# BUREAU OF INDIAN STANDARDS

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| *भारतीय मानक मसौदा*  **सीड क्लीनर्स के लिए छलनी के एपर्चर साइज के लिए सिफारिशें**  *(आई एस 10892 का पहला पुनरीक्षण)*  *Draft Indian Standard*  **RECOMMENDATIONS FOR APERTURE SIZE OF SIEVES FOR**  **SEED CLEANERS**  *(First Revision of IS 10892)*  **ICS 65.060** | |
| Agriculture and Food Processing Equipment Sectional Committee, FAD 20 | Last date of comments: **04/02/2024** |

# FOREWORD

(*Adoption clause will be added later*)

Various aperture sizes in sieves of seed cleaners are used in the country. A need was felt to develop an Indian Standard enabling the user or miller to select a proper dimension for getting optimized efficiency level in cleaning or grading.

This standard was originally published in 1984 and in preparation of this standard, assistance was derived from National Seeds Corporation Ltd, New Delhi. It is hoped that this standard would help in adoption of uniform sieve sizes. In order to align this standard with “Indian Minimum Seed Certification Standards” issued by the Central Seed Certification Board (GOI) in 2013, this standard has been revised and, in this revision, following modifications have been made:

1. Dimensions have been given in separate tables for individual group of similar commodities.
2. As many new and high yielding varieties have been developed so far and with different shapes and sizes, therefore, the aperture sizes of sieves for these varieties have also been incorporated.
3. All the dimensions are given in millimeters only.

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: 2022 ‘Rules for rounding off numerical values *(second revision)*’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# SCOPE

This standard covers the recommended aperture sizes of sieves used in seed cleaners.

# SIZES

* 1. Recommended aperture sizes are given in Table 1 to 12.
  2. The dimension of aperture size as given in Table 1 to 12 is in millimeters. The shape of apertures is round, oblong, and rectangular. In round aperture (represented by ‘r’), dimensions indicate the diameter of perforation. In oblong or rectangular aperture (represented by ‘s’), the dimensions indicate width and length of the perforation respectively.

## Table 1 Screen Aperture Size for Seeds of Cereals

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Barley - (2 Rowed) | 6.50 r | 2.30 s |
| Barley - (6 Rowed) | 6.50 r | 2.10s, 2.20 s |
| 2. | Paddy - (Coarse grain/ bold type) | 2.8s, 9.0r | 1.85s |
| Paddy - (Medium slender) | 2.8s, 9.0r | 1.80s |
| Paddy - (Fine/superfine) | 2.8s, 9.0r | 1.70s |
| 3. | Wheat - (T. aestivum) | 6.00 r | 1.80 s, 2.10 s, 2.30 s |
| Wheat - (T. durum) | 6.00 r | 2.10 s, 2.30 s |
| 4. | Triticale | 6.00 r, 7.00 r | 2.10 s, 2.30 s |

## Table 2 Screen Aperture Size for Seeds of Millets

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Maize except popcorn | 10.50 r, 11.00 r | 6.40 r, 7.00 r |
| 2. | Popcorn | 8.75 r | 4.25 r, 4.75 r |
| 3. | Sorghum | 4.75 r | 2.10 s, 3.50 r |
| 4. | Pearl millet | 3.25 r | 1.30 r, 1.30 s, 1.40 r,  1.40 s, 1.60 r, 1.90 r |
| 5. | Barnyard millet | 3.25 r | 1.40 s, 1.80 r |

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| --- | --- | --- | --- |
| 6. | Common millet | 3.80 r | 1.60 s |
| 7. | Finger millet | 3.25 | 1.40 s |
| 8. | Italian millet | 3.25 r | 1.20 s, 1.30 r |
| 9. | Kodo millet | 3.80 r | 1.60 s, 2.00 r |
| 10. | Little millet | 2.50 r | 1.60 r |

## Table 3 Screen Aperture Size for Seeds of Pulses

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Black gram | 5.00 r | 2.80 s |
| 2. | Bengal gram | 9.00 r, 10.00 r | 5.00 r, 5.50 r, 6.00 r |
| 3. | Cowpea | 7.00 r | 3.50 r, 4.00 |
| 4. | Green gram | 5.50 r | 2.80 s, 3.20 s |
| 5. | Indian bean (Sem) | 8.75 r | 4.75 s |
| 6. | Lentil | 7.00 r | 3.20 s, 4.00 r, 4.75 r |
| 7. | Pigeon pea (Arhar) | 9.50 r | 3.20 s, 4.00 r, 4.75 r |
| 8. | Rajmash (French bean) | 11.0 r | 4.75 s |

## Table 4 Screen Aperture Size for Seeds of Oilseeds

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Castor | 13.50 r | 4.40 s, 6.00 r |
| 2. | Rapeseed & Mustard | 2.75 r, 3.00 r, 3.25 r | 0.90 s, 1.00 s, 1.10 s,  1.40 r |
| 3. | Linseed | 4.00 r | 2.00 r |
| 4. | Niger | 3.20 r | 1.20 s |
| 5. | Rocket salad (Taramira) | 3.20 r | 1.10 s, 1.20 s |
| 6. | Safflower | 7.25 r | 1.20 s |
| 7. | Sesame | 2.40 r | 1.60 r, 1.90 r |
| 8. | Soybean | 8.00 r | 4.00 s |
| 9. | Sunflower | 9.00 r | 2.40 s |

## Table 5 Screen Aperture Size for Seeds of Fibres

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Cotton - (Fuzzy) | 14.30 r | 5.20 s |
| Cotton - (Delinted) | 7.20 r | 3.90 s |
| 2. | Jute - (Capsularis) | 2.40 r | 1.20 r, 1.60 r |
| Jute - (Olitorius) | 2.00 r | 0.80 r,1.00 r |

## Table 6 Screen Aperture Size for Seeds of Forages

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Berseem - (Diploid) | 2.00 r | 1.00 s |
| Berseem - (Tetraploid) | 2.40 r | 1.20 s |
| 2. | Forage sorghum | 4.00 r, 4.75 r | 2.10 s |
| 3. | Guar (Cluster bean) | 6.00 r | 1.80 s |
| 4. | Guinea grass | 2.10 r | 2.40 x 0.65 |
| 5. | Indian clover (Senji) | 2.10 r | 2.40 x 0.80 |
| 6. | Lucerne | 2.50 r | 0.70 s |
| 7. | Oats | 7.50 r | 2.00 s |
| 8. | Setaria grass | 2.40 r | 1.90 s |
| 9. | Sudan grass | 4.00 r | 1.20 s, 1.30 s |

## Table 7 Screen Aperture Size for Seeds of Vegetable crops (Cucurbits)

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Ashgourd | 9.50 r | 6.40 r |
| 2. | Bittergourd | 11.00 r | 6.50 r |
| 3. | Bottlegourd | 11.00 r | 6.50 r |
| 4. | Cucumber | 8.00 r | 2.00 r, 2.50 r |
| 5. | Indian squash | 9.50 r | 6.40 r |
| 6. | Longmelon | 5.00 s | 1.00 r |
| 7. | Muskmelon | 5.00 s | 1.00 r |
| 8. | Pumpkin | 11.00 r | 6.50 r |

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| --- | --- | --- | --- |
| 9. | Ridgegourd | 9.50 r | 6.40 r |
| 10. | Snakegourd | 9.50 r | 6.40 r |
| 11. | Snap melon | 5.00 s | 1.00 r |
| 12. | Sponge gourd | 9.50 r | 6.40 r |
| 13. | Summer squash | 8.00 r | 2.00 r |
| 14. | Watermelon | 6.00 r | 1.80 s |

## Table 8 Screen Aperture Size for Seeds of Vegetable crops (Fruit Vegetables)

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Brinjal | 4.00 r | 0.80 s, 2.10 r |
| 2. | Capsicum (Sweet pepper) | 4.00 r | 0.80 s, 2.10 r |
| 3. | Chilli (Hot pepper) | 4.00 r | 0.80 s, 2.10 r |
| 4. | Okra (Bhindi) | 6.00 r | 4.30 r |
| 5. | Rat-tail radish | 4.50 r | 2.00 r |
| 6. | Tomato | 4.00 r | 0.80 s, 2.10 r |
| 7. | Peas - Palse type T-163 | 10.5 r | 6.75 r |
|  |  |  |  |

## Table 9 Screen Aperture Size for Seeds of Vegetable crops (Greens/Leafy Vegetables)

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Asparagus | 6.00 r | 2.40 r |
| 2. | Celerey | 1.80 r | 0.40 s, 0.64 s |
| 3. | Fenugreek (Methi - (Large & Medium) | 3.25 r | 1.20 s |
| Fenugreek (Methi) - (Small) | 2.10 r | 0.69 s |
| 4. | Lettuce | 2.30 r | 0.80 r |
| 5. | Parsley | 2.75 r | 0.75 s |
| 6. | Spinach beet | 5.50 r | 1.80 s, 1.85 s, 2.25 r |
| 7. | Spinach - (Round seeded) | 5.00 r | 2.75 r |
| Spinach - (Sharp seeded) | 8.00 r | 2.50 |
| 8. | Coriander (All varieties) | 4.25 r | 2.5 s |

## Table 10 Screen Aperture Size for Seeds of Cole Crops

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Cabbage | 2.75 r | 0.90 s |
| 2. | Cauliflower | 2.75 r | 1.10 s |
| 3. | Broccoli | 2.75 r | 1.10 s |
| 4. | Chinese cabbage (heading & Non heading) | 2.75 r | 0.90 s |
| 5. | Knol-kohl | 2.75 r | 1.10 s |

## Table 11 Screen Aperture Size for Seeds of Bulbs crops

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Onion | 3.80 r | 2.00 r |

## Table 12 Screen Aperture Size for Seeds of Root Crops

(*Clause* 2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name at Crop** | **Screen Aperture Size In Millimeters** | |
| **Top Screen** | **Bottom Screen** |
| (1) | (2) | (3) | (4) |
| 1. | Carrot | 2.30 r | 1.00 r |
| 2. | Celeriac | 1.80 r | 0.40 s, 0.65 s |
| 3. | Sugarbeet - (Monogerm) | 9.00 r | 3.00 r |
| Sugarbeet - (Multigerm) | 9.00 r | 2.50 s |
| 4. | Gardenbeet | 9.00 r | 3.00 r |
| 5. | Radish | 4.50 r | 2.00 r |
| 6. | Turnip | 1.80 r | 1.20 r |