



**AMTEC**  
**Agricultural Machinery Testing and Evaluation Center**  
**1977**

**ACR 021:2023 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR  
POWER-OPERATED CORN SHELLER**

**■ 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 PAES 209:2000
- 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**

The power-operated corn sheller shall be ready for performance test. 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 power-operated corn sheller.

**■ 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. No other adjustments shall be permitted while the official test is on-going.

**■ Test Site**

The test applicant shall install the power-operated corn sheller on a stable level ground on a site with sufficient working space and shall be positioned in such a way that the wind will not blow the corn cobs and other impurities into the clean kernel.

**■ Test Material**

The test applicant shall prepare corn samples that are sufficient for three (3) trials of shelling operation. This includes those used for the running-in of the machine and actual conduct of test. Specifically, the amount of test material shall be sufficient for at least 15 minutes of operation per test trial. They should be prepared according to the following characteristics:

- Variety: commonly or locally grown
- Moisture content, wet basis: 18% - 24%
- Kernel-ear corn ratio: 0.77-0.81

The sample shall be prepared in such a way that the test sample to be used in each test trial have identical characteristics in terms of variety, moisture content, and purity.

**■ Other Test Necessities**

The following shall also be adequately supplied during the conduct of the field performance test:

- Fuel tank filled to full capacity;
- 10 L or sufficient fuel for refilling after each test trial; and
- Tools for machine repair and adjustments.
- Weighing scale with at least 100 kg capacity; and
- Sacks

**■ Machine Setting**

The power-operated corn sheller shall be tested with and without load at the manufacturer's recommended setting for the following:

- Feed rate, kg/hr: \_\_\_\_\_
- Shelling cylinder speed, rpm: \_\_\_\_\_



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■ Requirements	
AMTEC shall conduct various tests and verification on different parameters of the machine including the following requirements as per PAES 208:2000:	
■ Fabrication Requirements	
Item	Requirement as per PAES 208:2000
Shelling elements	<input type="checkbox"/> Shall be made of carbon steel (AISI 1040-1055 or its ISO equivalent).
Machine components	<input type="checkbox"/> Steel bars and metal sheet or plate shall be generally used in the manufacture of the different components of corn sheller
■ Standard Tools	
Basic tools shall be provided for the power-operated corn sheller. These tools shall be for the operator's safety and shall be suitable to the necessary adjustment operations during maintenance and operation.	
Item	Requirement as per PAES 208:2000
General	<input type="checkbox"/> 3 open wrenches <input type="checkbox"/> 1 Philips screwdriver <input type="checkbox"/> 1 flat screwdriver <input type="checkbox"/> 1 adjustable wrench
■ Workmanship and Finish	
Item	Requirement as per PAES 208:2000
General	<input type="checkbox"/> It shall be free from manufacturing defects that may be detrimental to its operation. The welding shall be satisfactory in all aspects and should not be brittle and porous. <input type="checkbox"/> All exposed metallic surfaces of power-operated corn sheller shall be painted and shall have a rust-free finish. <input type="checkbox"/> It shall be free from sharp edges and surfaces that may hurt the operator. <input type="checkbox"/> Rotating should be dynamically balanced.
Bearings	<input type="checkbox"/> Sealed type bearings shall be used as protection against dust. There shall be provision for lubrication of non-sealed type bearings and bushings.
Belt guard	<input type="checkbox"/> Belt guard or cover and provisions for belt tightening and adjustments shall be provided.
■ Performance Requirements	
Criteria	Requirement as per PAES 208:2000
Shelling recovery, %, minimum	97.0
Shelling efficiency, %, minimum	99.5
Losses, %, maximum	
a) Blower	1.0
b) Separation	1.0
c) Unshelled	0.5
d) Scattering	0.5
Purity, %, minimum	98.0
Mechanically damaged kernel, %, maximum	3.0
Net cracked kernel, %, maximum	5.0
Noise Level [db(A)], maximum	100*
*Allowable noise level for two (2) hours of continuous exposure based on Occupational Safety and Health Standards, Ministry of Labor, Philippines. 1983.	



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#### ■ Suspension and Termination of Test

If the test material and test plot do 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.

- AMTEC-OP-F24 (Waiver for Nonconformity to Test Requirements)

If during the test run, the machine stops due to major component breakdown or malfunctions so as to affect the performance of the machine, the test may be suspended with the concurrence of the official testing agency and the manufacturer's representative. If the machine cannot continue the operation, the test shall be consequently terminated.

#### ■ 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 power-operated corn sheller is PhP 10,000.
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