

# इंटरनेट

# मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11688 (1999): Newsprint [CHD 15: Paper and its products]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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IS 11688 : 1999

भारतीय मानक  
अखबारी कागज — विशिष्टि  
( पहला पुनरीक्षण )

REAFFIRMED

DEC 2005

*Indian Standard*

NEWSPRINT — SPECIFICATION

( *First Revision* )

ICS 85.060

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

*March 1999*

**Price Group 3**

**AMENDMENT NO. 1 MARCH 2006**  
**TO**  
**IS 11688 : 1999 NEWSPRINT — SPECIFICATION**  
**( First Revision )**

( Page 1, clause 4.4 ) — Substitute the following for the existing:

‘4.4 The newsprint shall be supplied either in ream, reel or sheet form.’

( Page 1, clause 4.4.1 ) — Substitute the following for the existing:

**‘4.4.1 Reams**

The nominal mass in kg per ream of 500 sheets including mass of wrapping paper shall be as agreed between the purchaser and the supplier. A tolerance of  $\pm 2.5$  percent shall be allowed on the nominal mass of the ream. Nominal mass of the ream shall be determined in accordance with the method prescribed in Annex A.’

( Page 1, clause 4.4.2 ) — Substitute the following for the existing:

**‘4.4.2 Reels**

**4.4.2.1** The width of the reels shall be any of the sizes specified in IS 1064. The minimum diameter of the reel shall be 800 mm. The permissible tolerance on the width of the reels shall be in accordance with 4 of IS 1064.

**4.4.2.2** The nominal mass in kg per reel including the mass of the core, plugs and wrappers shall be as agreed between the purchaser and the supplier. A tolerance of  $\pm 2.5$  percent shall be allowed on the nominal mass of the reel. Nominal mass of the reel shall be determined in accordance with the method prescribed in Annex B.

**4.4.3 Sheets**

The size of the newsprint and the permissible tolerance shall be in accordance with IS 1064.’

[ Page 2, clause 5.2(c) ] — Substitute the following for the existing:

‘c) Mass in kg per ream of 500 sheets including wrapping paper or mass in kg per reel including the mass of the core, plugs and wrappers.’

**Amend No. 1 to IS 11688 : 1999**

( Page 3, Annex A ) — Insert the following at the end of Annex A:

**‘ANNEX B  
(Clause 4.4.2.2)**

**DETERMINATION OF NOMINAL MASS OF REEL**

**B-1** The nominal mass of reel of newsprint shall be calculated according to the following formula:

$$J = \frac{(L \times M \times N) + K}{1\,000}$$

where

- $J$  = nominal mass of reel of newsprint in kg,
- $L$  = nominal grammage of newsprint in  $g/m^2$ ,
- $M$  = width of reel in m,
- $N$  = length of web of newsprint in the reel in m, and
- $K$  = mass of the core, plugs and wrappers in g.

( CHD 15 )

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Paper and Its Products (Excluding Packaging Materials) Sectional Committee had been approved by the Chemical Division Council.

This standard was originally published in 1986. However, growing concern about the cleaner environment and the fact that deforestation will destroy the ecological balance of the earth, initiate a world wide movement to conserve the forest. With the advance of technology in the manufacture of newsprint and printing technology and immense desire to conserve the woods. Lower grammage and thickness have been specified in this revision. Tensile index and brightness have been increased. Requirement of oil absorbancy has been deleted in this revision. Slight modification in smoothness requirement has also been made.

The composition of the committee responsible for formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960, 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Indian Standard

## NEWSPRINT — SPECIFICATION

### (First Revision)

#### 1 SCOPE

This standard prescribes the requirements and methods of sampling and test for newsprint intended for use in printing presses for publication of newspapers and periodicals.

#### 2 REFERENCES

The Indian Standards listed below contain provisions which through reference in this text, constitute provisions of this Indian Standard. At the time of publication, the editions indicated were valid. All standards are subject to revisions, and parties to agreements based on this Indian Standard are encouraged to investigate the possibility of applying the most recent editions of the Indian Standards:

IS No.	Title
1060 (Part 1) : 1966	Methods of sampling and test for paper and allied products: Part 1 (revised)
1064 : 1980	Specification for paper sizes (second revision)
4006 (Part 1) : 1985	Methods of sampling and test for paper and allied products: Part 1 (first revision)
4661 : 1986	Glossary of terms used in paper trade and industry (first revision)
6211 : 1993	Code of practice for packaging of paper and board (first revision)
9894 : 1981	Methods of test for smoothness/roughness of paper

#### 3 TERMINOLOGY

For the purpose of this standard the definitions given in IS 4661 shall apply.

#### 4 REQUIREMENTS

**4.1** Newsprint shall be free from shives, pin holes, slime holes, stock lumps, wrinkles and calender cuts.

**4.2** The grammage of newsprint shall be between 40 and 52 g/m<sup>2</sup>. For determination of grammage, select 10 sheets at random and cut from each, test piece of size 25 cm × 25 cm (or 25 cm × 20 cm or 25 cm × 40 cm). Proceed as prescribed in 6 of IS 1060 (Part 1). The mean of 10 test results shall not vary from the nominal grammage by more than ±4 percent. The nominal grammage shall be as agreed between the

purchaser and the supplier with the agreed value lying within the ranges specified above.

NOTE — Preference should be given for the manufacture of lower grammage of newsprint in view of scarcity of raw material.

**4.3** The thickness of newsprint shall be between 56 and 90 µm. A tolerance of ±4 percent shall be permitted on the nominal thickness, when tested according to 7 of IS 1060 (Part 1). The nominal thickness shall be as agreed between the purchaser and the supplier with the agreed value lying within the ranges specified above.

**4.4** The newsprint shall be supplied either in the reel form or sheet form.

##### 4.4.1 Reels

The width of the reels shall be any of the sizes specified in IS 1064. The minimum diameter of the reel shall be 800 mm. The permissible tolerance on the width of the reels shall be in accordance with 4 of IS 1064.

##### 4.4.2 Sheets

The size of the newsprint and its permissible tolerance shall be in accordance with IS 1064.

**4.5** In addition to the above requirements, the newsprint shall also comply with the requirements given in Table 1, when tested in accordance with the relevant test methods prescribed in col 4 of Table 1.

**4.6** The colour/shade of the newsprint shall be as agreed to between the purchaser and the supplier.

#### 5 PACKING AND MARKING

##### 5.1 Packing

The packing of newsprint shall be done so as to ensure that the paper is not damaged due to handling and transportation and shall be as agreed to between the purchaser and the supplier (see IS 6211).

**5.1.1** When supplied in reel form, the newsprint shall be tightly wound at even tension and shall not contain more than the specified maximum number of splices per roll. Splices shall be neatly and securely pasted with adhesives, which will not permit the splices to separate while passing through the drying oven maintained at 370°C. The adhesive used shall not cause the splice to adhere to adjacent laps. The maximum number of splices allowed in a reel shall be three.



Table 1 Requirements for Newsprint  
(Clauses 4.5, 7.3 and 8.3)

Sl No.	Characteristic	Requirement	Method of Test Ref to Clause No.
(1)	(2)	(3)	(4)
i)	Brightness, percent, <i>Min</i>	52.0	13 of IS 1060 (Part 2)
ii)	Opacity, percent, <i>Min</i>	90.0	16 of IS 1060 (Part 1)
iii)	Smoothness Top side (Bendtsen), Wire side ml/min, <i>Max</i>	250 300	3 of IS 9894
iv)	Porosity, ml/min, <i>Max</i>	800	13 of IS 4006 (Part 1)
v)	Tensile index, N.m/g <i>Min</i>	MD 35 CD 15	12 of IS 1060 (Part 1)
vi)	Tear index, mN.m <sup>2</sup> /g, CD <i>Min</i>	4.5	12 of IS 1060 (Part 1)

NOTE — Tear Index = Tear factor × 0.098; Tensile Index = Breaking length, m × 0.009 8

5.2 Marking

Each package shall be marked with the following particulars:

- a) Description, grammage in g/m<sup>2</sup>, thickness in µm of the paper;
- b) Size of the paper. In the case of reels, the width and diameter of the reel;
- c) Mass in kg per ream of 500 sheets including wrapping paper, when determined in accordance with the method prescribed in Annex A. In the case of reels the mass in kg including the mass of the core, plugs and wrappers;
- d) Lot number;
- e) Month and year of manufacture; and
- f) Manufacturer's name or his recognized trade-mark, if any.

5.2.1 BIS Certification Marking

The packages may also be marked with the Standard Mark.

5.2.1.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 SCALE OF SAMPLING

6.1 Lot

All the packages/reels in a consignment and belonging to the same batch of manufacture shall constitute a lot.

6.2 Unless otherwise agreed to between the purchaser and supplier, the number of packages/reels to be selected shall depend upon the size of the lot and shall be in accordance with the Table 2.

Table 2 Number of Packages/Reels to be  
Selected from a Lot  
(Clause 6.2)

Lot Size (1)	Sample Size (2)
Up to 50	3
101 " 150	4
151 " 300	7
301 " 500	10
501 and above	15

7 NUMBER OF TESTS

7.1 From each package 8 sheets shall be visually examined for defects as given in 4.1.

7.1.1 In case of reels, inspect in 5 different layers in the area along the full width of the reel and 300 cm in length.

7.2 For grammage and thickness, take 10 sheets from different packages/reels, taking equal number of sheets from each package/reel as far as possible. When the number of packages/reels is more than 10, take 10 packages/reels at random and select one sheet from each package/reel. For selection of sheets, the methods given in IS 1060 (Part 1) may be followed.

7.3 For all other characteristics given in Table 1, each package/reel shall be tested individually.

8 CRITERIA FOR CONFORMITY

8.1 For visual examination, the number of defective sheets in a package shall not be more than 3 and in case of reel, the number of defective sheets shall not be more than 2.

8.2 For grammage and thickness, the average of 10 results shall be within the tolerance limit given in 4.2 and 4.3.

8.3 For all other characteristics on which individual tests have been done average (*X*) and range (*R*) shall be calculated, range being the difference between the maximum and minimum of the test results and

Average =  $\frac{\text{Sum of the test results}}{\text{Number of test}}$

The lot shall be declared as conforming to the specification with respect to the characteristics given in Table 1, if the expression;

$X - 0.6 R \geq$  minimum value specified, and  
 $X + 0.6 R \leq$  maximum value specified .

In case the number of test results are more than 10, it shall be divided into sub-groups of 5 test results each, taking them as obtained and for each sub-group, range shall be calculated. The mean range (*R*) shall be calculated by dividing the sum of the ranges by the number of sub-groups and in the expression *X* - 0.6 *R* and *X* + 0.6 *R*, *R* shall be replaced by *R*.

ANNEX A

[Clause 5.2(c)]

DETERMINATION OF NOMINAL MASS OF REAM

A-1 The nominal mass of ream of reams of newsprint shall be calculated according to the following formula:

$$R = \frac{(A \times B \times C) + D}{1\,000}$$

where

R = nominal mass of reams of newsprint in kg,

A = nominal grammage of newsprint in g/m<sup>2</sup>,

B = nominal number of sheets of newsprint in a ream,

C = nominal area of each sheet in m<sup>2</sup>, and

D = nominal mass of the wrapping paper in g.



( Continued from page 4 )

Newsprint and Magazine Paper Subcommittee, CHD 15:4

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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