



AMTEC
Agricultural Machinery Testing and Evaluation Center
1977

ACR 019:2023 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR HAMMER MILL

■ Application for AMTEC Test

The test applicant shall submit AMTEC-OP-F01 (Agricultural Machinery Test Application Form) together with the following requirements:

- AMTEC-OP-F16 (Waiver for Machine Specifications)
- AMTEC-OP-F18 (Data Privacy Consent Form)

■ Technical Specifications of the Machine

The test applicant shall submit any document/s indicating the specifications and other relevant information of the machine upon application for testing.

- Operator's manual with complete specifications as indicated in Annex B of PNS/PAES 217:2004
- Brochure
- Machine specifications sheet (shall be filled out upon request and receipt of copy from AMTEC in case the manual or brochure is not available)

■ Preparation and Operation of the Machine

During field performance test, the hammer mill shall be ready for operation. The officially designated representative and/or operator of the test applicant shall operate, demonstrate, adjust, repair, and decide on matters related to the operation of the machine. The operator shall be skilled in operating a hammer mill.

■ Running-in of the Machine

A test run shall be conducted prior to the official test to check its condition and make necessary adjustments to the machine. During performance test, no other adjustments shall be permitted while the official test is on-going.

■ Test Material

The test applicant shall prepare corn kernels which are sufficient for the three (3) test trials with each test trials lasting for at least fifteen (15) minutes. The test material shall have the following characteristics:

- Locally grown and single variety,
- Maximum 14 %_{wb} moisture content
- Atleast 98 % purity

■ Other Test Necessities

The following shall also be adequately supplied during the conduct of testing:

- Fuel sufficient for the entire duration of test trials (for engine-driven machines);
- Engine oil (for engine-driven machines);
- Uninterrupted power supply (for electric motor-driven machine);
- Extra weighing scales; and
- Tools for machine repair and adjustments.

■ Machine Setting

The hammer mill shall be tested at the manufacturer's recommended setting.

■ Performance and/or Fabrication Test Requirements

AMTEC shall conduct various tests and verification on different performance parameters of the machine including the following requirements as per PNS/PAES 216:2004:

■ Materials of Construction

Criteria	Requirement as per PNS/PAES 216:2004
Different components of the hammer mill	<input type="checkbox"/> Steel bars and heavy-duty mild steel shall be generally used for the manufacture of the different components of the hammer mill.
Hammers	<input type="checkbox"/> Shall be made of AISI 1080 to AISI 1085 or its ISO equivalent
Bolts and Screws	<input type="checkbox"/> Shall conform with PAES 311 and 313



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■ Performance Requirements	
Criteria	Requirement as per PNS/PAES 216:2004
Fineness Modulus	Refer to Table 1
Noise Level, dB(A) Maximum	96

Table 1 - Fineness Modulus for Classifying Ground Feeds

Material	Whole Grain	Grind			
		Coarse	Medium	Fine	Very Fine
Ear corn	-	4.80	3.60	2.40	1.80
Shelled corn	6.00	4.80	3.60	2.40	1.80
Barley	5.00	4.10	3.20	2.30	1.50
Oats	4.50	3.70	2.90	2.10	1.40
Soybeans	6.00	4.80	3.60	2.40	1.80
Wheat	5.00	4.10	3.20	2.30	1.50
Corn fodder	-	5.50	4.20	2.90	-
Hay	-	4.00	3.10	2.20	1.40

Source: Henderson, S.M. and R. L. Perry. Agricultural Process Engineering. 3rd Ed. Westport, Connecticut, 1976.

■ Design, Workmanship and Finish	
Criteria	Requirement as per PNS/PAES 216:2004
Hammers and perforated screen	<input type="checkbox"/> Shall be accessible and replaceable.
Hubs and spacing collars	<input type="checkbox"/> Shall have matching diameters and faces.
Sealed type bearings	<input type="checkbox"/> Shall be used in the product zone.
Belt cover or guard and provisions for belt tightening and adjustments	<input type="checkbox"/> Shall be provided.
Others	<input type="checkbox"/> All components shall be dynamically balanced for stable running with low noise levels. <input type="checkbox"/> There shall be provision to prevent metallic materials from entering the milling chamber. <input type="checkbox"/> The machine shall be free from manufacturing defects that may be detrimental to its operation. <input type="checkbox"/> Any uncoated metallic surfaces shall be free from rust and shall be painted properly. <input type="checkbox"/> The machine shall be free from sharp edges and surfaces that may injure the operator.

■ Suspension and Termination of Test	
<p>If the test material does not conform with the recommended quantity and characteristics, AMTEC shall not proceed with the test. Should the test applicant request the conduct of the test despite the non-conformity to the test requirements identified by AMTEC, the applicant shall sign the AMTEC Waiver for Nonconformity to Test Requirements.</p> <p><input type="checkbox"/> AMTEC-OP-F24 (Waiver for Nonconformity to Test Requirements)</p> <p>If the machine stops due to breakdown or malfunction during the test run affecting the machine's performance, the test may be suspended. If the machine cannot continue the operation, the test shall be consequently terminated.</p>	



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■ Other Assistance During Test

1. For field and laboratory tests outside the AMTEC premises, the applicant shall shoulder the transportation expenses (i.e. fuel, toll fees, vehicle rental, plane fare, sea fare, etc.) of the AMTEC Staff assigned for the testing activity.
2. The applicant is requested to assist the AMTEC Staff in looking and/or making arrangements for hotel accommodation and food near the test site.
3. The applicant shall provide drinking water to the AMTEC Staff during the testing activity.
4. The applicant shall provide any form of shed or sunshade (e.g. tent, umbrella, etc.) for the test equipment, samples (if applicable) and AMTEC Staff during the testing activity in the field.
5. The applicant is requested to assist the AMTEC Staff in finding any means to access a safe and convenient restroom near the test site during the testing activity.

■ Testing Fee

1. The testing fee for hammer mill is PhP 9,000.
2. To proceed through AMTEC test, the test applicant shall settle at least 50 % of the testing fee which is non-refundable but transferrable.
3. In cases of additional testing during the field, the test applicant shall immediately submit the required documents and settle at least 50% of the testing fee within 5 working days after the testing proper.
 Additional testing, number of machines: _____
4. Payment/s shall be directed to the following:
 Through UPLB Cashier's Office (8AM to 12PM): AMTEC Trust Fund Code No. 8271632-40A2040101000
 Through Landbank (8:30AM to 3PM): UPLB Trust Fund Account No. 1892100507 or UPLB FI Account No. 1892-1003-29

■ Other Reminders

1. All manufacturers, fabricators, assemblers, and importers (MFAI) shall secure a Certificate of Conformity (CC) from the Bureau of Agricultural and Fisheries Engineering (BAFE) which guarantees that their agricultural and fisheries machinery conforms with PNS/BAFS PABES or other relevant standards identified by BAFE. More information about the application for CC can be found at <http://bafe.da.gov.ph/index.php/certificate-of-conformity-of-manufacturers-fabricators-assemblers-distributors-dealers-importers-and-exporters/>.
2. All MFAI shall employ an Agricultural and Biosystems Engineer (ABE), as mandated by RA 10915 (ABE Law), who shall facilitate all activities and concerns pertinent to AMTEC testing and BAFE requirements. Do you currently have an ABE in your roster of employees? Yes No