

INTERNATIONAL STANDARD

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8096-1**

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Rubber- or plastics-coated fabrics for water-resistant clothing — Specification —

Part 1: PVC coated fabrics

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*Supports textiles revêtus de caoutchouc ou de plastique pour vêtements
imperméables à l'eau — Spécifications —*

Partie 1: Tissus revêtus de poly(chlorure de vinyle)
<https://standards.iteh.ai/en/standards/ISO-8096-1-1989/4043b884e0e7/iso-8096-1-1989>

INTERNATIONAL

ISO



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8096-1 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

<https://standards.iteh.ai/catalog/standards/sist/fb14a032-084a-4521-8940-4f430814c0c7/iso-8096-1-1989>

ISO 8096 consists of the following parts, under the general title *Rubber- or plastics-coated fabrics for water-resistant clothing — Specification*:

Part 1: PVC-coated fabrics

Part 2: Polyurethane- and silicone elastomer-coated fabrics

Part 3: Natural rubber- and synthetic rubber-coated fabrics

Annexes A, B and C of this part of ISO 8096 form an integral part of the standard.

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International Organization for Standardization

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Rubber- or plastics-coated fabrics for water-resistant clothing — Specification —

Part 1: PVC-coated fabrics

1 Scope

This part of ISO 8096 specifies requirements for fabrics coated on one or both sides with a suitably plasticized coating, pigmented or otherwise, of vinyl chloride or copolymer the major constituent of which is vinyl chloride, and which are suitable for use in the making up of water-resistant clothing.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8096. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this part of ISO 8096 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-B02 : 1988, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

ISO 105-X12 : 1987, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing.*

ISO 176 : 1976, *Plastics — Determination of loss of plasticizers — Activated carbon method.*

ISO 1420 : 1978, *Rubber- or plastics-coated fabrics — Determination of resistance to penetration by water.*

ISO 1421 : 1977, *Fabrics coated with rubber or plastics — Determination of breaking strength and elongation at break.*

ISO 2286 : 1986, *Rubber- or plastics-coated fabrics — Determination of roll characteristics.*

ISO 2411 : 1973, *Fabrics coated with rubber or plastics — Determination of the coating adhesion.*

ISO 2602 : 1980, *Statistical interpretation of test results — Estimation of the mean — Confidence interval.*

ISO 3207 : 1975, *Statistical interpretation of data — Determination of a statistical tolerance interval.*

ISO 3303 : 1979, *Rubber- or plastics-coated fabrics — Determination of bursting strength.*

ISO 4674 : 1977, *Fabrics coated with rubber or plastics — Determination of tear resistance.*

ISO 4675 : 1979, *Fabrics coated with rubber or plastics — Low temperature bend test.*

ISO 5978 : 1979, *Rubber- or plastics-coated fabrics — Determination of blocking resistance.*

ISO 6451 : 1982, *Plastics coated fabrics — Polyvinyl chloride coatings — Rapid method for checking fusion.*

ISO 7854 : 1984, *Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing (dynamic method).*

3 Technical requirements

3.1 Physical requirements

The material shall comply with the requirements of table 1.

3.2 Colour fastness requirements

The material shall comply with the requirements of table 2.

4 Sampling

Samples shall be taken which are representative of the manufacturing batch from which they are drawn. Specimens for testing shall be taken from these samples in accordance with figure 1. The specimens shall be taken not less than 1 m from the end of the roll and not within 10 cm of a selvage. Subject to annex A, sampling shall be carried out at the discretion of the testing authority.

5 Testing and compliance

5.1 The performance values specified in table 1 and table 2 are those required of the manufacturing batch as a whole.

5.2 The method of selecting specimens from each sample shall be in accordance with annex A.

5.3 Tests shall be conducted as specified in tables 1 and 2 on specimens extracted from each sample.

5.4 In the event of dispute, the results of the tests conducted as specified in table 1 shall be subject to statistical analysis in accordance with the provisions of annex B.

In such event, if the lower confidence limit of the mean as calculated in accordance with annex B is below a requirement described as "minimum" in table 1, the bulk of the coated fabric which the sample represents shall be deemed not to comply with the requirements of this part of ISO 8096 in respect of that physical requirement.

If the lower confidence limit of the mean as calculated in accordance with annex B is at or above a requirement described as "minimum" in table 1, the bulk of the coated fabric which the sample represents shall be deemed to comply with the requirements of this part of ISO 8096 in respect of that physical requirement.

5.5 If, after the first series of tests, any physical requirement is deemed not to comply with the appropriate requirements of table 1, two further samples shall be taken from the same source as the original sample and test specimens shall be taken from each sample so that duplicate tests may be conducted. The re-test results and the results of the first series of tests in respect of that physical requirement shall be jointly subject to analysis in accordance with the provisions of annex B. If the lower confidence limit of the mean so calculated in accordance with annex B is still below a requirement described as "minimum" in table 1, the bulk of the coated fabric which the sample represents shall be deemed not to comply with the

requirements of this part of ISO 8096. If the lower confidence limit of the mean is at or above a requirement described as "minimum" in table 1, the bulk of the coated fabric which the sample represents shall be deemed to comply with the requirements of this part of ISO 8096 in respect of that physical requirement.

5.6 If any of the specimens tested as specified in table 2 fails to comply with the requirements of table 2, the tests which the specimen has failed shall be repeated twice. For this purpose, two further samples shall be taken from the same source as the original sample and test specimens shall be taken from each sample so that duplicate tests may be conducted. If all the re-test results comply with the requirements of table 2, the bulk of the coated fabric which the samples represent shall be deemed to comply with the requirements of this part of ISO 8096. If any of the results of the re-tests taken from the second series of tests do not comply with the requirements of table 2, the bulk of the coated fabric which the samples represent shall be deemed not to comply with the requirements of this part of ISO 8096.

6 Marking

Each roll of coated fabric shall have a label attached bearing the following information:

- the name and/or distinctive mark of the manufacturer and means of identifying the manufacturer's batch number;
- the reference number of this part of ISO 8096 (i.e. ISO 8096-1) and the appropriate grade reference, e.g. WL, LD, MW or IG;
- the fibre type of the base fabric, e.g. polyamide.

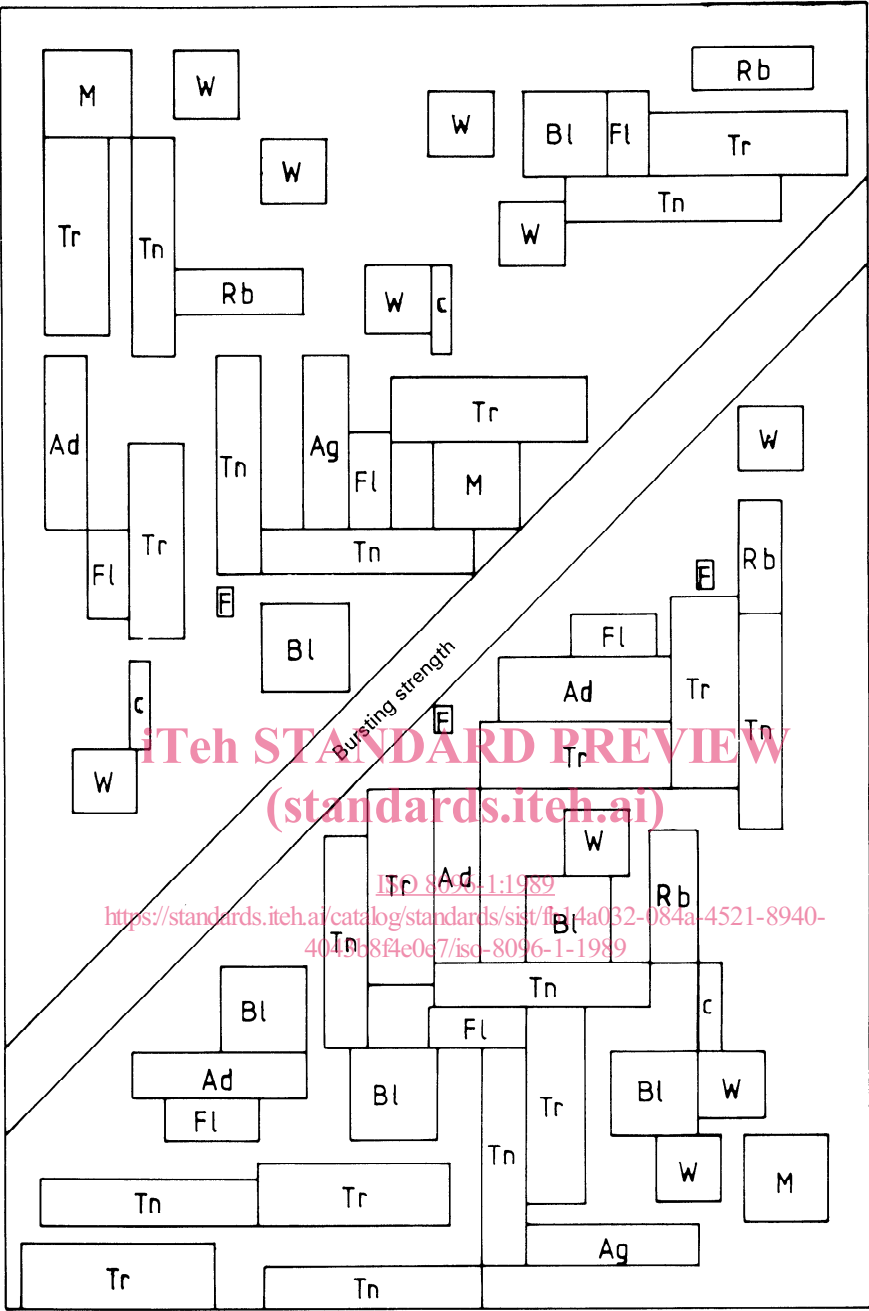
Table 1 — Physical requirements

Property	Limit	Requirements				Method of test
		Grade				
		WL	LD	MW	IG	
Total mass/unit area (g/m ²)	min.	270	310	380	270	ISO 2286
Tearing force (N)						
longitudinal	min.	100	100	134	180	} ISO 4674 Method A1
transverse	min.	88	80	184	140	
Breaking load (N)						
longitudinal	min.	300	490	620	840	} ISO 1421 Constant rate of extension
transverse	min.	150	330	530	685	
Fusion	—	No cracking or disintegration of face coating				ISO 6451
Flex cracking (number of cycles)	min.	500 000	500 000	500 000	500 000	ISO 7854 ¹⁾
Resistance to cracking	—	No cracks at – 20 °C				ISO 4675
Blocking	—	Separation without damage to coating				ISO 5978
Bursting strength (kPa)	min.	680	800	1 300	2 000	ISO 3303 Method B
Resistance to water penetration (kPa)	min.	15	15	15	15	Annex C
Heat ageing (% coating mass loss)	max.	5	5	5	5	ISO 176
Coating adhesion (N)	min.	18	18	18	26	ISO 2411
1) In the event of dispute, method B shall be employed.						

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Table 2 — Colour fastness requirements

Property	Limit	Requirement for all grades	Method of test
Colour fastness to artificial light (xenon arc)	min.	5-6	ISO 105-B02
Colour fastness to rubbing	min.	4-5	ISO 105-X12



Key			
M	Mass determinations	C	Cold cracking
Tr	Tear strength determinations	W	Water resistance determinations
Ad	Coating adhesion	Ag	Ageing
Tn	Tensile determinations	Bl	Blocking
F	Fusion		Bursting strength determinations as shown
Fl	Flexing	Rb	Rub fastness determinations

Figure 1 — Scheme for selection of test specimens

NOTE — Specimens for light fastness testing may be taken from any suitable place on the sample, provided that all colours are represented.

Annex A (normative)

Method of sampling and selecting test specimens

A.1 In the event of dispute, the following sampling requirements shall apply.

A.2 A sample shall be taken from each manufacturing batch identified as such in accordance with clause 6 at the rate of not less than one sample per 1 000 running metres.

A.3 Unless otherwise specified by the purchaser, samples shall not be taken within 1 m of the end of the roll or within 10 cm of a selvage.

A.4 The size of samples taken from each manufacturing batch shall be such that the aggregate size of the samples is

sufficient to enable test specimens to be selected for the purposes of fulfilling the appropriate test requirements in tables 1 and 2.

A.5 The specimens for testing shall be selected from the samples taken in accordance with clause A.4 so that all samples are represented by specimens in each of the tests conducted in accordance with the appropriate requirements of table 1 and table 2.

A.6 In the case of multi-coloured samples, all colours shall be represented by the specimens selected for colour fastness testing in accordance with table 2.

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Annex B (normative)

Determination of the standard deviation and confidence interval of the mean

B.1 The distribution of test results in the tests for physical requirements specified in table 1 shall be taken to be normal.

B.2 The test results obtained from the tests for physical requirements specified in table 1 shall be subjected to statistical analysis and an estimate of the standard deviation s shall be made in accordance with ISO 3207, i.e.

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

B.3 The 95 % confidence interval of the mean shall be calculated assuming a two-sided case in accordance with the provisions of ISO 2602 and the lower limit of the mean of the population taken to be

$$\bar{x} - \frac{t_{0,975}}{\sqrt{n}} s$$

B.4 In the case of re-tests as required by 5.5, the results of the first series of tests shall be included amongst the results of the re-tests for the purposes of estimating the standard deviation and the confidence interval of the mean.

Annex C (normative)

Determination of resistance to water penetration

C.1 The apparatus specified in method B of ISO 1420 shall be modified by replacing the pressure gauge specified for one graduated in kilopascals or kilonewtons per square metre with a maximum capacity of 100 kPa. A draw-off valve shall also be fitted to enable water pressure to be released after testing.

C.2 Employing the apparatus described in clause C.1, and raising the pressure at the rate of 10 kPa/min, test 10 specimens at the pressure indicated in table 1, maintaining the

indicated pressure for 2 min before opening the draw-off valve. Five specimens per side of the coated fabric shall be tested.

C.3 Record the pressure at which any damp patches appear. Disregard any results where lateral leakage has occurred and repeat the test on a fresh specimen.

C.4 Calculate the arithmetic mean of the 10 results so obtained and report this value as the resistance to water penetration, in kilopascals.

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