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BHUTAN STANDARD

Rice Mill – Basic Requirements (Part 1)



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BHUTAN STANDARDS BUREAU

The National Standards Body of Bhutan

THIMPHU 11001

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FOREWORD

This Bhutan Standards for Power Tillers–Test Code (Part 2) was adopted by Bhutan Standards Bureau after the draft finalization by the Mechanical Engineering Technical Committee and endorsed by BSB Board.

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BHUTAN STANDARD

Rice Mill – Basic Requirements (Part 1)

1 Scope

This standard specifies the general requirements for Rice Mill and shall apply to De husker, Polisher and Combined types. It excludes the test methods of Rice Mill.

2 Normative References

There are no normative reference for this document

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1 Rice Mill

A machine or equipment used for converting rough rice to milled rice.

3.2 De-Husker

A machine which is used to removes the husk from the rough rice.

3.3 Polisher

A machine used for polishing kernels of rice to change their appearance, taste and texture.

3.4 Combined Types

A machine which can perform both the operations of de-husking and polishing

3.5. Milled Rice

The white grain or kernel comprising the endosperm and the seed left after removal of husk.

3.6 Food Grade Material

Any material when it comes in contact with food does not contaminate the food beyond the limit of prohibited substances given in annex A, table 1.

3.7. Milling recovery index

It is the ratio of milling recovery rate of tested machine and the laboratory test reference value.

3.8 Head Rice recovery index

It is the ratio of head rice recovery rate of tested machine and the laboratory test reference value.

3.9 Rough Rice or Paddy

It is un-hulled or un-husked rice (*Oryza sativa*)

4 The general standard for Rice Mill shall cover;

4.1 Safety Requirements

4.2 Structure Requirements

4.3 Requirement of Operational Performance

4.4 Test Sample

4.1 Safety requirements

4.1.1 There shall be safety guard for moving parts which are prone to injury and guard shall be placed in between the moving parts and operator at appropriate safe distance.

4.1.2 The guard shall have enough strength and durability under the normal operational condition and the guard which does not require to be removed, should be firmly fixed on the machine.

4.1.3 Parts that come in contact with the rough rice should be made of food grade material.

4.1.4 The machine shall be equipped with Instruction and operation manuals.

4.2 Structure requirements

4.2.1 The main components shall not be abnormal or broken.

4.2.2 The operator should not have difficulty in operating and controlling the components.

4.2.3 There should not be any defects that may affect the operator.

4.2.4 The food grade materials for processing machine shall be as given in annex A, Table 2

4.3 Requirement of Operational performance

4.3.1 Milling recovery index should not be lower than 0.9.

4.3.2 Head rice recovery index should not be lower than 0.75.

4.3.3 The noise level for rice mill should not exceed 100dBA for 2 hours of continuous operation.

4.4 Test Sample

The test sample shall be new machine and it shall be adjusted as per the manufacturer's specification.

Annex A (Normative)*(Clause 3.6 and 4.2.4)*

Presence of any traces of prohibited substance should be within the limit prescribed in Table 1.

Table 1 Prohibited substances in food contact parts.

Sl. No	Elements	Limit Value
1.	Lead (Pb)	< 0.1%
2.	Antimony (Sb)	< 5 %
3.	Cadmium (Cd)	< 0.01 – 0.04 %
4.	Mercury (Hg)	< 0.1 %
5.	Cyanide	0

Table 2 Recommended food grade materials for different operating conditions:

Sl. No	Metal Type	Operating Condition				Food Contact Parts
		Wet			Dry	
		Acid (pH 0-6)	Neutral (pH 6-8)	Alkaline (pH 8-14)		
1.	Carbon Steel	Not Recommended	Recommended with Coating/Plating	Recommended with Coating/Plating	Recommended	Hopper, Shaft, Outer body
2.	Stainless Steel (SS)	SS 304, Recommended	SS304 Recommended	SS304 Recommended	SS200, Recommended	Shaft, Screen, Outlet
3.	Cast Iron	Not Recommended	Not Recommended	Not Recommended	Recommended with coating/Plating	Outer Body

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