



AMTEC
Agricultural Machinery Testing and Evaluation Center
1977

ACR 025:2023 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR ROTARY TILLER

■ 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/BAFS 336:2022
- 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 representative of the test applicant and testing agency shall check the rotary tiller to ensure that it has been assembled and installed in accordance with the instruction of the manufacturer. The recognized testing agency shall test the rotary tiller according to the specifications of the manufacturer.

■ 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 Conditions

The test applicant shall prepare at least two (2) test plots. Each test plot:

- Should have a clayey soil (i.e., sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay);
- For dry preparation, the test plot shall be initially plowed with depth of 200-400 mm and greater than the filling depth;
- For wet preparation, the test plot shall be unplowed and soaked with water level of 2-3 cm above surface maintained for at least three days before testing;
- Shall be rectangular and should have sides in the ratio of 2:1; and
- Shall not be less than 1000 m²

■ Other Test Necessities

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

- Fuel tank filled to full capacity;
- Sufficient fuel for refilling after each test trial; and
- Tools for machine repair and adjustments

■ Machine Settings

The rotary tiller shall be tested at the manufacturer's and the following recommended setting during plowing operation:

- Traveling speed: 1.5-2.5 kph
- Depth of cut: Not less than $\frac{3}{4}$ of the rotor assembly's radius.



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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 335:2022	
■ Fabrication Requirements	
Item	Requirement as per PAES 335:2022
General	<input type="checkbox"/> Shall be generally made of steel material. <input type="checkbox"/> Mild steel shall be used in the manufacture of the frame and hitch point.
Chain and sprocket and/or gears	<input type="checkbox"/> Should be used to transmit power from the transmission drive shaft to the rotary shaft.
Rotary tilling blades	<input type="checkbox"/> Shall be manufactured from a high-speed tool steel with equivalent alloy steel <input type="checkbox"/> Shall have a minimum hardness of 61 Hardness Rockwell C (HRC). <input type="checkbox"/> Materials shall be provided with a certificate from a recognized material testing agency. <input type="checkbox"/> Shall be replaceable.
Frame	<input type="checkbox"/> Shall have a provision for attaching the tractor as specified in PNS/BAFS PABES 301:2020 (Agricultural machinery – Four-wheel tractor – Specifications)
Bolts and nuts, screws, bearings, bushing, and seals	<input type="checkbox"/> Shall conform to PAES 311:2001 (Engineering materials — Bolts and nuts for agricultural machines – Specifications and applications) or other international standards.
Rear Cover	<input type="checkbox"/> Shall be made of steel sheet with a minimum thickness of 2 mm and should be replaceable.
■ Performance Requirements	
Item	Requirement as per PAES 335:2022
Actual Field Capacity, ha/h	As per manufacturer's specification
Field efficiency, %	80
Breakdowns or malfunctions	None
■ Safety, Workmanship, and Finish	
<input type="checkbox"/> There shall be earmuffs or other ear protective devices provided for the operators to use when the noise level exceeds 92 decibels (dB[A]) during operation. <input type="checkbox"/> The rotary tiller shall be free from any manufacturing defects that may be detrimental to its operation. <input type="checkbox"/> With the exception of the rotary tilling blades, any uncoated metallic surfaces shall be free from rust and shall be painted properly. <input type="checkbox"/> The rotary tiller, except for the tilling blades, shall be free from external sharp edges and surfaces that may injure the operator. Tilling blades shall have a safety provision so as not to harm the operator. Warning notices shall be provided in accordance with PNS/BAFS 330:2022 (Technical means for ensuring safety – Guidelines). <input type="checkbox"/> Rotating parts shall be dynamically balanced <input type="checkbox"/> Each rotary tilling blade shall be fastened securely to the rotary shaft <input type="checkbox"/> Uniformity of parts and components for the same brand and model shall be maintained. <input type="checkbox"/> The frame shall be rigid and durable without any noticeable cracks and weak joints. <input type="checkbox"/> All sets of moving parts shall be provided with guard. <input type="checkbox"/> Adequate arrangement for lubrication of bearings shall be provided. The bearings shall be reasonably dust-proof and shall be properly aligned. <input type="checkbox"/> There shall be provision for access to parts during repair, maintenance, and operation.	



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■ **Suspension and Termination of Test**

If the test plot 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.

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

If the rotary tiller results showed the machine stopping due to breakdown or malfunction affecting the machine's performance, the test engineer may suspend the test. If the machine installed with the tested rotary tiller will not be able to continue the operation, the test engineer may terminate the test with concurrence of the representative of the test applicant.

■ **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 of operated rotary tiller is Php 7,000.
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