



UNIVERSITI
TEKNOLOGI
MARA



INDUSTRIAL TRAINING FIELD REPORT (CHE 353)

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Diploma in Chemical Engineering (EH110)

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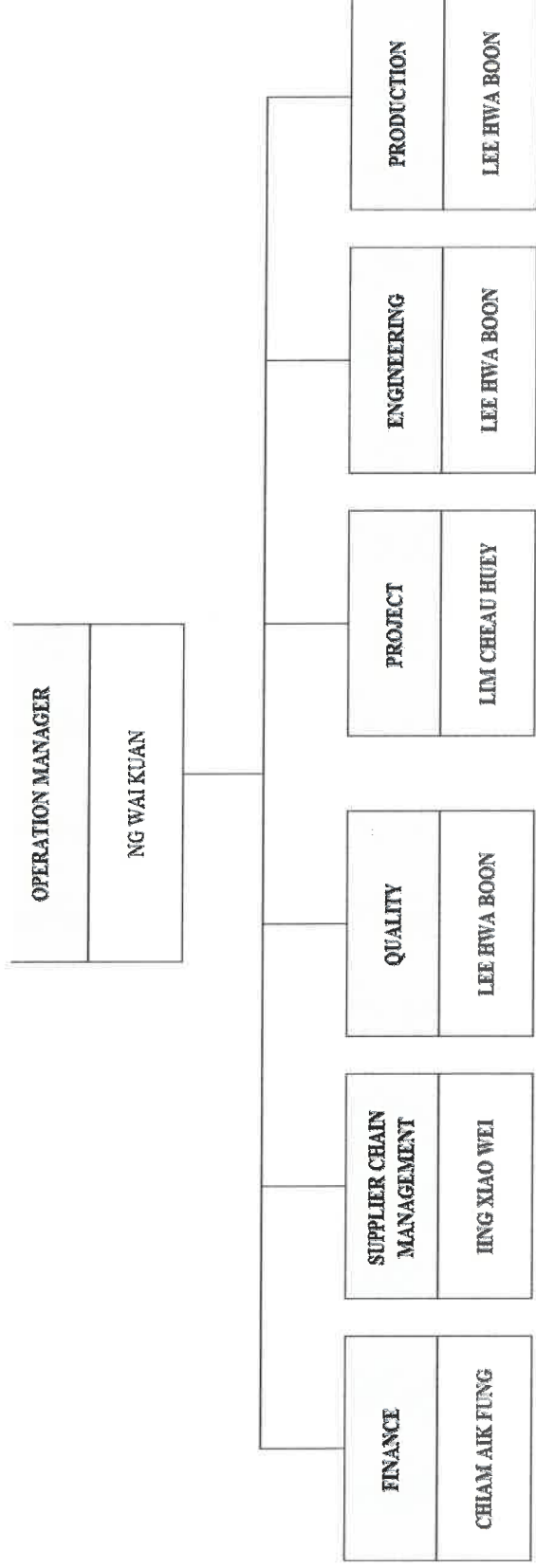
1.0 INTRODUCTION

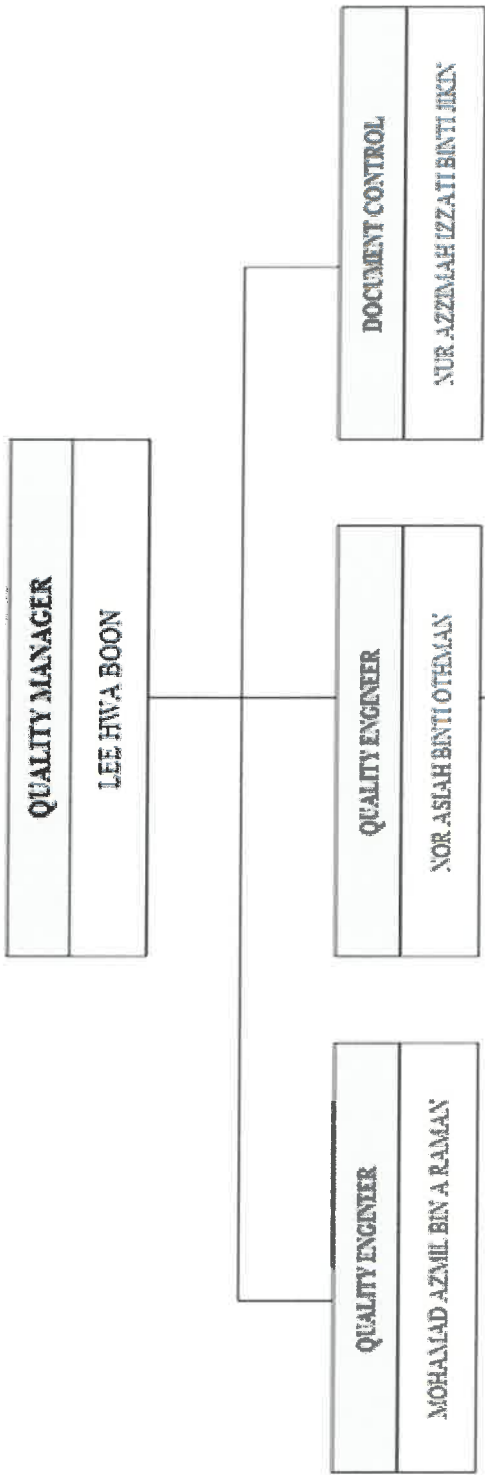
As a diploma student in chemical engineering, internship is an opportunity for us to have an exposure in gaining the experience to a real working environment. Besides, the exposure of internship to the student is gain professional knowledge and skills that require sooner or later in a real working scenario. Apart from that, it could improve the communication skill and the ability to interact with people since working society require high communication skill and if not it could be a problem to some people. Since we need to be more independent on the job task, so it is important to have communication skill or we will be left behind.

During 17 weeks (22nd March – 15th July) of my internship at Mybrush Industries Sdn Bhd, I was actively trying to achieve every objective and gain as much knowledge as I can to benefit this opportunity as a preparation in real working environment. On top of that, as a chemical engineering student I also try to apply as much knowledge that I have learn along my time as a student. It helps on give a good impression toward supervisor and shows interest on what a we learning from supervisor. Even though sometimes it is not related, it is where our focus and knowledge were challenge to understand what are we learning as fast as we can.

Internship is one of the way that bring could bring benefit to both side which the student and the company that the student had their internship. Since we as a student will be the example of the new generation that will be the employee in the future, we can show that we are reliable and have the quality that required in the future. So that as an internship student we need to set a good example and be productive when we are having industrial training. Besides, the company and university also could improve their partnership, so that it could be easier for new student or post graduate to find internship or a place to work. However, some of the company would not be recommend by the university if the company have a bad management which was report by student before to make sure the student can fully experience and utilise all the chance that they have during the internship

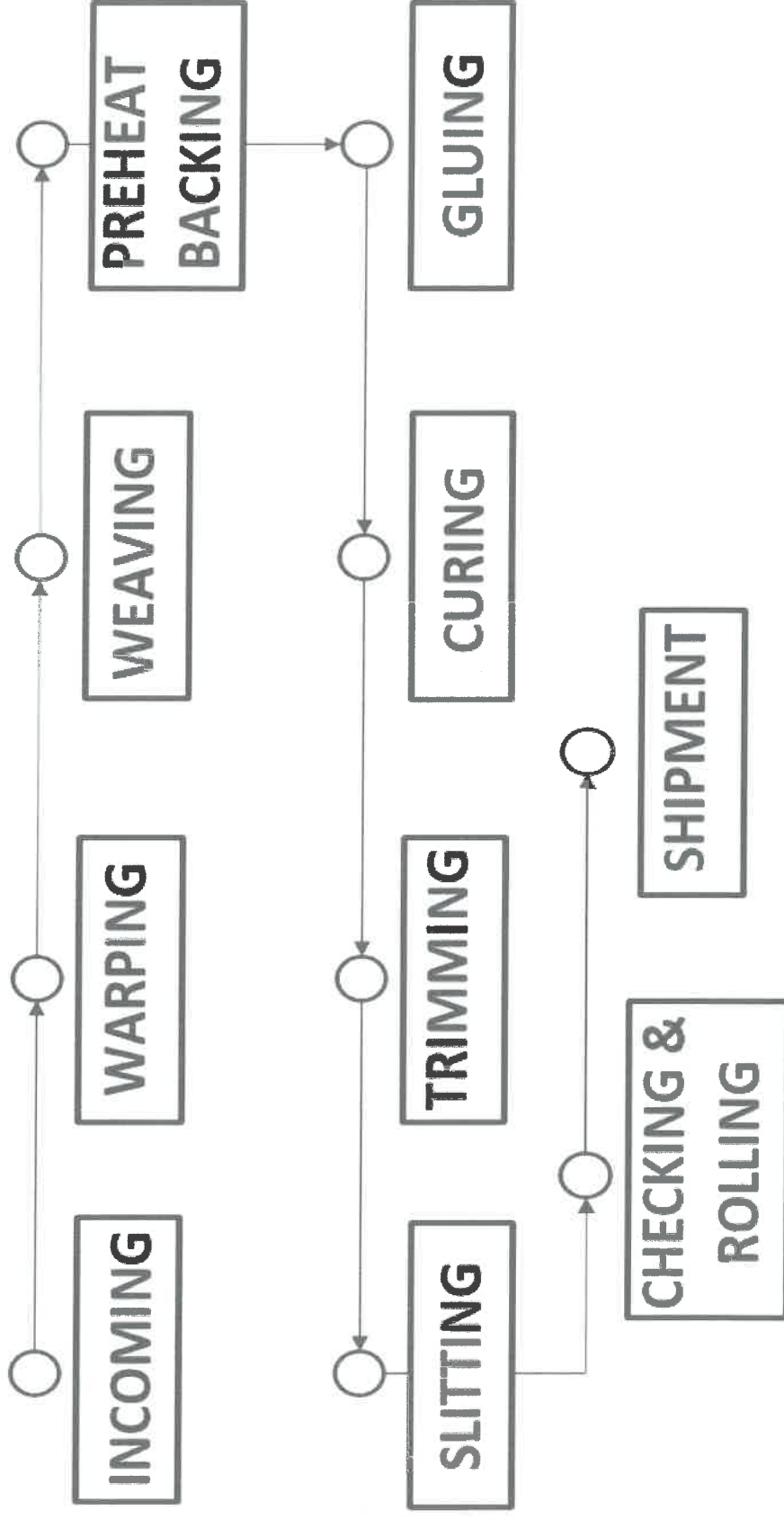
2.2 Organisation Chart





Quality department is the organisation that assigned to control and reach the objective of these company in terms of quality of the product and also reduce the amount of the reject product produce by the company. This department also need to handle the quality of these product based on the specs that demanded by the customer.

3.0 OVERALL PROCESS FLOW



WEAVING

Weaving process is a process that where we can see the main structure of end product but not fully finish with other detail finishing. Weaving process is actually very important to make sure that the running process is following standard operating procedure since most of the defect and reject product come from after weaving process. On top of that, defect and reject problem must be solve as soon as possible due to make sure the least of the money that could cost the company. Besides, if the defect founded on the next process will cost more for example 1 meter of felt that produce from weaving process has lesser value compare to 1 meter of felt that have undergo next process since it will cost the felt, glue and others. So, as quality control, we need to do the checking properly at the weaving process so that if any defect founded it can be solve and stop from there.

PREHEAT BACKING

For this process, it is actually a preparation for the next process. This process is heat up the backing of the felt to make it more effective for gluing process. Felt will go through hot iron rod to make heat it up. Besides, it is also to clean up the backing of the felt if there is any nylon torn out from the backing. Furthermore, in this process, felt will go through 3 layer of hot iron rod to make sure all the backing surface was heat up.

GLUING

Gluing is really important in order to produce a high quality of product. It is to make sure that the nylon attached to the backing strongly. Besides, if the nylon does not have glue on it, the strength of the felt is not as strong as the one that have glue on it. It is also have produce a better feature of the felt.

CURING

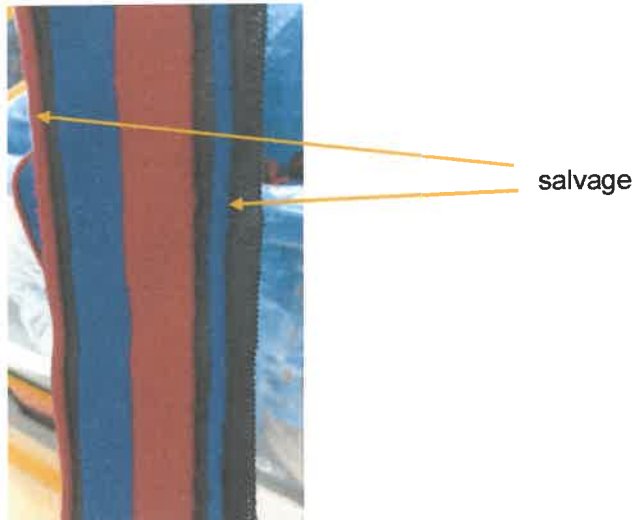
For this process, the felt will go through chamber and oven to heat up the whole felt. Firstly, it is because the felt need to be dry after gluing process before the glue flow to the upper layer of the felt and will damage the felt. In this process, the temperature of chamber and oven is control by technician to make sure it is not over heat and the felt produce is in good condition. Besides, felt will go through this process for three times to ensure it is fully heat up and more effective.

TRIMMING

In this process, it is just only to trim the surface of the felt to get the specific height of the felt based on the specs that demanded by customer. Due to the variety of model that produce by the company, this process also will be monitor regularly by the technician since it has a different type of height that requested to make sure the product produce afterward is on specs.

SLITTING

Slitting process is the last of the main process which where a part of felt will be cut off that call as salvage. Salvage part is purposely as mark of the width limit on the felt that will make it easier to monitor the width of the felt. This is the example of salvage that will be cut off in the slitting process.



CHECKING & ROLLING

This process is the last process where the final checking of the felt will occur. It is to make sure there is no defect on felt and the product is on specs. For rolling, felt will be roll to undergo packaging. Before the product will be ready for shipment, it will also stamp by in process quality check to verify that product is ready for shipment.

SHIPMENT

At this stage, the product will be ready for shipment and will be place at finish good are. The product also will stamp by outgoing quality control to verify this product is ready and good for shipment.

4.0 DAILY AND WEEKLY ROUTINE

4.1 DAILY ROUTINE

Since I was assigned in a quality department, my main job task is to assist the quality engineer. In the job task given, I was assigned to assist sorting process which for the on hold product. For this task, it was divided to two different section which are sorting for on hold product and sorting short felt. Sorting on hold product is basically for felt that was found any defect on it but it was not too obvious. So, the product need to do recheck to determine it can be use or not. Some of the defect is seen as big issue especially discolour. Discolour has been the main defect that lead to on hold product since this product usually appeared on felt. For the short felt, short felt is felt that way shorter compare to normal felt. Length short felt normally around 1 meter to 5 meter. It is also a side product that produce when there is defect on normal felt. For example, there are two defect in one felt, short felt is a felt between those two defect which make this shorter but can has no defect on it. So, I was assigned to sort this product weather it can be use or not.


Besides, I also will assist the production line either weaving or secondary process. In weaving process, I usually will assist operator on monitoring the spec of the felt produce and also do inspection if there is any defect on the felt. For secondary process, I will assist on doing the in process quality check and do the stamping. Sometimes, I will help on sewing and rolling the felt at the secondary process. Sewing is for connecting one felt with the other for do the rolling afterward.

Lastly, I will do the non-conformance material report (NCMR) and product performance capability (PPK). NCMR is basically report after I do the sorting which I need to report the quantity of felt reject and accept. While for PPK, PPK is a document where I need to update every time I do the checking on weaving process for the specs of the felt. Every hour, we need to do the checking at weaving process which we need to measure the felt for six points every hour to monitor that the felt is on specs. So, every time I do the checking I need to update the document.

4.2 WEEKLY ROUTINE

Week 1-4 (22nd March 2021 – 16th April 2021)

First of all, on the first week is like an induction when my supervisor gave an exposure about the company on what are this company produce and the product. I also been taught on how are this machine working and the explanation about in line production and about the process flow. I also attend meeting where I was assigned for my job task which I need to handle with my friend. Most of the time, I also assigned on updating old document since quality department lack of staff. I need to update PPK document for January, February and March. These document basically need to be done as soon as possible since it will be check by the management.



Part Name: FELT RNS
Part Number: WY4143170167-0004
Model: XJ25M

MEASUREMENT INSPECTION REPORT

QSI Number: QI-QSI-414117
Drawing Number: WY4143170167-0004
Line Number: 3

View & Control: Average, Range, Standard Deviation

+ Subgroup - Subgroup

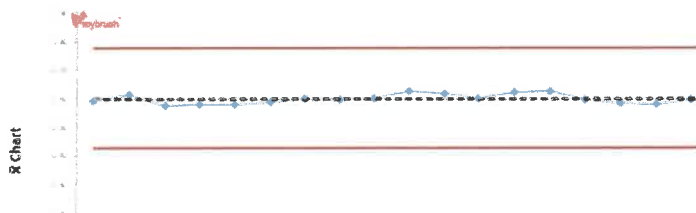
Clear Record!

Adrian Mada

| Product level | Inspection Stage | | Build Stage | |
|---------------|-------------------------------------|-------------------------------------|-------------|--------|
| | First Piece | In-Process | OK 1 | OK 2 |
| Get Box Audit | | | | |
| Assembly | | | | |
| Part | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | SCIP 1 | SCIP 2 |
| | | | SCIP | Others |

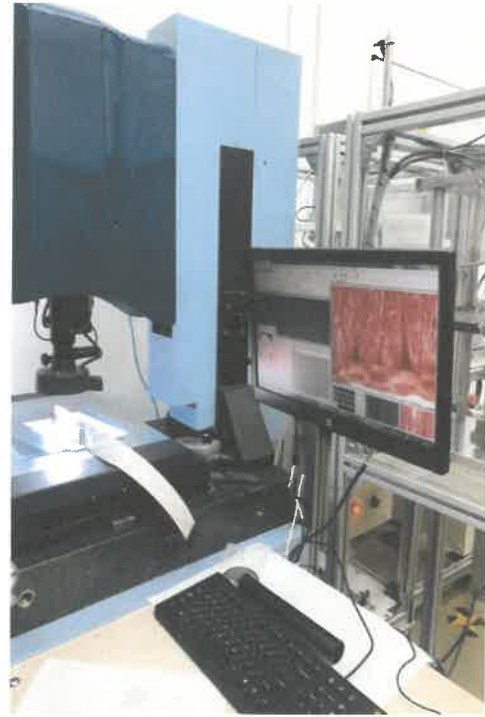
Specification: 26.65 ± 0.25
Instrument: Portable Scope
Process: Weaving

| Date | Time | Inspect By | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Average S | Perp (S) | Approach | Remark |
|-----------|-------|------------|----------|----------|----------|----------|----------|-----------|------------|----------|---------|
| 02-Jul-21 | 08:00 | Waqas | 26.43 | 26.52 | 26.53 | 26.55 | 26.56 | 26.58 | 26.5366667 | 0.13 | INSPECT |
| 02-Jul-21 | 02:00 | Sheraz | 26.61 | 26.65 | 26.59 | 26.6 | 26.64 | 26.67 | 26.63 | 0.08 | INSPECT |
| 02-Jul-21 | 04:00 | Sheraz | 26.55 | 26.58 | 26.55 | 26.59 | 26.57 | 26.61 | 26.575 | 0.06 | INSPECT |
| 03-Jul-21 | 10:00 | Waqas | 26.54 | 26.51 | 26.53 | 26.63 | 26.66 | 26.66 | 26.5936667 | 0.17 | INSPECT |
| 03-Jul-21 | 17:00 | Waqas | 26.75 | 26.77 | 26.71 | 26.73 | 26.68 | 26.65 | 26.7383333 | 0.11 | INSPECT |
| 02-Jul-21 | 14:00 | Waqas | 26.62 | 26.63 | 26.66 | 26.57 | 26.59 | 26.65 | 26.6233333 | 0.11 | INSPECT |
| 02-Jul-21 | 16:00 | Waqas | 26.45 | 26.48 | 26.55 | 26.56 | 26.65 | 26.68 | 26.5466667 | 0.23 | INSPECT |
| 02-Jul-21 | 18:00 | Waqas | 26.63 | 26.67 | 26.77 | 26.48 | 26.75 | 26.78 | 26.68 | 0.13 | INSPECT |
| 02-Jul-21 | 22:00 | Sheraz | 26.51 | 26.55 | 26.58 | 26.49 | 26.56 | 26.61 | 26.55 | 0.12 | INSPECT |
| 02-Jul-21 | 08:00 | Sheraz | 26.49 | 26.53 | 26.55 | 26.56 | 26.61 | 26.65 | 26.565 | 0.06 | INSPECT |
| 03-Jul-21 | 08:00 | Waqas | 26.56 | 26.53 | 26.56 | 26.51 | 26.58 | 26.55 | 26.5483333 | 0.07 | INSPECT |
| 03-Jul-21 | 10:00 | Waqas | 26.48 | 26.8 | 26.75 | 26.77 | 26.76 | 26.75 | 26.7383333 | 0.17 | INSPECT |
| 03-Jul-21 | 17:00 | Waqas | 26.63 | 26.65 | 26.65 | 26.63 | 26.68 | 26.67 | 26.6536667 | 0.05 | INSPECT |
| 03-Jul-21 | 14:00 | Waqas | 26.72 | 26.77 | 26.75 | 26.76 | 26.73 | 26.55 | 26.7333333 | 0.22 | INSPECT |
| 03-Jul-21 | 16:00 | Waqas | 26.65 | 26.58 | 26.62 | 26.64 | 26.68 | 26.66 | 26.6383333 | 0.1 | INSPECT |
| 03-Jul-21 | 18:00 | Waqas | 26.63 | 26.52 | 26.54 | 26.61 | 26.66 | 26.68 | 26.61 | 0.15 | INSPECT |



Week 5-8 (19th April 2021- 14th May 2021)

On this week, I start learn on how to use smart scope to analysis on the measurement of the felt. Using the smart scope it can get a better visual and more accurate measurement. So in this week, I usually use this test to check on the specs of the felt more detail for the purpose of quality control. I also was assigned to update defect code and defect sample for the use of operator.








Week 9-11 (17th May 2021 – 4th June 2021)

On this week, most of the time was outgoing and incoming process. I was given a task to handle incoming process since it have a lot of testing to do with incoming raw material and finish good. I need to do on nylon and measure the specs of finish good too make sure it is on specs. Besides, I also did a static load test to check the strength of the adhesive tape.



Week 12 – 17 (8th June 2021 – 15th July 2021)

Starting on this week I started to WFH, so that I was given a task to update defect matrix code. Furthermore, I also complete my mini project which I need to improve the management of discolour defect. Also for the last two week is to prepare presentation with my supervisor and check draft about my mini project with the help of my supervisor.

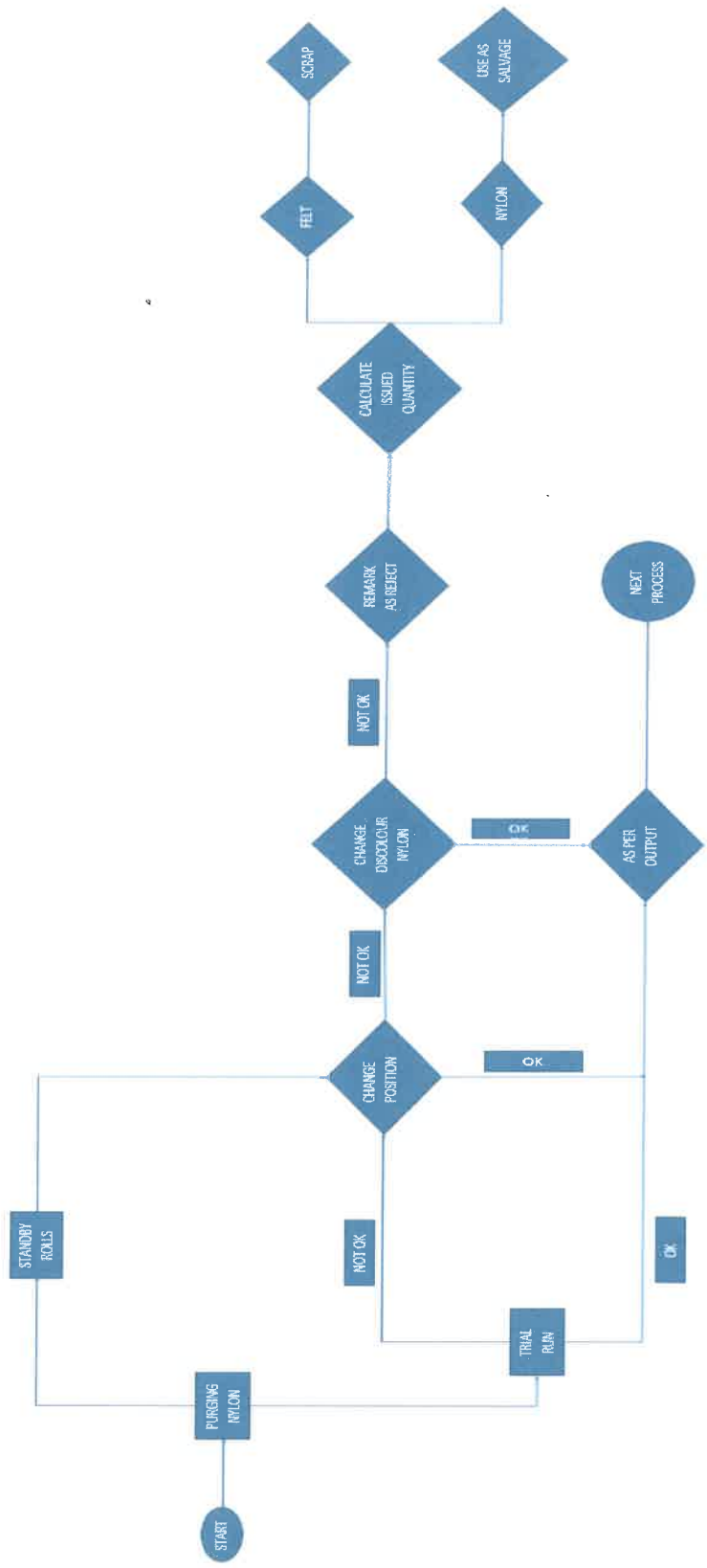
| MyBrush Industries Sdn Bhd | | | | |
|----------------------------|-------------|------------------|---|---|
| DEFECT MATRIX | | | | |
| Section : Weaving | | | | |
| NO | DEFECT TYPE | DESCRIPTION | EXAMPLE PHOTO | |
| | | | FRONT | BACK |
| 9 | A | Missing Sticking | Bundle of nylon yarn missed on felt |   |
| 10 | B | De-Wefting |   | |
| 11 | C | Double Yarn | Nylon yarn double knitted on a same row |  <p style="text-align: center;">NA</p> |

5.0 MINI PROJECT

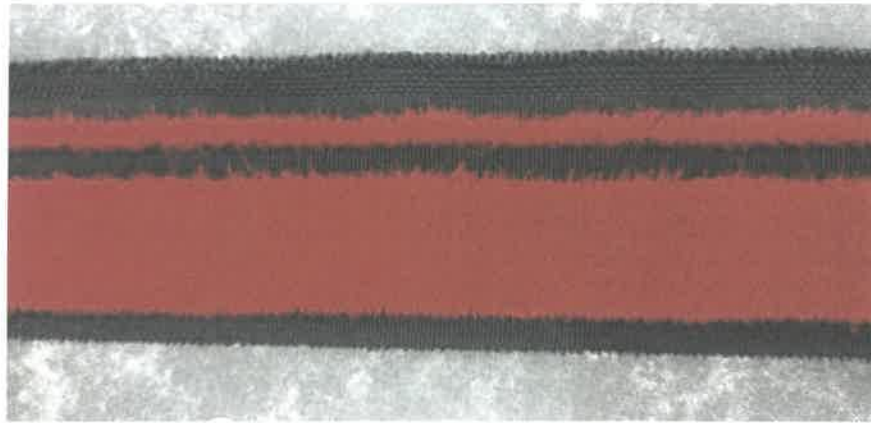
For mini project I was given a task to improve the management of discolour defect since discolour has been a main defect and caused a lot of reject product and on hold product. This is due to no specific limitation or guidance that lead to a problem to operator either to accept or reject it and pending as on hold product. So, I was given a task with the help of my supervisor in order to make a limitation for the discolour that could ease operator to understand the process flow and to accept or reject it. I was assigned to create a new process flow diagram (PFD) that is more simple and not complicated for operator to follow the flow. Furthermore, I also need to find an example of limitation of discolouration to show which type of discolour is acceptable and which type of discolour is reject. The only thing that make the difference is the different of tone that appear on the surface of the felt which is too obvious or not. I will show the example of discolour later.

Apart from that, there is two main reason that could lead to discolouration on felt. Firstly, it is because of the dying process from the supplier that supply raw material which is nylon. This is because the dying process is basically been done by batch, so that even the same colour and tone is use for the dying process, it is still can cause something and for this part is discolour. Even the changes are very slightly changes, when it became felt the difference is very obvious. For the second part is difference of humidity. When the nylon first came to the factory and before undergo any process, nylon will be store in mist room. In this room, the temperature and the humidity of the nylon will be control in order to maintain the quality and the structure of the nylon. Sometimes if the nylon is too humid or too dry it can lead discolouration. A line with different colour will appear either it is slightly dark or slightly light.

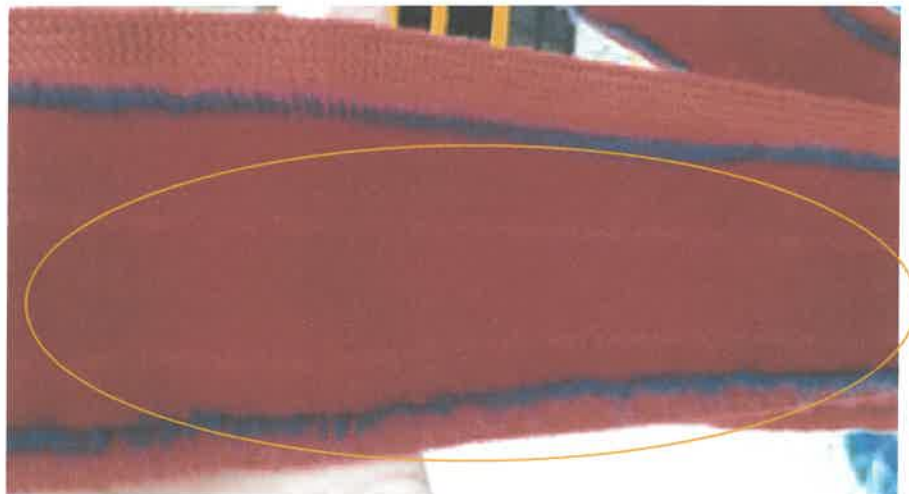
In order to create a new process flow diagram, that is easier to understand, I have created a new process flow diagram with the help of my supervisor. The diagram below is the process flow diagram that I have created.



Besides, I have made a limitation of discolouration sample with approval of my supervisor. On top of that, I have found a sample of discolouration either it is approved by customer or not since the customer has release the limitation for discolouration. The diagram below shown the sample of discoloured that can be accepted or not.



OK PART



NOT GOOD

6.0 CONCLUSION & RECOMMENDATION

From this internship I can conclude that internship can bring a lot of benefit to student. In order to improve communication skill and give an exposure to student about the real working environment and scenario. It is also make a student to become more independent person based on the job task given and also improve the way a student solving problems on a critical thinking situation. My communication skill also improved since I need to communicate with foreigner and different race.

Along my internship, I can say that quality department need to monitor the production line from raw material, in process and finish good in order to improve the efficiency in the production line with the least problem. Quality control also need to make sure operator to follow the standard operating procedure to avoid any problem from occur. Inspection on machine also need to be done regularly before start up process and calibration and maintenance on equipment need to be done before overdue to ensure equipment like calliper and weighing scale measurement are accurate. Lastly, working system with other department and between colleagues need to be improvise especially communication between them.

7.0 APPENDICES

