GIA LOI

JOINT STOCK COMPANY

QUALITY MANAGEMENT SYSTEM

REVISION: OCTOBER 18th,2024

TABLE OF CONTENTS

Gia Loi	**QUALITY MISSION STATEMENT**	DCN: CKCL.00 Revision: 0 Effective date: 01/09/2012 Page:1

- Do it right from the beginning - minimize quality control resources
- Relentlessly improve our QC procedures - through training, evaluating and efficiency
- Provide most reliable testing results - upgrading testing units and equipment, training lab personnel
- Our QMS requires our quality control testing facility maintain accreditation through GAI-LAP with the most current accreditation.

Binh Duong , September 1, 2012

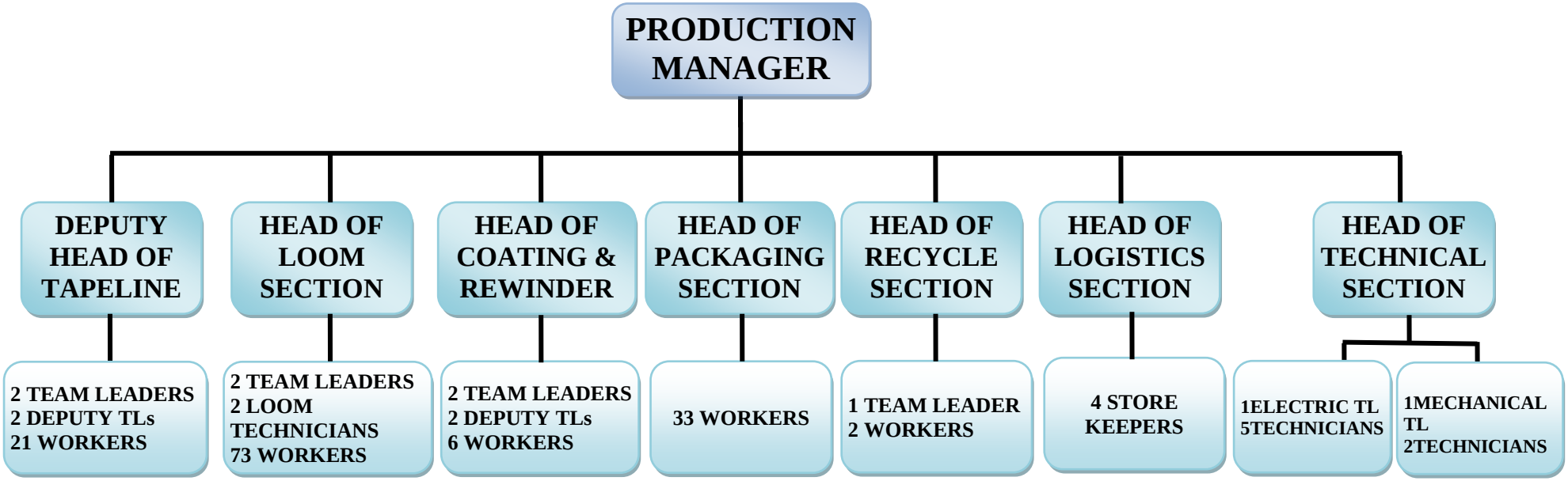
General Director

GIA LOI JSC

No: ……/2014

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

FACTORY ORGANIZATION CHART

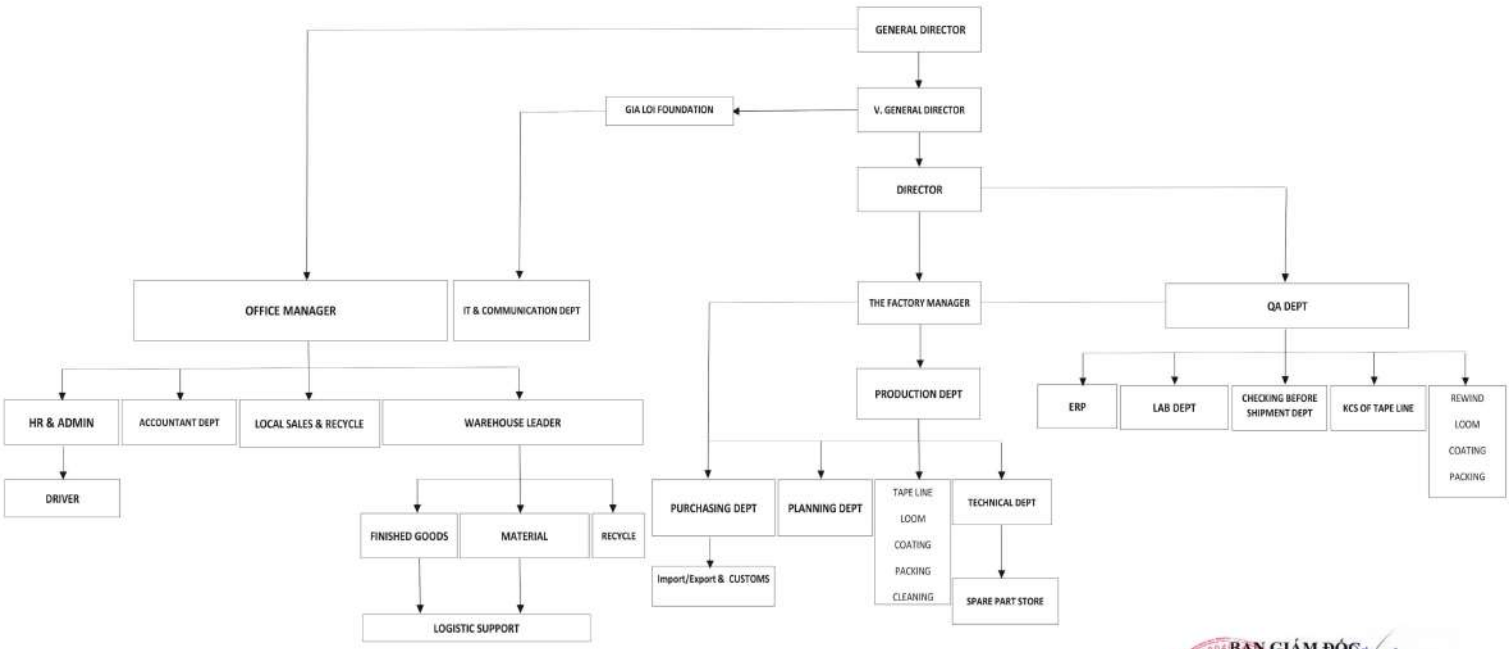


Effective date: from 13/06/2014.

APPROVAL OF GENERAL MANGAGER

COMPANY CHART

2022



BAN GIÁM ĐỐC

(ký tên, đóng dấu)

CÔNG TY CỔ PHẦN GIA LỢI

Đoàn Hồng Cúc

I. PURPOSE:

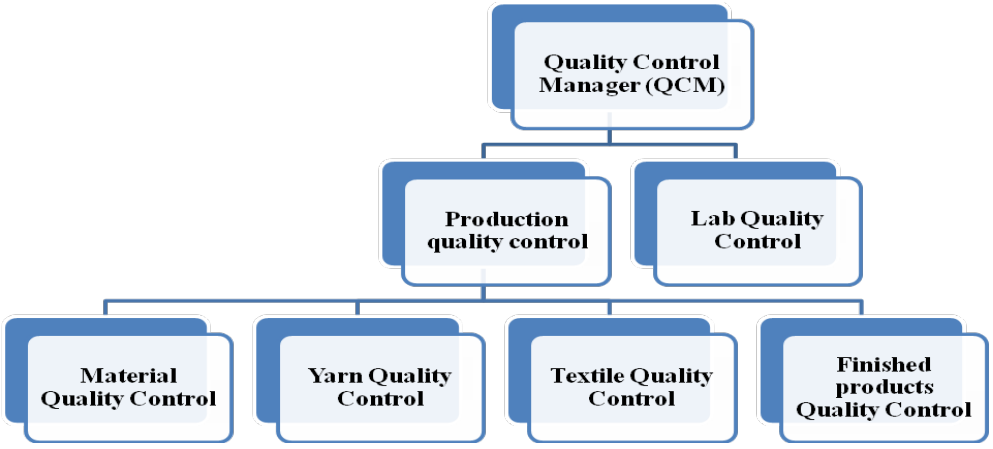
- To clearly outline the responsibilities of each member of Quality Control Division.

II. SCOPE:

All aspects of the Quality Control Process

III. CONTENT:

Hierarchy of QC Division



1. Quality Control Manager (QCM)

- Reports any and all QC matters to the General Manager.
- Drafts QC procedures, standards.
- Oversees all QC-related activities, including training.
- Ensures that all relevant records are filed and maintained according to Record Retention and Destruction Protocol.
- Consults the Board of Directors regarding all non-conforming products.
- Has the authority to halt production, shipping or storage of any non-conforming product.
- In the event of the QCM's absence, all QC Division staff has the authority to stop production and report directly to General Manager or BOD representative.

2. Raw Material Quality Control Technician

- Reports to the QCM about the quality of all product materials as outlined by AASHTO's M 288.
- Implements raw material test methodology as outlined by AASHTO.
- Notifies all relevant divisions about the quality of all purchased materials.
- Can refuse material shipments that fail to meet quality standards.

3. Yarn Quality Control Technician

- Reports to the QCM about the quality of yarns produced in the factory.
- Updates the agent in charge of yarn production about quality of the products being produced.
- Provides the required yarn to Weaving Division.
- Can refuse shipments of yarn for failing to meet quality standards.

4. Textile Quality Control Technician

- Reports to the Chief of QC Division about the quality of all fabric rolls.
- Examines size, weight, length and deficiencies in textiles.
- Handles all quarantined products if they are discovered.
- Reports product quality to QCM and the Chief of the Weaving Division.

5. Finished Product Quality Control Technician

- Reports to the QCM on the quality of all finished products.
- Examines product weight, size.
- Examines products for non-conformance and handles all non-conforming products.
- Issues reports on product quality to QCM and all related Division Chiefs.

6. Lab Quality Control Technician

- Reports to QCM about product compliance with M 288 by AASHTO.
- Gathers and tests samples in accordance with ASTM D4354.
- Conducts tests in accordance with AASHTO's M288.
- Reports test results to QCM and involved Division Chiefs.
- Issues Certificates of Quality to tested product lots for export.
- Utilizes and maintains lab equipment.

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1. **Quality Control Manager (QCM)**
   - Drafts procedures and standards for all QC tests.
   - Revises said procedures in the event of upgrades to existing or acquisitions of new factory equipment.
   - Revises said standards and procedures in the event that changes are made to the manufacturing process.
   - Ensures that all products meet specifications by conducting daily reviews of QC tests and procedures.
   - Announces shipment delays if products are determined to be of low quality.
   - In the absence of the QCM, departmental QC staff can halt production and report product defects directly to General Manager or BOD representative.
   - Oversees training of new QC staff; evaluates senior staff and maintains records on those results.
   - Monitors the filing of all QC samples and test results.

2. **Material QC Technicians**
   - Examines all Certificates of Analysis (COAs) for purchased materials.
   - Ensures materials and finished goods meet company specifications.

3. **Fabric QC Technician**
   - Ensure quality control protocol is properly followed when materials are taken off machines.
   - Ensure nonconformance resolution protocol is properly followed in the event that defects are detected.
   - Ensures that all testing equipment is properly calibrated

4. **Textile QC Technician**
   - Ensures quality control protocol is properly followed during manufacturing process.
   - Ensure nonconformance resolution protocol is properly followed in the event that defects are detected.
   - Ensures that all testing equipment is properly calibrated.

5. **Finished Product QC Technician**
   - Ensures quality control protocol is followed while testing finished products.
   - Ensure nonconformance resolution protocol is properly followed in the event that defects are detected.
   - Ensures that all testing equipment is properly calibrated.

6. **Lab QC Technician**
   - Ensure quality control protocol is properly followed during weaving process.
   - Ensure nonconformance resolution protocol is properly followed in the event that defects are detected during the weaving process.
   - Ensures that all testing equipment is properly calibrated.
   - Ensure that all QC documents, forms, checklists are maintained in accordance with Record Retention and Destruction Protocol.

List of QCD division

Order	Full name	Position	Contact
1	Hồ Thị Xuân Tình	Quality Control Mgr.	0908 812 017
2	Trịnh Văn An	Lab QC Tech	037 474 3710
4	Ngô Văn Khang		094 309 4645
5	Lương Thanh Chính	Material QC Tech,	098 653 0976
10	Nguyễn Huỳnh Thanh Toàn	Tapes QC Tech	089 931 6648
11	Nguyễn Thị Mỹ Tiên		032 987 1029
12	Trần Ngọc Lâm		034 693 5683
13	Võ Thị Thúy Liễu	Fabrics QC Tech	090 670 5492
14	Nguyễn Thị Chúc Ly	Finished goods QC Tech	

List of employees in charge of calibration:

Order	Full name	Position	Contact
1	Mr Li	Tech Engineer	
2	Nguyễn Văn Thỏa	Mechanical Engineer	097 463 5426

List of Chiefs of Divisions:

Order	Full name	Position	Contact
1	Nguyễn Thành Phước	Chief of Tapeline Division	0903 066 436
2	Hoàng Thanh Quyền	Chief of Coating Division	096 284 3371
3	Nguyễn Phương Anh	Chief of Loom & Packaging Division	098 989 4706

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a/Functions:

-Help General Manager do the following points:

-Build plans and strategies.

-Build forecast.

-Manage business contracts.

-Settle payment and strike a balance for business contract.

-Carry out tender tasks.

-Do other tasks as assigned.

b/ Missions:

*** Build plan:**

-Build strategies of manufacturing and business development for company at each stage.

-Counsel to build investment plans and carry out investment projects;

-Build monthly/quarterly/yearly plans as well as build short-term/medium-term/long-term plans of manufacturing and business development for company.

-Carry out statistics and summarize business situation of company as well as other tasks as assigned.

Instruct staffs to build yearly plan. Summarize figures and gather ideas from other related departments to build plans for company.

-Analyze and evaluate outcome of the monthly/quarterly/yearly plans. Based on that outcome, draft the monthly/quarterly/yearly summary reports to find out the advantages and disadvantages as well as to prove strength and overcome weakness.

*** Build forecast:**

-Build the consumption forecast, material purchasing forecast and submit for approval; present the business projects to General Manager.

*** Manage business contracts:**

-Draft and manage business contracts; cooperate with other related departments to check up and follow up the performance of contract; cooperate with the related departments to check and take over, to settle payment and to strike a balance for business contract.

*** Carry out tender tasks:**

-Take participate in tendering the projects to get income and profit for company.

-Settle and review tender documents according to requirements of partner and submit tender projects to General Manager for approval.

*** Do other tasks as assigned.**

c/ Rights

-Have the right to ask for the cooperation of staffs in the company to carry out functions, missions and authorities according to the regulations.

-Have the right to give opinions and propose solutions for business activities of the company.

-Propose business contracts under the laws and submit to General Manager for approval before proceeding.

-Have the right to propose arrangement, promote, commend and reward or reprehend sales staffs and submit to --General Manager for approval before proceeding.
-Have the right to use equipment of company to finish the above tasks.

d/ Responsibilities

-Build the plans and the working programs of sales department stated in section a to ensure compliance with regulations and to ensure quality and effectiveness of counsel, then submit to General Manager.
-Ensure compliance with the company regulations and the laws of the State in the implementation of the work.
-Regularly report to General Manager about performance of tasks assigned.
-Preserve, file and save, manage documents and equipments given by the company.
-Be responsible for the implementation of the above tasks in front of General Manager and under the law.

COMPOSED BY	CHECKED BY	APPROVED BY

I. Purpose:

To ensure that all raw material procurements are conducted in a clear and precise way and that all procured raw materials meet company standards.

II. Scope:

All raw materials.

III. Abbreviations:

Production Manager: PM
General Manager: GM
Telegraphic Transfer: T/T

IV. Content

1. All manufacturing divisions in need of raw materials (i.e. resin) must formally request the purchase of said materials in writing. The written request must be approved by the PM and GM.
2. This form should then be sent to the Purchasing Division, which is responsible for negotiating the following details with the supplier:

- Material specifications.
- Certificate(s) of Analysis, which must include the following data:
  + Analytical specifications
  + Lot numbers
  + Testing as outlined by ASTM D4354

The contract must be submitted to the GM for approval (and 3 copies must be supplied to the Accountant, Purchasing and Bank involved in the transaction).

3. Purchasing will prepare to draft a letter of credit or make a T/T payment.
4. The accounting division must request an order to open a letter of credit (or a proposal to make a T/T payment).
5. The Bank is responsible for generating a draft Letter of Credit, then faxing or emailing this letter to the Purchasing Division, then send to the supplier. The supplier is to verify the terms set forth in the draft Letter of Credit and determining whether or not an agreement has been reached. In the event of an agreement, the salesperson must ask the bank to draft an official Letter of Credit. Otherwise, the revision requests will be approved then send to the bank.
6. The Purchasing Division is responsible for monitoring all shipped materials through fax and email. The supplier must provide the Purchasing Division with information about the shipment, including a tentative delivery date. The Purchasing Division is responsible for reminding the supplier to send copies of shipping receipts to ensure that the company has details about the vessel (including a Bill of Landing).
7. At the same time, the supplier must DHL copies of the original sales documents and receipts. If payment is guaranteed by a Letter of Credit, one of three copies shall be sent to the bank. If payment is made directly, one whole copy must be sent.
8. Payment by Letter of Credit: the Purchasing Division shall make 2 copies all related documents and receipts (to be retained by the Purchase and Accounting Divisions). The original copies will be sent to the bank. The Accounting Division shall request a bank agent to deliver the original loan documents (if any) to the International Payment Division.

Loan documents may include:

- Collateral Loan: The Loan Department must receive the following: a Bill of Debt, Time of Delivery, an indexed Pledge Contract and a copy of all loan documents.

The Loan Department must then inform the Purchasing Division when the materials will be delivered to the factory. In the event of a secured loan, when raw materials are delivered they belong to Gia Loi JSC. In all other cases, the delivered materials belong to the bank.

The Purchasing Division is responsible for monitoring loan documents. In the event of a secured loan, the bank's agent must send the remaining documents to the Purchasing Division to monitor the transaction. In the event of a collateral loan, a bank agent must relay all loan documents to the Purchasing Division. The bank shall retain a Statement of Purchase and fax a copy of this statement to the Accounting and Purchasing Divisions for review and temporary storage.

9. Telegraphic Transfer (T/T payment): either 100% (1) or 30% - 70% (2)

(1): After receiving a proposal for a T/T payment from Gia Loi, the bank must remand payment to the supplier (if possible). If the supplier requires a telegraphic transfer, the Purchasing Division must contact the bank and request a faxed copy of all related documents to send to the supplier. The Purchasing Division must supervise delivery in accordance with steps 6 and 7.

The Purchasing Division must then send complete copies of the transaction documents to the Accounting Division, the Shipping and Receiving, and the Warehousing Division.

The Purchasing Division is responsible for preparing the original documents, making copies and providing three letters of recommendation for the receipt of goods/materials.

(2): After receiving a proposal for a T/T payment from Gia Loi JSC, the bank must remand the agreed upon payment to the supplier. If the supplier requires a faxed copy of the T/T agreement, the Purchasing Division must contact the bank and request a faxed copy. Once those materials are received from the bank, they must be sent back to the supplier. At that time, the Purchasing Division must await shipment in accordance with steps 6-7.

Initially, the company will pay up to 70% of the shipment's value in accordance with the terms of the contract.

10. Receiving the goods: The Storekeeper is responsible for verifying the lot number and Certificate(s) of Analysis for all received materials. Once those details are verified, he may commence storing the raw materials in accordance with Gia Loi's Storage Protocol.

Individuals in charge	Flowchart	Documents
Division in need	Request	TM-QTMH-BM01
Purchase division	Negotiation	TM-QTMH-BM01
	Negative	
GM	Approval	
	Affirmative	
GM, Purchase Division	Signing of Contract	-Contract - TM-QTMH-BM02
Accounting Division	Open of L/C or T/T	Proposal to opening L/C or T/T
Purchasing Division	Monitoring on shipped-in goods	-Tentative date of arrival. -Arrival -Documents (including COA).
Accounting Division	L/C or T/T payment	-Bill of store, lot number based on manufacture's lot number. COA.
Purchase division, storehouse	Receive of goods	

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I. Purposes

-To evaluate & select the suppliers who are proper with requirements of the company & meet requirements of customers.

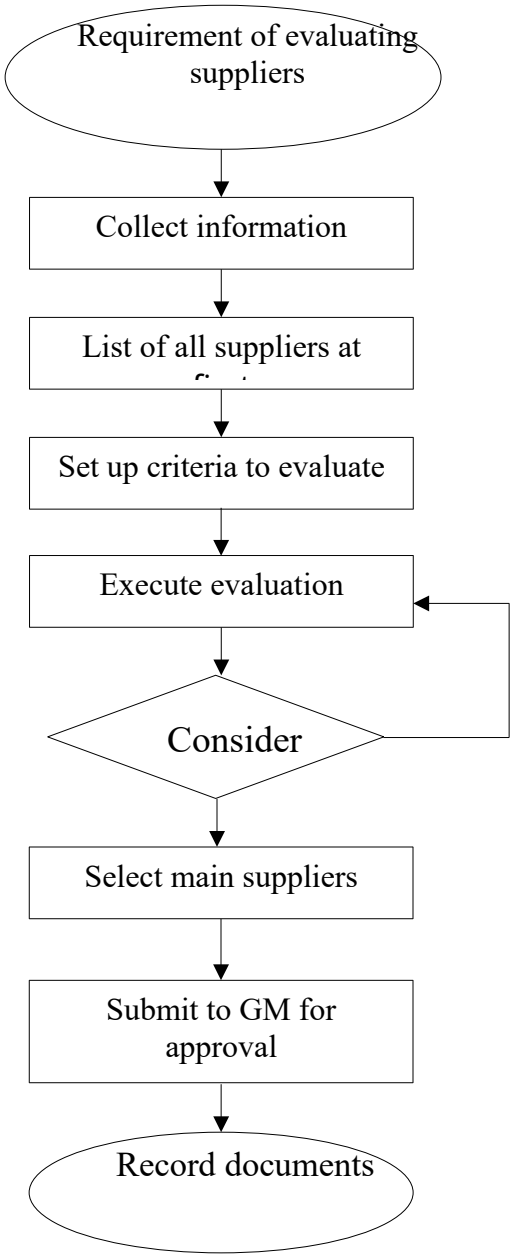
II. Scope

-Apply to suppliers who provide services and goods to company that affecting directly to product quality of company.

III. Abbreviations

-General Manager: GM

IV. Contents:

Executor	Processes	Documents
Staff Staff Head of division Head of division, Staff Head of division, Staff Head of division GM Staff		- List of all suppliers at first. - Criteria to evaluate suppliers -List of the selected suppliers.

Steps of evaluation:

a> Collect information of suppliers:

-There are many suppliers who provide one or many same products, so to have the right decision; company should gather information of suppliers through:

- Advertising system on newspapers, radio transmission, television.
- Catalogue of product introduction from suppliers
- Contact directly at agents of suppliers.
- Recommendation of other related entities....

b> Make the first list of suppliers

The suppliers are updated to the first list of suppliers. Evaluator has to collect enough information according to MH01 form.

c> Set up criteria of evaluation:MH02

To evaluate suppliers, company considers the problems related to suppliers as follows:

① Relationship with company
② Products are high quality & friendly with environment
③ Product price is reasonable
④ Feedback to the arising problems
⑤ Delivery time
⑥ Payment method
⑦ Capacity

The degree of importance is determined in the order from 1 to 7.

d> Execute evaluation of suppliers according to chosen criteria.

- After reviewing & evaluating potentiality of each supplier, evaluator will classify & select suppliers based on criteria to evaluate suppliers, standard selection, standard evaluation & standard re-evaluation.
- Visit factories & directly evaluate of facilities, licensed establishment, business activities as well as capacity of supplier.

e> Set up the list of official suppliers

List of the selected provider must be established according to order of evaluation results from MH03form.

f> Submit to GM to approve list of official suppliers

GM will consider the evaluation criteria. If GM doesn't agree with the criteria, redo evaluation. If GM agrees, he will approve for the chosen supplier list.

g> Record documents :

List of chosen suppliers will be updated frequently. Company has to maintain records of the evaluation results and any necessary actions arising from evaluation.

2. Re-evaluate suppliers

- In the period of one year or at the sudden request of GM/ QA manager, company carries out to re-evaluate suppliers who are in the official supplier list & still provide goods as well as service to company.
- Steps of evaluation are carried out according to the above item 4.1.

V. Forms applied:

- TM-QTĐGNCC-BM01: List of chosen suppliers
- TM-QTĐGNCC-BM02: Criteria to evaluate suppliers
- TM-QTĐGNCC-BM03: List of official suppliers

PREPARED BY	CHECKED BY	APPOVED BY

I. Objective :

- Guarantee timely and efficient production for all customer orders.
- Detect and amend any foreseeable delays in production.

II. Scope of Application:

- All orders.

III. Abbreviation:

- PEB: Production Executive Board
- PD: Planning Division
- PM Production Manager
- PO Production Order

IV. Content:

a. Receive production request, order:

After receiving a Production Request from the Sales Division, PD determines the feasibility of the order.

+ If positive, PD will commence scheduling production shifts.

+ If negative, PD will report to the Production Director.

b. Creating and implementing a production plan:

The company's standard production protocol shall be established based on regular POs and Contracts from the PM. Planning staff will submit a production schedule to the PM to deploy production divisions using form BM/KH01.

Regular orders shall be processed according to the company's established protocol. All orders involving unique customer specifications or requests shall require a BM/KH01 form outlining those requests. This form shall be and distributed to all parties involved in production to ensure the specifications are met.

All PD schedules will allot enough time to ensure that all products will be manufactured and stored before the date of delivery established in the Order/Contract drafted by the Business Division.

c. Supervising orders:

Production planner shall supervise the implementation of the BM/KH04, BM/KH02 and BM/KH06 on a daily basis in conjunction with the production divisions. Output Reports shall be generated to ensure timely and efficient production. This process will ensure that all orders are promptly met and that any foreseeable delays in production will be promptly reported. Upload the forms as follow: Drop box\Gia Loi Company\Production\order position\Year\Month\Date

d. Order adjustments:

i. <u>Delivery time adjustment:</u>

If, for some reason, the established manufacturing deadline cannot be met, the PD shall fill out a BM/KH03 form requesting an extension and submit it to the Production Director. This form shall then be sent relayed back to the PD to result in two possible outcomes:

- If an extension is possible the salesperson will approve and return the form to the PM, who will forward it to the PD to ensure the new deadline is met.

- If an extension is not approved, Sales will reject the request in writing and relay it to the Production Director. The director and a planner shall then generate an overtime schedule to ensure that the original deadline is met.

ii. <u>Production plan adjustment:</u>

Upon receiving a BM/KD03 from, the PD will follow one of two courses of action:

- If the delivery date is extended, then planning agents shall determine a time for attending the BP. If the production plan proves satisfactory, the existing order will be filled accordingly. Otherwise, the planning agents will either generate a new PO or supplement the existing PO. The new or amended PO will then be forwarded to the production divisions.

- In the even tthat the company receives requests for quantity or quality alterations (before commencement or in the process of manufacturing) production planning agents may supplement existing POs or generate new POs and revoke the old ones.

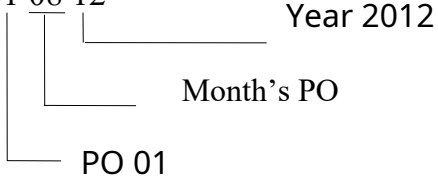
e. Order Closure: use form BM/KH05

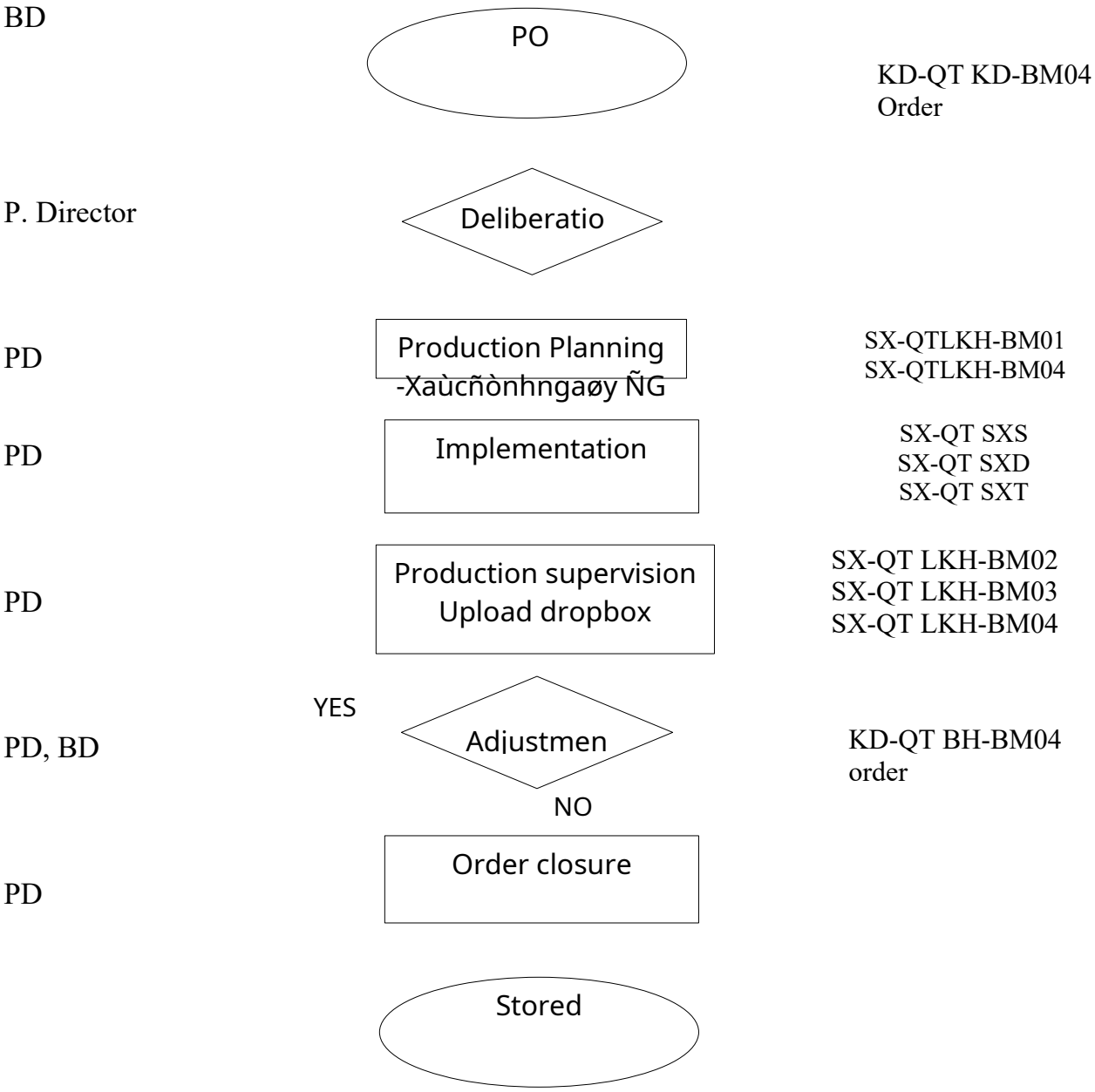
Production Order Description:

Number of PO: Ordinal number of the month's PO + month's PO + last two numbers of the year

Example:

PO: 01 08 12





PREPARED BY	EXAMINED BY	APPROVED BY

I. Purpose:

To provide a complete roadmap to the company's timely and efficient manufacturing process.

II. Scope:

Applies to the entire manufacturing process divided as follows:

- Yarn – tape process.
- Quality Control process
- Weaving process
- Rewinding and packing process
- Storage process.

III. Abbreviations:

- V1 : Velocity (Speed) of tape up unit (film from T-die, before stretching)
- V2 : Velocity (Speed) of the stretching unit
- V3 : Velocity (Speed) of the annealing unit
- S :Scrap
- Wv :Weaving
- T :Thread
- W :Washing.
- Wk :Worker
- TL : Team lead
- Mtl :Material.
- SK :Storekeeper
- QC :Quality Control
- FPG :Finished – product group.

IV. Operating instructions

TAPESECTION:

1.1 Preparation:

Storekeeper: Dispatches materials to weavers for manufacturing.

Team leader: Weighs out raw materials according to the established mix ratios.

- Powers up the machine.
- Sets he temperature for the extruder.
- Sets the synchronous velocityto3.5V
- Adjusts the temperature for the filtering net.
- Sets the heat pattern of the mold.
- Turns on the circulating water pump to fill the cooling tank.
- Opens the drain valve, once the film has cooled, and empties the tank.
- Turns the film pulling roller and the film shaft on and off; checking the V1,V2 and V3.
- Calculate the washer's thickness based on the thread width outlined in the order: set the washer and the cutting device in the film cutting shaft.

- Open the valve to fill and empty the cooling tank in the V3 film shaft.
- Set the temperature for the extrusion and steam rig and check the hot – air blower.

Worker: *Powers on the thread collecting rig

- Prepares the bobbins.
- Prepare yarn carrying carts.

1.2. Thread manufacturing procedures:

- Worker:*Places material into the mixing tank.

*Presses the ON button to turn on the machine, after 10 minutes, presses the OFF button.

*Open the intake valve, funneling raw material into the plastic tank.

* Turns on the plastic pump and pumps the mixed raw materials into the hopper

- After 90 minutes, the device's heat will rise to the set temperature parameter

- Team leader:*Slowly increases the extruder speed to push plastic out of the mold; stops when the plastic film is being steadily extracted at a speed of30r/minute

* Pulls the film into the water tank to cool it down.

* Pulls the film onto a pulling roller and lowers the grab to pull the film.

* Adjusts the pull speed to avoid tearing or breaking the film.

* Pulls the film under the cutting blade and cuts the film

* Continue to put the film into the take up roller and adjusts V1 to prevent snapping the film.

* Opens the hatch on the heating oven.

* Pulls the thread into the heating oven and closes the hatch.

* Continues to pull the film towards theV2godets.

* Lower the grab and adjusts V2 so that V2/V1=I(I : stretching coefficient).

* Continues to pull the film to V3 godets.

* Lowers the press roller and adjustsV3 to make it fit formula (V3-V2= annealing factor)

-Worker: Continues to pull the film to the end of the collection rig and winds the thread around the iron spindles.

- Team leader: after the thread has been wound, increases the speed of the extrusion puller to speed required by BM/CNS.

- Worker: take each tape to a winder. After the bobbin meets the diameter required, worker will take out and load the bobbins onto the trolleys and send them to the Quality Control Division. This division will check, weigh, and then store the thread.

- Worker:guides the thread onto the collection winder

*40-45 minutes/bobbin for waft tape.

*25-30 minutes/bobbin for weft tape.

1.3 Cleaning up:

1.3.1 Atthebeginning of each shift:

- At the beginning of each shift, the team lead must assign the members of his/her group to clean the work place and set up the necessaryequipment.

- Clean the cooling tank.

- Clean the opening of the mold before shaping the thread film.

1.3.2 In the middle and at the end of each shift:

- Clean the plastic pump once in the middle of each shift.
- Clean the floor of the workplace in the middle and at the conclusion of each shift.
- Weigh the scrap, turn off machines, cut power, close and lock the door when all tasks are complete.

2. THREAD QUALITY CONTROL PROCEDURES:

2.1 Operating process:

The Quality Control Division will inspect the thread while the Weavers are collecting it on the spindles.

- Take thread samples and check for loose strands. Inspect the weight and width of each thread and then report findings to the team leader in charge of Yarn and Tape production.
- After 15 minutes, continue checking for loose thread, noting weight, width, and the endurance of the thread again. Record the results on the thread quality test table (QC- QT KTCL-BM03) and yarn weight checklist (QC- QT KTCL-BM02).
- The thread should be inspected again as it is transferred to the iron spindles. The results of this inspection should also be noted on the aforementioned forms.
-Store and record the finished product of thread in accordance with specification of warp thread and shuttle thread.(Report details on Daily finished product of Thread Log (QC- QT KTCL-BM01)
- Quarantine and record details of non-conforming product (On a non-conforming product report sheet QC-QT SPKPH-BM02).
- Basing on the order of production, the Quality Control division should move the thread to the weaving machine and record the data (Using a table on daily thread usage SX-QT SXD-BM02)

2.2 Cleaning up:

- One hour before the end of each shift, clean and tidy up the workplace, storing all equipment in its rightful location.
- Clean up the storehouse, gathering all non-conforming thread. Sort out the scrap thread by color, weight and note the results. At the conclusion of each shift, turn off all lights and machines and close the door.

3 .WEAVING SECTION:

3.1 Preparation:

- Switch on power supply.
- Weaving equipment: scissors, slip stick.
- Pour silicon into intake spout.
- Record the initial data on textile output report: the clock number shown on the meter reflecting the speed at which the machine starts weaving, the number of weaving machines and names of the each product.

3.2Weaving operation process, storing and dispatching:

- Follow the order, the Head of the Yarn – tape guides the team lead to prepare the weaving machine.
- Receive warp thread and shuttle thread from spindle trolleys.
- Arrange winder on slubbing frame according to order arranged on trolleys.
- Pull the thread to the top of the frame.
- Slip the thread through the comb, the porcelain hole, the weft and then into the weaving machine.
- Put the spindles of shuttle thread on and begin weaving.

- When the number of cloth rolls meets the requirements, inform the worker to take the cloth down.
- Record the length of the final fabric product and the weave date on the stamps and glue them to the cloth rolls (BM/D04).
-QC Division cut cloth samples for QC testing:
Check the elongation of the cloth (ASTM D4632).
Check the durability of the cloths (ASTM-4533).
Check the puncture resistance of the cloth (ASTM -6241).
Check cloth permeability (ASTM-4491).
Check Apparent Opening Size (ASTM – 4751).

***Storage**:

- Worker: Bring finished products to their appropriate storage location and record the number of rolls produced that day (Note on Daily Textile Log) (QC- QT KTCL-BM05)

***Dispatching**:

- Worker: Use the winch to load cloth into correct position for rolling and unrolling.

***Unwinding, storing and dispatching finished products**

-Worker: Use the winch to lift the cloth onto the unwinder unit.
- QC Division: Check the measurement clock:
* Set the clock to 000 when rolling begins.
* Set the wheel of the meter counter at a right angle to the fabric roll.
* In case defects in the fabric are detected, the QC section must move the wheel of the measuring clock out of the fabric roll before pulling and cutting.
*Unwind and inspect the fabric for further defects.
*Wrap up the textile according to the customers' orders and record the process of supervising the release (QC- QT KTCL-BM07)
*Adhere stamps to product in accordance with Production order
-Worker: Use the winch to lift the finished cloth rolls. Tie 3 rolls together and then bring them to the store.
- QC division: Record the data onto a store receipt (SX-QT SXĐG-BM05).
- Storekeeper: Use lift truck and winch to dispatch products following receipt of a dispatch form: 02-VT (KHO-QTPXKTP-BM08)

3.3 Cleaning up:

- Loom worker: During the weaving operation, take time to cut the shuttle thread and return empty iron spindles to plastic containers.
- There are 15 minutes between shifts. At the end of each shift, workers from the departing shift must collect scraps and bring them to the end of the rig for the team leader to weigh and record data into the Weaving Machine Output Report (SX-QT SXD-BM03).
- Clean up the area around the machine and prepare for the next shift. Turn off all machinery and shut down power to the work area.
- Workers in the unrolling section, packing section, supply and sale section must clean up, weigh scraps, arrange the finished products in order and fill out necessary reports. When leaving the work area, turn off

machines and lights, switch off power and close doors.

PREPARED BY	EXAMINED BY	APPROVED BY

TASKS

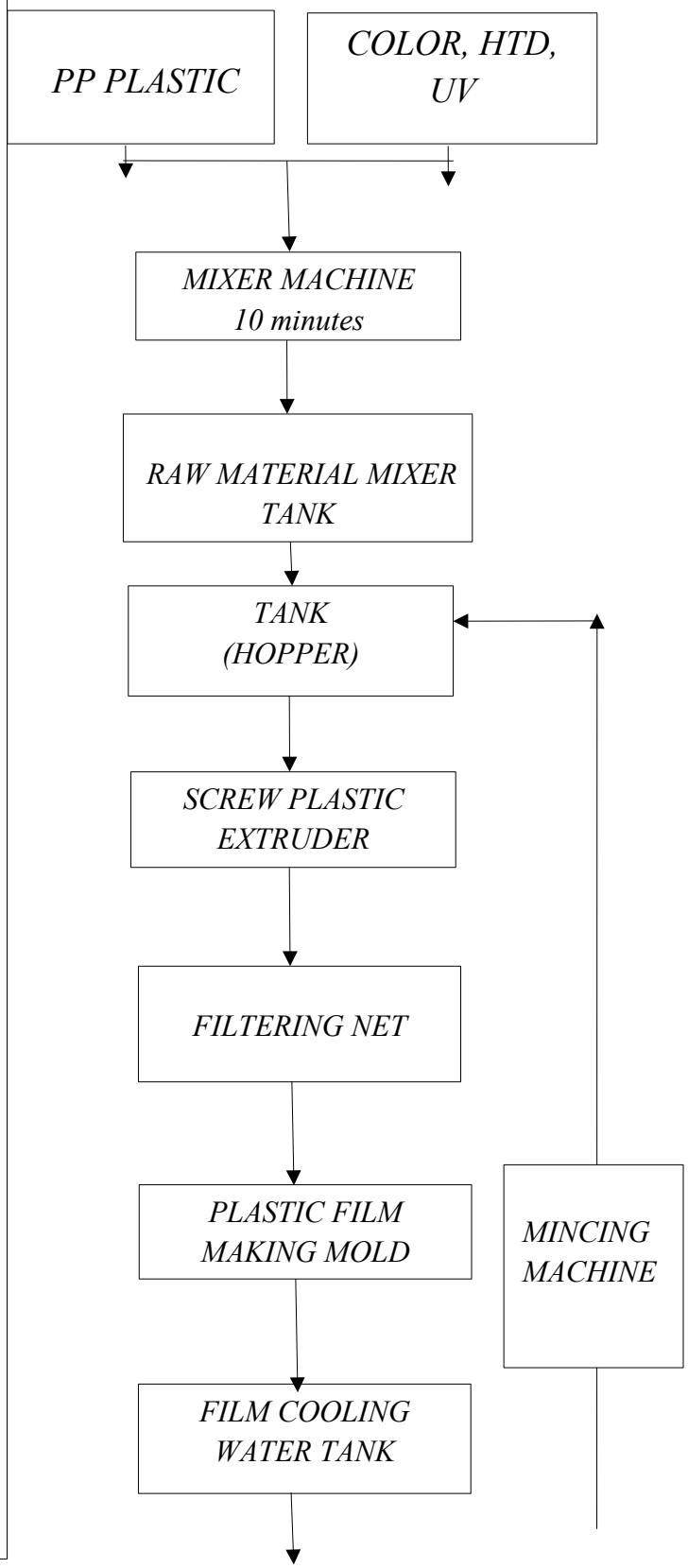
TL: Team Leader
WK: Worker
QC: Quality Control Technician
WV: Weavers

- Storekeeper: Dispatches the PP plastic and materials to factory
-TL: Weighs the materials according to the mix ratio.
-Writes the daily material receipt

- Wk: Turns on the material mixer on and off, monitors its operation.
- Wk: Opens the valve to put the mixture into the tank

- WK: Turns on the machine to pump plastic into the hopper
-Cleans the plastic pump
-TL: Turns on and sets the temperature for the screw plastic extruder.

-TL: Adjusts the temperature and filtering net tension parameters
- TL: Checks the net tension to change the filtering net
- TL: Sets up the heat pattern of the mold
- TL: Turns on the pump to fill the film cooling tank.
- TL: Opens the drain



DOCUMENTS

- Production order (SX-QT LKH-BM01)
- Receipt CN-QT TK&PTSP-BM01

SX-QT SXS-BM05

CNS01
SX-QT SXS-BM05

- SX-QT SXS-BM05

TL: Turns on the film pulling roller

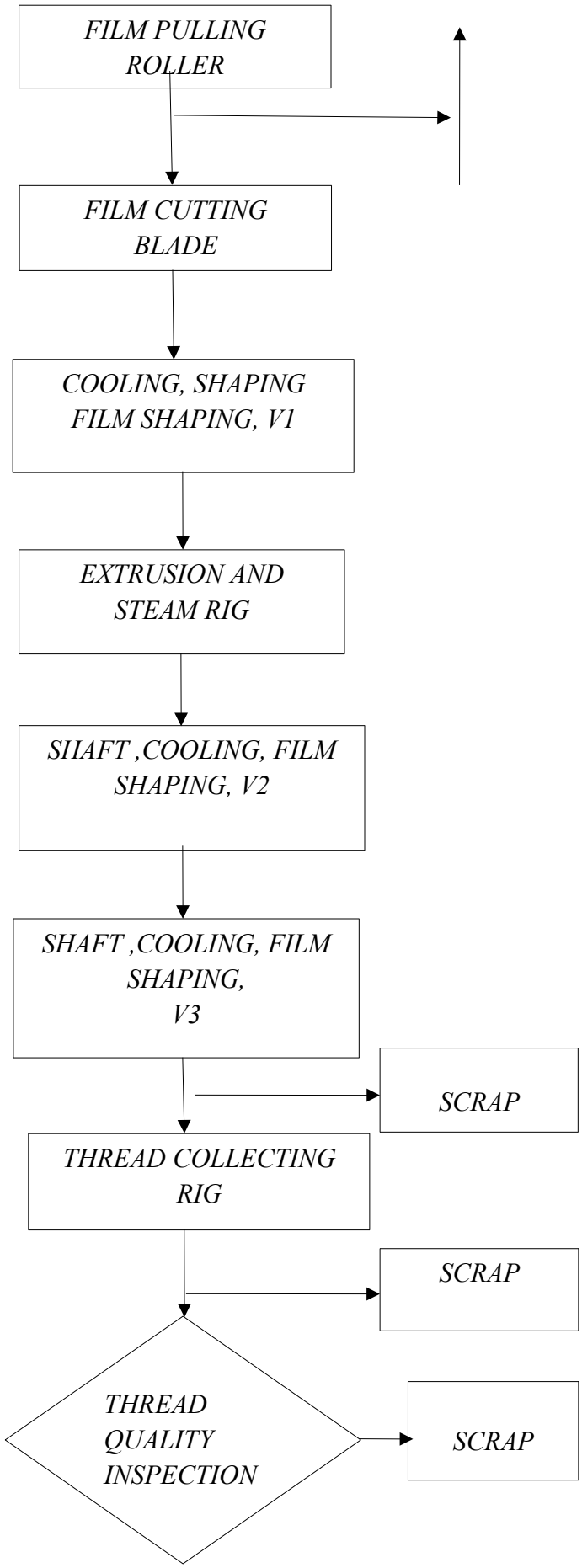
-TL: Calculate washer thickness and prepares the film cutting blade.
-TL: Lowers the blade and cuts the film.

-TL: Sets the velocity for the film shaft (V1)

-TL: Sets the temperature for the extrusion and steam rig; checks the hot-air blower.

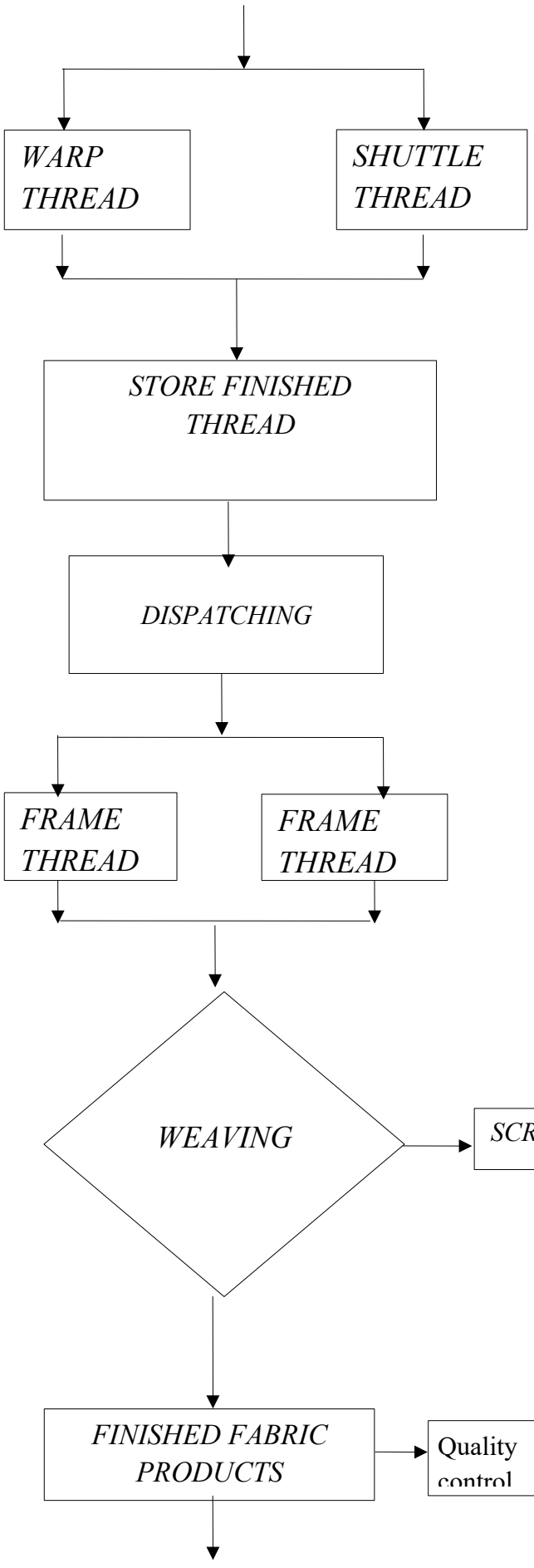
-TL: Sets the velocity for film shaft (V2)
-TL: Opens the valve to l to cool the shafts and then sets velocity (V3)
- Wk: Powers on the thread collecting rig
- Wk: Prepares the iron spindles.
- Wk: Winds the thread around the spindles
- Wk: Transfers the thread to the spindles

- QC: Checks spindle size and thread sample: tumbled thread, loose thread, thread weight, thickness and endurance
-QC: Weighs and stamps finished products, checks the spindles.



SX-QT SXS-BM05

- Fiber weight checking table (QC- QT KTCL-BM02)
- Fiber quality checking table (QC- QT KTCL-BM03)



- QC: Checks the size of the frame spindles and the frame shuttle.

-QC: Stores the thread separating warp thread and shuttle thread

-QC: Glues product stamps on the rolls and records the data.

-QC: Provides materials on demand. What has been stored first will be shipped first.

Weavers: Receives warp thread and shuttle thread
-WV: Assemble frame spindles.
-WV: Pull the thread towards the end of the frame.
-WV: Thread it through the comb, the weft and then into the loom; puts the shuttle in and start weaving.
-WV: Write the weaving report.
-WV: Record fabric length and date of production on label and attach to rolls
-QC: Cuts and tests fabric samples

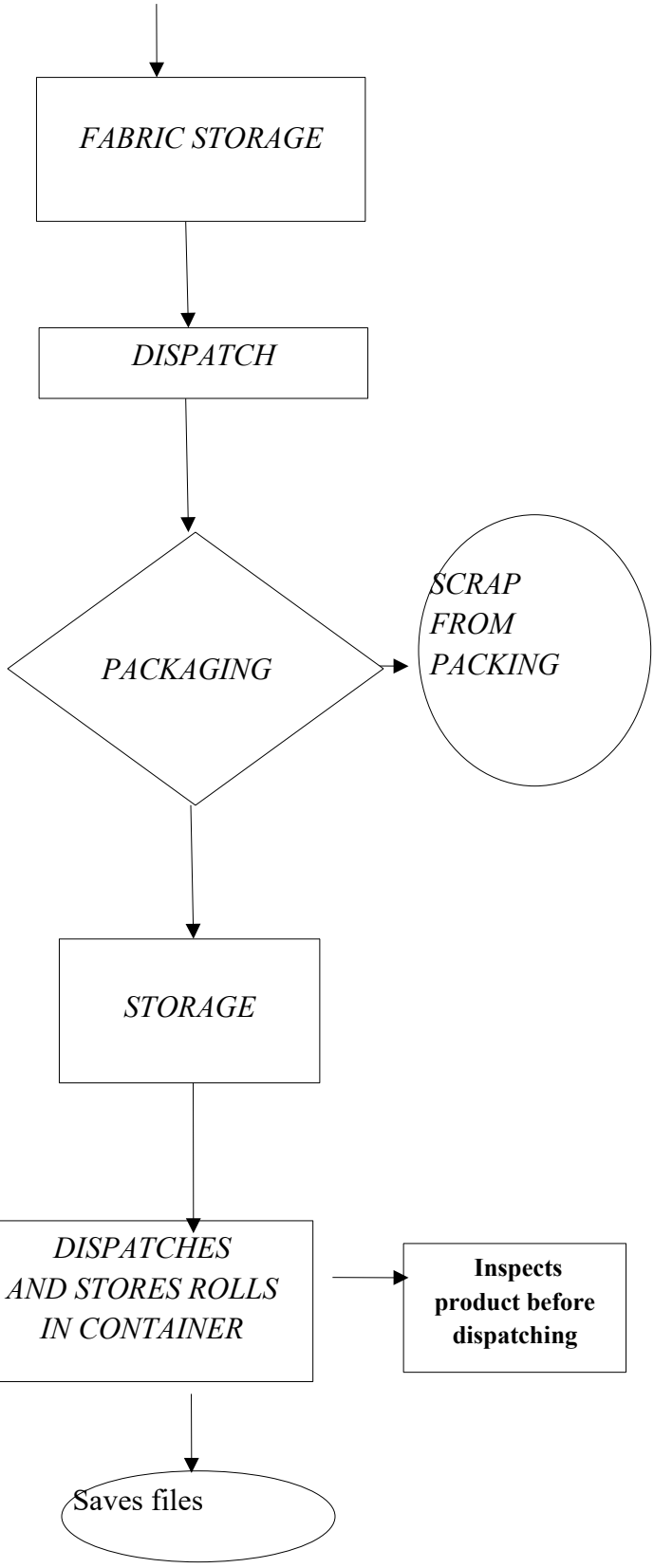
- Report and process non-conforming products (QC-QT SPKPH-BM02)

- Report table of daily finished product of thread. (QC- QT KTCL-BM01)
- Stamp finished thread (QC- QT KTCL-BM04)

Fill in daily thread usage log (SX-QT SXD-BM02)

- *CN-QT TK&PTSP-BM02*
- *Record weaving machine output (SX-QT SXD-BM03)*

- *Fabric Labeling (SX-QT SXD-BM01)*



Wk: deliver fabric to storehouse and record product data.

- Use winch to unload rolls.

-Load fabric on washing rig.

Wash and quality checking: Wash and check cloth.
- Measure the length of each fabric roll:
- Glue stamps on the finished products.

- Wk: Use the winch to bring finished cloth to the storehouse.
Finished product group: Writes store receipt.

Wk: Dispatches fabric by using lift truck and winch
Finished product group: Writes dispatch receipt

- Report table of daily inspection of woven cloth (SX-QT SXD-BM07)

- Check table on the process of washing and rolling cloth. (QC- QT KTCL-BM07)

- Store receipt (KHO-QT01-BM06)

- Dispatch receipt KHO-QT01-BM08
Inspects product before dispatching: KHO-QT01-BM09

Title: **Standard Practice for Sampling of Geotextiles for Testing**

Reference Standard: **ASTM D4354**

Test Category: **Sampling Method**

Material Applicability: **Woven PP Geotextiles**

I. Purpose:

All materials and products at all stages must be checked to ensure that all requirements of customers are best carried out. Determine the testing method to confirm conformance of products compared with company's regulations & customers' requirements.

II. Scope:

Apply from raw materials to finished products and to loading products to customers.

III. Abbreviations:

- Quality Control Manager (QCM)

IV. Content

1. Frequency of tests based on ASTM D 4354

Number of units in lot	Number of test samples
1 to 2	1
3 to 8	2
9 to 27	3
28 to 64	4
65 to 125	5
126 to 216	6
217 to 343	7
344 to 512	8
513 to 729	9
730 to 1000	10
1001 or more	11

Sampling for Quality Control Testing:

Master roll # in same lot	# of products rolls	Number of samples taken	Lab sample	
			Master roll # (all test)	Master roll # (additional to D4632)
1	1 to 12	2	1 (beginning and end of master roll)	
2	13 to 24	3	2	
3 to 5	25 to 60	4	4	
6 to 10	61 to 120	5	7	10
11 to 18	121 to 216	6	13	16
19 to 28	217 to 336	7	22	19, 25, 28
29 to 42	337 to 504	8	34	31, 37, 40
43 to 60	505 to 720	9	49	43, 46, 52, 55, 58
61 to 76	721 to 912	10	64	61, 67, 70, 73, 76
77 to 94	913 to 1092	11	79	82, 85, 88, 91, 94
95 or more	> 1093	>11	Every 15 rolls	

Note:
1. If the lot have from 4 rolls or more, sample will be taken each rolls from the 1st roll to the 4th roll, the next samples will be taken as the above table.
2. If we keep doing same product from end of December to Jan and quantity is more than the 16th master roll (from beginning of Jan) then sample will be taken every 3 master rolls from the 1st to the 18th, the next samples will be taken as the above table.

1.1Raw materials: refer to Certificate of Analysis (COA), check manufacturer's sample and divide into lots along with relevant certificates.

1.2 Fabric: check based on M 288, using the following test methods:

Item	Testing Standard	Method

#		
1	Measuring Mass per Unit Area for Geotextiles	ASTM D5261
2	Falling Head Test Method for Permittivity of Geotextiles	ASTM D4491
3	Apparent Opening Size of Geotextile (AOS	ASTM D4751
4	Grab Breaking Load and Elongation Testing	ASTM D4632
5	Trapezoid Tear Strength Testing	ASTM D4533
6	Static Puncture Resistance Testing	ASTM D6241
7	UV: apply at least to the products which have the lightest weight or which have same formulation.	ASTM D4355

Notes: one product unit = one master roll from loom division with the length in SKU (TC06.01).

Compare results with product specification and production orders.

2. Evaluate and record the test results. If the test results are not passed, control them according to Non-conforming Product Control Protocol.
3. Report the test results to QC Division and ensure the results are passed along to other relevant divisions
4. Keep the tested samples.

		QC- QT KTCL-BM05
Division Chief concerned, QC Division		ASTM D4354
Storehouse staff, QC Division		-Product specification TC.xx SX-QT LKH-BM01
Storehouse staff, QC Division		
QCM		
QCM, General Manager, Storehouse staff, QC Division		
Chief of Division concerned		Record Retention and Destruction Protocol

II. Form applied

BM/TN08.00

Prepared By	Examined by	Approved by

Title:	**Falling Head Test Method for Permittivity of Geotextiles**
Reference Standard:	**ASTM D4491**
Test Category:	**Physical – Hydraulic**
Material Applicability:	**Woven PP Geotextiles**
Target Properties:	**Permittivity (flow rate/unit area-unit head loss)** **Permeability (flow rate/unit area-unit gradient)**
Units:	**sec^{-1}/cm/sec**
Specimen Geometry:	**3.625" (92mm) O.D.**
Number of Specimens:	**4**
Test Equipment:	**TRI Permittivity Apparatus with 2 Falling Head Timers** **- Liqui-Cel de-airing system** **- Thickness gauge** **- Permittivity specimen cutting die** **- Dissolved oxygen test kit** **- Specimen soaking container with lids** **- IRM Disc**
Date Sheets:	**TN-QT D4491-BM01; TN-QT D4491-BM02**

I. Purpose

To ensure product quality, detect defects and initiate corrective action.

II. Scope

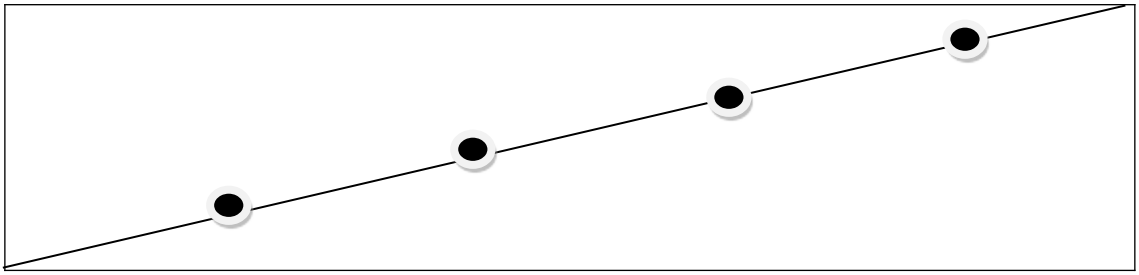
All Polypropylene (PP) geotextile fabric

III. Abbreviation

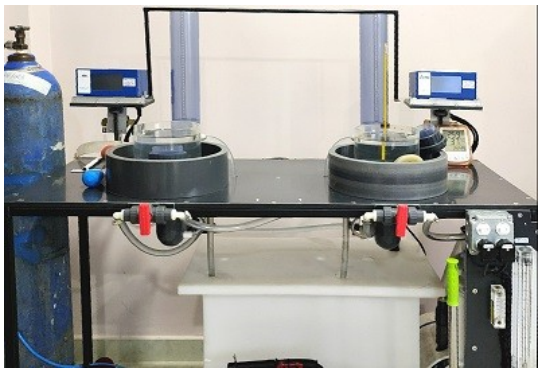
LP: Laboratory personnel.

IV. Summary of Procedure:

1. Place four specimens with diameters of 3.625in along the diagonal line on the laboratory sample tray. No specimen should be closer than 8 inches from the corner of the tray; then arrange specimens using small triangles formed by the perimeter of the laboratory sample tray.



2. Measure and record the thickness of each specimen in mm using the Thickness Gauge per ASTM D5199 and fill in the TN-QT D4491-BM01 form
3. Soak the specimens in a closed container of de-oxygenated water for a minimum period of 2 hours. Ensuring that there is NO AIR in the headspace of the container.



4. Activate the pump and open the inflow valve of the water filter.
5. Inject nitrogen and at speed of 10 -15scfh.
6. Activate the vacuum pump at 25-35 kPa.
7. Open the inflow valve to let water flow through the permeability apparatus for approximately 2 hours (The apparatus should not contain the specimens at this point).
8. Close the bleed valve and record the level of dissolved oxygen (DO) in the flow.
9. If DO < 6 ppm, continue the testing procedure.
10. Record water temperature in the system.
11. Reopen the inflow valve so that water just flows little over the edge of the pot, and then shut off the inflow value.
12. With no sample in the holder, check the differential pressure sensor displays “0.0”. If not, refer to the “Transducer Calibration” section and “zero” the unit.

13. Take the first specimen and submerge it below the water surface in the upper compartment. Press the specimen up against the inside surface of the acrylic standpipe and examine it for trapped air bubbles. Manually chase any visible trapped air bubbles out of the specimen.
14. While keeping it submerged, place the specimen on the rubber surface. Place the white Teflon washer on the top of the specimen then screw on the securing upper section.
15. Submerge a tube attached to a source of vacuum to just above (10 mm (0.5 in.)) the surface of the geotextile, moving the tube gently over the surface while applying a slight vacuum in order to remove any trapped air that may be in or on the specimen. If necessary, readjust the head to 50mm (2 in.) after removing the vacuum.
16. Set up the timer to time the fall of the water. The upper thumbwheel set-point should be set at "80", and the lower thumbwheel set-point at "20" to measure the time between the ASTM D4491 falling head levels of 80mm(h_0) and 20mm(h_1). Verify h_0 and h_1.
17. Open and close the inflow valve when the water fills the upper standpipe to above the 16 centimeter level.
18. Press the "Reset" button to clear the timer display.
19. Record the falling time of water (in seconds). Record the inside diameter (d) of the upper unit, the diameter (D) of exposed portion of the specimen.
20. Repeat steps 16 through 18 four more times. Compare the times recorded in all five readings (Maximum deviation: 0.5%) If successive collection times tend to lengthen, the specimen is probably clogging. Check the air content of the water and change the water filter cartridge.
21. Repeat steps 13 through 19 for the remaining three (3) specimens.
22. Calculate permittivity according to (ASTM D4491), use the form TN-QT D4491-BM02.

Permittivity, $sec^{-1} = R_t\ (a/At)ln(h_o/h_1)$

where:

a= area of upper standpipe

A= test specimen flow area" $20.3cm^2$

R_t= temperature correction factor using equation (1)

h_o= head of water on the specimen at the beginning of the test: 80mm

h_1= head of water on the specimen at the end of the test: 20mm

t = time head to fall from 80mm to 20mm, s

$R_r = u_t/u_{20}$ (1)

Where:

u_t = water viscosity at test temperature, millipoises

u_{20} = water viscosity at 20°C

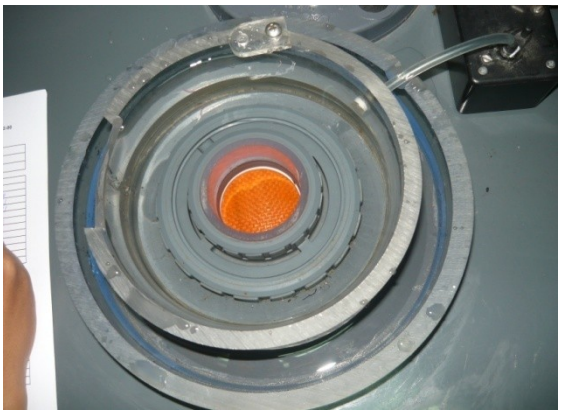
23. Calculate average value of permittivity sample

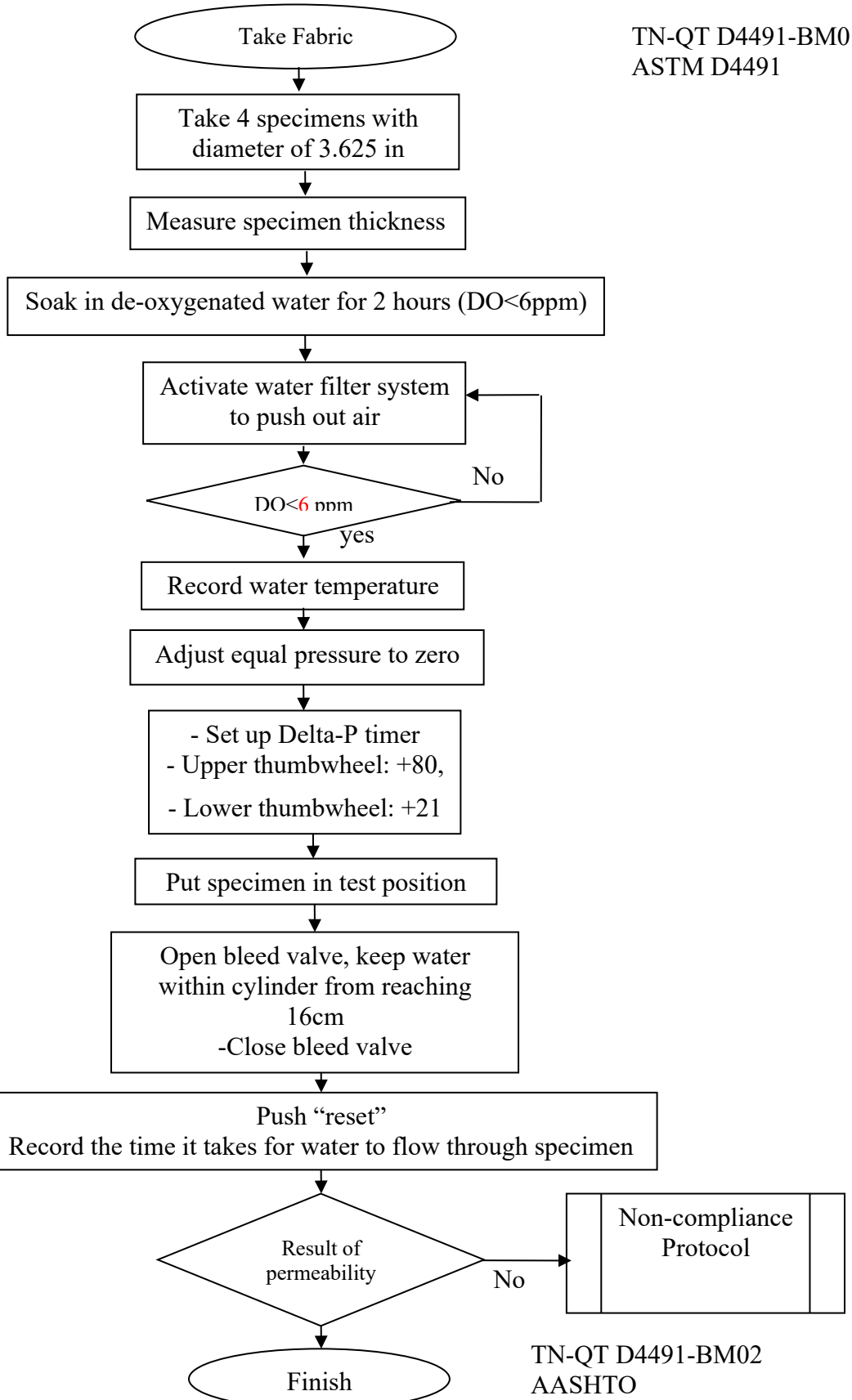
24. Calculate permeability(cm/s)

Temp, ° C	Viscosity ($x10^{-3}$ kg/s.m) x 10^{-3}	Correction Factor, R_t
19	1.027	1.025
20	1.002	1
21	0.978	0.976
22	0.954	0.952
23	0.932	0.931

The correction factor, R_t can be calculated with: $R_t = 1.4751-0.023xT°C$

Permittivity testing equipment



PERSONNEL	FLOWCHART	DOCUMENTS
LP		TN-QT D4491-BM01 ASTM D4491 TN-QT D4491-BM02 AASHTO

Yes

V. Forms applied

- TN-QT D4491-BM01
- TN-QT D4491-BM02

VI. Reference document

ASTM D4491

Prepared By	Examined by	Approved by

Title:	**Trapezoid Tear Strength Testing**
Reference Standard:	**ASTM D4533**
Test Category:	**Physical – Mechanical**
Material Applicability:	**Woven PP Geotextiles**
Target Properties:	**Tear Strength of Geotextiles**
Units:	**N, pound (lbs)**
Specimen Geometry:	**3”x8” (76x203mm) rectangular**
Number of Specimens:	**Table 2 “number of test specimens”**
Test Equipment:	**Universal Testing Machine (UTM), TH232 clamps**
Date Sheets:	**TN-QT D4533-BM01**

I. Purpose

To ensure product quality, detect defects and initiate corrective action.

II. Scope

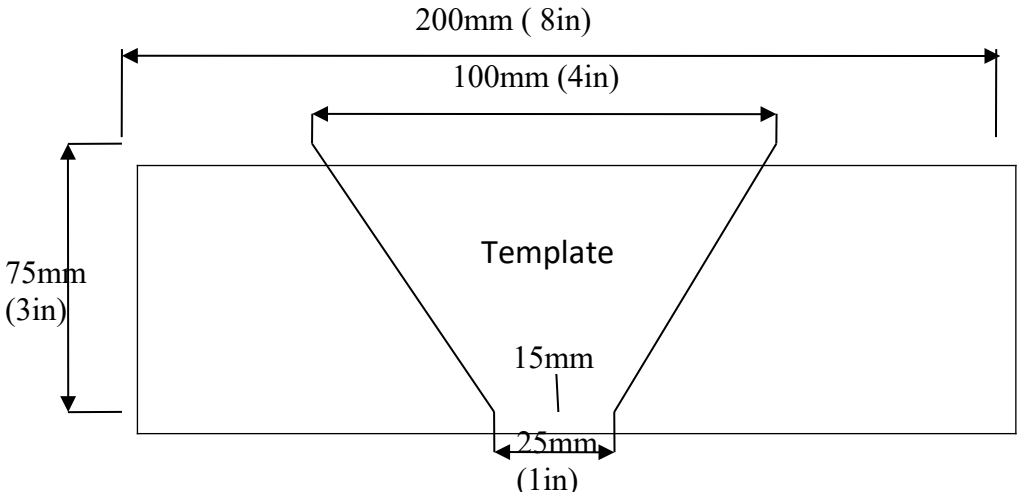
All Polypropylene (PP) geotextile fabric

III. Abbreviation

LP: Laboratory personnel.

IV. Summary of Procedure

1. Cut one (1) linear meter of fabric swatch between two (2) master rolls.
2. Cut rectangular specimens 3” x 8” diagonally across fabric. Take samples from fabric no closer than 6” to the selvage edge. Number of specimens: see Table 2 “Number of test specimens”.
3. Check each test specimen size as requirement, mark each specimen with an isosceles trapezoid template that 1in and 3in side in the center of 8 in long side. Mark a preliminary cut 15.9mm (0.625in) long at the center of the 25.4mm (1 in) edge.

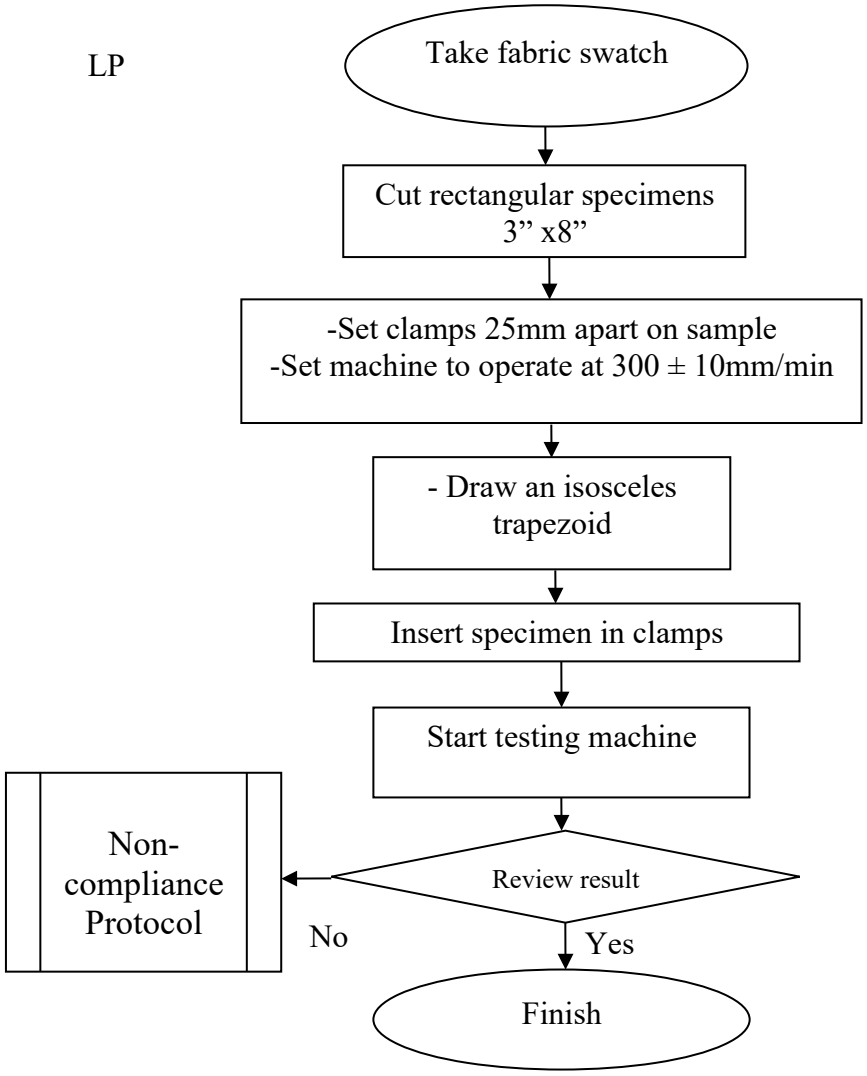


4. On the UTM, set the distance between the clamps at 25 ± 1mm (1 ± 0.05 in). The upper clamp should be supported by a free swivel or universal joint which will allow the clamp to rotate in the plane of the fabric.
5. Set the machine to operate at 300 ± 10mm/min (12 ± 0.5 in/min).
6. Secure the specimen between the clamps, clamping along the nonparallel side a of the trapezoid so that the end edges of the clamps are in line with the 25mm (1 in long side of the trapezoid.
7. Start the machine and record the tearing force on the autographic recorder. The tearing process should keep going on until over half of fabric sample is torn. If the machine does not reverse back to the initial position automatically, manually set the distance between the clamps to the original distance (Zero).
8. If the specimen slips, ruptures within 5mm of the jaw dimension, then:
   - The jaws may be padded
   - The fabric may be coated under the jaw face area
   - The jaw face may be modified

   If any of the modifications listed above are used, state the method of modification in the report.
9. If an individual test result deviates 25% or more from the average test result of a swatch, it must be discarded and an additional specimen test.

10. Based on the standards set out in ASTM D4759, if the average value of the test result is smaller than the required minimum average roll value (MARV):

- Discard the roll and begin testing on the adjacent rolls until the desired MARV is achieved.
- Report disqualified rolls in accordance with the Non-conforming Product Resolution Protocol.

PERSONNEL	FLOWCHART	DOCUMENTS
LP		TN-QT D4533-BM01 ASTM D4533 AASHTO M288 ASTM D4759

Prepared By	Examined by	Approved by

Title:	**Grab Breaking Load and Elongation Testing**
Reference Standard:	**ASTM D4632**
Test Category:	**Physical – Mechanical**
Material Applicability:	**Woven PP Geotextiles**
Target Properties:	**Grab Tensile Strength and % of Elongation**
Units:	**N, pound (lbs), %**
Specimen Geometry:	**4"x8" (102x203mm) rectangular**
Number of Specimens:	**Calculate base on Reliable Estimate of *v* annual.**
Test Equipment:	**Universal Testing Machine (UTM), TH232-BG 25.4*50.8 clamps**

Environmental condition: 65 ± 5% relative humidity; 21 ± 2°C

Date Sheets: **TN-QT D4632-BM01**

I. Purpose

To ensure product quality, detect defects and initiate corrective action.

II. Scope

All Polypropylene (PP) geotextile fabric.

III. Abbreviation

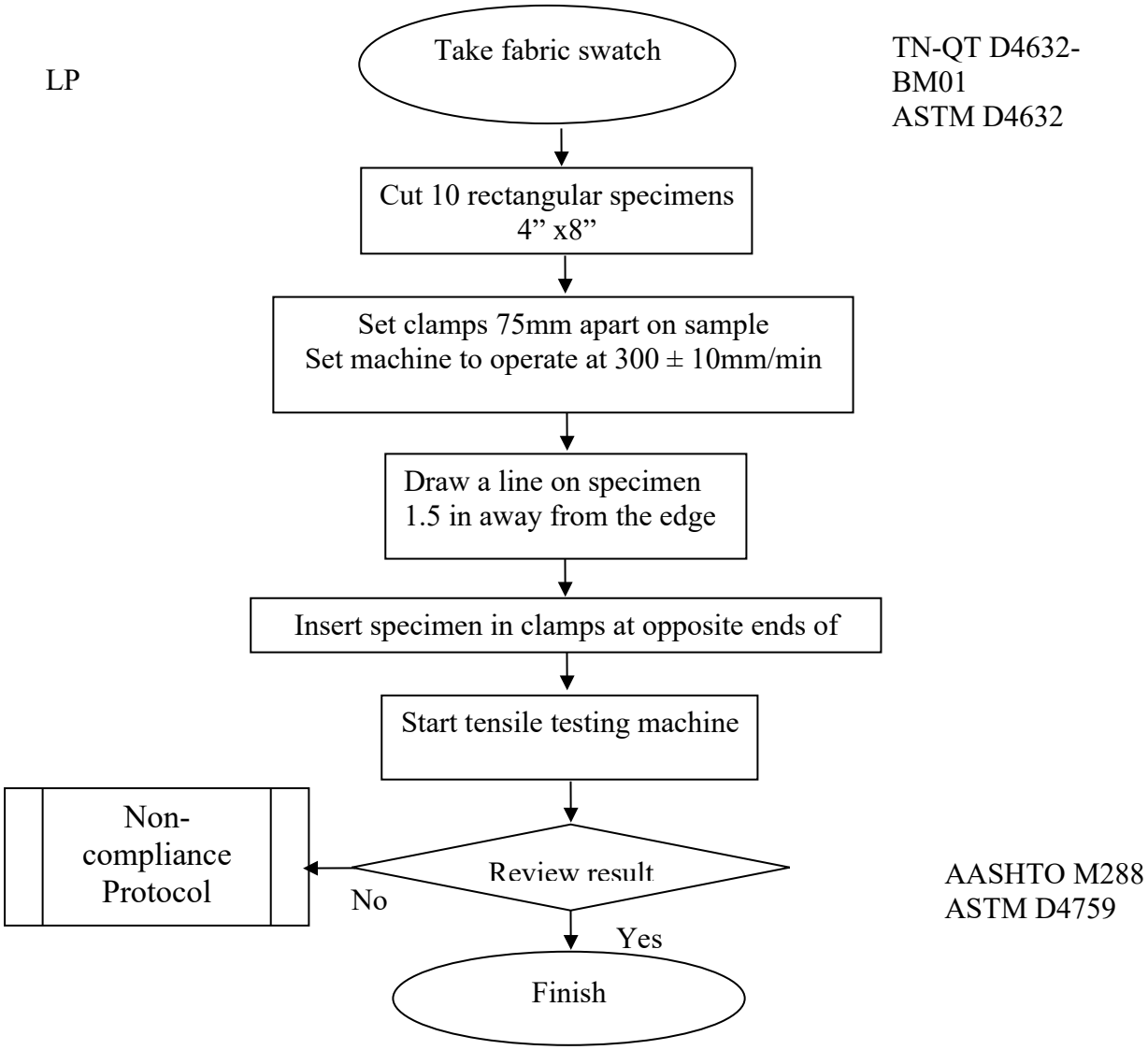
LP: Laboratory personnel.

IV. Summary of Procedure

1. Cut one (1) linear meter of fabric swatch between two (2) master rolls. Ensure that the area of cutting has not been in storage for over 1 week.
2. Cut rectangular specimens 4" x 8" diagonally across fabric. Take specimens from fabric no closer than 6" to the selvage edge. Samples should be kept in the lab conditions at least 24 hours before the specimens are tested.
3. Set the distance between the clamps on the UTM at 75 ± 1mm (3" ± 0.05").
4. Set the machine to operate at 300 ± 10mm/min (12 ± 0.5 in/min)
5. Insert specimen into the clamps, ensuring that the fabric extending beyond each clamp jaw is roughly equal in length. Insert the specimen in the middle of the jaws in the widthwise

direction keeping them roughly 1.5 in from the top and bottom of the specimen. This will ensure that the same lengthwise yarns are gripped in both clamps.

6. Start the tensile testing machine; if the machine does not reverse back to the initial position automatically, manually set the distance between the clamps to the original distance (Zero).
7. If the specimen slips or ruptures within 5mm of the jaw dimension or some other procedural error occurs, discard the result and take another specimen.
8. Based on the standards set out in ASTM D4759, if the average value of the test result is smaller than the required minimum average roll value (MARV), then:
   - Discard the roll and begin testing on the adjacent rolls until the desired MARV is achieved.
   - Report disqualified rolls in accordance with the Non-conforming Product Resolution Protocol.

PERSONNEL	FLOWCHART	DOCUMENTS
LP		TN-QT D4632-BM01 ASTM D4632 AASHTO M288 ASTM D4759

Prepared By	Examined by	Approved by

Title:	**Apparent Opening Size of Geotextile (AOS)**
Reference Standard:	**ASTM D4751**
Test Category:	**Physical – Performance**
Material Applicability:	**Woven PP Geotextiles**
Target Properties:	**Apparent Opening Size**
Units:	**mm or sieve #**
Specimen Geometry:	**8” (200mm) diameter**
Number of Specimens:	**5**
Test Equipment:	**AOS shaker, weighing scale 300g (accurate to ±0.05g), 200mm sieves, antistatic spray, AOS cage with pan and cover, calibrated glass beads (various sizes)**
Date Sheets:	**TN-QT D4751-BM01**

I. Purpose

To ensure product quality, detect defects and initiate corrective action.

II. Scope

All Polypropylene (PP) geotextile fabric.

III. Abbreviation

- LP: Laboratory personnel.

IV. Summary of Procedure:

1. Cut one (1) linear meter of fabric swatch from the end of each roll of fabric in the lot sample, after first discarding a minimum of 1m of fabric from the very outside of the roll.
2. Cut five specimens with a diameter of 200 mm.

- Weigh the specimens and submerge them in distilled water for one (1) hour at the standard atmosphere for testing.
- Let the specimens self-dry at room temperature.

3. Place the specimens on flat sieves on a 2.5cm opening wire mesh. Secure the specimens between two sieve frames, secured with hoop lock. Take care to ensure the fabric is without wrinkles.
4. Weigh the sieves and specimens along with the spherical glass beads, taking down all specifications on form TN-QT D4751-BM01.
5. - For Method A1:

   Place 50g of uniform glass beads on the specimen, starting with those of smallest diameter.

   -For Method A2: this procedure is strictly intended as a "Pass/Fail" test for manufacturing QC testing:

   Use the glass bead size that is designated by the purchase's specification. For example, if the specification is "No.100US Sieve minimum", or conversely, "0.150mm maximum,", use the No.100 beads.

Note: Should the glass beads "clump" together during testing, which is an indication of static build-up, apply the anti-static spray on the surface of the specimens.

6. Repeat from step 2 to step 4 for the rest 4 specimens.
7. Place 5 specimens into the AOS cage in numerical order with tray 5 at the bottom. (Each set includes: 1 tray containing the glass beads and 1 containing the specimens locked into the flat sieve.)
8. Put AOS cage in AOS shaker and shake for 10 minutes.
9. Weigh the number of glass beads retained by the specimens.

   - Weigh the number of glass beads passing through specimens (on tray).
   - Quarantine the beads after use in a test and then re-sieved before use again.
   - Weigh the sieve and specimens
   - Weigh the tray.

10. Calculate the percentage of glass beads passing through each specimen on form BM/TN01.

    B = 100*P/T
    where:
    B: beads passing through specimen, %
    P: mass of glass beads in the pan, g
    T: total mass of glass beads used, g

11. For Method A1: Repeat from step 4 to step 9, gradually increasing the next diameter of the glass beads.
12. Continue until the weight of the beads passing through the specimens is 5% or less. Perform the trials so that the percent passing decreases from a value of greater than 5% to a value less than or equal to 5%.
13. For Method A2

    - If one of the five specimens passes more than 5% of the single bead size being used, all five test specimens must be tested in accordance with method A1 in order to determine the actual AOS for comparison to the specification.

    - If all five test specimens pass less than 5% of the bead size, the test result is the bead size used in millimeters, or, if requested, the corresponding U.S Sieve Number.
14. Calculations for Method A1
    - Record calculations and percent beads passing (see TN-QT D4751-BM01)
    - Identify the location of the two points on the graph (% of glass beads passing through and glass beads size) in the graph.
    - Connect the two points (AB).
    - The intersection of the 5% of glass beads passing through the specimens and the AB on the graph represents the AOS of each specimen.
15. The average AOS value is determined by the AOS test result.

Glass Bead size:

Bead Size Range				Bead Size Designation [A]	
Passing		Retained			
mm	Sieve Number [B]	mm	Sieve Number [B]	mm	Sieve Number [B]
2.0	10	1.70	12	1.7	12
1.4	14	1.18	16	1.18	16
1.00	18	0.850	20	0.850	20
0.710	25	0.600	30	0.600	30
0.500	35	0.425	40	0.425	40
0.355	45	0.300	50	0.300	50
0.250	60	0.212	70	0.212	70
0.180	80	0.150	100	0.150	100
0.125	120	0.106	140	0.106	140
0.090	170	0.075	200	0.075	200

[A]The designated bead size is the “retained on” size of the sieve pair used to size the beads. For example, beads designated No.40 are beads that pass the No.35 sieve and are retained on the No.40 sieve. These beads are typically sold as 35-40 beads.

Note: The sieves not mentioned as the standard range cannot be used, discard those sieves out of testing sieve shelf (ex: sieve 35, 60, 80)

PERSONNEL	Flowchart	Documents
LP	Take Fabric Swatch	TN-QT D4751-BM01 ASTM D4751
S1	Take five 200mm samples	
S2	Submerge in distilled water for an hour	
S3	Allow to self-dry at room temp.	
S4	Place specimens in sieve, tighten	
S5	Weigh sieve, tray, glass beads and specimens	Method A2
	Method A1	
S6	Place 50 gr of smallest beads on tray with specimens	Place 50gr of the spec. bead size
S7	Load 5 sieves into shaker	
S8	Shake for 10 min	
S9	-Weigh: sieve, spec. and beads -beads withheld by spec. -beads permeating spec. -trays -Quarantine the beads after use in a test and then re-sieved before use again	Method A2
	Method A1	
	1st time: % of beads through spec. > 5%	One of the five specimens passes >5% / All 5 test specimens pass < 5% of the bead size
	Repeat S5 – S9 using next larger beads	
	2nd time: % of beads through spec. < 5%	
	Calculate size of beads at 5%	
	Size of holes	Non-compliance protocol
	Finish	

V. Form applied
TN-QT D4751-BM01

PREPARED BY	EXAMINED BY	APPROVED BY

Title: **Measuring Mass per Unit Area for Geotextiles**

Reference Standard: **ASTM D5261**

Test Category: **Physical**

Material Applicability: **Woven PP Geotextiles**

Target Properties: **Average Mass per Unit Area**

Units: **grams**

Specimen Geometry: **circular**

Number of Specimens: **10**

Test Equipment: **Fabric Sample Cutter, calibrated caliper and weighing scale 300g**

Environmental condition: 65 ± 5% relative humidity; 21 ± 2°C

Date Sheets: **TN-QT D5261-BM01**

I. Purpose

To ensure product quality, detect defects and initiate corrective action.

II. Scope

All Polypropylene (PP) products

III. Abbreviations

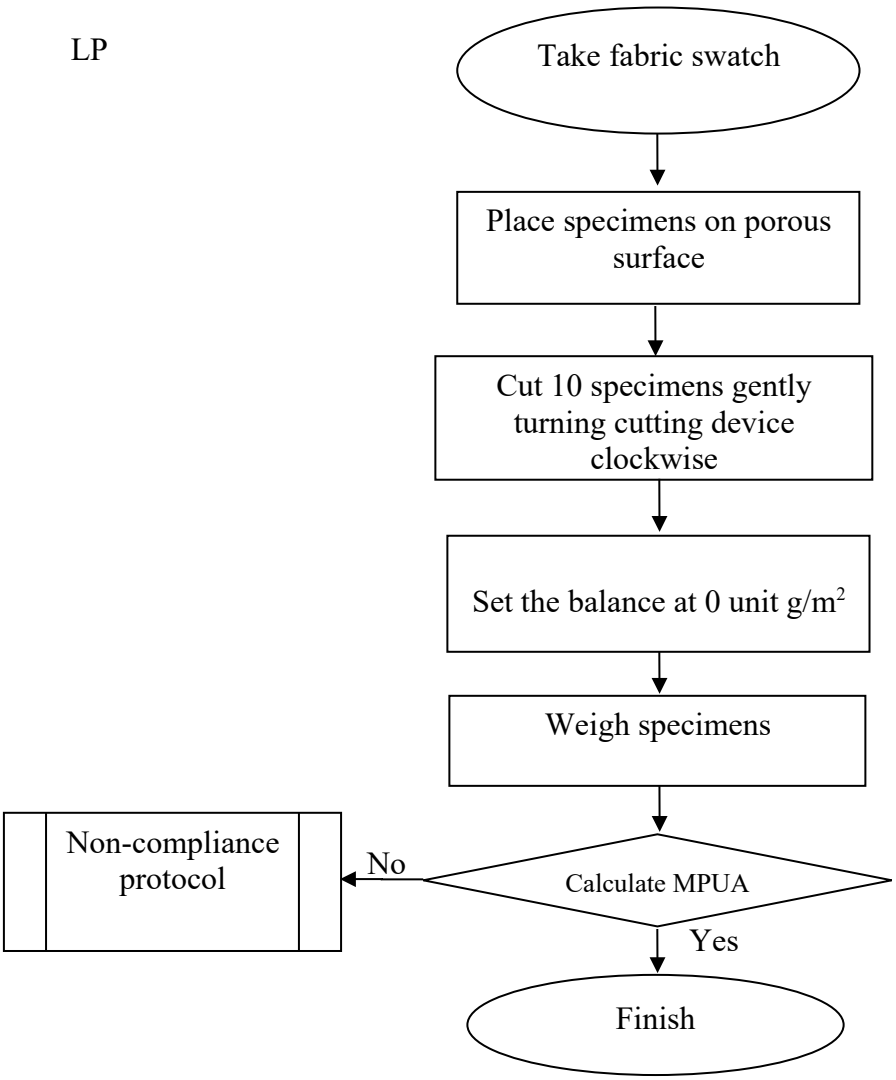
MPUA: Mass per Unit Area

LP: Laboratory Personnel

IV. Content

1. Cut one (1) linear meter of fabric swatch master rolls. Ensure that the area of cutting has not been in storage for over 1 week. Samples should be kept in the lab conditions at least 24 hours before the specimens are tested.
2. Cut ten (10) specimens using the Fabric Sample Cutter on the porous mat, cut such that they are representative of the entire roll Width. Each test specimen should be equal in area with an accuracy of ± 0.5 % of its area (15.5in^2) by using a calibrated caliper, record the specimen size on Form TN-QT D5261-BM01. Cut the test specimens at least one-tenth the width of the geotextile from any selvage, unless otherwise specified.

3. Set the balance back to 0 and set the unit as g/m^2.
4. Weigh each of the conditioned specimens separately on a calibrated balance to the nearest 0.01g and record the parameters on form TN-QT D5261-BM01.
5. Calculate the average value of 10 specimens.
6. If the average value is in the range of -3% to 5% of the MPUA, the test result is good. Specimens falling outside this range should be considered indicative of non-conforming product and should be handled accordingly.

Personnel	FLOWCHART	Documents
LP		TN-QT D5261-BM01ASTM D5261

Prepared by	Examined by	Approved by

Title: **Static Puncture Resistance Testing**

Reference Standard: **ASTM D6241**

Test Category: **Physical – Mechanical**

Material Applicability: **Woven PP Geotextiles**

Target Properties: **Puncture Resistance of Geotextiles**

Units: **N, pound (lbs)**

Specimen Geometry: **12”x12” (300mmx300mm).**

Number of Specimens: **Calculate base on Reliable Estimate of *v* annual.**

Test Equipment: **Universal Testing Machine (UTM), VN-03 clamps**

Environmental condition: **65 ± 5% relative humidity; 21 ± 2°C**

Date Sheets: **TN-QT D6241-BM01**

I. Purpose

To ensure product quality, detect defects and initiate corrective action.

II. Scope

All Polypropylene (PP) geotextile fabric

III. Abbreviation

- LP: Laboratory personnel.

IV. Summary of Procedure

1. Cut one (1) linear meter of fabric swatch between two (2) master rolls. Ensure that the area of cutting has not been in storage for over 1 week.
2. Cut specimen with full width about 12 inches. Take specimens from fabric no closer than 6” to the selvage edge. Samples should be kept in the lab conditions at least 24 hours before the specimens are tested.
3. Put the puncture unit into the center of testing machine (note: always have support bar beneath to keep the puncture unit fixed.
4. Calibrate minimum 100 mm route for piston on the UTM, with a uniform speed of 50 mm/minute.
5. Press the white button to open the clamps.
6. Put the specimen between 2 clamps and keep the specimen straight.

7. Press the yellow button to close the clamps.
8. Press “return” button on the testing machine to return the piston to “zero”.
9. Press ‘start’ to begin puncture force test until the puncture rod completely ruptures the test specimen.

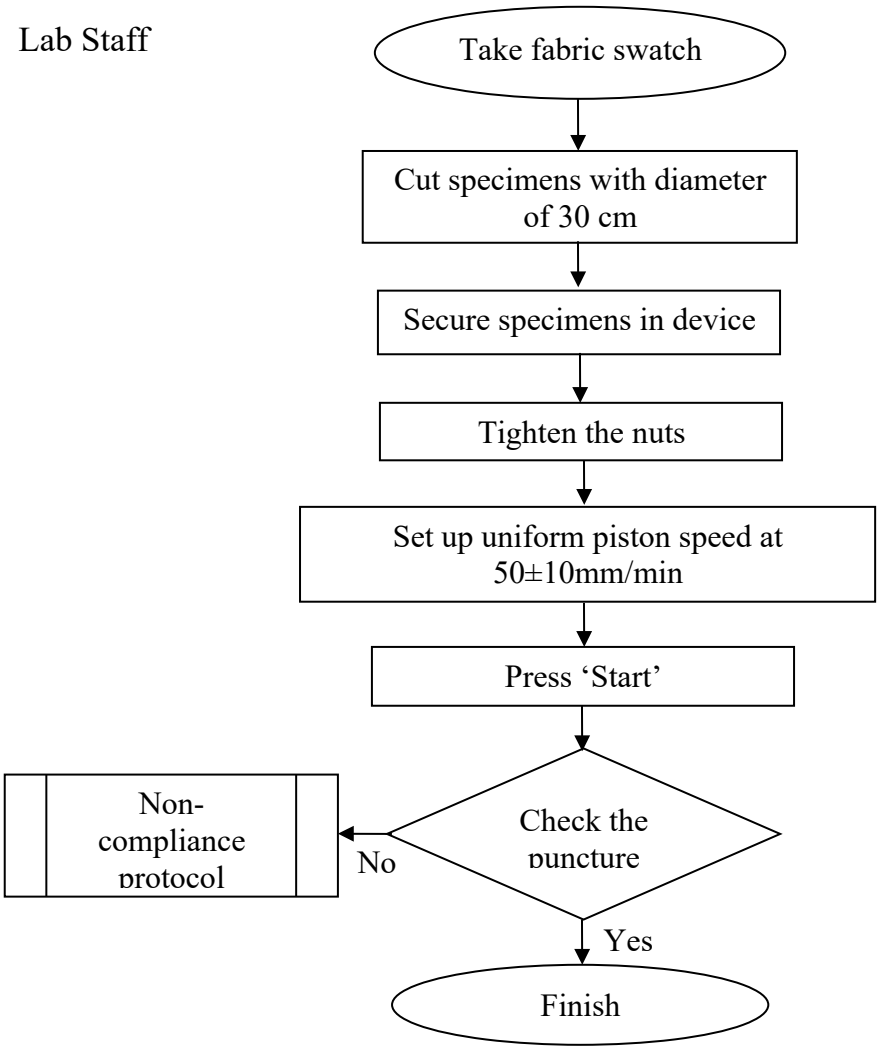
Check the puncture force of fabric

6. Based on ASTM D4759, if average value of test results is smaller than required MARV:
   - Eliminate the roll and select adjacent rolls to test until the MARV meets product specifications.
   - Initiate Non-Conforming Product Resolution Protocol for all rolls that fail to meet D4759 standards.

Personnel

Lab Staff

Flowchart



Documents

TN-QT D6241-BM01
ASTM D6241

AASHTO M288
ASTM D4759

-

Prepared By	Examined by	Approved by

Title:	**Test Grab Tensile Strength & % of elongation with wide width**
Reference Standard:	**ASTM D4595**
Test Category:	**Physical-Mechanical**
Material applicability:	**Woven PP geotextiles**
Target properties:	**Grab Tensile Strength & % of elongation**
Units:	**N, pound (lbs), %**
Specimen Geometry:	**16"x 8" (LxW: 400mm x 200mm) rectangular**
Number of specimens:	**6**
Test equipments:	**Universal Testing Machine (UTM), TH232-BG 210 Clamps**
Environmental condition:	**65 ± 5% relative humidity; 21 ± 2°C**
Data sheets:	**TN12.00**

I. Purposes

-To ensure product quality, detect defects & initiate corrective action.

II. Scope

All Polypropylene (PP) geotextile fabric

III. Abbreviation

NCM CP: Non-Conformance Control Procedure

UTM: Universal Testing Machine

IV. Contents

1. Cut one (1) linear meter of fabric swatch between two (2) master rolls. Ensure that the area of cutting has not been in storage for over 1 week.
2. Cut 6 rectangular specimens 16"x8". To PP woven fabric, cut the fabric width about 210 mm (8.5 in). After that, take out the tapes near cutting line to have exact width of 200mm. Take no samples nearer the selvage or edge of the geotextile than one-tenth the width of the geotextile. Samples should be kept in the lab conditions at least 24 hours before the specimens are tested.

3. Set the distance between two clamps on the UTM at 100 ± 3mm (4 ± 0.1in)
4. Set the machine to operate at: 10 ± 3% /min (0.4in/ min)
5. Draw 2 lines with the distance 100 ± 3mm (4 ± 0.1in) which through specimen width at the position to put clamps into slot.
6. Draw 2 more lines which are far away from the line just drawn 2.5 in through fabric width. Fold two edges of fabric along the length & put into the clamps to the line just drawn (for the purpose to keep the sample not to slip in testing process)
7. Put sample into clamps
8. Press "start" to check Grab Tensile Strength & % of elongation of specimen, if the machine does not reverse back to the initial position automatically, manually set the distance between clamps to the initial distance (zero)
9. If the specimen slips or ruptures within 5mm of the jaw dimension or some other procedural error occurs, discard the sample & cut another.
10. Decision to discard test results because of reasons from step 8 need the observation of changes of specimens during operation. If cannot make sure that breaking is from clamps, then any breaking occurs within 5mm of clamps which is below 20% of average value of all values, discard it. However, accept the result if the weakness is due to random distribution.

    In some cases, it may also be caused by a concentration of stress in the area adjacent to the jaws because the jaws prevent the specimen from contracting in width as the force is applied. In such cases, a break near the edge of the jaw is inevitable & should be accepted as a characteristic of the particular method of test.
11. If the specimen slips or if 24% of specimen breaks at the position within 5mm of clamps:
    - The jaw may be padded
    - The fabric may be coated under the jaw face area
    - The jaw face may be modified
12. Calculation:

$\alpha_f = F_f / W_s$

With: α_f : Strain Strength, N/m

F_f : Grab Tensile Strength can be observed on UTM, N

W_s : Specimen width, m

Elongation of specimen (%): is the result of elongation from UTM

Base on specification of each product to evaluate if the results pass or fail. If the specimen is not passed, solve as non-conformance control procedure.

RESPONSIBILITY	DIAGRAM	DOCUMENT
Lab staff	Take fabric swatch ↓ Cut 6 rectangular specimens 8"x8" ↓ -Set clamp distance 100 ± 3mm -Speed 10 ±3% /min ↓ Draw 2 lines with the distance 100 ± 3mm which through specimen ↓ Put specimen in clamps right on the lines ↓ Press "start" to operate ↓ Consider No → NCM CP Yes ↓ Record	BM/TN12.00 ASTM D4595 ASTM D4759

V. **Form applied**

-BM/TN12.00

PREPARED BY	EXAMINED BY	APPROVED BY

Title:	**Breaking force & elongation of Textile Fabrics (Strip method)**
Reference Standard:	**ASTM D5035**
Test Category:	**Physical-Mechanical**
Material applicability:	**Woven PP geotextiles**
Target properties:	**Grab Tensile Strength & % of elongation**
Units:	**N, pound (lbs), %**
Specimen Geometry:	**2" x 8" (50 x200mm) rectangular**
Number of specimens:	**8**
Test equipments:	**Universal Testing Machine (UTM), TH232 clamps**
Environmental condition:	**65 ± 5% relative humidity; 21 ± 2°C**
Data sheets:	**TN-QT D5035-BM01**

I. Purposes

-To ensure product quality, detect defects & initiate corrective action.

II. Scope

All Polypropylene (PP) geotextile fabric

III. Abbreviation

NCM CP: Non-Conformance Control Procedure

UTM: Universal Testing Machine

IV. Contents

1. Cut one (1) linear meter of fabric swatch between two (2) master rolls. Ensure that the area of cutting has not been in storage for over 1 week. Samples should be kept in the lab conditions at least 24 hours before the specimens are tested.
2. Cut 8 rectangular specimens 2"x8". To PP woven fabric, cut the fabric width about 65 mm (2.5 in). After that, take out the tapes near cutting line to have exact width of 50mm. Take sample from fabric over 1/10 to the selvage edge & according to cross line of sample.
3. Set the distance between two clamps on the UTM at 75 ± 1mm (3 ± 0.05in)
4. Set the machine to operate at: 300 ±10 mm/ min (12 ± 0.5in / min)

5. Put sample into clamps, mark across the specimen at the front inner edge of each jaw to check for specimen slippage. When slippage occurs, the mark will move away from the jaw edge.
6. Press “start” to check Grab Tensile Strength & % of elongation of specimen, if the machine does not reverse back to the initial position automatically, manually set the distance between clamps to the initial distance (zero)
7. If the specimen slips or ruptures in the jaw or maybe some other procedural error occurs, discard the sample & cut another.
8. Decision to discard test results because of reasons from step 7 need the observation of changes of specimens during operation. If cannot make sure that breaking is from clamps, then any breaking occurs within 5mm of clamps which is below 50% of average value of all values, discard it.

   However, accept the result if the weakness is due to random distribution.

   In some cases, it may also be caused by a concentration of stress in the area adjacent to the jaws because the jaws prevent the specimen from contracting in width as the force is applied. In such cases, a break near the edge of the jaw is inevitable & should be accepted as a characteristic of the particular method of test.
9. If the specimen slips or if over 25% of specimen breaks at the position within 5mm of clamps:
   - The jaw may be padded
   - The fabric may be coated under the jaw face area
   - The jaw face may be modified
10. Value of Grab Tensile Strength & Elongation is the value of Grab Tensile Strength & Elongation displayed on testing specimen.
11. Based on specification of each product to evaluate if the results pass or fail. If the specimen is not passed, solve as non-conformance control procedure.

RESPONSIBILITY	DIAGRAM	DOCUMNET
Lab staff	Take fabric swatch ↓ Cut 8 rectangular specimens 2”x6” ↓ -Set clamp distance 75 ± 1mm -Set speed 300 ±10mm /min ↓ Put specimen in clamps right on the lines ↓ Press “start” to operate ↓ Consider No → NCM CP Yes ↓ Record	TN-QT D5035-BM01 ASTM D5035 ASTM D4759

V. Form applied

- TN-QT D5035-BM01

PREAPARED BY	EXAMINED BY	APPROVED BY

Title:	**Standard Test Method for Measuring the Nominal Thickness of Geotextile**
Reference Standard:	**ASTM D5199**
Test Category:	**Physical-Mechanical**
Material applicability:	**Woven PP geotextiles**
Target properties	**Measuring the Nominal Thickness of Geotextile**
Units:	**mm**
Specimen Geometry:	**4' x 4'square**
Number of specimens	**10**
Test equipments:	**Thickness measuring Device TN09**
Environmental condition:	**60 ± 10% relative humidity; 21 ± 2°C**
Data sheets:	**TN-QT D5199-BM01**

I. Purposes

-To ensure product quality, detect defects & initiate corrective action.

II. Scope

All Polypropylene (PP) geotextile fabric

III. Abbreviation

IV. Contents

1. Cut one (1) linear meter of fabric swatch between two (2) master rolls. Ensure that the area of cutting is in the middle of fabric roll which has not been in storage for over 1 week.

2. Cut through fabric width 10 samples, each one at least 100mm (4in.) to the edge selvage. Samples should be kept in the lab conditions at least 24 hours before the specimens are tested.

3. Put the presser foot with diameter 2.22 inc. in contact with the base when there's no sample; press "ON/CLEAR" to reverse back zero (0).

4. Lift the presser foot; center the specimen on the base & under the presser foot.

5. Let presser foot contact with specimen about 5 seconds (with a weight of 290gr on the top of presser foot, ensure the pressure when contacting with sample is 2 ± 0.02Kpa (0.29 ± 0.003psi))

6. Record the thickness with accuracy at least 0.02mm. Take sample out of testing equipment.

RESPONSIBILITY	DIAGRAM	DOCUMENTS
Lab staff	Take fabric swatch ↓ Cut 10 specimens 4" x 4" ↓ Press "ON" Set unit: mm Press "CLEAR" to reverse back zero (0) ↓ Lift presser foot. Put sample between pressure foot & the base. ↓ Put down the pressure foot to contact with sample for 5s. ↓ Record thickness of specimen ↓ Record	TN-QT D5199-BM01 ASTM D5199

V. Form applied

-TN-QT D5199-BM01

PREPARED BY	EXAMINED BY	APPROVED BY

Title:	**Fabric deterioration testing**
Reference Standard:	**ASTM D4355**
Test Category:	**Durability**
Material Applicability:	**PP Woven Geotextiles**
Target Properties:	**% retained of breaking strength and elongation Units: N, pound (lbs), %**
Specimen Geometry:	**rectangle 2'' x 6" (50 x 150mm)**
Number of Specimens:	**20**
Test Equipment:	**Atlas Ci3000+ testing machine**
Date Sheets:	**TN-QT D4355-BM01, TN-QT D4355-BM02**

I. Purpose

-To see the deterioration of products, then to meet the specifications.

-To develop products.

II. Scope: pp fabric

III. Abbreviation

LS: Lab staff

IV. Content:

1. Cut 2 samples, each one 1 square meter, from the full width sample of lab room. The samples are at least 1/10 of fabric full width from the edges. One sample is used for machine direction testing and the other is used for transverse direction testing.
2. Use the below figure 1 to specify testing sample. Draw randomly 20 samples by machine direction and transverse direction with dimension 50 x 150mm (2 x6in.). Can cut the sample longer than 6 in. to be proper with method D5035 after testing.

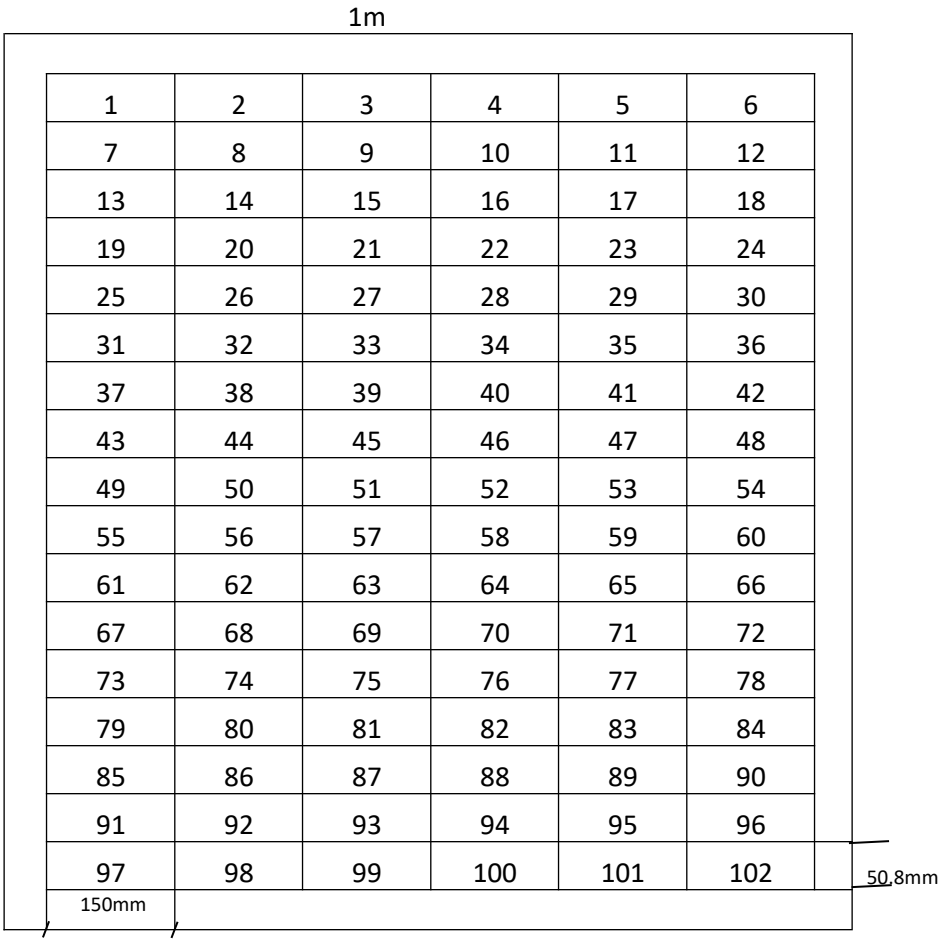


Figure 1. Choose samples

3. Put the samples on the tray and fix them with stainless steel frames in order to straighten the sample (no wrinkles).

   Note: Identify each sample by using a permanent marker to mark out of the testing area of sample.

4. Set the sample testing cycle as follows:
   - Cycle 1: 90 min exposed at 65±3^{0}C (149 ± 5^{0}F) black board and 50 ± 10% relative humidity.
   - Cycle 2: 30 min exposed and water spray.
   - Cycle 3: back to cycle 1.
5. Set and remain radiation control 0.35 ±(W/m^2/nm) at 340nm.

6. Expose each 5 same-direction samples (machine direction, transverse direction) with time in turn: 0 (no exposure), 150hrs, 300hrs, 500hrs.

   Put 15 same-direction trays of sample into testing booth so that the surface of samples is exposed. Close the booth door.

   Follow up the testing time and stopping time according to TN-QT D4355-BM01.

   Note:

   - Samples are rotated during testing time.
   - Samples are not allowed to take out from the testing booth over 24 hours.
   - Report testing time for any samples which are interrupted testing time over 24 hours.
7. Specify breaking strength by kN/m (lbs/in.) of 5 non-exposed samples and 5 exposed samples according to each stages of testing time/ direction (machine direction/transverse direction) of the method D5035 using 2 in. in width.
8. Work out breaking strength for the non-exposed samples as well as for the exposed samples according to the testing time/direction of sample.
9. Work out % of strength retained from the result of step 8.
10. Work out deviation and factor of upheaval of breaking strength for each 5-sample group above.
11. Based on TC04, if the average value of testing result < the required value:
    a. Eliminate the roll and continue to get the sample of the previous roll and the next roll to check until the result meets TC04.
    b. Report and solve the roll based on protocol for quarantine and resolution of non-conforming products.

RESPONSIBILITY	DIAGRAM	DOCUMENTS
LS	Full width fabric sample ↓ Cut 2 samples, each one $1m^2$ ↓ -Cut 20 samples by machine direction and transverse direction. -Size: 2 x 6 in. ↓ -Put samples on the testing tray. -Set the testing cycle. -Set the radiation: $0.35W/m^2/nm$ at 340nm -Expose sample at: 150hrs, 300hrs and 500hrs -Revolve the samples. ↓ Specify breaking strength according to D5035. ↓ Review strength No → Protocol for quarantine and resolution of non-conforming products Yes ↓ Save	TN-QT D4355-BM01 ASTM D4355 TC04.00 TN-QT D4355-BM02

COMPOSED BY	CHECKED BY	APPROVED BY

I. Objectives:

- Certify the quality of a product meets all technical requirements corresponding with such product.
- A product's Certificate of Quality is issued before that product is shipped

II. Scopes:

Apply to all GS and SF products

III. Abbreviation:

- TN: Test
- BM: Form
- QA: Quality Assurance
- QTKS SPKPH : Control procedure of nonconforming products

IV. Contents:

1. Sample testing

- Testers check and choose sample according to testing procedure D4354. Sample is kept at least 24 hours in laboratory condition before being tested.
- Fully test all methods as per testing procedure D4354 and complete the testing results within 03 days after having such samples
- Evaluate testing results, conform to Control Procedure of Nonconforming Products if the results show unqualified to technical requirements

2. Synthesize testing results of all methods

- Test leader synthesizes all results according to BM/TN08
- Conclude testing result
- Conform to Control Procedure of Nonconforming Products if the results show unqualified to technical requirements

3. List of roll for delivery and customer information

- List of roll for delivery and customer information are provided to QA department by planning department
- QA staff check product as per listed and check the MRs have not the testing result yet. Carry out the Control Procedure of Nonconforming Products if any inaccuracy in quantity, quality, label information or product appearance is found.
- QA shipping staff, responding for shipping out product, list down and full fill all customers' information as form BM/KCS28

4. Issue roll testing results according to roll delivery list

- Laboratory leader fully fills testing results into the list

- Testing results is mutual used to all rolls in range from the tested roll to the next roll tested.
- Check and compare results of MARV, MAX, MIN to technical standards. Apply the Control Procedure of Nonconforming Products if the results are lower than the standards.

5. Compile Quality Certificate Form/Certificate

- Collect calculation results of MARV, MAX and MIN from BM/KCS28
  + MARV: used for D4632, D4533, D6241
  + MAX: used for D4751
  + MIN: used for D4491
- Before signing, check all figures in Certificate comparing to those in BM/KCS28

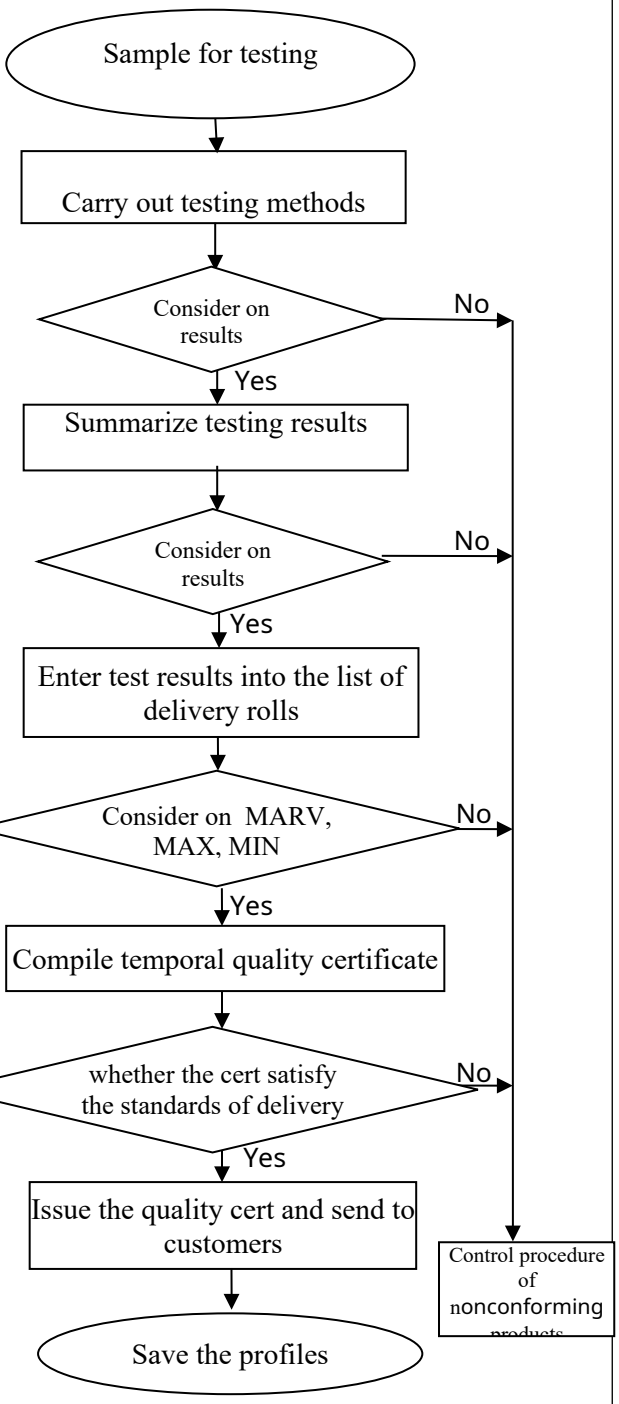
6. Check during delivery process

- QA shipping staff re-check:
- Information printed in labels of random rolls in comparison with product delivery list's as well as delivery request note's.
- Product appearance during delivery process
- Actual delivery quantity compared to the delivery list
- Product certificate compared to technical standards of product
- QA staff has the right to refuse delivering unqualified rolls, suspend the process and inform to QA manager or higher for advising solution

7. Issue certificate to customers

- Confirm the quantity, information of actual rolls shipped.
- Add or remove testing data from BM/KCS28 according to the list of actual delivery
- Re-check values of MARV, MAX and MIN in certificate
- Print out the certificate, sign on, scan and send file to customers

8. Save the certificate and testing data by customer/month/PO or by delivery date

Implementer	Procedure	Documents
Tester		D4354
Test leader		
QA manager		BM/TN08
QA staff		
QA manager		BM/KCS28
QA staff		
		BM/CN
		BM/CN

V. Biểu mẫu áp dụng / forms used

- BM/CN
-BM/KCS28

NGƯỜI SOẠN Prepared by	NGƯỜI KIỂM TRA Checked by	NGƯỜI DUYỆT Approved by

Group 2, Phuoc Hai Ward, Thai Hoa Town,
Tan Uyen Dist, Binh Duong Province, Viet Nam.
Tel: (+84.650) 362 5825 Fax: (+84.650) 362 5688
www.gialoi.com.vn

QUALITY CERTIFICATE

No: CN

Date:

Customer:

PO No.:

Invoice No.:

Cont No.:

Product Description:……..**is produced in Vietnam**

We certify our shipment to …….has the following specifications:

PROPERTIES	ASTM TEST METHOD	MARV
GRAB TENSILE	D4632 (MD/CD)	
GRAB ELONGATION	D4632 (MD/CD)	
UV RESISTANCE	D4355	
TRAPEZOID TEAR	D4533 (MD/CD)	
CBR PUNCTURE STRENGTH	D6241	
APPARENT OPENING SIZE	D4751	
PERMITTIVITY	D4491	

Performed By	Verified By

I. Purpose:

To regulate the procedures governing recruiting, training and employee evaluation to ensure that all jobs are properly done, particularly those related to quality control.

II. Scope:

The protocol pertains to all activities concerning the recruiting and training of employees.

III. Abbreviations:

- CTD - Chief of the Training Division
- DC -Division Chief
- BOD - Board of Directors
- QCM – Quality Control Manager
-

IV. Content:

A. Training:

1. New Employees: the HR Division is responsible for ensuring that trainees spend their first day of employment being familiarized with the following information:

- Establishment and history of the company, product line, company structure and the total number of employees.
- Compensation and company rules and regulations.

The QCM will familiarize the trainee with his/her tasks in the following way:

- Week 1: The QCM will explain the trainee's division structure, work guidelines, procedures, title and assignments.
- Week 2: Trainees shall observe and practice their assignments under the supervision of the CTD and QCM. Lab trainees will be familiarized with the following tests:
  + Evaluating the average mass per unit area of geotextiles [ASTM D5621]
  + Evaluating trapezoid tearing strength of geotextiles [ASTM D4533]
  + Grab breaking load and elongation of geotextiles [ASTM D4632]
- Week 3: Observation and practice of the following tests:
  + Static Puncture Strength of geotextiles using a 50mm probe [ASTM D6241]
  + Water permeability of geotextiles [ASTM D4491]
- Week 4: Observations and Practice on AOS (Apparent Opening Size) [ASTM D4751]
-

2. Veteran employees

2.1 A CD may request re-training for a veteran employee by submitting form NS-QT ĐT-BM01 to the PTĐT for consideration.

2.2 The CD will discuss the practicality of all training requests with the BOD and CTD. If the requested training must be conducted outside the company, the discussion will include a consideration of the costs.

2.3 If outside training is required, a request will be sent to GM for approval. The Division of Training will then be tasked with hiring outside trainers.

2.4 The division will generate a list of employees to be trained on form NS-QT ĐT-BM01.

2.5 At the conclusion of each training course, each employee will be required to file a copy of his or her training certificate with the Division of Training for documentation using form NS-QT ĐT-BM03. All such records will be forwarded to the QCM who will be responsible for ensuring an adequately trained work force.

2.6 If training is handled internally, veteran employees shall conduct training sessions.

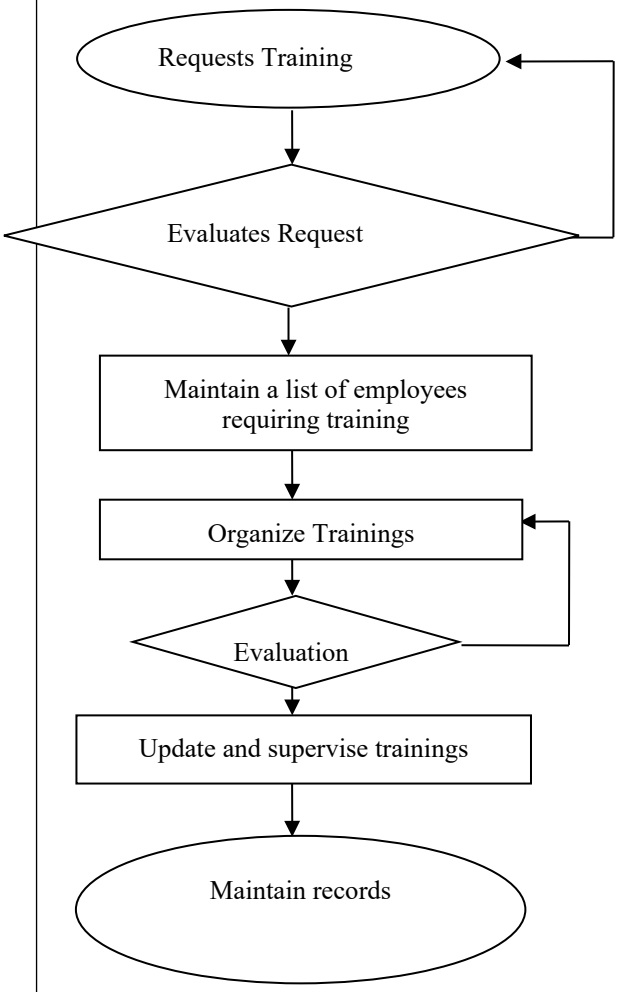
B. Evaluation

1. Following each training course, staff from Division of Training will issue examinations to the trainees. The QCM will evaluates trainees based on the following point system:

- Theory: 5 points
- Practice: 5 points
- Pass: ≥ 7 points
- Trainees who fail to pass must be re-trained and re-evaluated.

2. The results of all employee evaluations must be recorded on form NS-QT ĐT-BM01 and documented in accordance with the company's documentation protocol.

3. The QCM and CTD must collaborate on providing an annual training session. The QCM and CTD must also hold trainings every time the company purchases new equipment. These sessions must comply with sections 2.1-2.6 and B.

Individuals in charge	Procedure	Documents
DC BOD/CTD CTD&QCM CTD& QCM Trainers HR Division/QCM HR Division/ QCM		NS-QT ĐT-BM01 NS-QT ĐT-BM02 NS-QT ĐT-BM03 NS-QT ĐT-BM03

V. Forms applied

- NS-QT ĐT-BM01, NS-QT ĐT-BM02, NS-QT ĐT-BM03.

PREPARED BY	EXAMINED BY	APPROVED BY

I. Purpose:

To establish the statistical standards used to evaluate QC test results (i.e. Statistical Process Control Plan). Besides, to use Pareto chart to display according to important sequence and rank the improvement opportunities.

II. Scope:

All Polypropylene (PP) products according to SOP D4632, D4533 vaø D6241

III. Abbreviations:

- Board of Directors: BOD
- QA Manager
- MARV: The minimum average roll value

IV. Content:

4.1 Statistical Control Process

- Choose measuring unit is testing value (force).
- Draw on xy axis, with x is LOT number of product and y is MARV (lbs) of that lots.
- Standard MARV is specifications value corresponding with each product.

4.2 Statistic of testing results and improvement

- QA Manager will carry out statistic of testing results corresponding with above testing methods every month.
- Count average value of each tested specimen and work out MARV value. MARV is carried out to certify the quality of products corresponding with above testing methods.
- Make a chart between MARV (force) and lot number.
- Review distribution of MARV.
- Compare between MARV value worked out and standard MARV value of each product.
- Review variation of MARV value to find out which one need to be improved: material or formulation.

V. Forms applied

- BM/TN13.

PREPARED BY	EXAMINED BY	APPROVED BY

I. Purpose

To ensure that due precaution is taken to prevent the manufacture of non-conforming products and that all such products are quarantined and the cause of the problem is quickly remediated.

II. Scope of application

- Relates to all Polypropylene (PP) products.

III. Abbreviations

- GM: General Manager
- DC :Division Chief
- NCP: Non-conforming product.
- BOD: Board of Directors

IV. Content

1. Remedial and Precautionary protocols

1.1 The company's remedial and precautionary protocols are generated by DCs and upper-managers to minimize the possibility of releasing a non-conforming product. They are also designed to assist the company staff, customer service professionals and members of the sales team in using customer complaints and comments in a constructive manner.

1.2 The protocol is generated based on a thorough analysis of the following data:

* Division protocols and their impact on product quality
* Employee evaluations, QC test results, and product check samples
* Customer suggestions and complaints.

1.3 During routine Internal Audits, all reports pertaining to non-conforming products are thoroughly reviewed. The auditors are responsible for analyzing existing remedial and precautionary procedures and generating recommendations for new ones.

1.4 The auditors' recommendations (as recorded in their QC-QT SPKPH-BM02 reports) will be sent to the departments responsible for implementing them. These reports are then transferred to a representative of the BOD so that he/she can revise according to our protocols. The BOD will then assign a representative to track the implementation of the remedial and precautionary recommendations.

1.5 The DC responsible for the division in which the nonconformance was first detected is responsible for analyzing the causes of any non-conformance and presenting remedial and precautionary measures, appointing staff to implement them and establishing a deadline for their implementation. These measures will be considered and approved according to the jurisdictional flow chart attached in section two.

1.6 The Board of Director's Representative will appoint and evaluate a supervisor charged with implementing the remedial and precautionary procedures. Test samples will be gathered.

- If the results are satisfying (e.g. consistently positive) then the appointed supervisor will record them in his/her QC-QT SPKPH-BM02 report and submit it to the Board of Director's representative. At this point, the process will be complete.
- If the results are unsatisfying (e.g. negative or inconsistent) then the appointed supervisor will record them his/her QC-QT SPKPH-BM02 report and submit it to the Board of Director's representative; at which point, the representative will issue a new QC-QT SPKPH-BM02 and repeat steps 1.4 –1.6 of this protocol.

2.**Jurisdictional flow chart pertaining to remedial and precautionary measures**

No.	Problem area	Jurisdiction		
		Oversight	Diagnosis	Implementation
1	Product quality	Board of Directors	QC Department, Manufacturing Department	Manufacturing Department
2	Manufacturing process	Board of Directors	Manufacturing Department	Manufacturing Department
3	Testing inspection and measurement equipment	Board of Directors	Engineering Department	Engineering Department
4	Purchasing goods	Board of Directors	Marketing Manager	Marketing Staff
5	Equipment	Board of Directors	Engineering Department	Technician
6	Product maintenance, storage and delivery.	Board of Directors	Warehouse Manager	Warehouse-Manager
7	Training	Board of Directors	Head of Training Department, QCM	TCHC Department's Staff

1.1. Classification of nonconformance

- NC+ is considered a Major Nonconformance—wherein company protocols have not been implemented whatsoever.
- NC- is considered a Minor Nonconformance—wherein company protocols were followed but insufficiently.
- OBS is Observation—a note demanding improvements to general process to improve business performance.

REMEDIAL ACTION FLOW CHART

Individuals in charge	Procedure	Documents
-DC	Detects non-conforming	
-DC/ QCM	Isolates cause, recommends solution	QC- QTSPKPH -BM02
-DC wherenon-conformance is detected	Consideration	
-DC where non-conformance is detected	Determine cause	
-DC where non-conformance is detected	Consideration	
-DC where non-conformance is detected	Suggest solutions	
-DC where non-conformance is detected	Considerati	
-DC where non-conformance is detected	Apply solution	
GM and Concerned DC	Evaluate	
QC Division	Planning a resolution	BGĐ-QT KP&CT-BM01
QC Division	Documentation	

V. **Forms applied**

- QC- QTSPKPH-BM02
- BGĐ-QT KP&CT-BM01

PREPARED BY	EXAMINED BY	APPROVED BY

I. Objective:

Guarantee that disqualified products (Non-conforming products) will not be put into use.

II. Scope of Application:

Applies to all imported raw materials, semi-finished and finished products.

III. Abbreviation

- CEO: Chief Executive Officer
- QC: Quality Control

IV. Content:

1. When an employee or Division supervisor becomes aware of a disqualified product (i.e. raw material, semi-finished, finished product, product returned by client) he or she must immediately fill out a QC-QT SPKPH-BM01 form and affix it to the product. Said employee must immediately quarantine the disqualified product and report it to the appropriate Division Chief.

2. The Division Chief must quarantine and thoroughly inspect any non-conforming product and any subsequently produced products until all non-conforming products are identified, quarantined and assigned a QC-QT SPKPH-BM01 form.

3. The Division Supervisor must fill out a full QC-QT SPKPH-BM02 report that includes one or more of the following recommendations:

- A plan to repair the products and return them to the client that complies with the company's QC protocol. OR

- A plan to retrieve all non-conforming products from the client. OR

- A plan to downgrade the products to be reused for other purposes. OR

- A plan to destroy the products and salvage the raw materials. OR

- A plan to return any and all non-conforming raw materials to the supplier.

4. The QC Manager must inspect the disqualified products and transfer the Division Chief's QC-QT SPKPH-BM02 report to the CEO for review. Following the CEO's review, the QC Manager will assign personnel to resolve the non-conformance based on the supervisor's recommendations.

5. The personnel assigned to resolve the non-conformance shall follow the steps outlined in the QC-QT SPKPH-BM02 report. Once these steps are completed, the personnel assigned to resolve the non-conformance must issue a full report to the CEO.

6. The QC Manager will supervise the implementation resolution outlined in the QC-QT SPKPH-BM02 report and ensure that the disqualified product remains quarantined until the non-conformance is resolved.

7. The Division Chief will determine if the non-conformance merits amendments to the production protocol to ensure the error is not repeated.

Individuals in charge	Flowchart	Document
	Non-conformance detected	
-Division Chief	Inspect and quarantine all disqualified products	QC-QT SPKPH-BM01
- Employees - Division Chief	Fill out and affix a BM/KCS11 form to disqualified products	QC-QT SPKPH-BM01
- Division Chief	Generate a BM/KCS05 report that includes a recommended resolution	QC-QT SPKPH-BM02
- Quality Control Manager - CEO	Assess (No / Yes)	QC-QT SPKPH-BM02
- Division Chief - CEO	Assign personnel to execute recommend actions in (Yes)	QC-QT SPKPH-BM02
	BM/KCS05.00	
- Division Chief - CEO - QC Manager	Report the outcome to the CEO and division	QC-QT SPKPH-BM02
	Assess (No / Yes)	QC-QT SPKPH-BM02
	Determine whether the production protocol must be amended to prevent future non-conformance	
	Completion	

V. Forms applied

1. QC-QT SPKPH-BM01
2. QC-QT SPKPH-BM02

PREPARED BY	EXAMINED BY	APPROVED BY

I. Object:

Ensure that the company's lab and measurement equipment remains properly calibrated at all times.

II. Scope of application:

Applies to all lab and measurement equipment used in QC procedures throughout the factory.

III. Abbreviation:

- CEO: Chief Executive Officer
- QCM: Quality Control Manager
- HTD: Head of Technical Division

IV. Content:

1. *Inventory of all lab and measurement equipment:*
   - The QCM and the HTD must maintain an inventory of all measurement equipment used during production both inside and outside the factory.
   - This inventory must be maintained on a QC-QT KSTBĐ-BM01 form.

2. *Establishing a schedule for maintaining and calibrating measurement equipment:*
   - All measurement equipment must be calibrated at least once a year. The schedule for calibrating must be created and maintained by the HTD on a KT-QT KSTBBT-BM01 form.
   - This schedule shall be transferred all related Division Chiefs for review before being submitted to the CEO for approval.
   - Factory equipment must be cleaned every weekend as described on the QC-QT KSTBĐ-BM06 form**.**

3. *Establishing a plan for calibrating and monitoring measuring equipment:*
   - The plan should be recorded on a QC-QT KSTBĐ-BM03 form and include: the proposed dates of calibration, the equipment used, the location of the procedure, the personnel in charge.
   - The calibration plan should be submitted to the CEO for final approval.

4. *Executing the calibration plan:*
   - The personnel in charge need to follow the plan; in case any problem arise during the calibration procedures, they must report back to the QCM immediately for advice.
   - After the calibration is complete, the personnel in charge must submit their results to the QCM. These results must include: calibration equipment used, the method of calibration, and maintenance methods used for calibration.

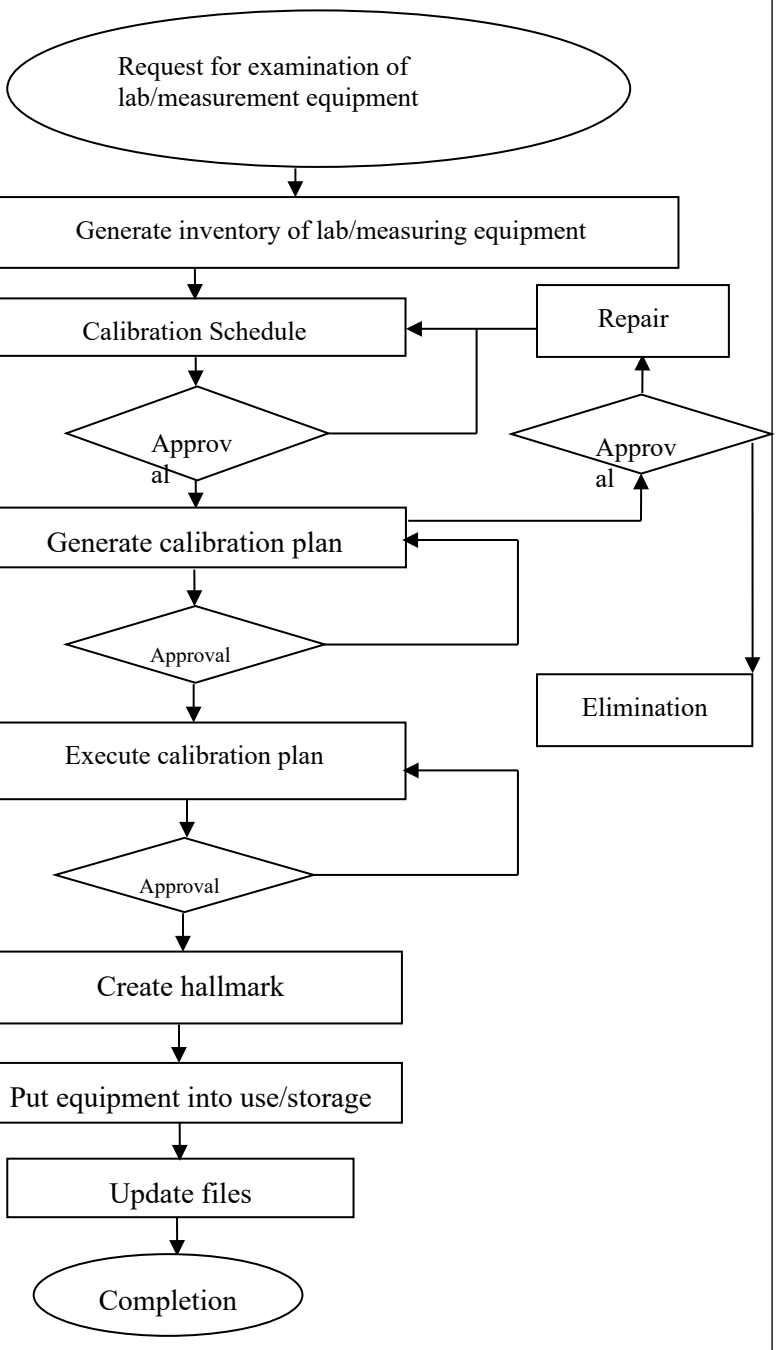
5. *Certification label/hallmark specifications:*

   Calibration technicians must affix a label onto all calibrated measurement equipment. This label must include: the date of calibration, the equipment's name, the name and signature of the technician.

6. *Internal calibration inspections and checks:*
   - Before being applied to the company products, all measurement equipment must be inspected internally by being compared to equipment calibrated by outside authorities. Following such inspections, an "internally inspected" sticker must be affixed to the machine.
   - Following each bi-annual calibration, the HTD must recheck all measurement equipment. He/she must quarantine all unqualified equipment, and immediately fill out a QC-QT KSTBĐ-BM04 form and submit it to the DC responsible for said equipment.
   - In the course of operation, if measurement equipment is observed to provide inaccurate results, the operator must immediately report the problem to the maintenance department and have the device repaired at once.

7. Monitoring calibrated equipment
   - Any measurement equipment that has been subject to repairs must be calibrated and checked before being put into use, unless it is returned with a certificate of calibration.
   - In the event that new measurement equipment has been purchased, the laboratory should demand: a certificate of calibration issued by an accredited laboratory, instruction on calibration, the tools necessary to conduct internal calibration, a training contract for the operator & maintenance staff.
   - Disqualified machines must be quarantined and labeled "Do not use".
   - All relevant divisions must guarantee that all testing and measuring equipment is dismantled, moved, maintained, stored in accordance with factory specification in order to ensure these machines provide accurate readings at all times. This equipment must be stored and operated in a secure, cleanly environment.
   - Equipment not subject to calibration or checks cannot be used in executing QC protocols. However, such devices may be used to conduct preliminary examinations or reference purpose.

8. Record keeping:
   - All the documents related to measurement equipment calibration protocols must be carefully stored in accordance with the Record Retention and Destruction Protocol.

Individuals in charge	procedure	Documents
		

HTD/QCM

QCM

DC/CEO

QCM

CEO

Technicians

Head of division/QCM

Technicians

Technicians/QCM

Technicians/QCM

List of measuring equipment: QC-QT KSTBĐ-BM01

Calibration Schedule: KT-QT KSTBBT-BM01

Calibration Plan: QC-QT KSTBĐ-BM03

Calibration schedule assessment checklist: QC-QT KSTBĐ-BM04

Record Retention protocol

V. Forms applied:

List of measuring equipment	QC-QT KSTBĐ-BM01
Calibration schedule	QC-QT KSTBĐ-BM02
Calibration plan	QC-QT KSTBĐ-BM03
Assessment checklist	QC-QT KSTBĐ-BM04

PREPARED BY	EXAMINED BY	APPROVED BY

GiaLoi	**INSTRUCTION TO CHECK ELECTRONIC BALANCE**	DCN: HD KTCĐT.02 Revision: 02 Effective date: 02/01/2024 Page: 1/1

I. **Purpose**

To ensure of the reliability of device measurement

II. **Scope**

Electronic balance in lab room

III. **Abbreviation**

IV. **Content**

1. Press button "TARE" in order to displays zero "0" on the screen
2. Use at least **05** standard balance weights with different weight which was calibrated then put into the device which is checked.
3. Fill result in the form QC-QT KSTBĐ-BM02
4. Compare the weight of the standard weight with the measuring results.

   -If having any differential >0.5%, stick the label "no use" on that wrong device.

   -If all of results have differential ≤ 0.5%, stick stamp internal calibration on that device.
5. Make the report of checking devices & pass to quality control manager.
6. After being calibrated, the device needs checking each time of using at the beginning of the week to maintain reliability of calibration condition.

V. **Form applied**

QC-QT KSTBĐ-BM02

PREPARED BY	EXAMINED BY	APPROVED BY

I. **Purpose**

Specify & calibrate to ensure of the reliability of device measurement.

II. **Scope**

Pressure transducers

III. **Abbreviation**

IV. Content

A. Pressure transducer

1. Open the input valve so that the water runs over fitly at the edge. Lock the input valve.
2. When the water stops running over the edge, record the value on the measuring ruler of water tube & measuring ruler on the edge in the first & the second column of BM/KCS22.00.

   Note: if the ruler on the edge points 30mm =it points 0mm on the water tube.
3. Value of the 3^{rd} column = 1^{st} column – 2^{nd} column
4. Record the value displaying in screen in 4^{th} column.
5. Value of 5^{th} column = 3^{rd} column – 4^{th} column
6. Put IRM device on the position to put sample, do from the 1^{st} step to the 5^{th} step with various water levels on water tube.
7. If variation > ± 0.5%, must do the next adjusting steps.
8. Open screw of pressure transducer, lift slightly to change the box. Use hand to tap slightly to release air out of the box.
   - Get out the small water tube which connects pressure transducer with water tube & the edge to release air, and then fix it again.
   - Use screwdriver to fix pressure transducer
   - Do from the 1^{st} step to the 6^{th} step.
   - If there's still variation, adjust directly the button behind the box so that the screen displaying "LOGIN" changes into "00.0"
9. Stick internal calibration label
10. After being calibrated, the device needs checking each time of using at the beginning of the week to maintain reliability of calibration condition.

B. Flow rate measuring device (every month)

- Verify the stop watch,
- Verify the volume measurements by closing the collection container valve and filling the container with water using the calibrated graduated cylinder. Compare the measured collection volume with the "displayed" collection volume

V. Form applied

-BM/KCS22.00

PREPARED BY	EXAMINED BY	APPROVED BY

GiaLoi	**INSTRUCTION TO CHECK THICKNESS MEASURING DEVICE**	DNC: HDKT TBĐĐD.02 Revision: 02 Effective date: 01/01/2024 Page: 1/1

I. **Purpose**

Specify the reliability of device measurement

II. **Scope**

Thickness measuring device of lab room

III. **Abbreviation**

IV. Content

1. Press “ON/CLEAR” in order to display zero “0” on the screen.
2. Use at least 5 standard pieces with the different thickness (ex 0.3mm; 0.4mm; 0.6mm 0.8mm & 1mm) which were calibrated to put one by one into the device which needs to be calibrated.
3. Record results in QC-QT KSTBĐ-BM02
4. Compare the thickness of standard pieces & measuring results:

   -If having any differential >0.02mm, stick label “no use” on that wrong device.

   -If all of results have differential ≤ 0.02mm, stick stamp internal calibration on that device.
5. Make report of checking measuring device & pass to QCM.
6. After being calibrated, the device needs checking each time of using at the beginning of the week to maintain reliability of calibration condition.

V. Form applied

QC-QT KSTBĐ-BM02

PREPARED BY	EXAMINED BY	APPROVED BY

I. **Purpose**

To ensure of the reliability of device measurement

II. **Scope**

Digital length measuring roller

III. **Abbreviation**

None

IV. Content

A. **Digital length measuring roller**

1. Press "RST" on the gauge which needs to be calibrated to return zero "0".
   Press "RST" on standard gauge to return zero "0" on the screen. Put the digital length measuring roller on the fabric before carrying out measurement.
2. Let machine run corresponding with the different length 1, 20,50,100,150 m. Then, compare among the meter on machine, the meter on standard gauge and the meter on measuring tape when running one by one of different length.
3. Record results in QC-QT KSTBĐ-BM02
4. Compare the length (meter) on the calibrated gauge & the actual length result (meter) from the machine:

   -If having any differential between ± 1% stick internal calibration label QC-QT KSTBĐ-BM05.

   -If having any differential outside the range ± 1%, stick label "no use" on that wrong device.
5. Set the record of checking & transfer to QAD.

B. **Straight ruler**

1. Let zero "0" point of a traceable mm scale overlaps the ruler that need to be calibration
2. Choose 5 points on the traceable mm scale and compare among the mm on the ruler
   Proceed as in 3 through 5

V. Forms applied

-QC-QT KSTBĐ-BM02

-QC-QT KSTBĐ-BM05

PREPARED BY	CHECKED BY	APPROVED BY

GiaLoi	**INSTRUCTION TO CHECK NTPEP CODE PRINTED ON FINISHED FABRICS**	DCN: HDKT NTPEP.02 Revision:02 Effective date: 15/11/2014 Page: 1/2

I. **Purpose**:

To identify the products produced by Gia Loi JSC and/or to identify the special products for a unique customer.

II. **Scope**: Apply for **GS36/GS40/ GS48/ GS57** and **SF30/SF36**

III. Abbreviations

PO: Purchasing Order

IV. **Content**

1. There are 5 following NTPEP codes:
   - CP7MMQKFBNJB
   - 48CD9HRBMHJJ
   - 8TVD3JZFFN76
   - RMXBCJE3GB2X
   - VUYB6NJ3RLPA

   Each month Gia Loi Company will print on fabric unique NTPEP code for all products as the above scope. QA will provide this code to the related divisions.
2. **Printing on fabric 8-10 cm from the edge and repeated each 5m include:**
   - NTPEP code: QC must check what NTPEP code should be printed in Production Order and then compare with sample printing on fabric before packaging. This sample printing is recorded with document of each product packed in one day.
   - Date of production (automatically)
   - Time of production (automatically)
3. **Information on labels outside fabric rolls:**

   Each finished product roll will be labeled with 4 labels (2 inside the core and 2 at the end of the roll on each side) with the following information:
   - Name of products/specifications
   - Production lot #: is the weaving lot # of that product

- Roll #: Tracking #
- Manufacture date: is the finishing date of that master roll.
- NTPEP code (if required): Packaging QC will check and compare between this code on label and the code printed on fabric and then ensure they are the same.
- AASHTO M288 Class as follows:

Product	GS57	GS48	GS36
AASHTO M288 class (Elongation <50%)	Class 1	Class 2	Class 3

Before shipping goods, QA has to compare information of labels on fabric rolls and information on labels in Production Order. If any non-conformance is found out, solve it according to Non-conforming product control process.

PREPARED BY	EXAMINED BY	APPROVED BY

RAW MATERIAL SPECIFICATIONS

No.	SKU	Material name	Type	Criteria	MI value	Testing method
1	HD-Z-1100J-T	HD resin	Coating	Melt index	17-23	COA of suppliers/Datasheet
2	HD-Z-5818J-SCG-T					
3	HD-Z-HMA016-T					
4	HD-Z-5000S-PTT-S		Tape		0.7-0.9	
5	HD-Z-5480-SCG-S					
7	LD-Z-C119-T	LD resin	Coating	Melt index	6-10	COA of suppliers/Datasheet
9	LD-Z-777C-T					
11	PP-Z-HGX030-S	PP resin	Raffia	Melt index	2.7-3.3	COA of suppliers/Datasheet
15	TC-T-603A-TL-S	Taical-Vistamax	Filler	Melt index	5.5-6.5	Datasheet of suppliers
16	TC-T-6B-TT-S				28-32	
17	VXM-T-6102-GME-S		Addivtive		1.5-4.5	
18	MB-X-44697-TT-S	MB	Addivtive	Color difference	1-10	COA of suppliers/MB samples
19	MB-X-42936-TT-S				1-10	
20	MB-XD-42678-TT-S				1-10	
21	MB-Do-10846A-TT-S				7.5-8.5	
22	MB-T-91480-TT-S				1-10	
	MB-D-H4408				80-120	
23	MB-D-305B-TT-S				1-10	
24	MB-Xa-106-TT-T				5-15	
25	MB-R-35037-TT-T				4.5-5.5	
26	MB-X-42598A-TT-T				10-20	
27	MB-R-32646-TT-T				4.5-5.5	
28	MB-X-42446-TT-T				3.5-4.5	
29	MB-C-70260-TT-T				10-30	
30	MB-L-32925-TT-T				10-20	
31	UV-T-TT-ST	UV	Addivtive	UV content	20%	Datasheet of suppliers

14/05/2023

COMPOSED BY	CHECKED BY	APPROVED BY

PP YARN SPECIFICATIONS

SKU	Weight +/- 2% (tex)	Tape width +/-0.05 (mm)	Tensile Min. (g/D)	Tear strength Min. (kgf) (>)	Elongation (%)	Warp bobbin diameter (G) mm	Weft bobbin diameter (T) mm
PD204U-20	204	1.95	5.5	10.1	15-25%	<120	105-110
PD185U-20	185	1.97	5.5	9.2			
PD170U-20	170	1.95	5.5	8.4			
PD155U-20	155	1.95	5.5	7.7			
PD140U-20	140	1.95	5.5	6.9			
PD130U-20	130	1.97	5.5	6.4			
PD124U-20	124	2.00	5.0	5.6			
PD115U-20	115	1.97	5.5	5.7			
PD107U-19	107	1.90	5.5	5.3			<100
PC107U-19	107	1.90	5.5	5.3			
PD85-19	85	1.90	5.5	4.2			

2/1/2023

COMPOSED BY	CHECKED BY	APPROVED BY

SURFACE CRITERIA OF PP FABRIC

No.	Checking criteria	Standard	Resolution of non-conformance
1	Weft errors	1 time 1 weft tape < 20cm	- Cut error. Allow to joint 1 time in 1 finished roll.
		3 times 1 weft tape < 20cm, if the minimum distance between the last 2 weft errors is >50m.	
		1 time 1 weft tape < 30cm	
2	Warp errors	3 times with area 2cm ^{2}	
		2 times with the area from 2-15 cm^2 using PP tape 7.5 kgf to stitch up by star or cross to fullfil the hole.	
3	Edge selvage	No pulling-out tapes. 2 edges of the bobbins must be even.	Use soldering to cut the pulled out tapes
4	Dimension	Fabric width: ± 2%	- Separate & stick label " non-conformance" - Make non-conformance & hand in to QCM.
		Length: according to customer's requirement	
5	Weight/roll	± 2%	
6	Jointing	1 time/roll; the length of joint piece is at least >6m	
		Use heating to cut fabric when jointing & finishing 1 roll (94.5m)	
		Folding 2 fabric edges & 2 stich lines.The distance between two stitch lines is 5cm.	
		Use black PP tape with tearing strength >7.5kgf to stich.	
		5% of joint roll/ 1cont (275 rolls)	
7	Packing	Use black film to pack, 2 layers.	
		Strap 03 rolls/ 1 bunch.	
8	Paper core	Dimension: according to customer's requirement	
		Must be clean.No worm,wetness or damage	
9	Label	Stick outside, at the beginning of the film-wrapped roll.	
10	Surface of fabric rolls	wìnd tightly	
		2 edges of fabric roll are even.	
		Clean packing, no tearing	

1/2/2020

PREPARED BY	EXAMINED BY	APPROVED BY

GIALOI JOINT STOCK COMPANY

PP WOVEN GEOTEXTILE

MECHANICAL PROPERTIES	ASTM TEST METHOD	GS36	GS40	GS46	GS50	GS55
NTPEP Number		GTX-2016-01-141	GTX-2020-01-253	GTX-2020-01-254		GTX-2020-01-255
WEAVE		12x12ppi (48x48 tapes per 10cm)				
COLOR		Black				
WEIGHT	D5261	3.6oz/122gsm	4oz/135gsm	4.6oz/155gsm	5oz/169gsm	5.5oz/186gsm
GRAB TENSILE	D4632	180lb/800N	200lb/890N	250lb/1100N	270lb/1200N	315lb/1400N
GRAB ELONGATION	D4632	> 15%				
UV RESISTANCE	D4355	> 70%				
CBR PUNCTURE RESISTANCE	D6241	640lb/2800N	700lb/3110N	800lb/3550N	880lb/3920N	940lb/4150N
TRAPEZOID TEAR	D4533	72lb/320N	85lb/375N	100lb/445N	110lb/490N	125lb/555N
APPARENT OPENING SIZE	D4751	40 US Sieve				
WATER FLOW	D4491	5 gal/sqft/min, 203 l/min/m^2				

These values are MARV data and are not intended as limiting specifications.

PHYSICAL PROPERTIES	UNIT	TYPICAL VALUE				
		GS36	GS40	GS46	GS50	GS55
ROLL DIMENSIONS (WIDTH X LENGTH)	ft (m)	12.5 x 432 (3.8x132) 15 x 360 (4.57 x 110) 17.5 x 309 (5.34 x 94)	12.5 x 432 (3.8x132) 15 x 360 (4.57 x 110) 17.5 x 309 (5.34 x 94)	12.5 x 360 (3.81 x 110) 15 x 300 (4.57 x 91) 17.5 x 258 (5.34 x 78)	12.5 x 360 (3.81 x 110) 15 x 300 (4.57 x 91) 17.5 x 258 (5.34 x 78)	12.5 x 360 (3.81 x 110) 15 x 300 (4.57 x 91) 17.5 x 258 (5.34 x 78)
ROLL AREA	yd^2 (m^2)	600 (502)	600 (502)	500 (418)	500 (418)	500 (418)
ROLL WEIGHT	lb (kg)	135 (61.4)	150 (68.2)	143.8 (65.3)	156.2 (71.0)	171.9 (78.1)

Packaging: 4" heavy duty paper core, wrap with black film, tripack

Group 2, Phuoc Hai, Thai Hoa, Tan Uyen,
Binh Duong Province, Vietnam

Tel:(+84-650) 3625625 Fax:(+84-650) 3625688

www.gialoi.com.vn

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PE YARN SPECIFICATIONS

SKU	Weight (tex)	Tape width (mm)	Lực căng (g/D)	Breaking strength (kgf) min	Elongation (%)	Warp bobbin diameter (G) mm	Weft bobbin diameter (T) mm	Notes
T85-29	85	2.9	3.8	2.9		≤90		
Do90-29	90	2.9	3.8	3.1				Red color
XN95-22	95	2.15	3.8	3.2				Blue color-MS
XD95-22	95	2.15	3.8	3.2				
T95-21	95	2.05	3.8	3.2		≤100		
T95UV-21	95	2.05	3.8	3.2				
T115U-21	115	2.05	3.8	3.9				
T130UV-20	130	2.0	3.8	4.4				
X90-29	90	2.9	4.0	3.2	15-25%	≤90		
Z85-29	85	2.9	4.0	3.1			≤90	
Z90-32	90	3.2	4.0	3.2				
D90-29	90	2.9	3.8	3.1				
Z100-36	100	3.6	4.0	3.6				
T100-36	100	3.6	4.0	3.6				
T100UV-36	100	3.6	4.0	3.6			≤95	
T115UV-36	110	3.6	4.0	4.0				
T140UV-46	140	4.6	4.0	5.0				

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PP FABRIC SPECIFICATIONS OF LOOM DIVISION

SKU	Color	Mesh (sợi/in.)			Weight (g/m^2)	Weight (g/m^2)	Weight/ MR (kgs)	Ø of steel pipes (mm)	Small roll/MR	Diameter of fabric roll (cm)	Edge
		Warp		Weft							
SF24-30x4-MR	black	12	x	11.5	2,850	81	423	114	2	110	Ultrasonuic cutter
SF24-30x4-MRC	orange				2,850	81	423		2		
SF30-50x2-MR	black				2,850	101	442		1		
SF30-50x2-MRC	orange				2,850	101	442		1		
SF30-30x4-MR	black				2,850	101	529		2		
SF30-30x4-MRC	orange				2,850	101	529		2		
SF30-40x3-MR	black				1,900	101	705		2		
SF30-40x3-MRC	orange				1,900	101	705		2		
SF36-30x4-MR	black				2,345	122	522		2		
SF36-30x4-MRC	orange				2,345	122	522		2		
GC30-30x4-MR	black				2,576	101	481		56		
GC30-40x3-MR					1,840	101	683		60		
GC30-60x2-MR					1,840	101	341		20		
GC30-100-MR					1,840	101	569		20		
GC30-120-MR					1,840	101	683		20		
GC30-150-MR					1,840	101	853		20		
GC30-175-MR					1,380	101	747		15		
GS36-125-MR					1,620	122	751		12		
GS36-150-MR					1,350	122	751		12		
GS36-175-MR					1,155	122	750		12		
GS40-125-MR					1,620	135	834		12		
GS40-150-MR					1,350	135	834		12		
GS40-175-MR					1,155	135	834		12		
GS46-125-MR					1,360	155	803		12		
GS46-150-MR					1,130	155	800		12		
GS46-175-MR					965	155	799		12		
GS55-125-MR					1,360	186	964		12		
GS55-150-MR					1,130	186	961		12		
GS55-175-MR					965	186	958		12		

05/01/2019

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PE FABRIC SPECIFICATIONS OF LOOM DIVISION

SKU	Color	Mesh (tapes/in.)			Weight (g/m^2)	Allowed weight		Ø of steel pipes (mm)	Max length (m)	Max diameter (m)	Edge
		Warp		Weft		-2%	2%				
H5-MR	White	9	x	11	88.2	86.4	90.0	114	1,850	1.3	Selvage
H8-MR	White	12	x	13	98.1	96.1	100.1	114	1,850	1.3	
MS5-MR	White-dark blue	12	x	13	98.1	96.1	100.1	114	1,880	1.1	
UV9-MR	White	12	x	13	98.1	96.1	100.1	114	1,850	1.1	
UV10-MR	White	12	x	14	120	117.6	122.4	114	1,600	1.1	
X2-MR	Blue	9	x	9	62	60.8	63.2	114	3,000	1.3	
XT1-MR	Blue-white	9	x	9	58.6	57.4	59.8	114	3,000	1.3	
S120-MR	Blue-white-red	9	x	11	69.5	68.1	70.9	114	3,000	1.3	
BT200-MR	White	12	x	14	120	117.6	122.4	114	1,600	1.3	
L240-MR	White	12	x	15	144.1	141.2	147.0	114	1,300	1.1	
R240-MR	White	12	x	15	144.1	141.2	147.0	114	1,300	1.1	

Note: Workers/ loom technicians have to unload fabric length the same as requirements in SKU. If they unload fabric with different length (excess or lack), they have to mention clear reasons.
& ký vào tờ giấy giao ca.

1/7/2023

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PP FINISHED PRODUCT SPECIFICATIONS

SKU	Specifications (m)			Weight (g/m2)	kgs	-kgs	+kgs	Paper core (mm)	Packing
SF24-36-MR	0.92	x	2745	81	204.5	200.5	208.6	OG100x9x950	PE fabric outside fabric rolls, imported paper core
SF24-36-MRC	0.92	x	2745	81	204.5	200.5	208.6	OG100x9x950	
SF30-36-MR	0.92	x	2745	101	255.7	250.6	260.8	OG100x9x950	
SF30-36-MRC	0.92	x	2745	101	255.7	250.6	260.8	OG100x9x950	
SF30-48-MR	1.22	x	2745	101	340.9	334.1	347.7	OG100x9x1250	
SF30-48-MRC	1.22	x	2745	101	340.9	334.1	347.7	OG100x9x1250	
SF30-60-MR	1.53	x	2745	101	426.1	417.6	434.7	OG100x9x1560	
SF30-60-MRC	1.53	x	2745	101	426.1	417.6	434.7	OG100x9x1560	
SF36-36-MR	0.92	x	2287.5	122	255.7	250.6	260.8	OG100x9x950	
SF36-36-MRC	0.92	x	2287.5	122	255.7	250.6	260.8	OG100x9x950	
GC30-30x300	0.92	x	92	101	8.5	8.4	8.7	OG76x6x950	BP-50-Đ
GC30-40x300	1.22	x	92	101	11.4	11.1	11.6	OG76x6x1250	
GC30-60X300	1.83	x	92	101	17.0	16.7	17.4	OG76x6x1870	
GC30-80X300	2.44	x	92	101	22.7	22.3	23.2	OG76x6x2480	
GC30-100X300	3.05	x	92	101	28.4	27.8	29.0	OG76x6x3090	
GC30-120X300	3.66	x	92	101	34.1	33.4	34.8	OG76x6x3700	
GC30-150X300	4.57	x	92	101	42.6	41.8	43.5	OG76x6x4610	
GC30-175X300	5.34	x	92	101	49.7	48.7	50.7	OG76x6x4610	
GS36-125X432	3.81	x	132	122	61.4	60.1	62.6	OG100x9x3850	
GS36-150X360	4.57	x	110	122	61.4	60.1	62.6	OG100x9x4610	
GS36-175X309	5.34	x	94.5	122	61.4	60.2	62.7	OG100x9x5380	
GS40-125X432	3.81	x	132	135	68.2	66.8	69.5	OG100x9x3850	
GS40-150X360	4.57	x	110	135	68.2	66.8	69.5	OG100x9x4610	
GS40-175X309	5.34	x	94.5	135	68.3	66.9	69.6	OG100x9x5380	
GS46-125X360	3.81	x	110	155	65.3	64.0	66.6	OG100x9x3850	
GS46-150X300	4.57	x	92	155	65.3	64.0	66.6	OG100x9x4610	
GS46-175X258	5.34	x	78.5	155	65.6	64.3	66.9	OG100x9x5380	
GS50-125X360	3.81	x	110	169	71.0	69.6	72.4	OG100x9x3850	
GS50-150X300	4.57	x	92	169	71.0	69.6	72.4	OG100x9x4610	
GS50-175X258	5.34	x	78.5	169	71.3	69.8	72.7	OG100x9x5380	
GS55-125X360	3.81	x	110	186	78.1	76.6	79.7	OG100x9x3850	
GS55-150X300	4.57	x	92	186	78.1	76.6	79.7	OG100x9x4610	
GS55-175X258	5.34	x	78.5	186	78.4	76.8	80.0	OG100x9x5380	

10/12/2020

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PE FINISHED PRODUCT SPECIFICATIONS

SKU	Specifications (m)			Weight (g/m2)	Unit	kgs	Packing	Paper core (mm)	Bag size (cm)
	Width		Length						
X204	4	X	52	100	Bag	21.0	BB80x175-Do		80x175
X206	6	X	52	100	Bag	31.5	BB80x175-Do		80x175
X208	8	X	31	100	Bag	25.2	BB80x175-Do		80x175
XT104	4	X	51	100	Bag	21.0	BB80x175-L		80x175
XT106	6	X	51	100	Bag	31.5	BB80x175-L		80x175
XT108	8	X	31	100	Bag	25.2	BB80x175-L		80x175
H504XC	4	X	51	143	Bag	30.0	BB80x175-C		80x175
H506XC	6	X	51	143	Bag	45.0	BB88x180-C		88x180
H508XC	8	X	31	143	Bag	36.0	BB88x180-C		88x180
MS502	2	X	102	143	Roll	30.0		OG40x2x2020	Ø33 x 2100
MS504	4	X	51	143	Bag	30.0	BB80x175-X		80x175
MS506	6	X	51	143	Bag	45.0	BB88x180-X		88x180
MS508	8	X	31	143	Bag	36.0	BB88x180-X		88x180
H802XC	2	X	102	163	Roll	34.0		OG40x2x2020	Ø33 x 2100
H804XC	4	X	51	163	Bag	34.0	BB80x175-C		80x175
H806XC	6	X	51	163	Bag	51.0	BB88x180-C		88x180
H808XC	8	X	31	163	Bag	40.8	BB88x180-C		88x180
MS804	4	X	51	163	Bag	34.0	BB80x175-X		80x175
MS806	6	X	51	163	Bag	51.0	BB88x180-X		88x180
MS808	8	X	31	163	Bag	40.8	BB88x180-X		88x180

UV904	**4**	**X**	**100**	**168**	**Bag**	**68.0**	**BB100x190-D**		**100 x 190**
UV906	**6**	**X**	**100**	**168**	**Bag**	**102.0**	**BB100x190-D**		**100 x 190**
UV908	**8**	**X**	**100**	**168**	**Bag**	**136.0**	**BB100x190-D**		**100 x 190**
UV104	**4**	**X**	**100**	**198**	**Bag**	**80.0**	**BB100x190-D**		**100 x 190**
UV106	**6**	**X**	**100**	**198**	**Bag**	**120.0**	**BB100x190-D**		**100 x 190**
BT202U	**2**	**X**	**101**	**198**	**Roll**	**40.0**		**OG40x2x2020**	
BT204U	**4**	**X**	**51**	**198**	**Bag**	**40.0**	**BB80x175-L**		**80x175**
BT206U	**6**	**X**	**51**	**198**	**Bag**	**60.0**	**BB100x190-D**		**100 x 190**
BT208U	**8**	**X**	**31**	**198**	**Bag**	**48.0**	**BB100x190-D**		**100 x 190**
R2404U	**4**	**X**	**51**	**238**	**Bag**	**48.0**	**BB80x175-L**		**80x175**
R2406U	**6**	**X**	**51**	**238**	**Bag**	**72.0**	**BB100x190-D**		**100 x 190**
R2408U	**8**	**X**	**31**	**238**	**Bag**	**57.6**	**BB100x190-D**		**100 x 190**
L2404U	**4**	**X**	**51**	**238**	**Bag**	**48.0**	**BB80x175-L**		**80x175**
L2406U	**6**	**X**	**51**	**238**	**Bag**	**72.0**	**BB100x190-D**		**100 x 190**
L2408U	**8**	**X**	**31**	**238**	**Bag**	**57.6**	**BB100x190-D**		**100 x 190**
R170-72-MR	**1.83**	**X**	**2000**	**168**	**Roll**	**622**		**OS90x3x1850**	**Same color PE fabric**
R170-144-MR	**3.66**	**X**	**1000**	**168**	**Roll**	**622**		**OS90x3x1850**	**Same color PE fabric**
X170-72-MR	**1.83**	**X**	**2000**	**168**	**Roll**	**622**		**OS90x3x1850**	**Same color PE fabric**
X180-72-MR	**1.83**	**X**	**1800**	**178**	**Roll**	**593**		**OS90x3x1850**	**Same color PE fabric**
X180-144-MR	**3.66**	**X**	**900**	**178**	**Roll**	**593**		**OS90x3x1850**	**Same color PE fabric**
B140-80-MR	**2.03**	**X**	**2250**	**138**	**Roll**	**639**		**OS90x3x2050**	**Same color PE fabric**

12/8/2014

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PACKING SPECIFICATIONS

SKU	Packing type	Desciption (mm)	Size	Color
BB80x175-X	Bag	Blue bag (MS5,MS8,4m)	80x175 (cm)	white color with blue printing color
BB88x180-X		Blue bag (MS5,MS8, 6-8m)	88x180(cm)	white color with blue printing color
BB80x175-C		Blue-Orange bag (H8,H5,4 m)	80X175(cm)	white color with orange printing color
BB88x180-C		Blue-Orange bag (H8,H5, 6-8 m)	88x180(cm)	white color with orange printing color
BB80x175-Do		Red bag, X2 (4-6-8 m)	80X175(cm)	white color with red printing color
BB80x175-L		Green bag (XT1,XLT,Z140, 4-6-8 m)	80X175(cm)	white color with green printing color
BB100x190-D		Black bag, UV, 4-6 m	100x190(cm)	white color with black printing color
BB80MR		White bag, 0.8m	80x150000cm	no printing
BB88MR		White bag, 0.88m	88x150000cm	no printing
BB100MR		White bag, 1m	100x150000cm	no printing
OG76x6x950	Paper core	Paper core Ø 76.5X6X950		browm
OG76x6x1250		Paper core Ø 76.5X6X1250		browm
OG76x6x1870		Paper core Ø 76.5X6X1870		browm
OG76x6x2480		Paper core Ø 76.5X6X2480		browm
OG76x6x3090		Paper core Ø 76.5X6X3090		browm
OG76x6x3700		Paper core Ø 76.5X6X3700		browm
OG76x6x4610		Paper core Ø 76.5X6X4610		browm
OG76x6x5380		Paper core Ø 76.5X6X5380		browm
OG100x9x3850		Paper core Ø 99.2X9X3850		browm
OG100x9x4610		Paper core Ø 99.2X9X4610		browm
OG100x9x5380		Paper core Ø 99.2X9X5380		browm
OS76x1x1030	Steel pipe	Steel pipe Ø 76x1.2x1030		black
OS90x3x1850		Steel pipe Ø 90x2.5x1850		black
OS90x3x2050		Steel pipe Ø 90x2.5x2050		black
BP-50-D	Stretching film	Stretching film, 50x18x312	50cmx18μmx312m	black
BD-PET-L	Strap	Strap, 12x0.6x2415	12mmx0.6mmx2415m	green
BD-PP-V		Strap, 15x0.8x1250	15mmx0.8mmx1250m	yellow

12/8/2014

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I. Purpose

- Control closely products in manufacturing process to ensure supplying qualified products as customer's requirement.
- Discover promptly & give solution for non-conforming products.

II. Scope

- PP products

III. Abbreviation

- QC: quality control
- FP: Finished products

IV. Content

1. When outputting materials, storekeeper fills in material lot # in KHO- QT KSK-BM04
2. Get tape sample:

    2.1. When start running machine: check samples of two continuous trolleys. When machine runs stably, each 2 trolleys get sample 1 time & no limit to get samples if necessary.

    2.2. Sample for checking is no less than 10% tapes.

    2.3. Check criteria according to TC02, TC05. Use QC- QT KTCL-BM02 & QC- QT KTCL-BM03 forms. If it fails, solve as non-conformance process procedure.

3. When putting into bags to input tape warehouse, on each bag stick label QC- QTKTCL-BM04 & fill in enough information.
4. Weaving: Loom workers need to check fabric surface during weaving process, mark or tie string on fabric edge so that the next stage other sections can easily identify & solve. Lab QC gets sample to check "finished product checking criteria"
5. Winding: Winding workers need to check fabric surface during winding process according to product surface criteria, TC09, TC10, use forms QC- QT KTCL-BM07 & SX- QT SXĐG-BM06. When inputting warehouse, use form SX- QT SXĐG-BM05.

RESPONSIBILITY	DIAGRAM	DOCUMENTS
Storekeepe	Output	
Storekeeper	Fill lot # in output form	KHO- QT KSK-BM04
Tape QC	Get tape sample	
Tape QC	Check	QC- QT KTCL-BM02 QC- QT KTCL-BM03
Tape QC	Input warehouse	QC- QT KTCL- BM01 QC- QT KTCL-BM04
Loom workers; Lab QC	Weave fabric	QC- QT KTCL- BM05
Loom workers, team leader	Check	Control non-conformance
	Wind fabric	
Packaging QC	Check	QC- QT KTCL-BM07 SX-QT SXĐG-BM06
FP storekeeper	Input warehouse	SX-QT SXĐG-BM05

V. Form applied :

- KHO- QT KSK-BM04
- QC- QT KTCL-BM01
- QC- QT KTCL-BM02
- QC- QT KTCL-BM03
- QC- QT KTCL-BM04
- QC- QT KTCL-BM05
- QC- QT KTCL-BM07
- SX- QT SXĐG-BM05
- SX- QT SXĐG-BM06

PREPARED BY	EXAMINED BY	APPROVED BY

Gia Loi	**CRITERIA TO CHECK MATERIALS & FINISHED PRODUCTS**	DCN: HD TSKTNVLTP.01 Revision: 01 Effective date: 05/01/2020 Page:1/1

I. Purpose

Check correctly & adequately criteria of materials and finished products to evaluate product quality correctly.

II. Scope

- Materials: resin & additives
- PP finished products

III. Abbreviations

- COA : Certificate of analysis

IV. Criteria & test methods

Testing criteria	Methods	Testing frequency
PP fabric		
Average weight	ASTM D5261	According to ASTM D4354
Permeability	ASTM D4491	
AOS	ASTM D4751	
Grab breaking Load/Elongation	ASTM D4632	
Trapezoid Tear strength	ASTM D4533	
Static puncture Resistance CBR	ASTM D6241	
UV resistance	ASTM D4355	
Resin: Check COA & TEST REPORT (COA has regulation of checking frequency according to ASTM D4354 & lot #).		

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I. Objectives:

- Easy to identify products, preventing from confusion in using
- Convenient to check and to do statistics of products

II. Scope of application:

Materials, tapeline, unrewinded rolls and final rolls

III. Abbreviation

- QC: quality control

IV. Procedure:

A. Materials

1. After receive to the warehouse, the keeper needs to alternatively stick the label on 1 side of the pallet. For plastics, 2 large labels need to be attached on 2 sides of pallets
2. Materials half used: team leaders stick identify label on the bags
3. Material label content: material name, lot number: retain the manufacture's lot numbers, date of receipt (stock-in)

B. Sợi / tape:

1. Before coming to QC department, every trolley of tape has to be stuck a paper label mentioning it's kind of tape by tapeline team leaders or staff responsible
2. Count the quantity of bobbins, put in bags. QA staff staples tape identify label to every bag.
   Yarn lot: Tapeline #/ letter A-Z/times of specs change or material lot change (1-99)
3. Pallets of tape bags (3 labels): team leaders weigh and affix 1 barcode label onto the top of pallet, 2 other labels of QC- QT KTCL-BM04 onto 2 sides of pallet
   Tape bins (2 label): 1 barcode label, 1 label on the top. Tape bins are kept into rows and stacked together by tape specs. An identify label will be put in front of each row of specs
4. When delivering to looms: QA department will keep the barcode label for delivery tracking, the remaining label will be there for loom operator to recognize.

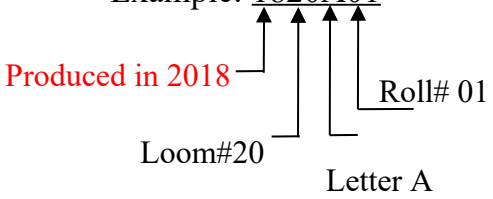
C. Uwindered rolls

1. When unloading, loom operators attach 2 SX-QT SXD-BM01 labels onto the edge of the roll and fill information of unloading date, product code, roll number, lot number and the length of roll.

- Principle of roll coding:

  Loom number – 1 letter in alphabet order A, B, C – the number of rolls produced by each loom (range from 01-99)

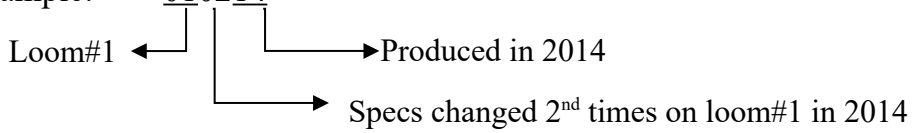
  Example: 1820A01



- Principle of lot coding:

  Loom number – time of specs change –2 last numbers of the production year

  Example: 010214



2. Loom operators stick color label for identifying PP fabric rolls:

Products	**label colors**
GS5.5	blue
GS5.0	no label
GS4.6	orange
GS4.0	pink
GC3.0	no label

3. QA staff weigh fabric rolls and full fill contents of weight into SX-QT SXD-BM01, average weight into QC- QT KTCL-BM05

D. PE coated fabric rolls:

QA staff at rewinding section will affix QC- QT KTCL-BM06 label onto 1 tip of the steel core of the roll

Finished rolls:

1. Label colors designated for PP products

Finished products	**label colors**
GS5.5	blue
GS5.0	no attached
GS4.6	orange
GS4.0	not attached
GC3.0	no attached

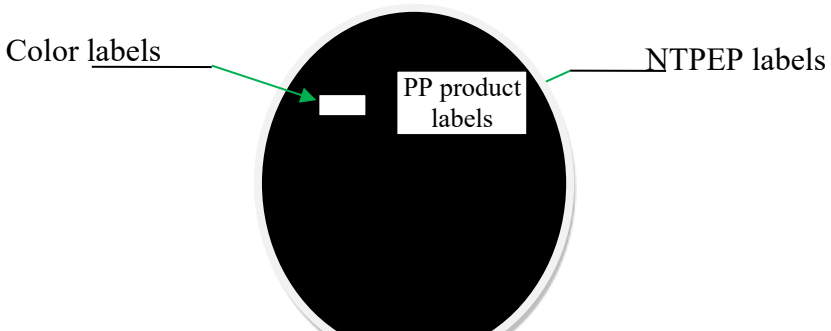
2. Labeling position on PP products:

   QA staff at winding area stick label as following:

   - Color label: attach on 1 tip of fabric roll

   -NTPEP label (SX-QT SXĐG-BM04): stick 4 same labels (inside 2 ends of paper core, outside 2 base sides of fabric roll). In case that 1 NTPEP label is split into 1 barcode label and another as request of customer, apply same labeling method as above.

   - Labels are stuck onto the roll immediately after such roll is film winded. In case of using auto film winder, 2 labels will be glued inside the core firstly, then other 2 labels will be attached once the roll goes thru the winder and comes to last point of the conveyor



- In case that product in stock is winded, firstly stick 2 labels inside the core.

3. **PE finished product**:

QA staff affix labels:

- Product-in-bag: identify PE finished products by means of bag colors and information on SX-QT SXĐG-BM01 label stuck on the bag

Products	**Bags**
H8	orange words printed
MS	blue words printed
UV	black words printed

- Product-in-roll: affix labels in correspondence with label SX-QT SXĐG-BM01 attached on the master roll

Person in charge	Flowchart	Documents
Material warehouse keeper QA team leader in tapeline	Materials (in use), tape, fabric rolls	QC- QT KTCL-BM04 SX-QT SXD-BM01
Loom operators in shift	Attach identify label in every department	
QA staff in rewinding	Update the weight of fabric roll into label	SX-QT SXD-BM01
QA staff in rewinding	Report specs of fabric roll	QC- QT KTCL-BM05
QA staff in rewinding	Check specs & labels No	
QA staff in rewinding	Yes Enter unfinished fabric book	
QA staff in rewinding	Stick rewinding label QC-QTKTCL-BM06 while rewinding and coating	QC- QT KTCL-BM06
	Stick label ĐG-BM01 while packaging Stick label ĐG-BM04 while winding	SX-QT SXĐG-BM01 SX-QT SXĐG-BM04
QA staff in packaging	Check labels No	
	Control procedure of nonconforming products	
Warehouse keeper, packaging team leader	Yes Deliver to finished product warehouse	

V. Forms used

- QC- QT KTCL-BM04
- SX-QT SXD-BM01
- QC- QT KTCL-BM05
- QC- QT KTCL-BM06
- SX-QT SXĐG-BM01
- SX-QT SXĐG-BM04

Prepared by	Checked by	Approved by

I. Purpose:

To ensure that products are safely unloaded, wrapped, and stored in good condition and that deliveries are executed in order to prevent damage or loss of product.

II. Scope:

This practice applies to all products input into our warehouse.

III. Abbreviations:

FG: Finished goods

IV. Content:

1. *Order of storage:*

After packaging, team leaders must generate a warehouse receipt using form BM/ĐG06.

1. *Storage admission procedures:*

- Before admitting FG to the warehouse, the storekeeper must recheck the product numbers, packaging and labels for any damage. The storekeeper must inspect the identification label to ensure that no mistakes have been made in labeling. If labeling mistakes are detected then the product should be separately wrapped up and set aside.
- If no labeling mistakes are detected, the storekeeper must sign form SX- QT SXĐG-BM05 and begin the storage procedure.

2. *Arrangements for storage:*

- The storekeeper is responsible for maintaining a neat and tidy storehouse.
- The storekeeper is responsible for directing loaders in storing the products. The storehouse must be organized according to the principle of ‘First In – First Out’.
- All stored items must be stacked under hanging identification boards that classify stored products by production code, specifications and quantity.
- Each product must include an identification label that includes the product code, specification, wrap date and weight.
- During shipment all products must be handled gently to avoid damage. All forklift tines must be more than two-thirds the length of product rolls that they are used to transport.

- All products stored outside of the storehouse must be placed on a pallet and properly covered. They may not be stored outdoors for more than 10 days.

- In rainy locations, all products stored outdoors must be placed on a pallet and be properly covered.

- Should damage (products, label, packing, strap, paper core…) be detected during storage, it must be reported to the appropriate supervisors and immediately addressed.

3. *Delivery:*

- After receiving a copy of a sales manifest from a salesperson, the storekeeper must recheck the products in the storehouse using form KHO-QTXNTTP-BM07 and ensure that the quantity meets the customers' demands. Then he must report his findings to the salesperson. The salesperson must then request a bill of goods from the Accounting Department.

- The storekeeper must ensure that the transfer or shipment of over-sized and heavy products is carried out using the appropriate apparatus (forklift, conveyor belt, etc.) to avoid damage during transportation.

The storekeeper must hand over the position and quantity of products to QA staff who is in charge of loading products onto the containers. The store keeper should also cooperate to check up during loading time like reweigh Master Rolls. If any problems arise concerning the weight, the quantity as well as the quality (quality of products, packing, strap, label…), the process must be halted and the storekeeper must report the matter to the agent/division in charge using form KHO-QT01-BM09

- The storekeeper should collaborate with security personnel to ensure that the products remain safe until transferred to the customer.

4. *Documentation:*

- All delivery records and files must be carefully maintained.

- All relevant data must be reported to the sales division, quality control division, export-import division and planning division.

Division in charge	Procedure	Documents
Packaging Division	Quality assurance & delivery	SX- QT SXĐG-BM05
Storekeeper	Receives products	KHO-QT01-BM06
Storekeeper	Visual inspection	
Storekeeper	Signs storage receipt	Monitoring arrangements
Storehouse staff	Arranges storage	KHO-QT01-BM07 KHO-QT01-BM08
Storekeeper	Inspection	KHO-QT01-BM09
Storehouse staff	Delivery	Bill of goods
Storekeeper, QA	Checking → Monitors NC Prepares documentation Completion	

V. Application forms:

- KHO-QT01-BM06
- KHO-QTXNTTP-BM07
- KHO-QT01-BM08
- KHO-QT01-BM09

PREPARED BY	EXAMINED BY	APPROVED BY

Gia Loi	**PROCEDURE TO LOAD DOMESTIC PRODUCTS ONTO CONTAINERS**	DCN: QTLCHND.01 Revision: 01 Effective date: 1/9/2023 Page: 1/3

I. Purposes :

-To ensure that the process of loading domestic products onto containers are proper.

-To avoid incorrectness of SKU and quantity of product while loading products onto the containers.

II. Scope:

-For loading domestic products onto containers

III. Abbreviation:

-FP storekeeper: Finished product storekeeper

IV. Contents:

Loading domestic products process onto containers will be as follows:

-After receiving shipping schedule, 3 people: 01 FP storekeeper, 01 sales staff, 01 security guard will check the loading process. Security guard will dependently check the loading process.

-FP storekeeper has to:

+Organize products according to pallets and SKU. Each pallet is allowed to put 01 SKU.

+Organize to load products onto containers in pallet order.

+Check SKU and number of bags again before loading products onto containers.

-While loading products onto containers: sales staff and security guard, each one will stand in front of each container's side while the forklift driver brings the pallets onto the container. They have to check SKU, number of bags and then fill in their report form.

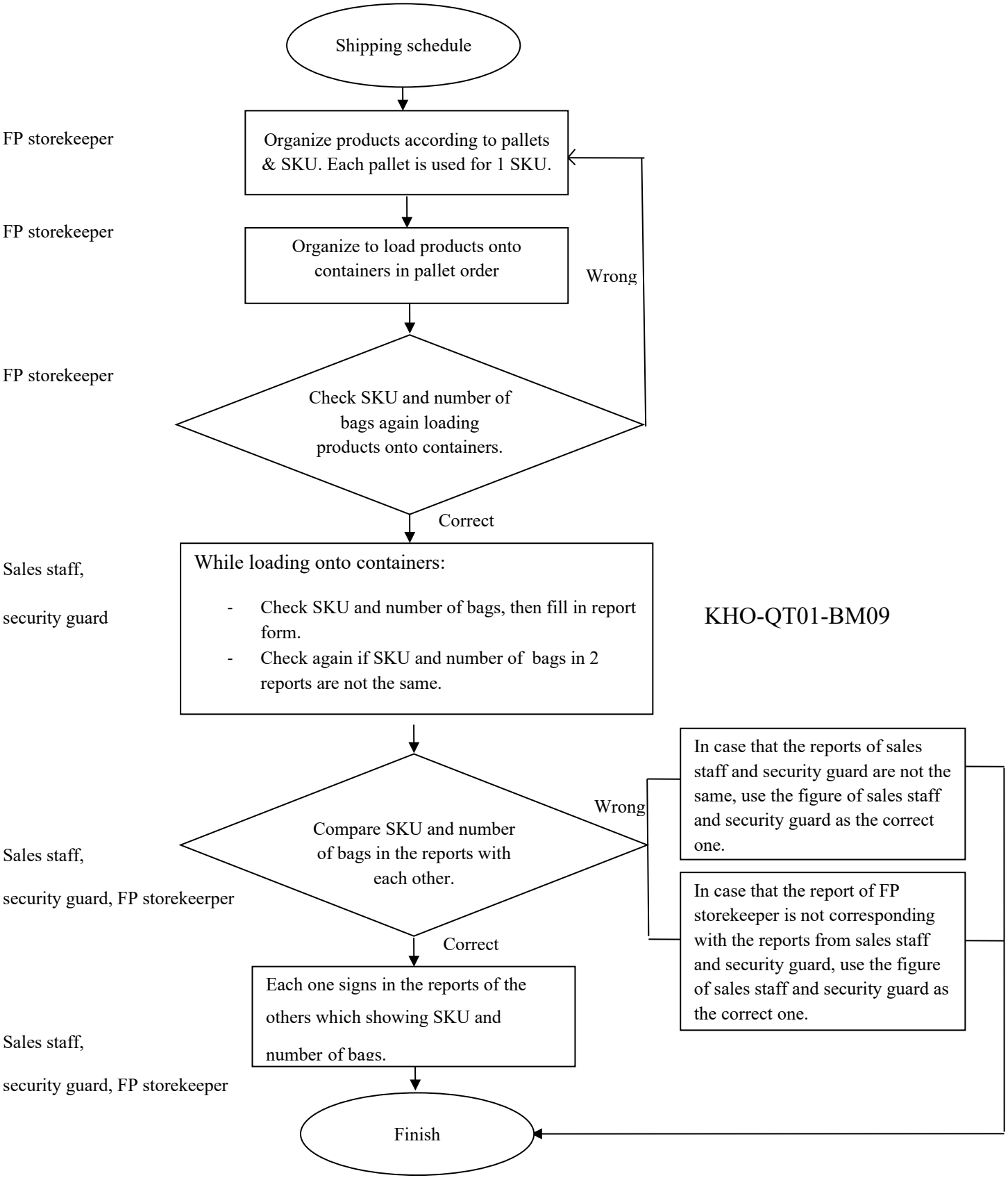
-After checking SKU, number of bags, sales staff and security guard have to compare report with each other. If there's any discrepancy, they have to check again.

-FP storekeeper sometimes has to drop by checking the loading process and compare quantity with sales staff and security guard.

-In case that the reports of sales staff and security guard are not the same (write down incorrectly…), they both have to inform FP storekeeper promptly and use the figure of FP storekeeper as the correct report.

-In case that the report of FP storekeeper is not corresponding with the reports from sales staff and security guard, use the figure of sales staff and security guard as the correct one.

-After finishing the loading process, each one has to sign in the reports of the others which show SKU and number of bags.


Shipping schedule
FP storekeeper
Organize products according to pallets & SKU. Each pallet is used for 1 SKU.
FP storekeeper
Organize to load products onto containers in pallet order
Wrong
FP storekeeper
Check SKU and number of bags again loading products onto containers.
Correct
Sales staff,
security guard
While loading onto containers:
- Check SKU and number of bags, then fill in report form.
- Check again if SKU and number of bags in 2 reports are not the same.
KHO-QT01-BM09
Wrong
Sales staff,
security guard, FP storekeeperper
Compare SKU and number of bags in the reports with each other.
In case that the reports of sales staff and security guard are not the same, use the figure of sales staff and security guard as the correct one.
In case that the report of FP storekeeper is not corresponding with the reports from sales staff and security guard, use the figure of sales staff and security guard as the correct one.
Correct
Sales staff,
security guard, FP storekeeper
Each one signs in the reports of the others which showing SKU and number of bags.
Finish

V. Applied form

KHO-QT01-BM09

COMPOSED BY	CHECKED BY	APPROVED BY

I. Objective

To quickly resolve any customers' complaints or non-conforming products by tracing all products to their origin

II. Scope of Application

Applies to all products

III. Abbreviation

TP: Finished product

MT: Materials

PP: Polypropylene

PE: Monomer Ethylene

IV. Content

1. To trace any finished fabric product to its origin, begin by reviewing the product label (SX-QT SXĐG-BM01, SX-QT SXĐG-BM04). Locate the identification number and packaging date of the fabric roll.
2. Using the packing date and the identification number, for PE fabric products, use the QC- QT KTCL-BM06 label to verify coating date. Use the coating date to locate the SX-QT SXT-BM01 form, which includes a list of the coating materials as well as the material lot; then cross-reference the unloading date and the SX-QT SXD-BM02 form to identify the number of fabric lots used in weaving.
3. Fabric lot: Use the SX-QT SXS-BM01 form to locate the material and the material lot used for spinning.
4. From the lot number, determine the origin of the material along and its quality.

INDIVIDUALS IN CHARGE	**Flowchart**	**Documents**
QC Division	Finished fabric product	
	- Locate the fabric ID number - Locate the packing date	SX-QT SXĐG-BM01 SX-QT SXĐG-BM04
	Locate the unload date & coating date	
	PE	
	Locate the MT, MT lot used for coating	SX-QT SXT-BM01
	PP	
	Locate the fabric lot used for weaving	SX-QT SXD-BM02
	Locate the MT, MT lot used for spinning	SX-QT SXS-BM01
	Find the certificate & analysis of the MT	COA of the manufacturer
	Make a record of the file	

V. Forms applied

- SX-QT SXĐG-BM01
- SX-QT SXĐG-BM04
- SX-QT SXT-BM01
- SX-QT SXD-BM02
- SX-QT SXS-BM01

PREPARED BY	EXAMINED BY	APPROVED BY

I. Objective:

To assess the Quality Management System and to ensure that application is corresponding with the management systems in writing as well as to ensure that the system is proper and effective to achieve the aim and the policy of the company.

II.Scope of Application:

The protocol applies to all internal assessment activities, including drafting an assessment plan, conducting an audit, generating reports and next follow-up. The QCM is in charge of this process.

III. Abbreviation:

- BOD: Board of Directors
- GM: General Manager
- AAD: Auditors and Division Being Evaluated.
- QCM: Quality Control Manager
- QC: Quality control

IV. Content:

1. Assessment plan:

At least one a year (or more frequently, in the event of an emergency), the QCM or Board of Directors must draft an assessment plan to see if the management system:

A) Whether or not the management system is suitable with management system established by the company.

B) Whether or not the management system has been properly applied and maintained.

2. Team of auditors *and evaluation program:*

QCM will draft a team of auditors; including a Chief Auditor and subordinate auditors.

At least 01 week before the audit begins, the QCM must create a schedule that includes the following assessment procedures:

- An inspection of the production plant.
- A review of all previous audits (if available).
- A review of all product certification procedures.
- An inspection of all testing equipment, procedures and calibrations.
- An observation of resin sampling and material lot control procedures.
- A review and observation of all geotextile sampling and testing procedures.

- A review of product correspondence to the standards through documentation or by requirement of checking to evaluate if the product is checked by the correct method.
- A review of all nonconforming product documentation and actions taken.
- An observation of on-processing work if it's suitable with protocol and instructions.

3. Preparation for the assessment:

For the assessment to be continuous and effective, the AAD should prepare assessment schedule as well as should jointly review all relevant documents such as:

- All available QC records;
- Previous audits and performance assessments;
- The audit standard, scope and method;

4. Inaugural meeting:

The AAD should hold an opening meeting in order to review the assessment plan and method as well as to introduce all of its participants.

5. Conducting the internal audit:

A)The AAD must follow the following guidelines:

- The assessment must be objective and independent;
- The process must strictly adhere to the approved schedule;
- The AAD must use all documents and records established to operate effectively process according to the standard.
- The AAD must control the non-conformance, adequacy and effectiveness of processes and products accurately.
- The AAD must analyze any inappropriate or inefficient action so as to prevent it from happening again.

B) The AAD must be prepared to address any and all inadequacies:

- If any inadequacies (e.g. faulty products, inefficient processes) are discovered during the audit process, the AAD must note them in an official report.
- The audit team must recommend corrective measures for any inadequacies and distribute BM/KCS05 reports to the evaluated division.

6. Closing meeting:

The auditors will conclude their internal assessment by announcing their findings and recommendations. At this time, they should also stipulate how their recommendations are to be implemented and evaluated.

7. Reporting the results:

The auditors will generate a detailed report deeming whether or not the current QC protocol is:

- Appropriate: Complies with the company's quality standards in theory and in practice.
- Inappropriate: Does not meet the standards stated above.

The report should outline a course of corrective action for any and all inadequacies. At the same time, the report should assist the company's managers in recognizing hard-working employees and raising morale.

8. *Resolving inadequacies:* According to precautions and remediation for non-conformance.

Assessing the solution:

9. *Assessment of corrective actions:* According to precautions and remediation for non-conformance.

Assessing the solution:

10. Concluding the assessment:

The auditors must assemble a dossier containing every document reviewed during the assessment process. Each of these files must be signed by the participants and sent to the GM after finishing the internal audit documents.

Personnel	Audit Flow Chart	Documents/Forms
QCM	Demand for Assessment	
	Schedule an Assessment	BGĐ-QT ĐGNB-BM01
	Approval (No)	
	Assessment Scheme	BGĐ-QT ĐGNB-BM01
	Approval (No)	
	Preparation	BGĐ-QT ĐGNB-BM02
Chief Auditor	Evaluation	
AAD Division being evaluated	Joint assessment	
	Propose/review solutions	BGĐ-QT ĐGNB-BM03
AAD Division being evaluated	Closing meeting (No → Report; Yes)	QC-QT SPKPH-BM02
Chief Auditor	Report the Assessment results / Propose solutions	
Evaluated division	Carry-out recommended solutions	QC-QT SPKPH-BM02
	Assess the solution → Distribute KCS05	BGĐ-QT ĐGNB-BM03
Chief Auditor	Conclude Assessment	
	Report to the CEO	
Storage staff	Storage	

V. Forms applied

- BGĐ-QT ĐGNB-BM01
- BGĐ-QT ĐGNB-BM02
- BGĐ-QT ĐGNB-BM03

PREPARED BY	EXAMINED BY	APPROVED BY

I. Purpose:

To monitor both internal documents and ones submitted by outside agencies.

II. Scope:

All diagnostic and QC documents used in the monitoring of the company's products
These documents are considered part of the company's official diagnostic documents.

III. Abbreviations:

- Division in charge (DIC)
- Documents from Outside Sources (DOS)
- Chief of Training Division (CTD)
- Division Chief (CD)

IV. Content:

A. Coding of documents

-Procedure: Dep-QT xx/xx
- xx/ — Numbers signifying the version of the document.
- Dep-QT — Initials from name of the procedure

eg: NS-QT ĐT/01

-Production Form: Dep- QT- BM xx.xx –Document version
- xx — Order
- Dep- QT- BM — Code for division, based on the first (sometimes first two) letters in its name

eg: NS-QT ĐT-BM01/00

-Tracking Form: BM/ TD.xx –Document version
- xx — Order

-Formulation: CN.xx.xx- Document version
- xx — Product name of each stage
- CN — Code for division, based on the first (sometimes first two) letters in its name

-Guideline: HD/ xx.xx-Version
- xx — Initial letters from name of the guidelines following 'HD'

B. Issuance of new documents

1. If the need for new documents arises, a requester will fill out form NS-QTKSTL-BM01 and send it to the CTD for consideration.

2. After consideration, the CTD will either:
   - Notify the requester if he/she does not agree.
   - Instruct a subordinate to draft the new document (designating he or she the "Drafter") and sign the submitted NS-QTKSTL-BM01 if he/she agrees.

3. Drafter
   - The Drafter must begin drafting the document taking care to include the time of issuance and sign the box on the NS-QTKSTL-BM01 marked 'planner.'
   - The Drafter then sends a draft document to all related divisions, the company's Document Monitor and the employee tasked with gathering feedback about the document. Gathering general feedback about a document is optional, though the company's Document Keeper must review and provide feedback about all draft documents. All relevant opinions must then be summarized, reviewed and incorporated into a revision by the Drafter.
   - After all revisions are complete, the Drafter must submit the new documents to the CTD for approval (including any feedback that was used in the revision process). All relevant feedback about the document must be submitted to the CTD before approval is granted.
   - After the revised document meets the approval of the CTD, the Drafter will send it to the Document Keeper.

4. The Document Keeper must include new documents on the current document list on form NS-QT KSTL-BM04. This list must always be available for review by company employees so that they may confirm that they are not using expired forms.

5. The Document Keeper is tasked with making copies, marking them 'monitored', and distributing them to the parties identified in the CTD-approved NS-QT KSTL-BM05 form.

6. Employees who have received a new document must make sure they have received the correct form and inform their colleagues that a new document is available for use.

7. The Chief of the Document Keeping Division is responsible for maintaining an original copy. This original copy must not be marked 'monitored' so it may be used for making subsequent copies.

C. Amending existing documents

1. If an employee recognizes the need to make amendments to an existing documents he or she must send request form NS-QT KSTL-BM02 to the CTD.
2. After consideration, the CTD will either:
   - Notify the requester if he/she does not agree.
   - Instruct the Drafter to begin revising the document and provide written approval on form NS-QT KSTL-BM02 if he/she agrees.
3. The Drafter can then begin revising the portions of the document that require revision as outlined in steps 3 – 7 in Section A.

4. Classifying revised documents

a. Majorly-revised documents:

- Print the whole document anew.
- Commence document revision, making sure to generate a new version number (adding 1) and edit the date of issuance.
- The Document Keeper must make copies of all revised documents and mark them 'monitored' and then begin to distribute them according to steps step 4 - 7 in section A.
- Document borrowers must return all out-of-date documents to the Document Keeper to be destroyed. If the documents are not to be discarded, all must be filed away as 'expired'.

b. Slightly-revised documents

- Slightly-revised documents include those that require changes on pages 1 - 3. The CTD will determine to what degree the documents require revision (e.g. majorly or slightly) depending on the circumstances.
- The Document Keeper must make copies of all revised pages (without marking them 'monitored')and then begin distributing them according to steps 4 - 7 in section A.
- After receiving the revisions, the Document Keeper must collect and replace all outdated pages and discard them.
- In the event of slight revisions, the Document Keeper shall print only the revised pages and make sure to edit the version number listed on the revised pages only.
- The Drafter must make note of these changes on form NS-QT KSTL-BM02.

5. The Document Keeper must maintain one original copy of the expired documents. These documents must be marked 'expired' and included on a list of documents in accordance with form NS-QT KSTL-BM04.

D. Documents from Outside Sources (DOS)

1. If a requester suggests that the company adopt a DOS, these documents must be submitted along with a proposal for their use (form NS-QT KSTL-BM03) to the CTD for consideration and approval.
2. After a DOS is approved, the requester must send the DOS to the Document Keeper to maintain as an original copy and to update the list of documents (using form NS-QT KSTL-BM04, if the DOS are engineering documents). The original copy will be maintained by the Chief of QA Division.
   The distribution of a DOS follows steps 4 - 7 in section A.
   The Document Keeper is responsible for contacting the publisher of a DOS and ensuring they are updated if the publisher ever issues a revision.
   Every three months, the company's Assessment Division shall ensure that the company's documents comply with current laws and QC protocols. The findings of these evaluations will be reported to the CTD. All unnecessary DOS will be discarded and outdated DOS will be revised.

E. Forms

1. Forms collected for the creation of a manual will be reviewed and approved by the CTD. Each form will feature a different code and version number.
2. Forms distributed along with Practices and Additional Documents do not necessarily require changes when associated forms require revisions. So, only version codes will be updated for these documents. Old forms should be discarded. Details on distribution of forms need not be recorded.
3. This practice is not applicable to some special forms.

F. Approval of documents

The General Manager must approve all manuals, documents, forms, etc. The Board of Directors shall consider the appropriateness of the system as a whole. Division Chiefs are responsible for approving work instructions/guidelines

Personnel	Procedure	Documents
Requester	Requests pertaining to diagnostic documents	NS-QTKSTL-BM01 NS-QTKSTL-BM02 NS-QT KSTL-BM03
Divisions involved + Document Keeper + Requester	Discussion	
CTD	Consideratio	
CTD	Assign	
Assigned individuals	Drafting	
CTD	Approv	
Document Keeper	Update	NS-QT KSTL-BM04
Document Keeper	Classify	
Document Keeper	Copying, distribution	Seal for monitoring NS-QT KSTL-BM05
Document Keeper	Recording	
	Completion	

III. Forms applied

- NS-QTKSTL-BM01; NS-QTKSTL-BM02; NS-QTKSTL-BM03; NS-QTKSTL-BM04; NS-QTKSTL-BM05

PREPARED BY	EXAMINED BY	APPROVED BY

I. Purpose:

To outline the procedures for collecting, maintaining and discarding company documents.

II. Scope:

This protocol applies to all documents generated in the course of manufacturing, QC testing and distribution.

III. Abbreviation

IV. Content:

1. *Cataloging / generating records:*

   Each Division Chief is responsible for cataloging pertinent documents using form NS-QT KSHS-BM01 (F/A-01) and submitting them to the General Manager (GM) for review at least once a year. The GM is responsible for ensuring these catalogs are reviewed by the Quality Control Manager (QCM).
   If the need for a new form or company document arises, a Division Chief must notify the QCM of said need. If the QCM approves the Division Chief's request, he/she may supervise the creation a new form. Once a new document has been generated, the QCM is responsible for introducing it to all of the company's Division Chiefs.
   Once said steps are taken, each Division Chief will be held responsible for ensuring his employees use this document. He/she may assign an employee to gather and catalog the division's documents using form NS-QT KSHS-BM01 (F/A-01)

2. *Classifying and organizing stored documents:*

   Division Chiefs are responsible for ensuring that their official documents are submitted in a clear and well-organized catalog.
   Each division catalog should be presented in a format that is easy to follow and suitable for long-term storage. Said catalog should only contain pertinent documents; all others should be discarded. Documents whose pertinence remains unclear should be filed separately. After 5 years, these documents should be discarded, if proven to be of no use. These documents, however, should be included in the catalog's table of contents.
   Documents that should be stored for at least 5 years include:
   a. NTPEP audit documentation.
   b. All specimens and results related to QC tests conducted on raw materials.
   c. All specimens and results related to QC tests conducted on fabric products.
   d. Training and competency records.
   e. Equipment calibration/standardization checks.
   f. Internal audits and all related documents.
   g. COAs provided by resin supplier

3. *Organization and preservation of records:*

   Documents should be organized into file folders that are clearly labeled by document type, the time the documents were generated and the division charged with storing them.
   If the documents are to be stored in desk drawers, for example, their location must be clearly labeled to ensure that they can be easily located. (For example: Desk 1, Drawer 1, etc.)
   All test results and specimens should be labeled accordingly:
   Client\Year\Month\Order\Date of release
   Every Division Chief is responsible for ensuring that their document storage facilities are cleaned every month. Documents that are not being used during office hours must be immediately returned to their proper storage location.

4. *Introducing new documents*

   In the event that a new document is generated by the QCM, Division Chiefs are responsible for ensuring that it is incorporated into use within two weeks of its creation.

5. *Storage protocol*

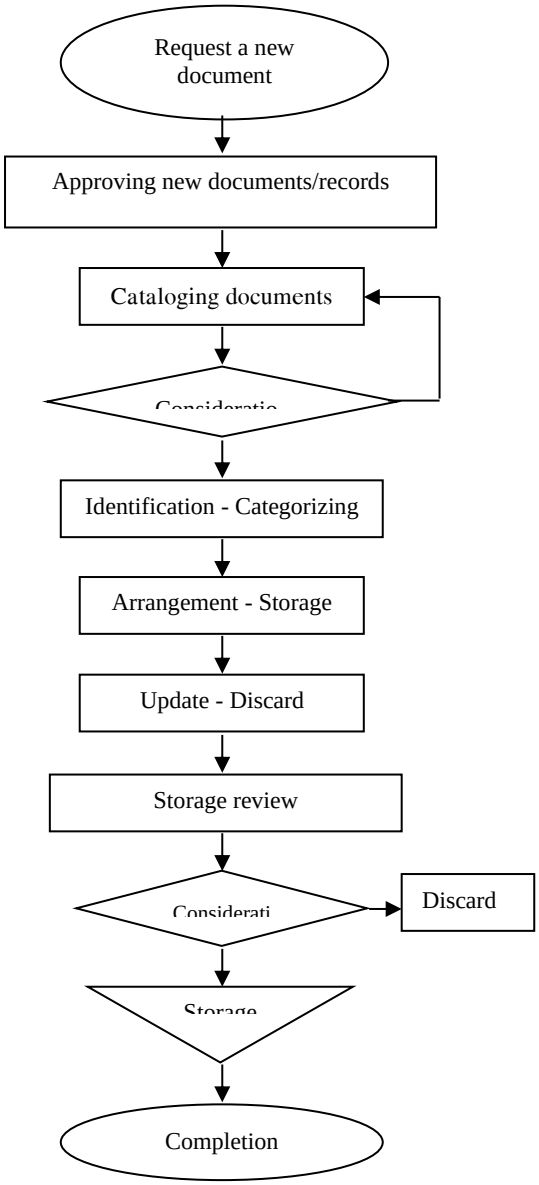
   Each division is responsible for reviewing its document catalog every month. Expired documents are to be discarded.
   All document destruction must be conducted according to company protocol.
   Each Division Chief is responsible for maintaining a record of all document destruction that should include: the time and place of the document disposal, the individual in charge of its disposal, the list of documents to be discarded (based on form BNS-QT KSHS-BM02) and a signature.

6. *Requirements*

   Each document should be carefully marked and safely stored in an easily accessible location. This includes documents submitted by suppliers, such as COAs.

7. *Document access*

   Each division member is welcome to access any and all company documents (except for classified materials) provided that they request permission from the company record keeper. Employees may request access to documents generated by other divisions from either the Division Chief or the General Manager.
   Customers wishing to review company documents are required to request access in the terms of their contract. The General Manager may also grant them access.

Personnel	Flowchart	Documents
Division Chief Division Chief QCM Division Chief PTĐT Person assigned Person assigned Person assigned Person assigned General Manager, Division Chief, Customers, Other Companies Person assigned		Announcement NS-QT KSHS-BM01 NS-QT KSHS-BM02

V. Forms applied

- NS-QT KSHS-BM01
- NS-QT KSHS-BM02

PREPARED BY	EXAMINED BY	APPROVED BY

I. Purpose

- To ensure of quality, quantity of products and to meet the customers' requirement.
- To find out promptly & give the suitable solution for non-conformance to ensure that the products are always qualified.

II. **Scope**: tape line division

III. **Abbreviation**

QC: Quality Control

NCM: Non-Conformance

IV. Content

a. Receive requirement

- Head of Tapeline division receives manufacturing requirements according to the form from manufacturing planning division.
- Head of Tapeline division considers those requirements. If not agree, return to planning division within 2 hours. If agree, execute the requirements.

b. Make formulation

- Based on manufacturing requirements & production order according to the forms from planning division, Head of Tapeline division together with technical in charge make formulation & submits to Manufacturing Manager to approve. If Manufacturing Manager doesn't agree, return to technical in charge to adjust. Head of Tapeline division continues to submit to Manufacturing Manager for approval until he approves.
- Original approved formulations are kept by the keeper, and be delivered to Head of Tapeline division according to document controlling procedures
- Head of Tapeline makes 1 copy of the approved formulation & gives tapeline team leader to hang on machine when manufacturing.
- Head of Tapeline makes manufacturing information for each kind of product & gives team leader to deploy & carry out.
- Head of Tapeline makes specifications of each machine for each kind of product & gives team leader to deploy & carry out.
- Before carrying out, Head of Tapeline needs to cooperate with technical division to check air compressor, water pump, electricity…

c. Receive material

- After the machine is checked, based on schedule of making tape, head of division will make material requisition form KHO- QT KSK-BM04.
- Team leader bases on request form and cooperates with mixing material workers to receive materials from warehouse. Check surface of material bags (SX-QT SXS-BM02). If they are ok, use for manufacture. If they are not ok, handle according to non-conformance control procedure.
- In the process of receiving materials & additives, team leader should note:

  +Ensure the correct materials & additives to be used.

  +part material bags need to be labeled for identifying

d. Manufacture

- In manufacturing process:

  + Team leader: Check machines frequently (specifications & tape formulation). Check tape quality (tape width, weight, color, diameter) according to tape quality standard. If finding any mistakes, inform to head of section to have solution.

  + Workers:

  - Check film slitting knife.

Film slitting knife

- Check edge waste sucking unit
- Check rollers (speed gauge)

-When unloading tape, workers need to tie the tape carefully, not let the bobbins oversized.

- Diameter of warp max 120mm
- Diameter of weft max 110mm
- check visually the bobbins and mark onto the winder which has fall out tape bobbin
- label tape trolleys before sending to QC according to labeling procedure

-No wrapping the tape heap up bobbins (2 knots)

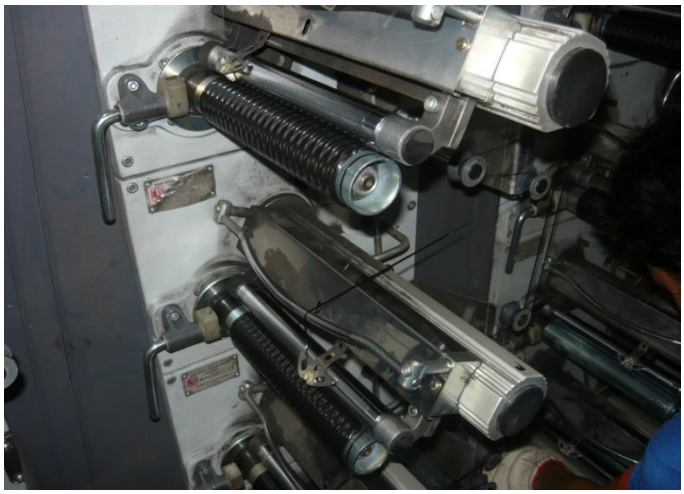
- Clean tape waste in pinion & winder
- If the rollers are halted, change the new ones.
- Clean mixing unit, tapeline machine & winders frequently.

Besides those requirements, if the operators find out any tape quality problems, inform to team leader for prompt solution.

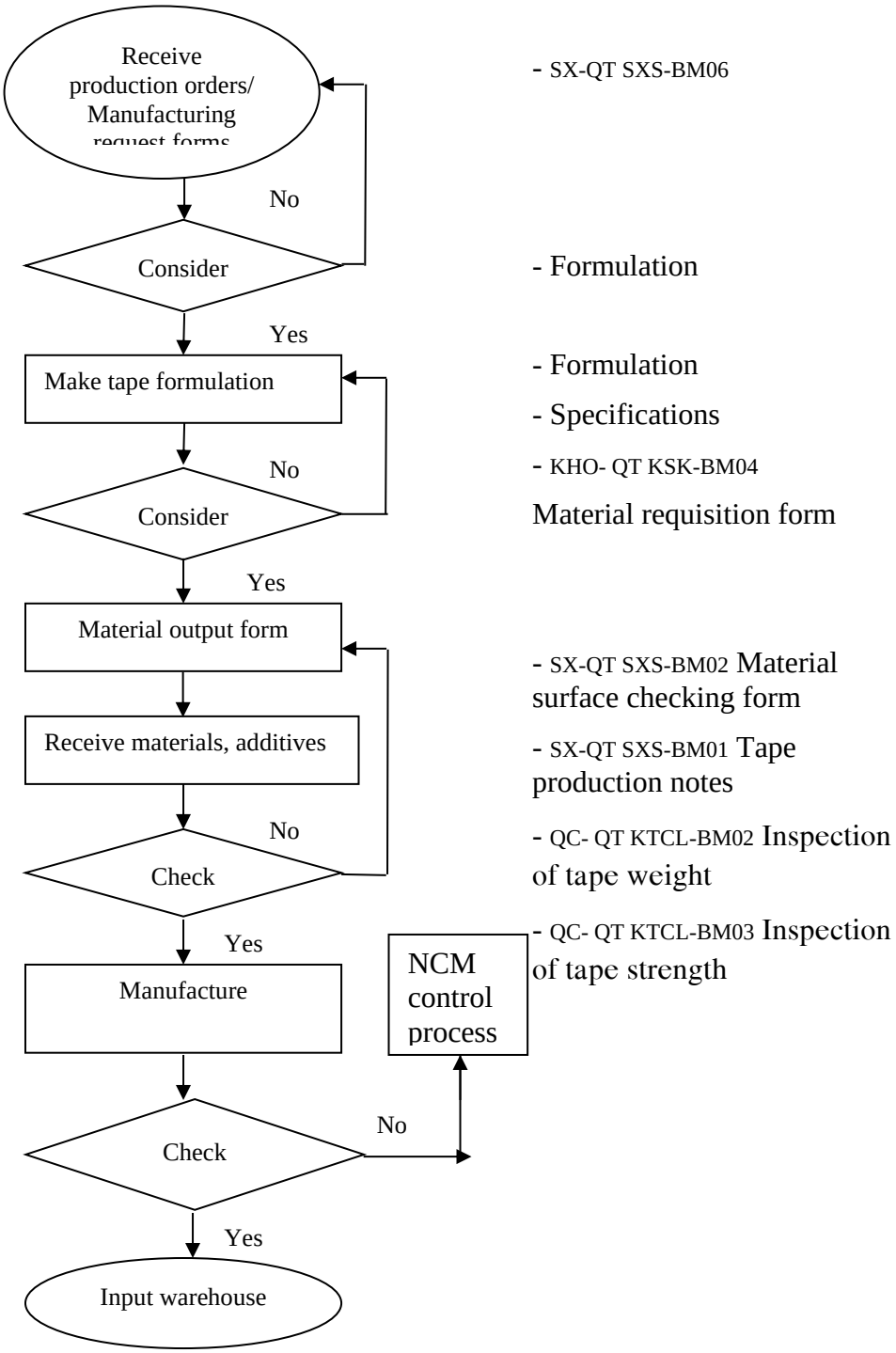
e. <u>Checking:</u>

Components of tape line are checked by QC according to TC02 and TC05 standards. If ok, pass to warehouse. If not ok, inform Tapeline team leader, Head of tapeline section, QC in charge to have further solution.

Workers make tape



Tapes are made & wound on winders.

RESPONSIBILITY	DIAGRAM	DOCUMNETS
- Head of division		- SX-QT SXS-BM06
- Head of division		- Formulation
- Head of division - Technical in charge		- Formulation - Specifications - KHO- QT KSK-BM04 Material requisition form
- Manufacturing manager		
- Team leader - Storekeeper		- SX-QT SXS-BM02 Material surface checking form
- Head of division - Workers		- SX-QT SXS-BM01 Tape production notes - QC- QT KTCL-BM02 Inspection of tape weight
- Head of division - Workers		- QC- QT KTCL-BM03 Inspection of tape strength
- QC		
- Head of division - Workers - QC		

V. Forms applied

No.	*Form name*	Code
01	Material requisition form	KHO- QT KSK-BM04
02	Tape production notes	SX-QT SXS-BM01
03	Material surface checking form	SX-QT SXS-BM02
04	Tape lot tracking	SX-QT SXS-BM03

PREPARED BY	CHECKED BY	APPROVED BY

Gia Loi	**INSTRUCTION TO CHECK TAPE**	DCN: HDKTS.04 Revision: 04 Effective date: 05/01/2024 Page: 1/2

I. **Purpose**: To ensure of the reliability of testing results.

II. **Scope**: Strength testing machine of QA division.

III. **Abbreviation**:

NCM: Non-Conformance

IV. Contents:

A. Check weight

1. Tape samples are taken from the marked bobbins on the winder of TL machine.
2. Put samples on measuring tape to cut exactly 1m.
3. Weigh and measure tape width/tape thickness. Write down on QC- QT KTCL-BM02 form.
4. Stick the identifying label on samples or put samples orderly to test strength & elongation.
5. If the sample is not passed by TC02 then put it separately. Inform team leader of tapeline division about testing results and solve according to non-conformance control process.

B. Check strength and elongation

1. Open “ON” button on the left side of the machine
2. Open “Trape lite-X” software on desktop of computer. Enter “admin” into username and password then ok.
3. Choose ASTM D2256 standard
4. Press “high speed” button to adjust the distance between 2 clamps
5. Check the distance between 2 clamps. It should be 10in.
6. Calibrate STROKE by double click at “STROKE”, choose “zero”
7. Calibrate FORCE by double click at “FORCE”, choose “calibrate”

8. Put sample into clamps and ensure not to slip sample.
9. Press blue button “START” to test sample.
10. If the above clamp cannot automatically return to the beginning position, press “RETURN” button.
11. Enter tex value of samples into “tex” column
12. If the sample is not passed by TC02 then put it separately. Inform team leader of tapeline division about testing results and solve according to non-conformance control process.

C. Check surface of yarn bobbin

1. Yarn color
2. Bobbin diameter
3. Tapes fall over at 2 the end bobbin

V. Forms applied

- QC- QT KTCL-BM02
- QC- QT KTCL-BM03

PREPARED BY	CHECKED BY	APPROVED BY

I. Purposes

- To ensure of quality, quantity of products & to ensure that they meet the customers' requirement.
- To find out promptly & give the suitable solution for Non-Conformance so that the products are always qualified.

II. Scope: Loom department

III. Abbreviation

QC: Quality Control

IV. Contents

a. Receive requirements

- Head of Loom division receives production orders according to the form from Production Planning division
- Head of Loom division considers those requirements. If not ok, return Planning within 2 hours. If ok, go ahead.

b. Make formulation, arrange machines

- Based on production order from Planning division, Head of loom division makes formulation for that kind of product & arranges machines. After making formulation, Head of loom division submits to Manufacturing Manager for approval. If Manufacturing Manager doesn't agree, return to Head of loom division. Head of loom division adjusts & submits until Manufacturing Manager approves. If Manufacturing Manager signs for approval on formulation, execute manufacture.
- Head of loom division photocopies 3 copies of the approved formulation (1 for Manufacturing Manager, 1 for statistics division &1 for technical) & keeps the original copy.
- Head of loom division makes the diagram of making tape & manufacturing information for each kind of product, then hangs on machine with formulation so that team leader & workers can follow.
- Before carrying out, Head of loom division should cooperate with technical division to check machine with the following steps:

  According to each kind of product, technical division should check:

  + Check the ring size if it's available or we need the outside process.

  +Check the devices & spare parts of machine. Ensure to follow the standard to run the correct type of product.

c. **Receive materials:**

- After the machines are checked, based on production order, Head of loom division will make daily tape output request form SX-QT SXD-BM04
- Team leader cooperates with operation workers to thread tapes on creel assembly & check quality of tapes. If the tapes are not qualified, return to tapeline warehouse. If ok, continues to thread tapes on machine.
- In the process of threading tapes on machine, team leader & workers need to note the following problems:

+ Clean machine carefully before threading

+ In the process of threading, divide tapes on comb holes equally, not overlapping each other.

+ Thread tape quantity correctly according to formulation.

+ Thread one-stripe tape quantity correctly

+ Thread enough stripe quantity.

d. Trial production and get samples

- After checking that the machines, the devices and the materials are correct according to requirements, Head of loom division arranges the trial production.
- Team leader arranges operation workers to weave fabric up to winding unit. In the process of weaving, workers should note:

+ Adjust to have correct mesh & fabric width

+ When the mesh & fabric width are stable, Head of loom division or team leader checks the loom formulation. QC gets the samples randomly according to SX-QT SXD-BM05. This form will be sent to Head of loom division. If the result is passed, go ahead. If the result is failed, adjust until meet the requirements.

e. <u>Manufacturing</u>

- In the process of manufacturing:

+Team leader, workers in shift: check the fabric frequently based on SX-QT SXD-BM06 weaving process checking form. Mesh & tape type must be corresponding with each kind of quality standard. If finding anything wrong, inform Head of loom division to have solution.

+ Workers:

- When changing or rethreading tapes, cut the tape tails neatly.
- Fabric must be cut by heating, not let the tape pulling out.

- Never threading tapes when having weft problems ……
- Weaving errors should be solved on the loom machine (mend, stitch …)

- Weft problems or weaving errors over 5cm should be tied with yellow color at the edge so that the re-winder division can identify. Besides, loom workers should check fabric width, mesh, and tape type to make sure they are corresponding with each kind of product according to quality standard. If finding anything wrong, inform team leader promptly to have solution.

- Unload fabric as the fixed meter. Mention clearly fabric roll tracking # on SX-QT SXD-BM02 daily fabric production log & stick label SX-QT SXD-BM01 on the fabric roll.

RESPONSIBILITY	DIAGRAM	DOCUMENTS
- BM/D03 Loom production report	Receive production	- Production order
	No	
- Manufacturing manager -Head of loom division	Check	
	Yes	
	Make formulation, arrange machine	-Formulation -Diagram to put bobbins on loom frame
- Manufacturing manager - Head of loom division	No	
	Check	
	No	
- Head of loom division - Technique	Receive tape	- SX-QT SXD-BM04 Daily tape output request form
	No	
- Head of loom division - Workers	Check	- Quality standard
	Pass	
	Deploy trial production	
- Head of loom division -Workers - QC	No	
	Check quality, get	- SX-QT SXD-BM05 Weaving formulation checking form
	Pass	
- Head of loom division -Team leader - QC	Manufacture	- SX-QT SXD-BM01 - SX-QT SXD-BM02 - SX-QT SXD-BM03 - SX-QT SXD-BM06
	No	
- Head of loom division - Workers - Team leader	Check	
	Pass	
	Finish	
	Non-conformance control	

V. Forms applied

- SX-QT SXD-BM01;
- SX-QT SXD-BM02
- SX-QT SXD-BM03
- SX-QT SXD-BM04
- SX-QT SXD-BM05
- SX-QT SXD-BM06

I. Purposes:

- To ensure that both quality & quantity of products meet the customers' requirement and that goods are always delivered on time.

- Find out promptly & give solution to overcome Non-Conformance to ensure that products are always qualified.

-Make sure to arrange manufacturing area tidily.

II. **Scope:** packaging division

III. **Abbreviation:**

Manufacturing request form

IV. **Content:**

a. Receive requirement

-Head of Packaging division receives Manufacturing request forms or production order from Planning division.

- Head of Packaging division considers those requirements. If he doesn't agree, return to planning division within 2 hours. If he agrees, execute the requirements.

- Based on manufacturing requirements & production order, Head of Packaging division arranges the production.

- Before manufacturing, Head of Packaging division has to cooperate with technical to check machines or to change the necessary spare parts to meet the requirements of production order.

b. Packing

- Head of Packaging division mentions clearly information of production order on the board (PE packing) or KD-QT KD-BM04 packing request form (PP packing) & deploys quality regulation of production order according surface quality standard for team leader & workers to know.
- In the process of manufacturing:

  * When loading fabric, team leader & team leader deputy need to pay attention on fabric width, color, edge, weight, & specifications according to regulation.

  + While packing, packaging workers & QC need to follow up:

  * Fabric surface, coating poly film, weight according to quality standard

* Quantity, specifications, weight according to TC09, TC10, finished product label SX-QT SXĐG-BM01; SX-QT SXĐG-BM04

- Label the spare pieces & mention clearly specifications, meter quantity (length), kg quantity. Then put neatly in warehouse for the next orders or to solve later.
- Input waste warehouse the spare fabric which cannot be used up.

c. Manufacture

- In the process of packing, team leader & team leader deputy should follow up machines frequently to adjust errors promptly. If they cannot adjust, inform technicians promptly according to the repair request form.
- In the process of manufacturing, if having any problems which cannot be solved by the workers, inform Head of Packaging division to have prompt solution.
- To the products which are not qualified, identify by QC-QT SPKPH-BM01 non-conforming product & solve according to non-conformance control process.

d. Input warehouse

At the end of the day or in manufacturing time, packaging workers together with KCS check the output quantity, the quantity which remains in warehouse & then input finished product warehouse according to SX- QT SXĐG-BM05 finished product warehouse input form.

RESPONSIBILITY	DIAGRAM	DOCUMENTS
- Head of Packaging division	Receive production order, manufacturing	- KD-QT KD-BM04 - SX-QT LKH-BM01
- Head of Packaging division	Consider (No)	
	Yes	
- Head of Packaging division	Make plan	- SX- QT SXĐG-BM01 -SX- QT SXĐG-BM04 Finished product label, TC09, TC10
- Head of Packaging division - Packaging worker	Deploy packing	- Surface standard - SX-QT SXĐG-BM06
- Head of Packaging division - Packaging worker - QC - Packaging - Storekeeper	Check (No) → Procedure of control NCM	- SX-QT SXĐG-BM02 - SX-QT SXĐG-BM03 - QC- QT KTCL-BM07 Rewinding/wrapping fabric checking form
	Yes	
	Input warehouse	- SX- QT SXĐG-BM05 Finished product warehouse input form
	Finish	

V. Form applied

- SX-QT SXĐG -BM01
- SX-QT SXĐG -BM02
- SX-QT SXĐG -BM03
- SX-QT SXĐG -BM04
- SX-QT SXĐG -BM05
- SX-QT SXĐG -BM06

PREPARED BY	CHECKED BY	APPROVED BY

DETERMINATION OF AOS OF GEOTEXTILE (ASTM D4751)

Date/time of Testing: Date/time of submerge specimens:

Fabric		Tracking #		Test #	
Specifications		Date of Prod.		Times of Testing	

	Range (mm)	Minimum	Wt.F+G	Wt. F+G	Wt.Beads	%	Wt.Pan	Wt. Pan	Wt.Beads	%	Wt.F+G	Wt.F+G	Wt.Retained	% Retained
	US Std Mesh	Dia. (mm)	W/Beads			Retained/lost	W/Beads			Passing	Before	After	in Geotextile	in Geotextile
1														
2														
3														
4														
5														

Yes ☐ No ☐

Solution for Non-Compliance: ……..

Chief of Division LP:

WATER PERMEABILITY TESTING RESULTS (D4491)

Date of Testing:

Fabric		Tracking #		Testing #	
Specifications		Date of Prod.		Times of Testing	
Soak specimens/ begin test at:				Dissolved oxygen content at soaking:	

Item #	**Specimen 1**	**Specimen 2**	**Specimen 3**	**Specimen 4**
Thickness (mm)				
Temperature: °C		Dissolved oxygen content at testing:		h_0/h_1:
Diameter of the upper unit (d): mm		Diameter of the exposed portion of the specimen (D): mm		
Time (s)				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Chief of Division: LP:

DIFFERENTIAL WATER MEASURING DEVICE CALIBRATION

EQUIPMENT NUMBER:_____ Temp:_____

DATE:_____ R.H.:_____

CALIBRATION EQUIPMENT USED: Head and Tail Manometers

HEAD (mm) (1)	TAIL (mm) (2)	**HEAD (mm)** (3)	DISPLAY (mm) (4)	DIFFERENCE (mm) (5)

SIGNED _____

PRODUCT MASS PER UNIT AREA TESTING RESULTS

Date of Testing:

Fabric		Tracking #		Testing #	
Specifications		Date of Prod.		Times of Testing	

Order	1	2	3	4	5	6	7	8	9	10	Average
Specimen size (m^2)											
Mass per Unit Area (gsm)											

Yes : ☐ No : ☐

SOLUTION FOR NON-COMPLIANCE : ……

Chief of Division LP

GRAB TENSILE STRENGTH TEST (ASTM D4632)

Test file name		Product name	
Report day		Method file name	ASTM D4632
Test type		Test day	
No of Batches		Speed:	12in/min
Date of prod		Qty/Batch	
Test #		Tracking #	
Times of testing			

Name	Thickness	Width	Gauge length
Unit	in	in	in
		4	3

Name	Break force	Break strain
Parameters	Sensitivity 10	Sensitivity 10
Unit	lbf	%

Yes : ☐ No: ☐

Solution for Non-compliance:……..

Carried out by:…….Calibrated by:……Calibration No.: ……

Chief of division **LP**

TRAPEZOIDAL TEARING STRENGTH TEST (ASTM D4533)

Test file name		Product name	
Report day		Method file name	ASTM D4533
Test type		Test day	
No of Batches		Speed:	12in/min
Date of prod		Qty/Batch	
Test #		Tracking #	
Times of testing			

Name	Thickness	Width	Gauge length
Unit	in	in	in
		3	1

Name	Max Force
Parameters	Calc.at Entire
Unit	lbf

Yes : ☐ No: ☐

Solution for Non-compliance:……..

Carried out by:…….Calibrated by:……Calibration No.: ……

Chief of division **LP**

STATIC PUNCTURE STRENGTH TEST (ASTM D6241)

Test file name		Product name	
Report day		Method file name	ASTM D6241
Test type		Test day	
No of Batches		Speed:	50mm/min
Date of prod		Qty/Batch	
Test #		Tracking #	
Times of testing			

Name	Thickness	Width	Height
Unit	mm	mm	mm
			100

Name	Max Force
Parameters	Calc.at Entire
Unit	lbf

Yes : ☐ No: ☐

Solution for Non-compliance:……..

Carried out by:…….Calibrated by:……Calibration No.: ……

Chief of division **LP**

VERIFICATION OF THE PLUNGER DIMENSIONS

1. Equipment code: VN03
2. Calibration equipment used: Calipers
3. Date: 19/07/19
4. Cab. No: I0719
5. Resuls:

Stt	Flat diameter		Radial edge	
	Value (mm)	Standard	Value (mm)	Standard
1	50	50mm ±1	2.7	2.5mm ±0.5
2	50		2.7	
3	50		2.8	
4	50		2.7	
5	50		2.8	
6	50		2.7	

LP

GIA LOI JSC **BM/TN08.00**

GEOTEXTILE TEST RESULTS

Product: GC3.0-12' Date:

Tracking #: 07S6.191211 Lot:

gsm: 102

Properties	Method	Unit	Value										Mean	Std.Dev
Grab tensile strength	**ASTM D4632**		1	2	3	4	5	6	7	8	9	10		
MD		lbs	197	181	182	154	188	170	191	183	198	213	185.7	16
TD		lbs	192	198	186	184	173	160	168	202	204	167	183.4	15.6
MD- Elong.		%	19	15	17	18	18	18	17	17	18	18	17.5	1.2
TD- Elong.		%	16	18	16	18	18	16	16	16	16	16	16.6	0.8
CBR test	**ASTM D6241**	lbs	700	735	694	706	701						707.2	16
Trapezoidal Tear	**ASTM D4533**													
MD		lbs	77	84	68	79	77	66	76	63	77	68	73.5	6.9
TD		lbs	71	75	62	86	78	69	73	89	71	86	76	8.7
Flow rate (T: 25.5° C)	**ASTM D4491**	**GPM/ft ^{2}**			**1**					**2**				
Thickness		mm	0.294	0.294	0.294	0.294	0.294	0.37	0.37	0.37	0.37	0.37		
Times		s	19.23	19.22	18.94	19.22	18.94	32.06	32.06	32.33	33.15	33.43		
Permittivity		s^{-1}	0.144	0.144	0.146	0.144	0.146	0.086	0.086	0.086	0.084	0.083		
Flow rate		GPM/ft^2	10.31	10.32	10.47	10.32	10.47	6.19	6.19	6.14	5.98	5.93		
Permeability		cm/s	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.003		
					3					**4**				
Thickness		mm	0.236	0.236	0.236	0.236	0.236	0.374	0.374	0.374	0.374	0.374		
Times		s	32.91	32.35	31.8	31.79	31.51	34.79	34.23	34.5	35.33	35.88		
Permittivity		s^{-1}	0.084	0.086	0.087	0.087	0.088	0.080	0.081	0.080	0.078	0.077	0.099	0.0274
Flow rate		GPM/ft^2	6.03	6.13	6.24	6.24	6.29	5.70	5.79	5.75	5.61	5.53	7.10	1.97
Permeability		cm/s	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.0008
AOS	**ASTM D4751**	**mm**	**0.286**											

Conclusion: YES ☐ NO ☐

BREAKING FORCE AND ELONGATION (STRIP METHOD)

Tracking #		Product name	
Test file name		Method file name	ASTM D5035
Report day		Test date	
Test type		Speed:	12in/min
No of Batches		Qty/Batch	
Form	**TN10.00**	Operater	
Test #		Times of testing	
Date of prod			

Name	Thickness	Width	Gauge length
Unit	inches	inches	inches

Name	Break force	Break strain
Parameters	Sensitivity 10	Sensitivity 10
Unit	lbf	%

Yes : ☐ No ☐

Solution for Non-compliance : ……

Carried out by…….Calibrated by…….Calibration No:…….

Chief of Division LP

PRODUCT THICKNESS TEST RESULTS (D5199)

Date of Testing:

Fabric		Tracking #		Test #	
Specification		Date of Prod		Times of Testing	

Order	1	2	3	4	5	6	7	8	9	10	Average
Thickness (mm)											

Yes : ☐ No ☐

SOLUTION FOR NON-COMPLIANCE : ……

Chief of Division LP

GRAB BREAKING LOAD AND ELONGATION (WIDE WIDTH)

Tracking #		Product name	
Test file name		Method file name	ASTM D4595
Report day		Test date	
Test type		Speed:	0.4in/min
No of Batches		Qty/Batch	
Form	**TN-QT D4595-BM01**	Operater	
Test #		Times of testing	
Date of prod			

Name	Thickness	Width	Gauge length
Unit	inches	inches	inches

Name	Break force	Break strain
Parameters	Sensitivity 10	Sensitivity 10
Unit	lbf	%

Yes : ☐ No ☐

Solution for Non-compliance : ……

Carried out by…….Calibrated by…….Calibration No:…….

Chief of Division LP

PP Woven Geotextile GS40-175

BM/TN13.00

INDIVIDUAL ROLL TEST REPORT

Lot #	Roll No.	Area Weight	Grab Tensile MD ASTM D4632	Elongation MD ASTM D4632	Grab Tensile CD ASTM D4632	Elongation CD ASTM D4632	Trap. Tear MD ASTM D4533	Trap. Tear CD ASTM D4533	CBR ASTM D6241	AOS ASTM D4751	Flow Rate ASTM D4491	Permittivity ASTM D4491	Production date	
		gsm	lbs	%	lbs	%	lbs	lbs	lbs	mm	gal/min/sf	sec^{-1}		
020119	1902Z38	136.2	254.2	22.0	248.6	25.2	106.5	96.2	831.9	0.33	8.4	0.129	1/15/2019	
	1902Z39	135.2	242.0	21.0	231.1	22.7	113.0	93.1	759.8	0.39	10.3	0.153	1/19/2019	
	1902Z40	134.5	247.8	21.9	232.6	21.8	107.7	92.7	820.2	0.32	10.0	0.150	1/21/2019	
	1902Z41	134.1	255.9	22.4	242.9	24.1	110.9	96.3	834.1	0.33	8.1	0.122	1/22/2019	
	1902Z44	135.1	244.7	20.2	225.9	22.4	105.9	90.4	801.0	0.30	9.2	0.138	1/24/2019	
	1902Z50	131.6	249.2	18.7	235.4	22.3	106.3	91.5	792.2	0.31	10.5	0.157	2/13/2019	
	1902Z59	133.8	257.0	19.2	229.8	20.0	108.2	92.2	762.1	0.33	10.6	0.158	2/26/2019	
	1902Z67	139.8	268.0	20.9	264.1	22.5	110.1	98.4	808.1	0.29	6.8	0.102	3/8/2019	
Mean			252.4	20.8	238.8	22.6	108.6	93.8	801.2	0.324	9.2	0.14		End: 1902Z67
Std.			8.3	1.3	12.6	1.5	2.5	2.8	28.7	0.032	1.4	0.02		Total: 30 rolls
Min.			242.0	18.7	225.9	20.0	105.9	90.4	759.8	0.289	6.8	0.10		
Max.			268.0	22.4	264.1	25.2	113.0	98.4	834.1	0.393	10.6	0.16		
MARV			235.8	18.1	213.7	19.5	103.5	88.3	743.8					
Spec.			200.0	15.0	200.0	15.0	85.0	85.0	700.0	0.425	5.0	0.05		

TRACKING OF TESTING TIME D4355

Staff name:

Sample code	Testing time	Stopping time of machine/Main reason					Finishing time

UV RESISTANCE D4355

Strength Retained measured via strip tensile (D5035)

Report date:

Fabric		Tracking #		Testing #	
Specification		Production date		Times of testing	
Filter	Day light-Q	UV Sensor	340nm	Black Panel	Uninsulated

Parameter	Unit	Value					Mean	Std	% Retained
Tentile Strength - B									
MD									
TD									
MD- Elong.									
TD- Elong.									
Tentile Strength - Exposed for 150hrs									
MD									
TD									
MD- Elong.									
TD- Elong.									
Tentile Strength - Exposed for 300hrs									
MD									
TD									
MD- Elong.									
TD- Elong.									
Tentile Strength - Exposed for 500hrs									
MD									
TD									
MD- Elong.									
TD- Elong.									

B: Baseline Unexposed MD: Machine Direction TD: Transverse Direction

GIA LOI JSC **BM/TD05.00**

LIST OF MATERIAL LOT

No.	Material SKU	Lot #	COA(Yes: √)	Quantity (kgs)	Date of input	Supplier name

TRACKING OF CALIBRATION # OF LAB ROOM

No.	Name of calibrated equipments	Equipment code	Date of calibration	Label # of calibration	Notes	Frequency of calibration times
L 1	Balance 150g	MTN06				
L 2	Bead 70	B70				
L 3	Water measuring device	MTN08				
L 4	Thickness measuring device	MTN15				
L 5	Balance 150g	MTN06				
L 6	Thickness measuring device	MTN15				
L 7	Balance 150g	MTN06				
L 8	Balance of QC 210g	CĐT1				
L 9	Bead 70	B70				
L 10	Balance 150g	MTN06				
L 11	Balance 150g	MTN06				
L 12	Balance 200g	MTN14				
L 13	Thickness measuring device	MTN15				
L 14	Balance 200g	MTN14				
L 15	Balance of QC 210g	CĐT1				
L 16	Water measuring device	MTN08				
L 17	Balance 200g	MTN14				
L 18	Water measuring device	MTN08				
L 19	Bead 70	B70				
L 20	Balance 200g	MTN14				
L 21	Water measuring device	MTN08				
L 22	Balance 200g	MTN14				
L 23	Water measuring device	MTN08				
L 24	Water measuring device	MTN08				
L 25	Thickness measuring device	MTN15				
L 26	Balance 200g	MTN14				
L 27	Balance of QC 210g	CĐT1				

SUPERVISE TESTING MINUTES

Method of testing:

Testing minute #	Product	Specifications	Roll tracking #	Manf.date	Testing date	Pass	Fail	Note

Testing minute #: The number of testing minutes in 1 month / 2 numbers of the test month/ 2 last numbers of test year.

TRACKING FORM OF LAB ROOM ENVIRONMENT

Month: /20.....

Speci-fications	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Temp. (° C)																															
Moisture (%)																															

Lab staff

TRACKING FORM OF OXYGEN CONTENT IN WATER FOR D4491

Year: 20…….

Parameter																		
Oxygen (ppm)																		
Temperature (^{o}C)																		

Test Report for Shipment

PRODUCT		PO /PI #		Loading date	
CUSTOMER		INVOICE #		Cont No.	

Lot #	No. of Rolls	Roll No.	Grab Tensile MD ASTM D4632	Elongation MD ASTM D4632	Grab Tensile CD ASTM D4632	Elongation CD ASTM D4632	Trap. Tear MD ASTM D4533	Trap. Tear CD ASTM D4533	CBR ASTM D6241	AOS ASTM D4751	Flow Rate ASTM D4491	Permittivity ASTM D4491
			lbs	%	lbs	%	lbs	lbs	lbs	mm	gal/min/sf	sec^{-1}
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
Average												
Std.												
Min.												
Max.												
MARV												
Spec.												

I. **Purpose**: To ensure that finished products are qualified.

II. **Scope**: In PP wrapping process

III. Abbreviations:

NCM: Non-conformance

QC: Quality Control

IV. Contents

1. Preparation:
   - Packing, paper cores, steel pipes as requirement of production order.
   - Mater rolls which are passed by checking the specifications.
   - Labels
   - Specify the fabric width on re-winder machine.
   - Check if the calibration labels of measuring devices are still valid or not.
2. Mention clearly the following information on master rolls: product name, specifications, tracking number, weight, average weight, length, manufacturing date on SX-QT SXĐG-BM06.
3. Set length meter of fabric roll on electronic counter meter.
4. Weigh paper cores & steel pipes before wrapping products (tare at zero).
5. Check the outer surface of fabric during wrapping process according to TC03. Clearly mention errors (if any) in fabric error column in SX-QT SXĐG-BM06.
6. Supervise the fabric width based on fabric width fixed on re-winder. Use measuring tape to measure the real width of the first finished product roll & write down on SX-QT SXĐG-BM06. If fabric roll is not qualified <1% (according to TC03), then separate it & handle according to NCM control process.
7. Check the screen of counter meter when it stops to see whether it's correct as fixed parameter or not (that means if it stops automatically or not). Cut by heating when changing to new roll.
8. Weigh fabric roll; write down on SX-QT SXĐG-BM06. If fabric weight is not qualified ±2%, separate & handle according to NCM control process

- Set the form of NCM identification QC-QT SPKPH-BM01.

- Head of packaging division asks workers to check previous rolls & next rolls of Non-Conforming roll until the result is ok.
- Head of packaging division sets NCM form QC-QT SPKPH-BM02, and then has fabric roll rewound to check the length.
- Head of packaging division checks the length in reason column of the form to see if it's because of length shortage reason.
- Head of packaging division passes QC-QT SPKPH-BM02 to Head of QC division to review reason, to propose solution or ideas of prevention (if any). Finally, pass to General Manager for approval.

9. Check the total length & weight of small rolls wrapped from per master roll. Compare with the origin length & weight of master roll to inform the related divisions in time.

V. Form applied

- SX-QT SXĐG-BM06
- QC-QT SPKPH-BM01
- QC-QT SPKPH-BM01

PREPARED BY	CHECKED BY	APPROVED BY

NEW DOCUMENT REQUEST FORM

Requester :_____. Signature: _____

Division :_____

Document requested :_____ (Name)

Content :_____

_____

_____

Title	Division	Full name	Opinion	Signature
Representative of Manager				
Drafter				
Document Keeper				

DOCUMENT REVISION REQUEST FORM

Requester : ……

Division : ……

Date : ……..

Name of Doc. : ……

Code of Doc. : ……

No.	Page, Chapter, Section requiring revision	Suggestion for revision	Opinion	
			Approved	Disapproved

Note: Mark (x) on column ‘Approval’ or ‘Disapproval’ accordingly.

Drafter’s specification:

……..…….

Reviewer:

…….

Time drafted:

…….

Approval
Representative of Manager

Requester

REQUEST FOR ADOPTION OF DOCUMENT FROM OUTSIDE SOURCE (DOS)

Full name : ……

Division :……

Date : ……

Order	Name of document	Content	Date of release	Scope of application

Approved by: **Requested by:**

CURRENT DOCUMENT LIST

Code	Name of document	Date of release	Division of release	Number of release	Note

Approved By: **Drafted By:**

RECORD STORAGE LOG

Department : ……

Item #	Document name	Kept by	Borrowed by	Location	Types of documents			Classi-fication	Date created	Date filed	Storage time	Method of destruction
					Text	Stored in Hard Disk Drive	CD-Rom/ USB					
1												All physical records must be shredded or burned. All electronic files must be deleted
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

Approval by Chief of Division **Planner**

LIST OF DESTROYED DOCUMENTS

Department: ……

Item #	Document Name	Document keeper	Location of document	Types of documents			Date filed	Date destroyed	Agent in charge of destruction	Method of Destruction
				Text	Hard Drive Disk (HDD)	CD-ROM/ USB				
										All physical records must be shredded or burned. All electronic files must be deleted.

Approved by Division Chief: **Planner**

REQUEST FOR TRAINING

Date: …….. **Request by:**

No.	Training course	Name of employee	Dep.	Type of training		Date of training	Training fee	Note
				Internal	External			
1								
2								
3								

Date:

Approve by Request by

TRAINING LOG

Name of employee :
Department :
Job description :

Item #	Content	Time of training	Place of training	Result	Notes
1	Average Mass per unit area(ASTM D5261)			s	
2	Grab tensile(ASTM D4632)				
3	Trapezoid tearing strength (ASTM D4533)				
4	Puncture resistance CBR(ASTM D6241)				
5	Water permeability (ASTM D4491)				
6	Apparent Opening Size AOS (ASTM D4751)				
7	Grab Tensile Strength & Elongation with wide width (ASTM D4595)				
8	Grab Tensile Strength & Elongation (ASTM D5035)				
9	Average Mass per unit area(ASTM D5199)				
Date: Evaluator:					
REQUEST FOR FURTHER TRAINING :					

INTERNAL EVALUATION CHECKLIST

Department	Criteria for evaluation	Documents reviewed	Month											
			1	2	3	4	5	6	7	8	9	10	11	12

Date:

General Manager **Planner**

INTERNAL EVALUATION PROGRAM

1. Evaluation team:

Based on internal evaluation schedule, arising requirements, requirements of Director Board, …… evaluation program in 20… at Gia Loi Company as follows:
Evaluation time: From: …… to:……..
Evaluation team:……

2. Internal evaluation team:

No.	Evaluation place / evaluated division	Scope/evaluated activities	Evaluation staff	Time

Program is informed to all related divisions for their preparation.

Director Board's approval

Date:…./…./20…
QC Director

Send to:

- Director Board
- Related Divisions
- QC Division keeps one as a record

INTERNAL AUDIT RESULT REPORT

To: General Director

Today, ……., we report about the internal audit results carried out on …… as follows:

No.	Division	Description of non-conformance	Level evaluation of Non-conformance
1			
2			
3			
4			
5			
6			

Note:

- NCM : Non-conformance Major
- NCm : Slight Non-conformance minor
- OBS : Observation

Total: 1 NCM, 3 NCm, 4OBS

Conclusion:
Suggestion:

Submit to:

General Director Chief of evaluation division

Send to:

- General Director
- Related divisions
- QC Manager keeps as record

OPERATIONAL PARAMETER OF TAPELINE 4

Date: …./……/2013

Type of tape: ……

Ring Blaze	Ring	Spacer bar	Blaze	Total (mm)
Dimension				

Mixed formula		
Material code	Kgs	%
PP		
MB		
UV		
Vitamaxx		

Main electric box		
	Adjustment	◦C
Extruder temperature	#1	
	#2	
	#3	
	#4	
	#5	
Filter temp.	#6	
Filter head temp.	#7	
T-die temperature	#8	
	#9	
	#10	
	#11	
	#12	
Melt Temp.		

Extruder (rpm)	V3 speed	V2 speed	Ratio	V1 speed	Stretching speed	HAO temperature	Chiller temperature	Water tank

Notes: To PP product (Y125 tape), parameter of electric box is increased +5.

Head of tapeline division **Head of tapeline division** **Establisher**

Date of announcement		**Production Order**	Lot Number	
Drafting			Draft Number	
Evaluating		Product Name:	Time of revision	
Approval			Number of page	Total of page:

I/ Contract Requirement

Materials	Yarn Weight	Weight (g/m2)	Coating:
PP ☐	Denier:		One side:
PE ☐	Tex:	(g/m^2)	Two sides:
UV: %	Size:	Content:	Coating color:
Specifications:	Amount: (kg)	Quantity: (m)	Delivery date:
Feature:		Grab breaking load & Elongation (D4632)	
		Tearing Strength (D 4533)	
		Static Puncture Resistance (D6241)	
		AOS (D4751)	
		Water Permeability (D4491)	

II/ Tape:

UV: %		Amount (Kg)	Loom
Date of Production:		Warp tape (Kg)	
Date of Finish:		Weft tape (Kg)	
Feature:			

III/ Loom

		Details	
Number of Woven Rolls:	(Roll)	Ranking:	
Amount:	(m)	Fabric width:	(mm)
Meter/Roll	(m/roll)	Core size:	
Completion Date:		Ø of ring size:	(mm)
Feature:			

IV/ Coating

Cut: Yes ☐ No ☐		UV Yes ☐ %	Average weight of finished products
Cut width: (mm)		No ☐	(g/m^2)
Date of coating:		Date of Completion:	
Feature:			

IV/ Packaging

Specifications:		Wrapped ☐	Meter measurement ☐
Amount (kg)		Paper core ☐	Metal core ☐

Amount (m)	Ø of paper core:
Date of Packaging	Date of Completion:

Feature:	**Label**

V/ Changes during Production Process

GIALOI JSC

SX-QT LKH-BM02.00

OUTGOING SHIPMENT SCHEDULE- Month /20

Customer Name	Order no.	Production Order	Product code	Quantity	Sch.date	Monthly inventory	Day 01	Day 02	Day 03			Total		Core size

ORDER MONITORING

Customer's Name	Order no.	Manuf. order	Date of Order	Product code	Amount (lbs)	Sch.date	Sch.date 1	Sch.date 2	Sch.date 3	Complete (m)	Production (m)	Remark	Delay reasons

LSX NO.	13040	LSX (Simple)	Code	ACFW
Date	16/01/2013		PI/PO No.	
Drating	Ngọc Anh		Draft number	
Evaluating			Time of revision	
Approval			Number of page	

SKU	Quantity	Unit	Weight (kgs)	Gross weight (kgs)	Delivery date (proposed)
GS40-125x432					
GS36-125x432					
GS36-150x360					
GS36-175x309			Total		

Special requirements:

I/Tapeline :

SKU	Quntity (kgs)	Formulation	Journal operation	Tapeline no.	Beginning date and finishing date
Total	-				

II/Loom :

SKU	Quntity (kgs)	Formulation	Journal operation	Tapeline no.	Beginning date and finishing date
Total	-				

III/ Packaging

SKU	Quntity (kgs)	Formulation	Journal operation	Tapeline no.	Beginning date and finishing date

Feature:

Label:

V/Changes in production process

FINISHED TAPE DAILY REPORT

Date / / 20

Shift	Tape code	Lot #	Finished tape 1st grade				Finished tape 2nd grade			
			Bags	Cheese pipes	G.W	Net weight	Bags	Cheese pipes	G.W	Net weight
1										
Total										
2										
Total										

Remark

QC

NON-CONFORMING PRODUCTS

Product code:…… Quantity:……..

Lot number:……Manufacturer:……Delivery Date:…….

Reasons of Non-conformance:

Date …….month…….year……..

Chief of Division Inspector

NON-CONFORMING PRODUCT

DETECTION AND RESOLUTION

Date: No:

Division reporting Fabric ☐ Weaving ☐ Coating ☐ Packaging ☐ QC ☐

I. CONTENT

Product name	Description	Quantity	Units

II. CAUSE OF NON-CONFORMANCE

III. SUGGESTED METHOD OF RESOLUTION

Repair ☐ Downgrade ☐ Terminate ☐ Return to supplier ☐

Other:

Division Handling Non-conformance: Date:

IV. POST-RESOLUTION INSPECTION RESULTS

Examiner: Date:

V. RESOLUTION - PREVENTION

Chief of Division where Date:

VI. BOA's APPROVAL Date:

Note:

INSPECTION AND RESOLUTION LOG FOR NON-CONFORMING PRODUCTS

No.	Non-conforming item number	Release date	Brief description of non-conformance	Corrective Measurement Taken	Deadline for resolution	Supervisor	Result		New item number for resolved product
							Satisfactory	Unsatisfactory	

Date

Prepared By:

LIST OF ANALYTICAL EQUIPMENTS AND CALIBRATION PROTOCOL

I. LAB EQUIPMENTS

Order	Name of equipments	Testing method	Origin	Model	Scale	Number	Division	Date of Calibration	Date of Expiration	Calibrated by	Date of Next Calibration
1	Utility endurance measurement device	ASTM D4632	Shimazhu-Japan	AGS-5kNX	5KN	1	Lab	11/7/2012	11/7/2013	TT3	12/7/2012
2	3-kg balance		South Korea		0-3kg	1	Lab				
3	150-g balance				0-150g	1					
4	Yarn Balance (TEX)					1	QCD				
5	Scale (QCD)		Japan		0-10mm	1					

II. PRODUCTION EQUIPMENTS

Order	Name of equipments	Testing method	Origin	Model	Scale	Number	Division	Date of Calibration	Date of Expiration	Calibrated by	Date of Next Calibration
1	Counter meter of Rewinder/ Wrapping Machine				0-9999 ^{o}C	5	Rewinder: 1; Packaging: 4				
2	Heat Gun (^{o}C)		America		0-999 ^{o}C	1	Engineering				
3	Electronic Balance		Vietnam		0-300kg	3	Packaging				
4	Electronic balance (Wrapping Machine 3)		4m long		0-3000 kg	1					
5	Electronic balance (for yarn)			XK3190-A9+	0-3000kg	1	Rewinder				
6	Speedometer		China	DT2235A	0-9999rpm	1	Engineering				

Notes:

Calibration Company: Center of Quality Calibration 3
Calibration Address: 7 1st Street - Bien Hoa Industrial Zone 1- Dong Nai
Phone: 0613 836 212
Fax: 0613 836 298
Email: qt-kythuattn@quatest3.com.vn
Person in Contact: Nguyễn Thị Nhanh

INTERNAL CALIBRATION RESULT FORM

No.:.....

Name of device to be calibrated: ..... Code: ……

Serial no.: ..... Manufacturer: ……..

Audit division: ..... Calibration label #: …….

Machine name: .....

NO.	STANDARD EQUIPMENT	CALIBR A-TION #	STANDARD VALUE	VALUE ON THE CALIBRATED EQUIPMENT	ERRO R	CONCLUSIO N

Date: .....

APPROVAL **AUDITOR**

PLAN OF CALIRATION FOR MEASURING EQUIPMENTS
DIVISION:

No.	Code of equipments	Name of equipments	Planned date of calibration	Auditor /Place of calibration

Head of division **Maintenance team leader**

CALIBRATING RECORD OF MEASURING EQUIPMENTS

No.	Code of equipments	Description of equipments	Division to use	Docket #	Pass	Fail

DD….MM….YY

Head of division Maintenance team leader

INSPECTION OF TAPE WEIGHT

Date Shift: 1 2 3

Specifications/ Tape Plant #									
Type of tape									
Lot #									
Tape width									
Weight									
Screw speed									
Take up speed									
V1 speed									
V2 speed									
V3 speed									
V2/V1 ratio									
	1st			2nd			3rd		
Location of samples	Weight	Width	Thickness	Weight	Width	Thickness	Weight	Width	Thickness
A 1									
A 2									
A 3									
A 4									
A 5									
B1									
B2									
B3									
B4									
B5									
Average									

Tapeline Team Leader QC

GIA LOI JSC QC-QT KSTBĐ-BM05

INTERNAL CALIBRATION LABEL

Calibration #:

Equipment name:

Equipment code:

Date of calibration:

Date of next calibartion:

Calibrator/auditor:

LAB EQUIPMENT CLEANING SCHEDULE IN 2012

Week	Content	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Shimazhu tester												
	AOS Machine												
	Water measuring Machine:												
	-Water replacement												
	- Tube Cleaning												
2	Shimazhu tester												
	AOS Machine												
	Water measuring Machine:												
	-Water Replacement												
	- Tube Cleaning												
3	Shimazhu tester												
	AOS Machine												
	Water measuring Machine:												
	-Water Replacement												
	- Tube Cleaning												
4	Shimazhu tester												
	AOS Machine												
	Water measuring Machine:												
	-Water Replacement												
	- Tube Cleaning												
	Sample Arrangement												
	Lab Cleaning												

INSPECTION OF TAPE STRENGTH

Date Shift: 1 2 3

Type of tape									
Lot #									
Tape width									
Weight									
Screw speed									
Take up speed									
V1 speed									
V2 speed									
V3 speed									
V2/V1 ratio									
Item #	Tape Plant #			Tape Plant #			Tape Plant #		
	Weight (tex)	Tensile Stength (N)	Elongation (%)	Weight (tex)	Tensile Stength (N)	Elongation (%)	Weight (tex)	Tensile Stength (N)	Elongation (%)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
Average									

Tapeline Team Leader QC

GIA LOI JSC			QC-QTKTCL-BM04.00
TAPE LABEL			
Type of yarn	P	I ☐	II ☐
Shift 1 2 3	# of bobbins/total wt	pcs	kgs
Team 1 2 3		Date of Production:	
Lot Number:			

GIA LOI JSC			QC-QTKTCL-BM04.00
TAPE LABEL			
Type of yarn	P	I ☐	II ☐
Shift 1 2 3	# of bobbins/total wt	pcs	kgs
Team 1 2 3		Date of Production:	
Lot Number:			

GIA LOI JSC			QC-QTKTCL-BM04.00
TAPE LABEL			
Type of yarn	P	I ☐	II ☐
Shift 1 2 3	# of bobbins/total wt	pcs	kgs
Team 1 2 3		Date of Production:	
Lot Number:			

DAILY FABRIC ROLL PRODUCTION LOG

Date ……..

Item #	Roll Code	Product Code	Size (m)	Length (m)	Weight (kg)	Mass/Unit Area (g/m^2)	Assessment	
							Qualified	Disqualified
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Staff of QCS

GIA LOI JSC

REWINDER

COATING

QC-QTKTCL-BM06

Specifications: Roll tracking #:	Average fabric width:
Date of unloading:	Length (meters, loom):
Date of rewinding:	Length (meters, after rewinding):
Lack of width:	Average weight at rewinder:
Tape folding(m):	Notes:
Difference in tape color (m):	
Error amount:	

KCS staff

Date of coating:	Remark
Product code:	
Shift: Team:	
Coating length:	
1st side weight:	
2rd side weight:	
Cut: 1m ☐ 2m ☐ 3m ☐	

Coating team leader

GIA LOI JSC

REWINDER

COATING

QC-QTKTCL-BM06

Specifications: Roll tracking #:	Average fabric width:
Date of unloading:	Length (meters, loom):
Date of rewinding:	Length (meters, after rewinding):
Lack of width:	Average weight at rewinder:
Tape folding(m):	Notes:
Difference in tape color (m):	
Error amount:	

KCS staff

Date of coating:	Remark
Product code:	
Shift: Team:	
Coating length:	
1st side weight:	
2rd side weight:	
Cut: 1m ☐ 2m ☐ 3m ☐	

Coating team leader

REWINDING/WRAPPING FABRIC CHECKING FORM

Rewinding/wrapping date : ……

Specifications :..…… Unloading date :…...…… kg : ……..……..

Roll tracking #/ lot # : ……. m : ……..…… Length (meter) after rewinding : ……

Loom worker code	When receiving shift	When releasing shift	At length (m) position	Edge selvage problem	Waft error	Weft error	Other errors

Loom Manager QC

FABRIC WEIGHT TRACKING

Specifications:……... Loom machine #:……..

No.	Input (not yet rewind)				Output (already rewind)				Average weight (g/m ^{2})		Coating date	QC staff	Remark
	Date	Roll tracking #	m/roll	kg/roll	Date	m/roll	kg/roll	Average width	Before rewinding	After rewinding			

TAPE PRODUCTION NOTES

Date of Production:		Order Number:	
Tape Code:		Lot Number:	

Formulation Number:

Ingredients, Materials

	Code	**Lot Number**	**Quantity**
PP			
Resins			
UV			

Specifications

Tex/Denier	
Size	
Strength	
% of elongation	
Color	

Head of Tapeline Division Team leader of Tapeline QC Staff

Each note will be used for one tape lot only

Lot Number: Tapeline #/ letter A-Z/times of specs change or material lot change(1-99)

MATERIAL SURFACE CHECKING FORM

Date of manufacturing: Manufacturing order #:

Tape tracking #: Tape lot #:

Formulation #:

Material component

Material	Code	Material Lot #	Fail		Pass
			Moisture	Dirt	
PP/PE					
MB					
UV					

Head of Tapeline Division Team leader of Tapeline

Note: Each MB uses for each tape lot
Manufacturing order #: (Order # /Customer name / Manufacturing year)
Tape lot #: Tape tracking # / order # / Material changing times #

TAPE LOT # TRACKING

Tapeline #:

No.	Production date	Shift	PP/PE		MB color		UV		Vistamaxx		Taical/nanocal		Tape code	Tape lot	Quantity (kg)
			Code	Lot #	Code	Lot #	Code	Lot #	Code	Lot #	Code	Lot #			

NTĐ: 17.11.21

Tape lot #: Tapeline # /A-Z/Times of changing tape # (1-99) or times of changing material.

GiaLoi

TAPE PLANT OPERATION JOURNAL

Tape code:…… *Machine # :……* *Lot #:……* *Date:……/……/20*

Extruder temperature +/-5⁰C							
Time (hour)		*6*	10	*14*	18	22	2
Position	*Set up*	*Operation*					
1							
2							
3							
4							
5							
6							

Filter temperature +/-5⁰C							
Time (hour)		*6*	10	*14*	18	22	2
Set up		*Operation*					

Pneumatic pressure kg/cm2							
Time (hour)		*6*	10	*14*	18	22	2
Position	*Set up*	*Operation*					
1	7						
2	7						
3	7						
4	7						

T-die temperature +/-5⁰C							
Time (hour)		*6*	10	*14*	18	14	22	2
Position	*Set up*	*Operation*						
1								
2								
3								
4								
5								

Hot Air Oven temperature +/-5⁰C							
Time (hour)		*6*	10	*14*	18	14	22	2
Position	*Set up*	*Operation*						
1								
2								

Colling water temperature °c								
Time (hour)		*6*	10	*14*	18	14	22	2
Set up		*Operation*						
20 <= T <= 27								

Mixing time……..Beginning time……..End time ……

1st cleaning for dosing unit: ……

2nd cleaning for dosing unit: ……

Operation Parameter	Speed (rpm)		Volatge (A)		Ratio	
	1st time	2nd time				
Extruder						
Top roller						
Nip roller						
V1 (Hol)						
V2 (Str)						
V3 (Ann)						
I=V2/V1						

Film water-cooled temperature = +/- 2⁰C	Mixing ratio (kg)	
	Resin	kgs
Water tank:	Master batch	kgs
◦C	UV	kgs
Cooling water:	vistamaxx	kgs
◦C		
Tape thickness:		

Spacer + knives

★Spacer & knives $= \sqrt{V2/V1}$ **x tape width - tape thickness**

NOTE: When the temperature is over the allowance, operators must inform Head of tapeline division immediately.

First operator

Second operator

TRACKING OF HALF-USED MATERIAL BAGS

Date:……

Unit ☐ Kg ☐ Bag

No.	Material name	Code	Lot #	Description	OB	Input	Output	CB

GIALOI JSC **SX-QT SXD-BM01.00**

FABRIC ROLL IDENTIFICATION

Finished Date		
Product Code		COLOR CODE
Roll tracking #		
Lot #		
Length	m	
Weight	kgs	
Weaver		

TRACKING FORM OF USING TAPES

Product: Specifications:

Loom #: Lot #:

Date of manufacture	Shift	Warp lot #	Weft lot #	Length (m) when receiving shift	Length (m) when releasing shift	Length (m) when unloading	Fabric roll tracking #	Mark ✓ on the roll which was taken sample
Total unloaded length (m)								m

Head of Loom Division Team leader of Loom Division

LOOM PRODUCTION REPORT

Specifications: ..... Fabric width: ..... Loom #: ..... Lot #: ..... Date: / / 20

1st SHIFT				2nd SHIFT				3nd SHIFT			
Code				Code				Code			
Receiving		Releasing		Receiving		Releasing		Receiving		Releasing	
Production		Waste (kg)		Production		Waste (kg)		Production		Waste (kg)	
Unloading roll tracking #				Unloading roll tracking #				Unloading roll tracking #			
Time		Production (m)		Time		Production (m)		Time		Production (m)	
Loom machine condition in the shift				Loom machine condition in the shift				Loom machine condition in the shift			
Confirmation				Confirmation				Confirmation			
Loom workers		Head of Loom Division		Loom workers		Head of Loom Division		Loom workers		Head of Loom Division	

GIA LOI JSC **SX-QT SXD-BM04.00**

DAILY TAPE OUTPUT REQUEST FORM

Date : ……../……./201….

Loom #	Product	Manufacturing order	Warp			Weft		
			Tape tracking #	Tape lot #	Wafp quantity (bag/kg)	Tape tracking #	Tape lot #	Weft quantity (bag/kg)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								

Team leader of Loom Division

WEAVING FORMULATION CHECKING FORM

Date:……. Manufacturing order: …… Product: ……

Loom machine #: …….. Shift: 1 2 3 Team: 1 2 3

Fabric width (m)										
Quantity of bobbins on the machine										
Stripe color										
Sripe quantity										
Mesh										
Average weight										

Conclusion: Pass ☐ Fail ☐

QC Manager QC Staff

WEAVING PROCESS CHECKING FORM

Loom machine #:……

Product:……..…….. Fabric width:…….. Manufacturing order #: ……..

Date	Time	Roll tracking #	Lot #	Real fabric width	Weaving errors		Checked by	Remark
					Position of length (m)	Error/ Dimension		

Note: 1. Each three hours check one time & no limited times of checking if necessary
2. No hanging tapes when they break
3.Inform loom team leader or loom technician to solve promptly

GIALOI JSC SX-QT SXĐG-BM01.00

GIA LOI JOINT-STOCK COMPANY

PRODUCT NAME: TARPAULIN ☐ PE ☐ PP

PRODUCT CODE: .....

SPECIFICATIONS: .....

WEIGHT: .....

PRODUCTION DATE: .....

ROLL TRACKING #: .....

PRODUCTION LOT #:

ADDRESS: GROUP 2-PHUOC HAI- THAI HOA

TAN UYEN DISTRICT - BINH DUONG PROVINCE- VIETNAM

FINISHED PRODUCT PACKING FORM

Specification: Date of packing:.....

Roll tracking # 1:.....m ..... kg.....Everge weight.....Date of coating.....

Joint: ☐ 1m ☐ 2m ☐ 3m ☐ 4m No joint: ☐

Roll tracking # 2:.....m ..... kg.....Everge weight.....Date of coating.....

No.	m		kg	No.	m		kg	No.	m		kg
	1st shift	2nd shift			1st shift	2nd shift			1st shift	2nd shift	
1				16				31			
2				17				32			
3				18				33			
4				19				34			
5				20				35			
6				21				36			
7				22				37			
8				23				38			
9				24				39			
10				25				40			
11				26				**Total**			
12				27				**Remark**			
13				28				Beginning of roll #1.....m.....kg			
14				29				End of roll #1.....m.....kg			
15				30				Beginning of roll #2.....m.....kg			
Total				**Total**				End of roll #2.....m.....kg			

Total

Date	Roll tracking #	Bag no.	m no.	kg	Signature
					Team leader
Roll weight:...../.....kg					Section manager
Roll weight:...../.....kg					

GIA LOI JSC

SKU:

SPECS:

ROLL #:

PRODUCTION DATE:

AASHTO M288 CLASS:

GIA LOI JSC **SX-QT SXĐG-BM05.00**

FINISHED PRODUCT WAREHOUSE INPUT FORM

Date:

No.	Product code	Manufacturing order	Specifications	Unit	Quantity	kg	Finished product label		Remark
							Right	Wrong	

Head of Finished Product Warehouse Head of Packaging Division QC

PRODUCT QUALITY REPORT

Date : …….

Specifications : …….. Lot #: …….. Customer : BWI

Roll tracking # '02T50 kg : ……. m : 500

Roll tracking #(**)	Fabric width	m	GW	NW	Average weight (g/m2)	Remark on facric roll
02T5001	4.57	92	92	82	162	
02T5002						
02T5003						
02T5004						
02T5005						
02T5006						
02T5007						
02T5008						

KCS

Notes:

(*) : Roll tracking # of KCS08

(**) : Small roll tracking #

GIA LOI JSC

KHO-QT KSK-BM04.00

MATERIAL OUTPUT FORM

Date: 10/6/2012 Output form #: 21/06

Division: Tape line ☐ Coating ☐ Lot #: 1

No.	Material name	Code	Material lot #	Quantity (bag)	Quantity (kg)	Remark
1	PP-5032	PP-5032	123165431			
2	MB-Đ-305	MB-Đ-305	12070077			
3	UV(TT)	UV(TT)	12070128			
4						
5						
6						
7						
8						

Warehousekeeper Head of Division Team leader/ Shift leader

FINISHED PRODUCT INPUT - OUTPUT - STOCK FORM

Date:

No.	Product code	A.W	OB		Input		Input (others)		Output/sell		Output (others)		CB	
		kg	bag	kg	bag	kg	bag	kg	bag	kg	bag	kg	bag	kg

GIA LOI JSC **KHO-QT KSK-BM08.00**

Phuoc Thai Hamlet, Thai Hoa Town, Form 02-VT

Tan uyen Dist., Binh Duong province (Issued according to 15/2006/QĐ/-BTC

MST: 3700496822 Mar 20th,2006 of Minister of Finance)

No:

OUTPUT VOUCHER

Date:……..

Receiver:…….

According to:…….No.:…….

Reason of output:

Output warehouse at:……...Location……

No.	Spare parts/goods name	Code	Unit	Q'ty	Price	Total
	Total					

Date:

Drafter (signature,full name)	Receiver (signature,full name)	Storekeepers (signature,full name)	Chief accountant (signature,full name)

OUTPUT PRODUCT CHECKING FORM

Date of output:…… Customer:…… Cont/seal no.:……

Product code:……. Specification:……... Amount:……

Lot #:

Amount: Enough ☐ Lack ☐ Lacking amount:

Strap: No break ☐ Break ☐ Break amount:

Restrap: Yes ☐ No ☐

Clean/damaged packing Yes ☐ No ☐ Re-process: Yes ☐ No ☐

Paper core: Broken ☐ No ☐ Re-process: Yes ☐ No ☐

Product: Torn ☐ No ☐ Re-process: Yes ☐ No ☐

Checker

MATERIAL CHECKING FORM

Date of checking: / / 20…. Date of input: / / 20….

Material name: Code:

No.	Lot #	Quantity	Unit	Manufac-turer	COA		Surface			
					Yes	No	Dry	Humid	Clean	Dirty

QC

GIA LOI JSC **KHO-QT KSK-BM11.00**

MATERIAL CHECKING FORM

Date of checking: / / 20…. Date of input: / / 20….

Material name: Code:

No.	Lot #	Quantity	Unit	Manufac-turer	COA		Surface			
					Yes	No	Dry	Humid	Clean	Dirty

QC

RAW MATERIALS PROCUREMENT REQUEST

Name:…… Division……

Item #	Name of materials	Unit	Amount	Prices	Notes
1					
2					
3					
4					
5					
6					

Date:

PM Approval

Division Chief

LIST OF CHOSEN SUPPLIERS

No.	Supplier name	Contact person	Address	Service/provided products	Remarks
1	Công ty CP Bao bì Á Châu	Ms. Nga/Mai	1/5A Binh Hung Hoa, Binh Tan	Paper core	
2	Công ty TNHH GME Chemicals (VN)	Ms. Ngan/Thuy	26-28 Ham Nghi, Ben Nghe ward, 1st Dis.	Vitamaxx	
3	Công ty TNHH Sản xuất - Thương mại - Dịch vụ Nhật Long	Ms.Phung	Lot C28/1 & C29/1, 2G street, Vinh Loc Industrial zone, BC	Resin	
4	Công ty TNHH Thương mại Vĩnh Cường	Ms.Phung	887 3/2 street, 7th ward , 11th Dis.	Resin	
5	Công ty TNHH Bao bì Nhựa Thành Phú	Ms.Thu	652 Ho Hoc Lam, 14th quarter, Binh Tri Dong B, Binh Tan ward	Packing	
6	Công ty Cổ phần Nhựa Opec	Mr.Nhat	Lot 6, 206 street , quarter A, Pho Noi A industry zone, Dinh Du, Van Lam, Hung Yen	Resin	
7	Công ty TNHH SX - TM Phú An	Ms. Linh	1B Hamlet, An Phu, Thuan An, Binh Duong	PE film	
8	Công ty TNHH Tân Đại Minh	Ms.Thu	28/14A ,15 street, Tan Kieng ward, 7th Dis.	Resin	
9	Công ty TNHH Đại Hùng Thịnh	Ms.Tra	126,15 street, 2nd quarter , Tan Kieng ward, 7th Dis.	Resin	
10	Công ty TNHH Thuận Lợi	Ms.Binh	Lot B2 – 35, Tan Dong Hiep B, Di An, Binh Duong	Taical	
11	Công ty TNHH SX và TM Thiệu Trinh	Ms. Mai	1/27 Le Van Quoi, 17th quarter, Binh Hung Hoa ward, Binh Tan Dis.	Master batch	
12	Công ty TNHH Thắng Vinh	Mr.Cuong/ Ms.Quan	356/2 Le Quang Sung, 6th ward, 6th Dis.	Resin	
13	Công ty TNHH TM & SX Thiên Gia Phúc	Ms. Loan/ Mr.Chuong	2640/3B, 1A national road, An Phu Dong ward, 12th Dis.	Process packing	

14	Công ty TNHH Chế biến Trà Tân Nam Bắc	Ms.Tuyet	861, 1A national road, Thanh Xuan ward, 12th Dis.	Paper core	
15	Công ty TNHH SX TM Thiên Phước	Ms.Van	Lot B9, Nhi Xuan industrial group , Hoc Mon Dis.	Resin	
16	Công ty CP Nhựa Việt Phước	Mr. Thac /Ms.Phuong	Lot K-3-CN,My Phuoc II industrial zone , Ben Cat, Binh Duong	Resin	
17	GCL India (P) Limited		India	Machines, equipments	
18	Hengli Machinery (Hong Kong) Co., LTD		Hong Kong	Machines, equipments	
19	Changzhou Kaitian Mechanical Manufacture Co., LTD		China	Parts	
20	LMS Technologies PTE LTD	Mr.Triet	Singapore	Machines, equipments	
21	Lohia Corp Limited		India	Machines, equipments	
22	Marubeni Chemical Asia Pacific PTE LTD	Mr.Phuong/ Ms. Trang	Singapore	Resin	
23	PTT Polymer Marketing Company Limited	Mr. Phương/ Ms. Trang	Thailand	Resin	
24	SCG Plastics Co., LTD	Ms.Hanh	Thailand	Resin	
25	Solmer Future LTD	Mr Kong	Korea	Resin	
26	Sumitomo Corporation Asia PTE LTD	Mr.Cuong/ Ms.Thuan	Singapore	Resin	
27	TH Color Company Limited	Mr Chanita	Thailand	Master batch	

General Manager's approval

Date: ……/……./20

Evaluator

CRITERIA TO EVALUATE SUPPLIERS

Supplier name :
Products :
Contact person :
Address :
Tel : Fax:

No.	Items to evaluate	Items to be evaluated	Mark
1	Relationship with company		
2	Quality		
3	Price		
4	Feedback to arising problems		
5	Delivery time		
6	Payment method		
7	Capacity		
8	After-sales service		
		Total mark (A):	

Scale: 1 - Too bad ; 2 - Bad ; 3 – Average ; 4 – Fair ; 5 - Good

☐ Accept: A $\geq$ 60% maximum total mark of all items is evaluated & there's no mark <3.

☐ Not accepted

General Manger's approval

Date: …./…./20
Evaluator

LIST OF OFFICIAL SUPPLIERS

No.	Supplier name	Contact person	Address	Effective date	Date of re-evaluation	Remarks
1	Công ty CP Bao bì Á Châu	Ms. Nga/Mai	1/5A Binh Hung Hoa, Binh Tan	01/01/2013		
2	Công ty TNHH GME Chemicals (VN)	Ms. Ngan/Thuy	26-28 Ham Nghi, Ben Nghe ward, 1st Dis.	01/01/2013		
3	Công ty TNHH Sản xuất - Thương mại - Dịch vụ Nhật Long	Ms. Phung	Lot C28/1 & C29/1, 2G street, Vinh Loc Industrial zone, BC	01/01/2013		
4	Công ty TNHH Thương mại Vĩnh Cường	Ms. Phung	887 3/2 street, 7th ward , 11th Dis.	01/01/2013		
5	Công ty TNHH Bao bì Nhựa Thành Phú	Ms.Thu	652 Ho Hoc Lam, 14th quarter, Binh Tri Dong B, Binh Tan Dis.	01/01/2013		
6	Công ty Cổ phần Nhựa Opec	Mr.Nhat	Lot 6, 206 street , quarter A, Pho Noi A industry zone, Dinh Du, Van Lam, Hung Yen	01/01/2013		
7	Công ty TNHH SX - TM Phú An	Ms.Linh	1B Hamlet, An Phu, Thuan An, Binh Duong	01/01/2013		
8	Công ty TNHH Tân Đại Minh	Ms.Thu	28/14A ,15 street, Tan Kieng ward, 7th Dis.	01/01/2013		
9	Công ty TNHH Đại Hùng Thịnh	Ms.Tra	126,15 street, 2nd quarter , Tan Kieng ward, 7th Dis.	01/01/2013		
10	Công ty TNHH Thuận Lợi	Ms.Binh	Lot B2 – 35, Tan Dong Hiep B, Di An, Binh Duong	01/01/2013		
11	Công ty TNHH SX và TM Thiệu Trinh	Ms.Mai	1/27 Le Van Quoi, 17th quarter, Binh Hung Hoa ward, Binh Tan Dis.	01/01/2013		
12	Công ty TNHH Thắng Vinh	Mr.Cuong/Ms. Quan	356/2 Le Quang Sung, 6th ward, 6th Dis.	01/01/2013		
13	Công ty TNHH TM & SX Thiên Gia Phúc	Ms.Loan/Mr. Chuong	2640/3B, 1A national road, An Phu Dong ward, 12th Dis.	01/01/2013		
14	Công ty TNHH Chế biến Trà Tân Nam Bắc	Ms.Tuyet	861, 1A national road, Thanh Xuan ward, 12th Dis.	01/01/2013		

15	Công ty TNHH SX TM Thiên Phước	Ms.Van	Lot B9, Nhi Xuan industrial group , Hoc Mon Dis.	01/01/2013		
16	Công ty CP Nhựa Việt Phước	Mr.Thac/Ms. Phuong	Lot K-3-CN,My Phuoc II industrial zone , Ben Cat, Binh Duong	01/01/2013		
17	GCL India (P) Limited		India	01/01/2013		
18	Hengli Machinery (Hong Kong) Co., LTD		Hong Kong	01/01/2013		
19	Changzhou Kaitian Mechanical Manufacture Co., LTD		China	01/01/2013		
20	LMS Technologies PTE LTD	Mr.Triet	Singapore	01/01/2013		
21	Lohia Starlinger Limited		India	01/01/2013		
22	Marubeni Chemical Asia Pacific PTE LTD	Mr.Phuong/Ms .Trang	Singapore	01/01/2013		
23	PTT Polymer Marketing Company Limited	Ms.Duyen	Thailand	01/01/2013		
24	SCG Plastics Co., LTD	Ms.Hanh	Thailand	01/01/2013		
25	Solmer Future LTD	Mr Kong	Korea	01/01/2013		
26	Sumitomo Corporation Asia PTE LTD	Mr.Cuong/Ms. Thuan	Singapore	01/01/2013		
27	TH Color Company Limited	Mr Chanita	Thailand	01/01/2013		

General Manager's approval

Date: ……/……/20…
Evaluator

GIA LOI JSC **CN-QT TK&PTSP-BM01.00**

Date		TAPE FORMULATION	Formulation No.	
Drafting			Draft No.	
Evaluating		Name:	Time(s)of revision	
Approval			Number of page	Total of page:

1.Specifications:…….

Material	Weight	Ratio %	Notes

Date		WEAVING FORMULATION	Formulation No.:	
Drafting			Draft No.	
Evaluating		Name:	Time(s) of revision	
Approval			Number of page	Total of page:

1.Specifications:

Warp:			Weft:				Coating poly (g/m2)
Type of tape	Weight	Fabric width	Stripe #	Tape #	Total of tape	(g)	% woven fabric	
								No coating
Mesh:							g/m^2	

2. Notes: