



AMTEC
Agricultural Machinery Testing and Evaluation Center
1977

ACR 018:2023 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR BIOMASS SHREDDER

■ 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 245:2010
- 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 biomass shredder shall be ready for testing. 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 biomass shredder.

■ 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 according to the recommendation of the test applicant and/or manufacturer. No other adjustments shall be permitted while the official test is on-going.

■ Test Material

The test applicant shall prepare young coconuts or "Buko" which are sufficient for at least 75% of the input capacity of the biomass shredder or for the three (3) test trials with each test trial lasting for at least fifteen (15) minutes. The test applicant may request for other biomass material to be used to determine the performance of the machine with other material. The test material should be prepared according to the test applicant and/or manufacturer's recommendations for the following:

- Size depending on the capability of the shredder
- Variety: _____
- Source: _____
- Moisture content, %_{wb}: _____
- Dimensions, L × W/D × T, mm: _____

■ Other Test Necessities

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

- Fuel tank filled to full capacity and engine oil for engine-powered biomass shredder;
- 1 L or sufficient fuel for refilling after each test trial for engine-powered biomass shredder;
- Power source for motor-powered biomass shredder
- Tools for machine repair and adjustments.

■ Machine Setting

The biomass shredder shall be tested at the manufacturer's recommended setting.

■ Requirements

AMTEC shall conduct various tests and verification on different performance parameters of the machine including the following requirements as per PNS/PAES 244:2010:



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■ Fabrication Requirements	
Item	Requirement as per PNS/PAES 244:2010
General	<input type="checkbox"/> Steel bars, metal sheet or plate, and heavy-duty mild steel shall be generally used for the different components of the biomass shredder. <input type="checkbox"/> Sizes of the parts of the biomass shredder shall be based on the specifications of the manufacturer.
Outlet Chute	<input type="checkbox"/> It shall be provided.
Knives or Cutting Mechanism	<input type="checkbox"/> It shall be made of high carbon steel and/or tool steel.
Open-Cylinder-Type Shredder	<input type="checkbox"/> The angle of inclination with respect to horizontal axis for blades or cutting mechanism attached to the cylinder should be 15° to 20° to facilitate conveyance and to avoid clogging of shredded materials inside the shredding chamber.
Clearance Between Rotating Blades and Counter Blades	<input type="checkbox"/> It shall be at least 6 mm.
Cover for Shredding Blades	<input type="checkbox"/> It shall be made of at least 2.5 mm M.S. plate and/or B.I. plate or its equivalent material to provide safety for the operator during shredding operation.
Bolts and Screws	<input type="checkbox"/> It shall conform to the requirements of PAES 311 and 313.
■ Performance Requirements	
Criteria	Requirement as per PNS/PAES 244:2010
Input Capacity	As per manufacturer's or desired setting
Noise Level, dB(A), maximum	96
Shredding Efficiency, %, minimum	90
■ Safety, Workmanship, and Finish	
Criteria	Requirement as per PNS/PAES 244:2010
General	<input type="checkbox"/> The biomass shredder shall be free from manufacturing defects to ensure safety to its operators. <input type="checkbox"/> All surfaces shall be free from rust and shall be coated with a suitable paint material. <input type="checkbox"/> The biomass shredder shall be free from sharp edges and surfaces other than cutting mechanism that may be unsafe to the operator.
Base	<input type="checkbox"/> It shall be rigid.
Rotating Components	<input type="checkbox"/> It shall be statically and dynamically balanced
Cutting Mechanism	<input type="checkbox"/> It shall be adjustable, replaceable, and can be sharpened
Belt Cover or Guard and Belt Tightening and Adjustments	<input type="checkbox"/> They shall be provided.
Mechanism for Immediate Load Disengagement Between Prime Mover and Biomass Shredder	<input type="checkbox"/> It shall be provided.
Welded Parts	<input type="checkbox"/> They shall be water-tight and smoothly polished and shall pass visual inspection criteria (AWS D1.1:2000) for discontinuity of materials.
Welded Joints	<input type="checkbox"/> They shall not be less than 4 mm (1/8 inch) side fillet. <input type="checkbox"/> Undercut shall not exceed 2 mm (1/6 inch) for any length of weld.
■ Standard Tools	
Basic tools shall be provided for the biomass shredder. These tools shall be suitable to the necessary adjustment operations during maintenance and operation.	



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■ Suspension and Termination of Test

If the test materials 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 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.

■ 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 biomass shredder 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 transferable.
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 12PM): 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