
**Agro-processing machines —
Specification —**

Part 1:

Rice thresher

ICS 65.060.01

Reference number

DRS 268-1: 2020

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 268-1 was prepared by Technical Committee RSB/TC 047, *Steel aluminium and related product*.

In the preparation of this standard, reference was made to the following standard (s):

- 1) XYZ: Title
- 2) XYZ: Title

The assistance derived from the above source is hereby acknowledged with thanks.

This second edition cancels and replaces the first edition (RS 268-1: 2015) which has been technically revised.

DRS 268 consists of the following parts, under the general title *Agro-processing machines — Specification*:

- *Part 2: Power operated maize sheller*
- *Part 3: Rice mill*
- *Part 4: Heated air mechanical grain dryer*
- *Part 5: Maize mill*

Committee membership

The following organizations were represented on the Technical Committee on *Steel aluminium and related products* (RSB/TC 047) in the preparation of this standard.

University of Rwanda/college of science and technology

University of Rwanda/College of agriculture animal science and veterinary medicine

Kabizu business group

Rwanda Polytechnic/IPRC Kigali

Rwanda Polytechnic/IPRC Ngoma

Rwanda Polytechnic/IPRC Musanze

RWANTECH Boilers

Rwanda Inspectorate and competition authority (RICA)

Rwanda Institute for Conservation Agriculture (RICA)

ACER Ltd

Machine Engineering and Training Company Ltd

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Agro-processing machines — Specification — Part 1: Rice thresher

1 Scope

This Draft Rwanda Standard specifies the classification, requirements, sampling and methods of test for rice thresher.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

RS 269-1, *Agroprocessing machines — Test methods — Part 1: Rice thresher*

RS 241, *Agriculture machinery — Methods of sampling*

RS 236, *Acoustics — Noise pollution — Tolerance limit*

RS 340, *Food processing machines — Specifications*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply

3.1

blower loss

ratio of the weight of grains blown with the chaff by the thresher fan, to the weight of the total grain input of the thresher, expressed in percent

3.2

chaff

empty grains and crushed straw being discharged from the threshing chamber

3.3

grain-straw ratio/ grain content

ratio of the weight of the grains present in the panicles, to the total weight of the grain and straw in the same sample text of the definition

3.4

mechanically damaged grain

grains that were broken and/or dehulled (partially or fully) as a result of threshing operation

3.5

purity

ratio of the weight of clean grains, to the total weight of unclean grains sample, expressed in percent

3.6

scattering loss

ratio of the weight of grains that fell out from the machine during threshing operation, to the weight of the total grain input of the thresher, expressed in percent

3.7

separation loss

ratio of the weight of grains that come out of the threshing chamber with the straw, to the weight of total grain input of the thresher, expressed in percent

3.8

straw length

cut plants length measured from the point of cut to the tip of the panicle

3.9

threshing efficiency

ratio of the weight of the threshed grains collected at all outlets, to the total grain input of the thresher, expressed in percent

3.10

threshing recovery

ratio of the weight of the threshed grains collected at the main grain outlet, to the weight of the total grain input of the thresher, expressed in percent

3.11**total grain input**

sum of the weights of collected threshed grains and all grains loss during threshing

3.12**unthreshed loss**

ratio of the weight of grains that remained in the panicles of the plants fed into the threshing chamber, to the weight of total grain input of the thresher, expressed in percent

4 Classification

The classification of rice thresher shall be based on the following:

method of feeding;

a) hold-on type;

b) throw-in type;

operation;

c) axial flow type;

d) through flow type;

threshing cylinder;

e) peg-tooth cylinder;

f) rasp-bar cylinder; and

g) Wire-loop cylinder.

5 Materials of construction

5.1 Food zone area shall be made from food grade materials.

5.2 Non-food zone area may be made from carbon steel that has been rendered corrosion resistant

5.3 Construction of rice threshing machine shall be done in accordance with RS 340.

6 Performance requirements

6.1 The performance criteria for rice thresher shall be as specified in Table 1.

criteria	Performance data
Threshing Recovery, %, min	97.0
Threshing Efficiency, %, min.	98.0
Losses, %, max.	
a) Blower Loss	1.2
b) Separation Loss	1.3
c) Unthreshed Loss	0.2
d) Scattering Loss	0.3
Purity, %, min.	
a) With Sifter and Fan	97.0
b) Without Sifter and With Fan	95.0
c) Without Cleaning Devices	80.0
Mechanically Damaged Grain, %, max.	2.0
Net Cracked Grain, %, max.	5.0

6.2 The maximum level for Noise Level, [db] (A) for threshing machine shall be as specified in RS 236.6.3 Sealed type bearings shall be used as protection against dust.

6.4 Lubrication shall be provided for lubrication of non-sealed type bearings and bushings.

6.5 Belt cover or guard and provisions for belt tightening and adjustments shall be provided.

6.6 Provisions for the safety of the operators in the feeding port and other moving parts shall be included in the thresher.

6.7 Threshing cylinder speed indicator should be provided.

7 Workmanship and finish

7.1 Rice thresher shall be free from manufacturing defects that may be detrimental to its operation.

7.2 Any uncoated metallic surfaces susceptible to corrosion shall be painted properly.

7.3 Rice thresher shall be free from sharp edges and surfaces that may injure the operator.

7.4 Rotating parts should be dynamically balanced.

7.5 Thresher shall be constructed to ease operation and cleaning.

8 Maintenance and operation

- 8.1 Each heated- rice thresher shall be provided with a set of relevant mechanic tool kit.
- 8.2 An instruction manual (User's manual, parts catalogue and service manual) shall be provided.
- 8.3 All components that require regular maintenance, servicing and adjustment should be easily accessible

9 Sampling and testing

- 9.1 Rice thresher shall be sampled for testing in accordance with RS 241.
- 9.2 Rice thresher samples shall be tested in accordance with RS 269-1.

10 Marking

Each rice thresher shall be marked at prominent place with the following information:

- a) name or registered trademark of the manufacturer;
- b) brand;
- c) model;
- d) serial number;
- e);
- f) g) country of manufacture;
- h) rating power, Kw;
- i) recommended threshing cylinder speed, rpm;
- k) safety/precautionary markings

production capacity

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