *Rubber and plastics hoses and hose assemblies — Vocabulary*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS K 6200** and **ISO 8330** and the following apply.

3.1 maximum working pressure

the highest pressure at which the hose can be continuously used

This generally includes impact pressure that is transitionally generated.

3.2 proof pressure

pressure applied for evaluation of static pressure resistance performance of hose

3.3 minimum burst pressure

the smallest pressure applied on hose assembly at which detachment of joint, bursting of hose, leakage at the metal fixture do not occur

3.4 concentricity

difference in wall thickness between one side and the other side of the hose resulting from the runout between the centres of the outside diameter and inside diameter of the hose, or between the centres of the inside diameter of the hose and the outside diameter of the reinforcement layer

4 Classification

4.1 Class

Nine classes of hose are specified, distinguished by their maximum working pressure (35, 70, 140, 210, 250, 280, 350, 420 and 560), as shown in table 1. Each class shall be manufactured for the same working pressure, whatever the nominal size is.

Table 1 Classes

Class	35	70	140	210	250	280	350	420	560
Maximum working pressure MPa	3.5	7	14	21	25	28	35	42	56

4.2 Grade

Hoses are classified according to their resistance to impulse into four grades : A, B, C and D (see table 2).

4.3 Type

Each grade is classified by outside diameter and minimum bend radius into standard