



MANUFACTURING QUALITY CONTROL PROCEDURES
AGRUTEX SERIES NONWOVENS

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THE QUALITY CONTROL SYSTEM

The Quality Control System is for the purpose of continuous improvement of our AGRUTEX Series Geosynthetics and the service of these products. Audits and Management reviews are performed annually to assess the Quality Control System. The Quality Control Manager is responsible for establishing, implementing, and maintaining the Quality Control System.

Each employee has the responsibility to perform the tasks assigned to them under the Quality Control System. It is also their responsibility to take appropriate actions to ensure that the Quality Control System is followed so that all AGRUTEX Series Geosynthetics conform to their specifications.

PERSONNEL

The Quality Control Lab contains adequate test equipment and personnel to properly conduct quality testing on AGRUTEX Series Geosynthetics. The QC Manager determines “adequate personnel” based on the testing requirements. The resources required are regularly analyzed during Management’s review process.

TRAINING

Job descriptions are maintained for each job classification with training forms maintained for each employee. These training forms are kept in the QC Lab detailing the training activities. Job descriptions and training forms are maintained by the Quality Control Manager and /or the HR department.

Personnel are authorized based on their abilities, education, on-the-job training, and other specialized skills.

OUTSIDE SERVICES AND SUPPLIES

Agro America, Inc. requires approved vendors for raw materials and services in order to maintain Quality Control and to make sure that the inspection practices and techniques ensure delivery of high standard raw materials and services.

The Quality Control Manager will verify vendors before purchases are made to assure their quality history, performance record, and their ability to meet Agro America’s requirements.

MANUFACTURING QUALITY CONTROL

All testing is accomplished in accordance with documented and controlled test methods. Where methods of inspection are not specified, methods will be selected that have published in international or national standards by reputable technical organizations or in relevant scientific texts or journals. Use of selected methods will be verified and approved by the Quality Control Manager.

Testing is carried out under controlled conditions which include the following:

Overall management of process control is governed by documented procedures.

Documented test methods and work instructions govern the comprehensive inspection and testing of each lot.

Testing equipment is selected based upon needs and the ability to satisfy specified requirements and the equipment is suitably maintained.

Training of personnel is adequate and documented.

Appropriate quality records are maintained.

Each test sample in the lab is accompanied by a label for that particular roll number. Test results are recorded on Quality Control Test Reports by number and then entered into the computer database by the roll number.

All samples are brought to the Quality Control lab and the sample is tested to meet minimum specification values. The standard operating procedure for each test is documented and copies of ASTM procedures are kept in the lab.

Preparation for each sample is conducted in accordance with Standard Operating Procedures and ASTM requirements.

TESTING FREQUENCY

Physical Property	Minimum Frequency
Grab Tensile (ASTM D4632)	18,000 y ²
CBR (ASTM D6241)	100,000 y ²
Trapezoidal Tear (ASTM D4533)	18,000 y ²
Water Flow Rate (ASTM D4491)	36,000 y ²
AOS (ASTM D4751)	100,000 y ²
Thickness (ASTM D5199)	18,000 y ²
Mass per Unit Area (ASTM D5261)	18,000 y ²

MATERIAL IDENTIFICATION

All material is identified by a stock code or style number. This stock code or style number corresponds to a product specification. Each production run is assigned a lot number to control production, record production, and maintain records for that lot. Rolls within a lot are assigned a roll number in sequential order.

HANDLING/STORAGE

Handling methods and procedures are implemented to prevent damage and deterioration to material during the manufacturing process. All Geotextile rolls are given sufficient wrapping to protect against moisture and to prevent ultraviolet exposure prior to placement. Rolls are labeled and marked to provide product identification for inventory and quality control purposes. All rolls are stored so that they are protected from the elements.

Archived samples are identified by labels and sufficiently stored to prevent deterioration.

SUPPORTING DOCUMENTATION

ASTM D4354 Practice for Sampling of Geosynthetics for Testing
ASTM D4873 Guide for Identification, Storage, and Handling of Geotextiles

CONTROL OF NONCONFORMING PRODUCT

Agru America geosynthetics procedures require the documentation of all nonconforming products. All products that are considered nonconforming are tagged and/or segregated. The status of nonconforming product is reviewed by the QC Manager to determine whether the product will be reworked, downgraded, scrapped or continue through the manufacturing process. All reworked material is re-inspected and must meet all of the original product requirements.

CORRECTIVE AND PREVENTATIVE ACTION

The effectiveness of a corrective and preventative action policy is critical to the success of a Quality Control System.

Corrective Action procedures include:

- Reviewing customer complaints

- Investigating the root cause of nonconforming products and system nonconformances.

Determination of corrective action to eliminate the cause of the nonconformance.

The Quality Control System provides for preventative action by reviewing data including but not exclusive to: customer complaints, audit results, and past nonconformance. This is to assist in detecting and eliminating potential causes of nonconformance.

AUTHORITY STATEMENT

The Quality Control Manager has been assigned the ultimate responsibility for implementing the Quality Control System as well as the authority for ensuring its maintenance.

If the Quality Control Manager is absent, this responsibility will fall to the appropriate personnel to act in those instances to ensure continuation of operations.

Responsibility for activities described under each element may be assigned to the appropriate personnel. Delegation of authority and responsibility includes the responsibility to assure all procedures described are implemented as written.

CERTIFICATIONS

All product certifications originate from the Quality Control Manager and are supported by test data.

Each shipment of geosynthetic textile is certified to meet product specifications and is supported with actual test results. The results of each test, or series of tests, is reported in the certification and contains all necessary information which is as follows:

- Report Identification
- Test Method Identification
- Property values
- Date of Certification

The Quality Control Manager is responsible for signing reports or designating personnel to sign reports. This signature assures that they accept responsibility that the report content is accurate.

If a certification report is sent to a customer and then determined to have an erroneous result, the QC Manager will amend the report and submit a revised report.

Statements concerning confidentiality and reproducibility are included on the certification where these statements are considered appropriate.