



SLOVENSKI STANDARD
SIST EN 2104:2001
01-junij-2001

Aerospace series - Acrylonitrile-butadiene rubber (NBR) - Hardness 40 IRHD

Aerospace series - Acrylonitrile-butadiene rubber (NBR) - Hardness 40 IRHD

Luft- und Raumfahrt - Acrylnitril-Butadien-Elastomer (NBR) - Härte 40 IRHD

Série aérospatiale - Elastomère butadiène-nitrile acrylique (NBR) - Dureté 40 DIDC

Ta slovenski standard je istoveten z: EN 2104:1996

[SIST EN 2104:2001](https://standards.iteh.ai/catalog/standards/sist/120800e5-1151-412a-80c3-8c21a73515b6/sist-en-2104-2001)

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ICS:

49.025.40 Guma in polimerni materiali Rubber and plastics

SIST EN 2104:2001

en

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EUROPEAN STANDARD

EN 2104

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 1996

ICS 49.040.10

Descriptors: aircraft industry, materials, rubber, butadiene-acrylonitrile rubber, hardness

English version

**Aerospace series - Acrylonitrile-butadiene rubber
(NBR) - Hardness 40 IRHD**

Série aérospatiale Elastomère Luft- und Raumfahrt -
butadiène-nitrile acrylique (NBR) Dureté 40 Acrylnitril-Butadien-Elastomer (NBR) - Härte 40
DIDC IRHD

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries and votes carried out in accordance with the rules of this Association, this Standard has successively received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 1996, and conflicting national standards shall be withdrawn at the latest by July 1996.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Scope

This standard specifies the properties of acrylonitrile-butadiene rubber (NBR) ¹⁾, hardness 40 IRHD, for aerospace applications.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- ISO 1629 Rubber and latices - Nomenclature
- ISO 1817 Rubber, vulcanized - Determination of the effect of liquids
- EN 3207 Aerospace series - Rubber compounds - Technical specification ²⁾

3 Application of the material

The suitability of the material for a specific application shall be determined by complementary tests carried out on the finished product as the properties specified in this standard are obtained from standard test specimens.

3.1 Typical use

General purpose application where resistance to mineral-oil-based fluids is required

NOTE : these materials have poor natural weathering and ozone resistance, a test is not required.

3.2 Temperature range

- SIST EN 2104:2001
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- Continuous service : from - 40 °C to + 100 °C
 - Intermittent service : from - 40 °C to + 120 °C

4 Properties

See tables 1 and 2.

For qualification, all tests shall be performed.

For batch acceptance, the tests identified in tables 1 and 2 shall be performed.

5 Designation

EXAMPLE:

Description block

RUBBER

Identity block

EN2104

Number of this standard _____

6 Technical specification

EN 3207

¹⁾ Symbol as per ISO 1629

²⁾ In preparation at the date of publication of this standard

Table 1 - Test methods

Line	Column	1	2	3
		Properties	Units	Requirements
1		Hardness	IRHD	40 ⁺⁵ ₋₄ *)
2				
3		Density	Mg/m ³	1) *)
4				
5		Tensile strength	MPa	7 min. *)
6				
7		Elongation at break	%	450 min. *)
8				
9		Modulus at - % strain	MPa	-
10				
11		Tear strength	N/mm	-
12				
13		Resistance to low temperatures TR10	°C	- 30 max.
14		Crystallization	Point	-
15		Compression set		
15.1		after 72 h at 100 °C	%	40 max. *)
15.2		after - h at - °C		
16				
		Ozone resistance		
17		Ozone concentration : (- ±) pphm Elongation of test piece : SIST EN 2104:2001 % Time : h Temperature : °C		-
18				
19		Corrosion and adhesion on metals in a dry atmosphere Time : - h Temperature : - °C	-	-
20		Corrosion and adhesion on metals in a damp atmosphere		
20.1		Time : - h Temperature : - °C Humidity : - % Test fluid : -	-	-
20.2		Time : - h Temperature : - °C Humidity : - % Test fluid : -	-	-
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

*) Test for batch acceptance
1) The value determined for each batch shall not differ from that determined at qualification by more than 0.02 Mg/m³.

Table 2 - Tests after exposure to test media

Line \ Column	1	2	3	4	5
1	Test media	-	Air	Oil No. 1 see ISO 1817	
2	Conditions of exposure in test media	Units	70 h/100 °C	70 h/100 °C	
3	Permitted variation of the properties compared to the initial value	Volume	%	-	+10 *) -25
4		Mass	%	- 10 max.	-
5		Tensile strength	%	- 20 max.	-
6		Elongation at break	%	- 50 max.	-
7		Hardness	IRHD	+20 0	+30 0
8	(standards.iteh.ai)				

*) Test for batch acceptance

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