



भारतीय रिज़र्व बैंक

RESERVE BANK OF INDIA

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RBI/DCM/2026-27/473

DCM(NPD) No.S2154/18.00.014/2026-27

October 02, 2026

The Chairman / Managing Director / Chief Executive Officer
All Banks

Madam / Dear Sir,

Master Direction on Note Sorting Machines

In exercise of the powers conferred under Section 35A and Section 56 of the Banking Regulation Act, 1949, Reserve Bank of India (RBI), from time-to-time issues guidelines / circulars / directives to the banks on Note Sorting Machines.

2. A Master Direction incorporating and updating the extant guidelines / circulars / directives on the subject has been prepared to enable banks to have all current instructions on Note Sorting Machines at one place for reference and the same is enclosed.

3. The previous circulars issued on the subject ([Annexed](#)) stand withdrawn from the date of issuance of this [Master Direction](#).

Yours faithfully,

(Sanjeev Prakash)
Chief General Manager-in-Charge

Encl: As above

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Master Direction on Note Sorting Machines

In exercise of the powers conferred under Section 35A and Section 56 of the Banking Regulation Act, 1949, Reserve Bank of India (RBI) being satisfied that it is necessary and expedient in the public interest to do so, hereby, issues the Directions hereinafter specified.

1. Introduction

Guidelines on installation of Note Sorting Machines (NSMs) for sorting / processing of notes were issued vide [circular DCM. No. Cir. NPD.3161/09.39.00 \(Policy\)/2009-2010 dated November 19, 2009](#), advising banks that these machines should conform to the standards / parameters prescribed by Reserve Bank of India from time to time. Further, with reference to the draft guidelines on "Note Authentication and Fitness Sorting Parameters" published during 2009 (December 23, 2009) and comments received from various stakeholders including banks, equipment manufacturers and members of public in this regard, the final guidelines on "Note Authentication and Fitness Sorting Parameters" were issued vide [circular DCM\(R&D\) No.G-26/18.00.14/2009-10 dated May 11, 2010](#). Subsequently, in the backdrop of introduction of the new series banknotes, these parameters were reviewed, and a revised set of guidelines were issued to banks vide [circular DCM\(NPD\)No. S488/18.00.14/2022-23 dated July 01, 2022](#).

2. Guidelines on Note Authentication and Fitness Sorting Parameters

2.1 A fit note is a note that is genuine, sufficiently clean to allow its denomination to be readily ascertained and thus suitable for recycling. An unfit note is a note that is not suitable for recycling because of its physical condition or belongs to a series that has been phased out by Reserve Bank of India. All the fitness parameters laid down in this document are to be evaluated individually. A note must pass all the fitness parameters to be considered fit for recycling.

2.2 These parameters provide the minimum standards for cash handling machines used by banks (hereinafter called 'the machines'). Notes can only be recycled / reissued if they are evaluated as genuine and fit according to these parameters.

Authenticity check is a prerequisite for fitness sorting. Fitness sorting can be done only in case of genuine notes. The machines shall be able to identify and segregate suspected counterfeits and notes which are unfit for circulation in terms of these standards in a reliable and consistent manner.

2.3 The Reserve Bank of India phases out certain series of notes from circulation from time to time. These notes, though considered legal tender unless otherwise specified, are unfit for reissue. As and when the Reserve Bank of India decides to phase out a specific series of a specific denomination of notes, the machines shall sort all the phased-out notes as unfit, irrespective of their physical condition.

3. Applicability

These parameters are applicable to machines operated by banks, either directly by their staff or indirectly by their agents. These machines can be of any of the following:

- i. machines which check the authenticity and fitness of notes, i.e. note processing machines / note sorting machines, and
- ii. machines which check only the authenticity of notes, i.e. note authentication machines and classify the individual notes as either genuine or suspect.

4. Authenticity Check

The machines shall perform authenticity check with reference to the features of genuine notes as disclosed by the Reserve Bank of India from time to time on its website. Any note which is not found to be having all the features of a genuine note shall be classified by the machine as suspect / reject.

5. Fitness Sorting

As a part of fitness sorting, notes with any visual or physical defects are to be sorted as unfit as per the criteria set out in **Table 1**.

Table 1: Sorting Criteria		
Sl. No.	Feature	Criteria
(i)	Soiling	General distribution of dirt across the entire note

(ii)	Limpness	Structural deterioration resulting in a marked lack of stiffness
(iii)	Dog-ears	Corner folds
(iv)	Tears	Lengthwise and crosswise cuts
(v)	Holes	Holes of a specific diameter
(vi)	Stains	Localised concentration of dirt
(vii)	Graffiti	Deliberate graphic alteration of the note
(viii)	Crumples / Folds	Multiple random folds / Folds reducing the length or width of the note
(ix)	Decolouration	Lack of ink on part or whole of the note, e.g. a washed note
(x)	Repair	Note repaired using adhesive tape/ paper/ glue

(i) Soiling

Soiling refers to the general distribution of dirt across the entire note or in some patterns. It is a measure of the loss of reflectivity from the unprinted areas due to dirt, ageing (yellowing), wear and extraneous markings and includes decolouration due to ageing, excessive folding and other wearing. Soiling increases the optical density and decreases the reflectance of the notes. Notes exceeding the soiling levels set out in **Table 2** shall be sorted as unfit. Both the obverse and the reverse of the note shall be checked for soiling.

Table 2: Soiling Levels			
Sl. No.	Denomination	Maximum Density difference	Minimum Reflectance
1	₹5	0.07	85%
2	₹10	0.07	85%
3	₹20	0.06	87%
4	₹50	0.06	87%
5	₹100	0.05	90%
6	₹200	0.05	90%
7	₹500	0.04	93%

(ii) Limpness

Limpness relates to structural deterioration or wear resulting in a marked lack of

stiffness in the note paper. Notes with very low stiffness of paper, i.e. with paper which is worn out in circulation or mechanically mutilated shall be sorted as unfit. Detectors for paper quality shall be adapted to the same level as for soiling.

(iii) Dog-Ears

Banknotes with dog-ears with an area of more than 100 mm² and a minimum length of the smaller edge greater than 5 mm shall be sorted as unfit. Chipped notes shall also be sorted as unfit.

(iv) Tears

Notes exhibiting at least one tear at the edge shall be classified as those having tears. Notes with tears larger than those indicated in **Table 3** shall be sorted as unfit.

Table 3: Tears			
Sl. No.	Direction	Width	Length
1	Vertical	4 mm	8 mm
2	Horizontal	4 mm	15 mm
3	Diagonal *	4 mm	18 mm

* Measured by drawing a straight line from the peak of the tear to the edge of the note where the tear begins (rectangular projection), rather than measuring the length of the tear itself.

(v) Holes

This refers to notes with at least one visible hole. Notes with holes with area exceeding 8 mm² shall be sorted as unfit.

(vi) Stains

Stains are visible markings which are not part of the feature of a note. Notes shall be detected as unfit if localized - i.e. with limited extension - stain can be recognized on its surface. In case the total area covered by stains exceeds 500 mm², the note shall be sorted as unfit. A note with a single stain covering an area of more than 200 mm² shall be sorted as unfit. Both the obverse and the reverse of the note shall be

checked for stains.

(vii) Graffiti

Graffiti refers to deliberate graphic alteration of the note with for example, figures or letters. Non-permanent markings such as pencil scribbles, which do not obscure the banknote subject to passing the criteria for reflectance and optical density, may not be classified as unfit. Fitness sorting criteria in case of graffiti shall be the same as those for stains. Both the obverse and the reverse of the note shall be checked for graffiti.

(viii) Crumples / Folds

Crumpled / folded notes shall be sorted as unfit if the folds result in reduction of the original note in length or width greater than 5 mm.

(ix) Decolouration

Notes affected by decolouration shall be sorted as unfit if the ink is partially or wholly missing from its surface. Both the obverse and the reverse of the note shall be checked for decolouration.

(x) Repair

A repaired note is created by joining parts of the same note together, for example, by using extraneous matter such as tape, paper or glue. Notes with the following types of repairs shall be sorted as suspect / reject:

- Repairs covering an area greater than 100 mm²; or
- Thickness of the extraneous matter 50 µm or more; or
- Width of the extraneous matter 10 mm or more; or
- Length of the extraneous matter 10 mm or more.

6. Mutilated, Imperfect, Mismatched Notes and Built-up Notes

6.1 These notes, as defined in Note Refund Rules ([NRR 2009](#), amended in

December 2018), shall be classified as suspect / reject.

6.2 Suspect / Reject notes shall be subjected to Manual Inspection for any wrongdoings.

7. Calibration and Periodic Testing of Machines

Banks shall ensure that the Note Sorting machines are tested for accuracy and consistency on a quarterly basis and recalibrated, if required. A certificate (signed by Bank Officials) to this effect shall be maintained for records. A periodicity of quarterly testing as per the [Format attached](#), may be followed.

8. Standards issued by the Bureau of Indian Standards (BIS) for Note Sorting Machines (NSMs)

8.1 The Bureau of Indian Standards (BIS) after due consultation with Reserve Bank of India and other stakeholders, published the standards for Note Sorting Machines (NSM) - 'IS 18663: 2024' in the 'Gazette of India' on March 19, 2024. The standards are available at BIS website (<https://standards.bis.gov.in/website>)

The list of BIS certified models of NSMs can be accessed at following links:

For domestic manufacturers:

<https://manakonline.in/MANAK/ApplicationLicenceRelatedrpt>

For foreign manufacturers:

<https://www.bis.gov.in/fmcs/licensee/>

8.2 NSM models deployed at banks which have been discontinued from production, shall be phased out on or before June 30, 2027. The timeline may be strictly adhered to, failing which penalties would be levied for non-adherence in terms of Master Direction on "[Incentives for Currency Distribution and Exchange and Penalties / Penal Provisions for Bank Branches and Currency Chests for Deficiency in Rendering Customer Service and Reporting of Transactions / Balances](#)" (Updated as on May 27, 2026). Going forward, banks shall only procure the BIS certified Note Sorting Machines (NSMs).

Quarterly Test Reporting Format

Denomination (₹)	Category of Notes	No. of Notes	Processing result				
			Fit	Unfit	Suspect	Reject	Total
100 (OLD)	Soiled / Reissue						
	Mutilated						
	Counterfeit						
100 (NEW)	Soiled / Reissue						
	Mutilated						
	Counterfeit						
200	Soiled / Reissue						
	Mutilated						
	Counterfeit						
500 (NEW)	Soiled / Reissue						
	Mutilated						
	Counterfeit						

(Signature)
Machine Supplier

(Signature)
NSM Operator

(Signature)
Bank Official

Testing Procedure

- A test deck of minimum 2000 pieces of soiled notes including mutilated notes, FICNs, Reissuables shall be prepared every quarter.
- These notes may be comprised of following denominations - ₹100 - old series (25%), ₹100 - new series (25%), ₹200 (25%) and ₹500 (25%) as per availability i.e., if notes in any denomination is not available, same may be replaced with other available denominations, and shall be run separately.
- In case of discrepancies, machine supplier shall be advised to re-calibrate the machines. The acceptable tolerance level for fitness checks is 5%, however, there is zero tolerance for FICNs.

Annex

List of Circulars withdrawn

Sr. No.	Circular / Notification No.	Date	Subject
1	DCM. No. Cir. NPD . 3161/09.39.00 (Policy)/2009-2010	19.11.2009	Sorting / Processing of Notes - Installation of Note Sorting Machines
2	DCM(R&D)No.G-26/18.00.14/2009-10	11.05.2010	Installation of Note Sorting Machines - Note Authentication and Fitness Sorting Parameters
3	DCM(NPD)No.S488/18.00.14/2022-23	01.07.2022	Note Sorting Machines - Authentication and Fitness Sorting Parameters
4	DCM (NPD) No.S2193/09.45.000/2024-25	30.10.2024	Note Sorting Machines: Standards issued by the Bureau of Indian Standards
5	DCM (NPD) No.S287/18.00.014/2025-26	24.04.2025	Note Sorting Machines: Standards issued by the Bureau of Indian Standards - Revised Timeline for Implementation