NBP | Narodowy Bank Polski

Warsaw, 22 June 2018

INFORMATION

CONCERNING TESTS OF BANKNOTE AUTHENTICITY CHECKING OR FITNESS

SORTING MACHINES

I.   **Definitions**

The terms used in this information mean:

1. NBP – Narodowy Bank Polski;

2. Regulation No. 19/2016 – the Regulation No. 19/2016 of the President of Narodowy Bank Polski of 17 August 2016 on the method and procedure to be used in counting, sorting, packaging and labelling packages of banknotes and coins, and in conducting activities related to the supply of banknotes and coins to banks;

3. Banknotes – Polish currency banknotes being legal tender of all issues;

4. Machine – a machine designed to check the authenticity or fitness of banknotes, subject to tests in accordance with Regulation No. 19/2016;

5. Machine type – a group of machines of one manufacturer, equipped with sub-assemblies and elements of software that ensure the performance of authenticity and fitness checking functionalities in the same way, distinguished by manufacturer, module name, scanner type or sensor function, scanner manufacturer, scanner or machine firmware, currency file;

6. Typical machine – a machine representing a specific type of machines;

7. Reference machine – a typical machine that has passed tests with a positive result, with the participation of NBP;

8. Additional machine – a machine which, in accordance with a supplier's or manufacturer's written declaration, represents a particular type of equipment and processes banknotes for authenticity and fitness in a manner identical to a reference machine of a given type;

1

9. Entrepreneur – a participant in cash transactions who professionally processes banknotes or delivers machines designed to check banknote fitness or authenticity, used for recirculation, in particular banks, companies that were entrusted with banknote counting and sorting activities, producers or suppliers of machines, independent ATM network operators and service engineers.

II. Rules of conducting tests

1. The introduction of the obligation to test machines in accordance with Article 7 paragraph 4 subparagraph 1 of Regulation No. 19/2016 is intended to systematically check whether banknote authenticity or fitness checking machines meet the requirements specified in Annex No. 3 to Regulation No. 19/2016 and classify banknotes in accordance with Annex No. 4 to Regulation No. 19/2016 and check banknotes for fitness in accordance with the criteria set out in Annex No. 1 to Regulation No. 19/2016.

2. Machines representing a specific type, which after passing the test with a positive result, are defined as reference machines are subject to the obligation of carrying out the tests. If it is necessary to change the elements essential for the functioning of the machine, particularly such as the currency file, detector or adaptation of fitness sorting software, the machine must be submitted for a second test with the participation of NBP.

3. Machines should be tested at least once a year. Tests performed before July 2018 and completed with a positive result will be formally confirmed by a protocol issued on 1 July 2018; tests performed in 2018 are valid until 31 December 2019; tests performed from 1 January 2019 are valid for 1 year; repeated tests performed in the fourth quarter of 2019 will be valid until the end of 2020.

4. Tests of machines with the participation of NBP will formally begin on 1 July 2018 and may be repeated in the event of a negative result of the test.

5. The list of types of machines tested with a positive result will be published on the website www.nbp.pl.

6. There is no need to test the machine that is compatible with the reference machine presented on the website www.nbp.pl.

7. An application for testing the machine with the participation of NBP can be submitted by the Entrepreneur.

8. Machine tests are performed using test sets and counterfeits sets prepared and made available by NBP, in the presence of an NBP employee.

9. The NBP shall not be liable for direct or indirect damages resulting from the conduct of the tests, or from the publication, non-publication or deletion of the tests results from the NBP website or for the test results.

10. A typical or additional machine may be used to process banknotes by Entrepreneur other than the entity submitting the machine for testing, provided that it is configured or parameterized in the same way as a reference machine.

11. The banknote counting machine (e.g. 1-1.5 stacker banknote processing machines) used at the final stage for banknote authenticity or fitness checking are subject to tests.

12. It is necessary to ensure invariability of the settings on staff-operated machines, e.g. by granting an authorisation to adjust the settings in the sorting threshold to the higher administrative level, with the requirement of written documentation of changes (in case when any parameter adjustment is indicated for technological reasons).

13. Machine tests may be carried out at the NBP headquarters or another location agreed with NBP and the Entrepreneur.

14. For the purpose of preparing machines for compliance with the fitness sorting criteria in accordance with Resolution No. 19/2016, NBP prepares the calibration sets of banknotes that can be purchased at their face value, upon prior notification of such a need to the following e-mail address: testyurzadzen@nbp.pl

15. The machine test protocol specimen is attached as Annex No. 1 to this information.

16. Specimens of lists containing information on the types of banknote handling machines which have been tested with positive results, with the participation of NBP, are Annexes 2 and 3 to this Information.

III.   The manner of performing tests

1. The tests relate to the evaluation of the correctness of operation of a banknote handling machine in accordance with the requirements set out in Annexes 1, 3 and 4 to Regulation No. 19/2016, in particular:

   a) checking if the machine correctly recognizes authentic banknotes,

   b) checking if the machine correctly recognizes counterfeits,

   c) checking if the machine correctly processes banknotes by fitness, provided that it has such a function,

   d) checking how the machine separates the banknotes of particular categories,

2. In order to perform the tests, NBP uses banknote sets that contain:

   a) returned fit banknotes and banknotes without mechanical damage in the amount of 40 pieces of each denomination and each issue,

   b) counterfeit banknotes of all available counterfeiting classes held by NBP,

   c) unfit banknotes:

      ▪ a set "20" containing 20 unfit banknotes of each denomination and each issue,

      ▪ a set of banknotes with stains and mechanical damage consisting of 22 pieces of unfit banknotes of each denomination, excluding the issue notes of 1994, with damages described in Annex No. 1 to Regulation No. 19/2016, in dimensions exceeding the dimensions specified therein.

   d) Classification of banknotes into categories is made in accordance with Annex No. 4 to Regulation No. 19/2016, in which the categories are defined as follows:

      Category 1 – objects not recognised as Polish currency banknotes,

      Category 2 – suspect counterfeit banknotes,

Category 3 – banknotes that are not clearly authenticated,

Category 4 – banknotes that are identified as genuine and fit,

Category 5 – banknotes that are identified as genuine and unfit.

3. Tests are performed in the following way:

a) Test No. 1 (using the set of banknotes described in point 2.a) – correct classification of genuine banknotes (categories 4 and 5)

The purpose of the test is for the machine to correctly recognize 40 pieces of banknotes from the test set in all orientations supported by this machine (Annex No. 4). The test result is considered positive if the number of notes incorrectly qualified by the machine for each denomination and issue does not exceed 5% (i.e. 8 qualifications) of genuine banknotes of categories 4 and 5.[1]

During the test the machine should have the fitness sorting function switched off (if it has such a function and if it is possible to switch it off).

b) Test No. 2 (using the set of banknotes described in point 2.b) - correct identification and retention of counterfeits.

The purpose of the test is for the machine to correctly classify counterfeits, separately for each denomination and issue, in all the orientations supported by the machine. The test is considered to be successful if the machine qualifies all counterfeits as category 2.[2]

c) Test No. 3 (using the set of banknotes described in point 2.c) – correct sorting of banknotes by fitness (categories 4 and 5).

The test is carried out in two stages, separately for each denomination and banknote issue in all the orientations supported by the machine.

The first stage uses a set of "20" banknotes which are unfit due to the soiling level. The test result is considered positive if the machine qualifies, in total, for all the supported

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[1] 5% x 40 x 4 = 8

[2] In special cases, as category 3 or category 1.

orientations for a given denomination and a given issue, not more than 10% (8 qualifications) of unfit banknotes of category 5 as circulating banknotes of category 4.[3]

In the second stage, the machine is fed with 22 unfit banknotes with stains and mechanical defects[4]. The test result is considered to give a positive result if the machine incorrectly qualifies no more than 10% of banknotes (i.e. a maximum of 9 qualifications)[5] to category 4, in total for all supported orientations within each denomination and each issue.

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[3] 10% x 20 x 4 = 8

[4] In the case of devices that do not have technical capabilities to recognize the adhesive tape, sorting by this criterion is not obligatory within next few years.

[5] 10% x 22 x 4 = 8.8; in case of damage in the watermark field, classification as category 2 is permitted.

NBP Narodowy Bank Polski

ANNEX NO. 1

TEST PROTOCOL SPECIMEN

Name of the Entrepreneur performing the test	
Contact details	
Machine name	
Category	
Manufacturer	
Serial number	
The code identifying the machine type	
Authenticity check (YES / NO)	
Fitness sorting (YES / NO)	
Reference parameterisation (YES / NO)	
Retention of category 2 banknotes (YES / NO)	
Retention / non-dispensing of category 3 banknotes (YES / NO)	
Test date	
Test result	Passed ☐ Failed ☐

Name and surname and signatures of persons participating in the test:

On the part of the Entrepreneur   On the part of NBP

…………………………………………   …………………………………….

version 2.1

TEST no. 1 – Criterion: not more than 8 banknotes incorrectly qualified, in total, in 4 orientations for each denomination

Denomination Issue 1 – 1994	Number of banknotes	Number of incorrect qualifications				Test result (pcs)
Banknote eeding orientation		**1**	**2**	**3**	**4**	**-**
10 zł	40					
20 zł	40					
50 zł	40					
100 zł	40					
200 zł	40					
Denomination Issue 2 – 2012, 2015, 2016	Number of banknotes	Number of incorrect qualifications				Test result (pcs)
Banknote feeding orientation		**1**	**2**	**3**	**4**	**-**
10 zł	40					
20 zł	40					
50 zł	40					
100 zł	40					
200 zł	40					
500 zł	40					

☐ Passed   ☐ Failed

TEST no. 2 – Criterion: 100% of correct results

Denomination Issue 1 – 1994	Number of counterfeits[6]	Number of incorrect qualifications			
Banknote feeding orientation		**1**	**2**	**3**	**4**
10 zł					
20 zł					
50 zł					
100 zł					
200 zł					
Denomination Issue 2 – 2012, 2015, 2016	Number of counterfeits	Number of incorrect qualifications			
Banknote feeding orientation		**1**	**2**	**3**	**4**
10 zł					
20 zł					
50 zł					
100 zł					
200 zł					
500 zł					

☐ Passed   ☐ Failed

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[6] The number of counterfeits in the set depends on the number of available banknote counterfeits.

TEST no. 3

STAGE 1 – Criterion: not more than 8 unfit banknotes (category 5) qualified as fit banknotes (category 4), in total, in 4 orientations for each denomination

Denomination Issue 1 – 1994	Number of category 5 banknotes	Number of incorrect qualifications				Test result (pcs)
Banknote feeding orientation		**1**	**2**	**3**	**4**	**-**
10 zł	20					
20 zł	20					
50 zł	20					
100 zł	20					
200 zł	20					
Denomination Issue 2 – 2012, 2015, 2016	Number of category 5 banknotes	Number of incorrect qualifications				Test result (pcs)
Banknote feeding orientation		**1**	**2**	**3**	**4**	**-**
10 zł	20					
20 zł	20					
50 zł	20					
100 zł	20					
200 zł	20					
500 zł	20					

☐ Passed   ☐ Failed

STAGE 2 – Criterion: not more than 9 unfit banknotes (category 5) qualified as fit banknotes (category 4), in total, in 4 orientations for each denomination

Denomination Issue 2 – 2012, 2015, 2016	Number of category 5 banknotes (stains and mechanical defects)	Number of incorrect qualifications				Test result (pcs)
Banknote feeding orientation		**1**	**2**	**3**	**4**	**-**
10 zł	**22**					
20 zł	**22**					
50 zł	**22**					
100 zł	**22**					
200 zł	**22**					
500 zł	**22**					

☐ Passed   ☐ Failed

NBP Narodowy Bank Polski

ANNEX NO. 2

SPECIMEN OF LIST OF TYPICAL MACHINES TESTED, WITH THE PARTICIPATION OF NBP, WITH A POSITIVE RESULT – CUSTOMER-OPERATED MACHINES

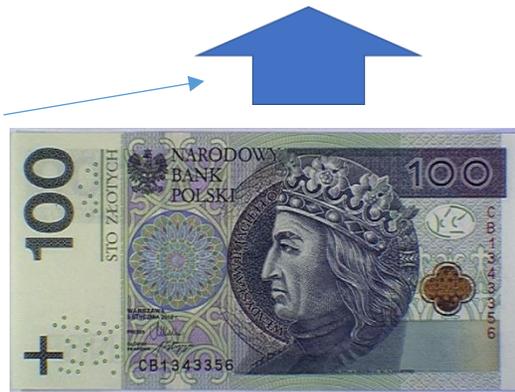| Machine name / model	Machine category	Manufacturer	Name of the payment / recirculation module	Scanner name / type	Scanner firmware	Currency file / signature	Functional description	Fitness sorting (Yes / No)	Test expiry date

ANNEX NO. 3

SPECIMEN OF LIST OF TYPICAL MACHINES TESTED, WITH the PARTICIPATION OF NBP, WITH A POSITIVE RESULT– STAFF-OPERATED MACHINES

Machine name / model	Scanner name or sensors' names and functions	Machine category	Manufacturer	Firmware	Currency file	Functional description / supported denominations	Fitness sorting (Yes / No)	Test expiry date

version 2.1

ANNEX NO. 4

DIRECTION OF BANKNOTE FEEDING TO THE MACHINE

Direction of banknote feeding to the machine, depending on the feeding mechanism.

ORIENTATION 1 (A)

Front top - up

ORIENTATION 2 (B)

Front top - down

ORIENTATION 3 (C)

Reverse top - up

ORIENTATION 4 (D)

Reverse top - down

version 2.1