BRITISH STANDARD

BS 6237:1982
ISO 6386:1981

Method for

Grading and visual classification for muscovite mica splittings

[ISO title: Muscovite mica splittings — Grading and visual classification]

UDC 553.677:552.123

Cooperating organizations

The General Electrotechnical Engineering Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following:

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Associated Offices Technical Committee
British Electrical and Allied Manufacturers' Association (BEAMA)
British Radio Equipment Manufacturers' Association
British Steel Corporation
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Electrical Installation Equipment Manufacturers' Association (BEAMA)
Mica Trade Section, London Chamber of Commerce and Industry
Rotating Electrical Machines Association (BEAMA)
The Transmission and Distribution Association (BEAMA)

This British Standard, having been prepared under the direction of the General Electrotechnical Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 26 February 1982

The following BSI references relate to the work on this standard:
Committee reference GEL/16
Draft for comment 78/31132 DC

ISBN 0 580 12656 0

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

National foreword

This British Standard has been prepared under the direction of the General Electrotechnical Engineering Standards Committee. It is identical (but see note below) with ISO 6383:1981 "*Muscovite mica splittings — Grading and visual classification*" published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

Wherever the words "International Standard" appear, referring to this standard, they should read as "British Standard".

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Cross-references. In clause **0** reference is made to ISO/R 67, ASTM D2131 – 71 and publication MEI – 1952 for information purposes only.

A related standard to ISO/R 67 is BS 3564:1962 "*Method for the size-grading of muscovite mica block, thins and films*".

NOTE *Textual errors.* When adopting the text of the International Standard some printing errors were noticed. They have been corrected and marked in this British Standard and have been reported to ISO in a proposal to amend the text of the International Standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 4, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

For many years Indian mica producers have been using a uniform system of size grading for muscovite mica. The Indian system has been adopted by various other countries, such as USA, Canada, Brazil, South Africa, and has been generally used in international trade.

This International Standard, though based on the Indian system, has been prepared after taking due account of the requirements of users of muscovite mica splittings all over the world. It is complementary to ISO 67[1)] which deals with the methods for grading muscovite mica blocks, thins and films.

In the preparation of this International Standard, considerable assistance has been derived from the following:

1) ASTM Designation: D 2131-71 *Specifications for National Muscovite Mica Splittings*. American Society for Testing and Materials.

2) Pub: MEI-1952 *Standards for Manufactured Electrical Mica.* National Electrical Manufacturers Association, USA.

1 Scope and field of application

This International Standard establishes a size classification of muscovite mica splittings by standard commercial grades and specifies the maximum allowable physical defects for each grade. It is applicable to commercially available natural muscovite mica splittings, irrespective of the basic colour of the mica or its source.

2 Definitions

For the purpose of this International Standard, the following definitions shall apply:

2.1
rough or burred edge

a frayed or serrated edge usually 0,8 mm deep or greater, or an edge turned up or down as caused by trimming with scissors, etc., or by rubbing the edge against sandpaper, stone, etc.

2.2
stains

discoloration arising from foreign materials, resulting in a partial or total loss of transparency, and which may be in the form of specks or patches of appreciable area, for example, slight stain, "vegetable" stain, clay stain, black stain, red stain, black speckled, light dot or spot, black, red or green dot or spot, etc.

NOTE 1 The so-called "vegetable" stains are of pale yellow, brown, green or clay colour when viewed by transmitted light.
NOTE 2 Mineral stains are distinctly black, red, brown or green when viewed by transmitted light.
NOTE 3 No data are available to support the impression that the "vegetable" stains are organic in nature. Tests conducted indicate that they are finely dispersed particles of the various iron oxides. The difference between these stains and the so-called mineral stains is probably only in their concentration or type of oxide.

2.3
stained splitting

a splitting that contains a single mineral dot or when the cumulative area of vegetable and clay stains exceeds 6,4 mm^2

2.4
tear, fracture and hole

a tear or fracture or a hole extending from the periphery more than the following distances:

Grade designation		Distance
New grade No.	Old grade No.	mm
63	3	15,9
40	4	12,7
20	5	9,5
16-06	5 1/2–6	6,4

2.5
thick edge

splittings shall be considered to have a thick edge if the edge or end in question is more than 1,5 times the minimum thickness measured at any point on the splitting or if the thickness of the edge or end exceeds the maximum average thickness allowed for the grade of splittings. This defect may be due to the nature of the mica used for the effect of splitting

2.6
thick splitting

a "bookform" splitting whose thickness in the major section of its area or over the entire area exceeds the maximum average thickness for the grade of splitting. "Loose with powder" splittings shall be considered thick only if such thickness exceeds 0,025 ram. "Loose" splittings shall be considered thick only if such thickness exceeds 0,030 mm

2.7
thin splitting

a splitting whose thickness in the major section of its area is less than the minimum average for the grade of splittings

[1)] At present ISO/R 67.

2.8
V cut

a cut or trim into the splitting roughly shaped as a "V". A splitting shall be considered V cut if it contains an indentation having an included angle of 120° or less extending from the periphery more than the following distances

Grade designation		Distance
New grade No.	Old grade No.	mm
63	3	15,9
40	4	12,7
20	5	9,5
16-06	5 1/2–6	6,4

2.9
waviness

one or a series of elevations or depressions or both, which are readily noticeable and which include defects such as buckles, ridges, etc.

3 Physical requirements

3.1 Size

Natural muscovite mica splittings shall meet the size requirement specified in Table 1.

3.2 Total defects

They shall not have more than the maximum allowable total defects specified in Table 2 based on percentage mass. Such defects shall not lie predominantly in any one category.

3.3 Individual defects

They shall not have more of[2)] any single defect than the percentage specified where a specific percentage is allowed for such defect.

4 Sampling

4.1 Bookform

Fifty books shall be drawn at random from each case sampled. At least 10 % of the cases in the lot shall be sampled.

4.2 Dust loose and loose

A minimum of a 28 g sample from each case sampled shall be taken. At least 10 % of the cases in the lot shall be sampled.

4.3 Method of calculation

Splittings shall be examined for defects in the order of separate values listed and counted defective for the first defective characteristics noted. Defects for which separate values are not given may be aggregated. Each group shall be weighed to determine the percentage it represents of the total sample mass less undersizes (see footnote "a" under Table 2). In computing percentages, 0,5 % or more shall be considered 1 %, less than 0,5 % shall be considered 0.

[2)] See note in national foreword.

Table 1 — Requirements for size and average thickness of splittings

Grade designation		Form	Size	Minimum dimension of usable rectangle	Average thickness of ten splittings
New grade No.	Old grade No.				
			cm^2	cm	mm
63	3	Bookform	64,5 to 96,8[c]	5,1	0,15 to 0,23[b]
40	4	Bookform	38,7 to 64,5 excl.	3,8	0,15 to 0,23[b]
20	5	Bookform	19,4 to 38,7 excl.	2,5	0,15 to 0,23[b]
16	5 1/2	Bookform	12,9[a] to 19,4 excl.	2,2	0,15 to 0,23[b]
06	6	Bookform	6,5 to 12,9 excl.	1,9	0,15 to 0,25[b]
63	3	Loose with powder	64,5 to 96,8	5,1	0,15 to 0,23[b]
40	4	Loose with powder	38,7 to 64,5 excl.	3,8	0,15 to 0,23
20	5	Loose with powder	19,4 to 38,7 excl.	2,5	0,15 to 0,23
16	5 1/2	Loose with powder	9,7 to 19,4 excl.	2,2	0,18 to 0,25
06	6	Loose with powder	At least 80 % shall be 6,5 to 9,7 excl.	1,9	0,18 to 0,25
06-1	6-1st	Loose	At least 70 % shall be 6,5 to 9,7 excl. Not more than 3 % shall pass through a screen having 19,05 mm square openings	—	0,18 to 0,25
06-i	6-intermediate	Loose	At least 60 % shall be 6,5 to 9,7 excl. and at least 25 % shall be 4,5 to 6,5 Not more than 3 % shall pass through a screen having 15,9 mm square openings	—	0,18 to 0,25
06-2	6-2nd	Loose	At least 50 % shall be 6,5 to 9,7 excl. Not more than 5 % shall pass through a screen having 15,9 mm square openings	—	0,18 to 0,28
06-3	6-3rd	Loose	At least 65 % shall have a minimum area of 4,8 cm^2 Not more than 8 % shall pass through a screen having 15,9 mm square openings	—	0,18 to 0,28
06-4	6-4th	Loose	At least 30 % shall have a usable area of 3,2 cm^2 and nothing shall pass through a screen having 6,35 mm square openings	—	0,18 to 0,31

NOTE 1 Splittings should not be of minimum area specified but should contain a fair proportion of sizes throughout the range specified.

NOTE 2 The area specified does not refer to the total area of the splittings but to the rectangular size which each grade will produce. For example grade 20 (old grade 5) splittings should be large enough to provide rectangular pieces measuring 3,8 cm × 5,1 cm, 5,1 cm × 5,1 cm, 5,1 cm × 5,9 cm, etc.

NOTE 3 The old grade designations are based on the practice in vogue in trade. These are given along with the new grades in order to allow familiarization with the new designations. The new designations have been chosen to represent the surface area of the minimum usable rectangle in each grade.

[a] Upon agreement between the interested parties, the minimum area may be 9,7 cm^2.

[b] Minimum and maximum thickness of a single splitting in case of bookform splittings shall be as agreed between the interested parties.

[c] See note in national foreword.

Table 2 — Defects

Grade designation		Form	Undersize, a	Stain, b	Waviness	Tears, fractures and holes	Thick splittings	Thin splittings	V cuts	Rough or burred edges	Other defects	Total allowable defects	Maximum allowable individual defects
New grade No.	Old grade No.		%	%			%					%	%
63	3	Bookform	5	d	d	d, e	d	d	d	d, f	d	15	4
40	4	Bookform	5	d	d	d, e	d	d	d	d, f	d	15	4
20	5	Bookform	5	d	d	d, e	d	d	d	d, f	d	15	4
16	5	Bookform	5	d	d	d, e	d	d	d	d, f	d	15	4
06	6	Bookform	5	d	d	d, e	d	d	d	d, f	d	15	5
63	3	Loose with powder	15	d	d	d	d	d	d	d, g	d	25	7
40	4	Loose with powder	15	d	d	d	d	d	d	d, g	d	25	7
20	5	Loose with powder	15	d	d	d	d	d	d	d, g	d	25	7
16	5 1/2	Loose with powder	15	d	d	d	d	d	d	d, g	d	25	7
06	6	Loose with powder	j	d	d	d	d	h	h	d, g	d	20	7
06-1	6	1st loose	j	12			3					20	
06-i	6	Intermediate loose	j	16			3					20	
06-2	6	2nd loose	j	20			4					20	
06-3	6-3rd	Loose	j	20			5					20	
06-4	6-4th	Loose	j	16			8					20	

a) This percentage not to be included with total allowable defects.

b) Lots that contain more than 2 % of stained splittings in which the sum of the major dimensions of the stains exceeds 6,4 mm shall not be regarded as meeting these standards. No mineral stain shall be permitted in bookform splittings. Not more than 30 % of the stain in grade 40, 20 and 16 (old grades 4, 5, 5 1/2) loose with powder shall be mineral stain. Not more than 40 % of the stain in grade 06, 06-1, 06-i, 06-2, 06-3 and 06-4 (old grade 6 loose with powder, 6-1st, 6-intermediate, 6-2nd, 6-3rd and 6-4th loose) shall be mineral stain.

c) To include an evaluation of undersize splittings for other defects.

d) Examine for the defect listed.

e) No hole shall be permitted.

f) Count as a defect if more than 20 % of the periphery is rough or burred.

g) Same as footnote f), except that limit is 35 %.

h) Do not examine for the defect listed.

j) Determine undersize in accordance with Table 1.

Publications referred to

See national foreword.

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BSI
389 Chiswick High Road
London
W4 4AL