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Bachelor Thesis

Quality improvement measures in
favour of the spruce wood products
of PontMeyer

PontMeyer 


CENTROP
HOUTIMPORT

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Quality improvement measures in favour of the spruce wood products of PontMeyer

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Preface

This report is written by the student Dieter Mullemeister who is attending the major International Timber Trade. This project is motivated from the graduation period of the study 'Forestry and Nature Conservation' at the university of applied sciences 'Van Hall Larenstein'. Due to the students specific knowledge of timber and the timber market PontMeyer is assigning this project to Dieter Mullemeister.

PontMeyer was facing an increase in remarks on the quality of the spruce wood products. The customer and employees indicated that the current quality is not sufficient enough, customer satisfaction is at stake.

Centrop is the wholesaler of softwood for PontMeyer and the project is motivated from this company. The complaints regarding quality are taken seriously since the customer satisfaction is of high priority. Centrop motivated this research to find the cause for the decreased customer satisfaction and design solutions for the situation.

The student, Dieter Mullemeister, was approached to perform a research and perform actions to improve the quality of the spruce wood products. The research was performed to reveal the current situation concerning the quality. Centrop requested the design of different procedures and improvements such as an incoming goods control, manual about the proper way of offering the products and implementation of a top quality product range. These procedures and improvements are designed by the student to fulfil the need of quality refitting.

I would like to thank 'Centrop Houtimport' for making this project available. I would like to thank Jan Voet, managing director of 'Centrop Houtimport', for his great effort, guidance and support during the process of the project.

I also would like to thank all employees of PontMeyer for the cooperation in the research and providing the data to complete the project.

I would like to thank John Raggars for his support and guidance for writing the report.

Velp, January 5th 2015

Abstract

The project is motivated to research the current quality of the spruce wood products. Centrop noticed a decrease in customer satisfaction and want to find solutions to monitor or improve the current quality.

The main question of PontMeyer is what actions and changes are required in the business operations of PontMeyer to improve quality and quality-awareness of the product range of Spruce wood? Before being able to answer this question it is necessary to reveal the main complaint quality and what may cause the reduction of quality.

After the orientating research the improvements and procedures are substantiated. The reduction of rejecting of spruce wood is researched, the complaint procedure is researched and the financial incentive of this project is substantiated. At last the introduction of a top quality spruce wood product line is explained and investigated and the effect on the quality experience.

The method of the research is designed to receive well substantiated data for the implementation of actions and procedures. The research consists of desk and field research.

At first the current situation is investigated with the available data concerning the problem. This data are the scrap figures per establishments and communication per mail concerning the quality.

The second part of the research reveals the main quality issues and solutions according to the employees of PontMeyer. The research is performed by a questionnaire with subjects concerning the quality. This quantitative research is performed throughout the Netherlands to receive data from multiple establishments. Additionally a customer survey is performed to reveal the satisfaction about the current quality of spruce wood.

The research revealed the quality problems are considered a current important issue. The employees and customers indicated that the quality of the spruce wood products is insufficient. The main quality issues are found in products up to two inch and is mainly deformation. Also knots, cracks, wane, mold, boxed in heart and too wet timber are frequent mentioned quality issues at the establishments.

The research revealed that the establishments are not consistent in the scrap procedure. The scrap figures investigated at the beginning of the research are because of this fact not reliable.

The majority of the establishments indicated a decrease of the quality in the past 10 years. Also is revealed that the majority of the establishment employees are indicating that a higher price for a better quality is hard to justify towards the customer.

The research revealed that the employees are not aware of what steps to take when ascertaining quality issues, though when quality issues are reported the employees at establishments indicate that the feedback on this is insufficient.

Conclusion

The actions and changes which are required in the business operations of PontMeyer to improve quality and quality-awareness of the product range of Spruce wood are the introduction of an incoming goods control, clear description of the complaint procedure, procedure of storage standards of timber, communication towards the suppliers with the intention of demanding a better quality and introduction of a top quality at establishments.

The recommendations made for the success of the project are the continuation of research on the subject of introducing a FIFO-system at the yard of Zaandam, reduction of the moving of bundles at Zaandam and the introducing of a top quality. It is recommended to motivate education on the introduction of the procedures at establishments.

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1 Problem analysis

1.1 Inducement

The inducement of this research is motivated by problems occurring with the quality of spruce wood products of Centrop. For the quality monitoring, quality assessment and quality improvement different actions are been set for further research and development.

The current quality of the Spruce wood of the product range of PontMeyer is facing an increasing number of complaints. Since PontMeyer is leading importer of softwood of the Netherlands the quality is seen as a priority. To assure the best products for the customers different actions are required to be completed, to maintain and cherish the quality of the spruce wood. PontMeyer is differentiated in the softwood market by offering higher quality in comparison to the competitors.

1.2 Problem description

The current situation regarding quality of the spruce wood is motivated by the amount of complaints from the branches of PontMeyer. The complaints were addressing a problem with the quality which causes trouble selling the wood.

The problems related to the quality of spruce wood will be addressed to create a solution and assure quality improvements. The actions will vary from investigating the source of the problems to registering the complaints and create more quality awareness among the employees of PontMeyer. The research will find solutions for improvements regarding quality.

1.3 Motivation

PontMeyer is a leading company in quality and service in the timber trade of the Netherlands. Since a few years there is a decreasing quality satisfaction noticeable of the spruce wood products. This change of satisfaction is especially noticed on the takeaway branches. On these branches a wide variety of spruce wood products are sold which the customers pick up themselves.

An increasing number of complaints are noticed by PontMeyer. The question arises if the quality of spruce wood is actually decreasing or if there are other factors in play.

The thesis project is provided by 'Centrop Houtimport' concerning the quality of the spruce wood assortment.

1.4 Outlining

This thesis is established during the graduation period. This period is the final semester of the study 'Forestry and Nature Conservation' and the major 'International Timber Trade' at the university of applied sciences 'Van Hall Larenstein' in Velp, the Netherlands.

The research is commissioned by 'Centrop Houtimport' in Zaandam, the Netherlands. Centrop is a subsidiary company to PontMeyer.

The research is performed by a student specializing in the major 'International Timber Trade'.

1.5 Project goal

The goal of this project is to design and perform solutions for the improvement of the current quality of spruce wood. The thesis is designed to substantiate the process of developing the solutions. The thesis is also providing recommendations regarding the improvement of the current quality level of spruce wood.

1.6 Demarcation of the project

To be able to have a well framed research the demarcation of the research is discussed with the stakeholders of the research. Mainly the focus of the field research is demarcated to find out what is necessary to reveal with the research. The demarcation of the project can be divided into four basic steps:

1. Determine the problem regarding quality of the spruce wood product range. Reveal the current situation by performing research.
2. Improve current activities regarding the handling and supply of spruce wood. This includes designing incoming goods control procedures, claim and complaint registration, research and manage current suppliers and manage the current supply of goods.
3. Improve the quality specifically for the establishments where customers take away the spruce wood. When needed, improve quality of the spruce wood by changing suppliers. This also needs improvement of the logistics.
4. Install a high quality assortment. Potentially finger jointed or laminated spruce wood products.

2 Main question

The steps mentioned above are forming the foundation of the research. To successfully execute the research specific questions are drawn up. The research will answer these questions structured. The following main and sub-questions are designed according to the above mentioned problem outline, description and actions.

Main question of the research:

What actions and changes are required in the business operations of PontMeyer to improve quality and quality-awareness of the product range of Spruce wood?

For a substantiate way of answering the main question different sub-questions are drawn up:

- ***What is the main complaint or problem regarding quality reduction of the Spruce wood products noticed by Centrop and what may cause this?***
- ***What can be done to improve the quality and reduce rejecting because of quality flaws?***
- ***What can be done to improve the processing of quality complaints and processing of rejected spruce wood products?***
- ***What is the financial incentive of improving the quality?***
- ***What will be the effect on the quality experience when adding a range of top quality spruce wood products to the assortment?***

3 What is quality?

The term 'quality' is the main subject covered by this project. Before the research is started it is good to define the term 'quality' and explain what it means for the involved groups in this project, the seller and the buyer.

3.1 Quality

The definition of quality is defined as "fully meeting the customer expectations and needs"¹. Another approach of quality is the "fitness for use"².

Important to know is the fact that when the targeted customer demands change so should the level of quality.

Quality can be defined on different aspects. This includes the reliability, performance, appearance, features, conformance, durability, serviceability, aesthetics, perceived quality, price and performance ratio and availability of the product. The company must be able to describe these aspects and meet them. When concerning quality all departments of a company are involved.

3.2 The seller's benefits

The improvements on quality control can have different benefits for the company. The most important benefits are listed below;

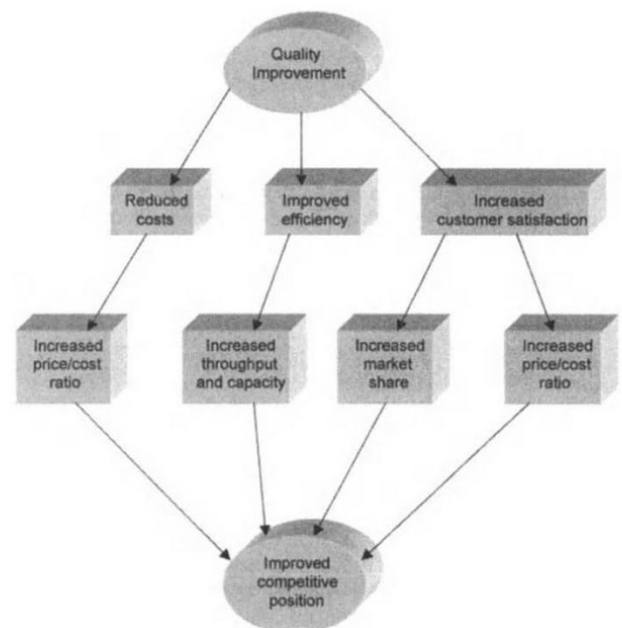
- Improvements of the products in the long run
- Continuous evaluation of the system
- Eventually it reduces work related to processing scrap, this improves the productivity
- Less failure of products can lead to a lower price of the products which lead to increased competitiveness

To successfully implement a quality control system aspects of the standards of ISO 9000³ are used as guidance for the measures. These procedures and tools are used by many companies to optimize their products and service to consistently meet the customer's demands and requirements. The principles of the ISO 9000 are added to the annex. (Annex 6)

3.3 Customer expectations on quality

To improve the quality and reduce rejecting because of quality flaws the customers' expectations must be approached. The customer's needs must be substantiated to be able to design targeted actions. These actions can be designed after considering the following questions which will be answered during the research:

- Who is buying my products?
- What is the customers demand?
- How can I reach the customers expectation?⁴



¹ www.businessballs.com

² Fundamentals of quality control and improvement, Amitava Mitra, 2008

³ www.iso.org

⁴ Quality improvement to improve the competitive position

4 Project preconditions

To reach a satisfying end-result of the research the following preconditions need to be managed in order to be able to fulfill the research.

- The organization providing the assignment must support the process of the research. When the research is performed the collaboration of the company is decisive for the success of the project. The people involved in the research are expected to cooperate when performing tasks in order to complete the project.
- The research must be performed within different departments of the company. The subject of the research is a problem which is concerning different departments of PontMeyer. To implement a solution to the problem the cooperation of all departments involved is necessary to complete the research.
- The making of mistakes should be allowed as long these mistakes are solved. The mistakes form an educational pathway which is part of the training of the student.
- The actions and projects implemented must support the solution for the problems of PontMeyer. The proceedings of the student must be within the subject of the research.
- The student is responsible for finding solutions for the problem. Implementation of the solutions is partly the responsibility of the student. The student is creating a report with recommendations of implementing the solutions.
- The student is creating awareness of the problem within the company of PontMeyer. Creating awareness is important of the success of the implementation of the project.
- The student is performing tasks to inform all involved with the project about the progress. The intermediate results of the project are communicated. This communication is done with the help of mail, telephone, meetings and intranet.

⁴ Fundamentals of quality control and improvement, Amitava Mitra, 2008

5 Methodology

In this chapter the methodology of the research is described. The methodology of the research will form understanding of the chosen way of performing the research. Every step of performing the research is substantiated and explained.

5.1 Research

For the gathering of information a substantiated research is designed. This research will form the basis of the principles in the next steps. The primary research will be executed within the companies of PontMeyer.

The research

Before well substantiated actions can be designed a research of the actual situation must be performed. This research will provide the information about the current situation.

5.1.2 Available information at the beginning of the research

When discussing the current situation concerning quality of the spruce wood products it is difficult to draw a clear situation. Due to a lack of available data there is no substantiation of the problem and no actual information about the problem. The problem is described as a noticeable increase of complaints but these are not documented. The feeling arises among Centrop that the current quality is insufficient.

5.2 Qualitative and quantitative research

The research performed is mainly based on a qualitative set up. Before mentioning the outline of the research the difference between qualitative and quantitative research is elaborated.

Qualitative research is focussed on the collecting, analysing and interpreting data which is gathered with questionnaires or interviews. It is based on in-depth interviews where the answers and ideas of a person are uncovered⁵. Due to the application of qualitative research subjective data is gathered. Also the use of open-ended questions is contributing to the subjective aspects of the data.

The focus group of interviewees is based on a small number of employees on different levels in the company of PontMeyer. This is done to reveal different points of view. The focus groups are elaborated in chapter validity and reliability of the research.

5.2.1 Quantitative research

A part of the research is based on quantitative research. This type of research is based on numerical data gathered from research. The quantitative research is designed to collect measurable data in a structured way. This can be done with the help of surveys, mostly distributed over a large quantity of people.⁶

The quantitative research for this subject is the customer research. A survey was performed with customers by conducting a questionnaire. The data retrieved from the answers is processed into useable statistics.

Another part of the quantitative research is the research of available data of scrap amounts per establishments. The investigation of scrap figures reveals information which is used for the research.

⁵ www.icoe.org

⁶ www.snapsurveys.com

5.3 Research method

5.3.1 Types of research

To perform a well substantiated solution to the problem indicated by PontMeyer a well ordered research is necessary. The research will be designed to provide information about the current situation. The information gathered will be used to design specific actions. The research will be executed by two types of research, desk research and field research. The following steps of research can be seen: Desk research → Field research → Desk research.⁷

The information gathered from a desk research is used to design the field research, the information gathered of the field research is processed and conclusion are drawn with a consecutive desk research.

- **Desk research**

This research is performed with the use of information which is available at the company of PontMeyer. A close look is taken to the common literature, databases and prior researches performed on the subject. This desk research will help to outline the tasks of the research and what is needed to research. When this outline is clear a goal orientated research will be designed.

- **Field research**

When the desk research is performed a well orientated field research is the next step for the gathering of data and information. The field research will be performed within the company of PontMeyer. The information is gathered by interviewing employees of the company. The ideas, point of views, experiences and remarks of the interviewed people are used to draw conclusions and design

5.3.2 The implementation of the desk research

The desk research is performed by investigating available data. This immediately revealed the problem that there was not much data available at the beginning of the research. This resulted in a small comprehensive desk research with minimal results.

For the orientating desk research the data of scrap amounts was investigated. This data was covering a period of 12 months specifying scrap amounts per establishment. With this data the establishments with extraordinary high or low scrap amounts can be selected.

There is also desk research performed on the communication between the people involved in the project. Before the start of the project of the student the project have been introduced with different stakeholders within PontMeyer. These stakeholders initiated the introduction of a project to tackle the problem. This introduction involved communication by mail, these mails are involved in the desk research.

The data which is used for this research is included in the report. (Annex 5)

⁷ www.educatie-en-school.infonu.nl

5.4 The implementation of the field research

After an orientating desk research the field research is designed. The field research is mainly focused on gathering information about the current situation. The first step was to gather information from the different departments at the head office of PontMeyer at Zaandam.

5.4.1 Internal investigation of departments of PontMeyer

A selection of departments is made by choice of involvement on the subject of 'quality'. The following departments are selected for the internal investigation;

- Logistics
- Yard management
- Quality controller
- Sawmill

These departments are interviewed because of great involvement with the quality of the products. The questions drawn up to reveal facts and opinions of the interviewed persons. The questionnaires are taken up in the Annex. (Annex 1)

5.4.2 Field research at establishments

The field research will be performed to gather information about the current situation of the quality. The research will be performed on 16 establishments with an extensive questionnaire. At every establishment three target groups are interviewed.

The questionnaire will be performed with the following target groups:

- The establishment manager
- The yard employees
- Clients of the establishments

The establishment manager will be interviewed to acquire information about the current situation of quality. The establishment manager can give information about the overall situation within the company. This information is valuable to require information about the quality and satisfaction about the spruce wood products.

The yard employees are addressed in the research to require information about the current quality issues. The yard employees have a different view on the quality level because these employees are in close contact with the product and the client. The yard employees are the first channel for the complaints of customers and they are in close contact with the product itself.

The clients/customers of the establishments are interviewed to gather information about the satisfaction about the offered products. The clients are eventually the main focus when make improvements within your product range. When the customers view on the quality is important when making improvements in the spruce wood product range.

The questionnaires for the different target groups are taken up in the annex (Annex 1)

5.4.3 Implementation of the questionnaire

The questionnaire covers different subjects. The use of a questionnaire is chosen to make sure every subject is discussed during the interview. This will make it possible to analyze the data what is gathered.

5.4.4 Selection of establishments

PontMeyer has 45 establishments spread over the Netherlands. The selection of establishments is based on an even distribution between the north, middle and the south. With this distribution the different regions are addressed in the research.

5.4.5 List of all establishments

North, middle, south division.

Establishments visited for the research

- Wormerveer
- Den Bosch
- Tilburg
- Den Haag
- Westland
- Groningen
- Amsterdam
- Heerenveen
- Utrecht
- Oudkarspel
- Amersfoort
- Deventer
- Breda
- Hilversum
- Almere



2 Locations of visited establishments

6 Validity and reliability of the research

In this chapter the validity and reliability of the research is discussed to see if the gathered data is useable for drawing conclusions. The data gathered from the research will be analyzed and assessed upon usability.

6.1 Validity and reliability of the field research

The research is divided in three different aspects. In this chapter the validity and reliability of the research is discussed. The three aspects of the research;

- Interviews employees at Zaandam
- Interviews employees at the establishments
- Customer satisfaction survey

The validity and reliability of the research must be discussed to assess the usability of the data gathered from the research.

6.2 Validity and reliability of the Interviews with employees at Zaandam

The employees are constantly in close contact with the products. The interviewed employees are in managing positions and are informed on aspects of quality by the people they manage. This is in favor of the validity and reliability of the research. The data collected from this part of the research is classified as usable.

6.3 Validity and reliability of the interviews with employees at the establishments

The validity and reliability of the information gathered from the questionnaire with the branch manager is substantiated by the level of involvement within the branch activities. The branch manager is involved within the entire company structure and is aware of the situations regarding insufficient quality of the spruce wood. The branch manager is involved in buying, selling and the company's management and can use this knowledge to provide data for the research.

Also the yard employees are interviewed. This focus group is of great value for the research since this group is in close contact with the product as well as the customer. This group is aware of the current issues with the spruce wood assortment and the specific customer demands.

The interviews are designed with open-ended questions to obtain answers which are thought of by the employees.

The validity and reliability of the interviews with the employees is considered high, the data of the research is useable.

6.4 Validity and reliability of the customer satisfaction survey

The customer satisfaction survey is useable to measure the satisfaction level among the customer. The customer's opinion on quality is important to research.

The survey is partly designed with questions where the customer has to rate certain subjects.

The data gathered from the customer satisfaction survey is considered low. The number of customers interviewed is too low to draw reliable conclusions. However the customer survey is giving the student insight in the opinion of the customer and what the customer is considering important.

7 Introduction of the company

The research is specified on the company of PontMeyer. To make it possible to understand some aspects of the research an introduction of the company is necessary. The following chapter is explaining the structure of PontMeyer.

7.1 PontMeyer

PontMeyer is the biggest supplier of softwood and sheet material in the Netherlands. Since 1844 PontMeyer is performing activities in the wood industry focused on the construction market. The range of products varies from building material to tools and finishing material.

The company of PontMeyer is relying on a wide network of suppliers all over Europe. Most timber is imported from Scandinavia and middle Europe.

PontMeyer has 49 establishments spread over the Netherlands with 750 employees.⁸ The establishments are supplied with products by the logistic service points of PontMeyer or directly by the suppliers from all over Europe.

The soft wood product range meets the quality standard of VVNH⁹ (Koninklijke Vereniging Van Nederlandse Houtondernemingen), Centrum Hout and KOMO ('Keuring en Onderzoek van Materialen voor Openbare werken'). The products of PontMeyer are certified with the well-known certification bodies for sustainable forest management and to emphasize the environmental performance of PontMeyer.

7.2 Suppliers of PontMeyer

The 49 establishments of PontMeyer are supplied by three subsidiary wholesalers. These wholesalers are affiliated with the company but also act as independent companies. The wholesalers of PontMeyer are:

- **Centrop Wood Import. Wholesale of the softwood product range.**
Centrop is specialised in the import of softwood. This company is importing products mainly from Scandinavia. The current activities involve mainly the supply of spruce wood for the construction purposes. The import of pine and Douglas fir is also part of the assortment offered. Centrop is not solely involved with the supply for PontMeyer establishments but acts as a trading company for a wide range of customers.
- **Trima Sheet Materials. Wholesale of the sheet material and plywood product range.**
The products supplied by Trima are sheet material and plywood for the Dutch construction market. The company is active since 1931 and with this 80 years of experience they set up a wide network of suppliers. The products are imported from all over the world. Products are imported from Europe, South America and Asia where quality, supply and service is of high priority. Trima supplies a broad range of sheet material with a focus on fair and sustainable products.¹⁰
- **Van Dam Hardwood. Wholesale of the hardwood product range.**
A timber trading company since 1889 with a broad supply of hard- and softwood. Later on the company specialised and focussed on hardwood. Since 2000 Van Dam joined the PontMeyer concern to be the supplier of hardwood. They use their specialism in the

⁸ www.PontMeyer.nl

⁹ Kwaliteitseisen voor op uiterlijke kenmerken gesorteerd Europees Naaldhout, SKH

¹⁰ www.Trima.nl

hardwood market to supply suitable products for the construction market in the Netherlands. From within the company there is focus on reliable suppliers and long term durability.¹¹

Sawmill

Centrop has the availability of a sawmill (De Twee Gebroeders). With this sawmill it is possible to anticipate on different and specialized orders of the customers and meet a wide range of demands. Most products are fit up to the demands of the customer at the sawmill of the supplier but the availability over a sawmill is making it able to provide a wide range of options for the customer. It also makes it possible to react in short order when customers demand a product that meet their demand. The sawmill is located at the head office of PontMeyer in Zaandam. This improves the effective factor of speed of executing the woodworking. Transport to a sawmill is excluded.

7.3 Logistic service points

PontMeyer is wide spread over the Netherlands. To supply all the establishments there are logistic service points (LSP's) where the logistics of establishments is supported. The logistic service points are also managing the large orders of customers and function as a distribution point.

7.4 Old and new situation regarding logistics at the establishments.

The company structure of PontMeyer has been changed. Before the structural changes the logistics were managed by logistics departments at the establishments itself. Most of the establishments were planning their own transport and managed their own stock.

Since the changes made in the company structure the logistics and transport has been centered to districts, the establishments are relying on the supply of direct shipments or through the logistic service points.

In order of the research this is an important aspect to mention. The changing situation brought changes to the supply of the spruce wood products and might have had an effect on the current quality management.

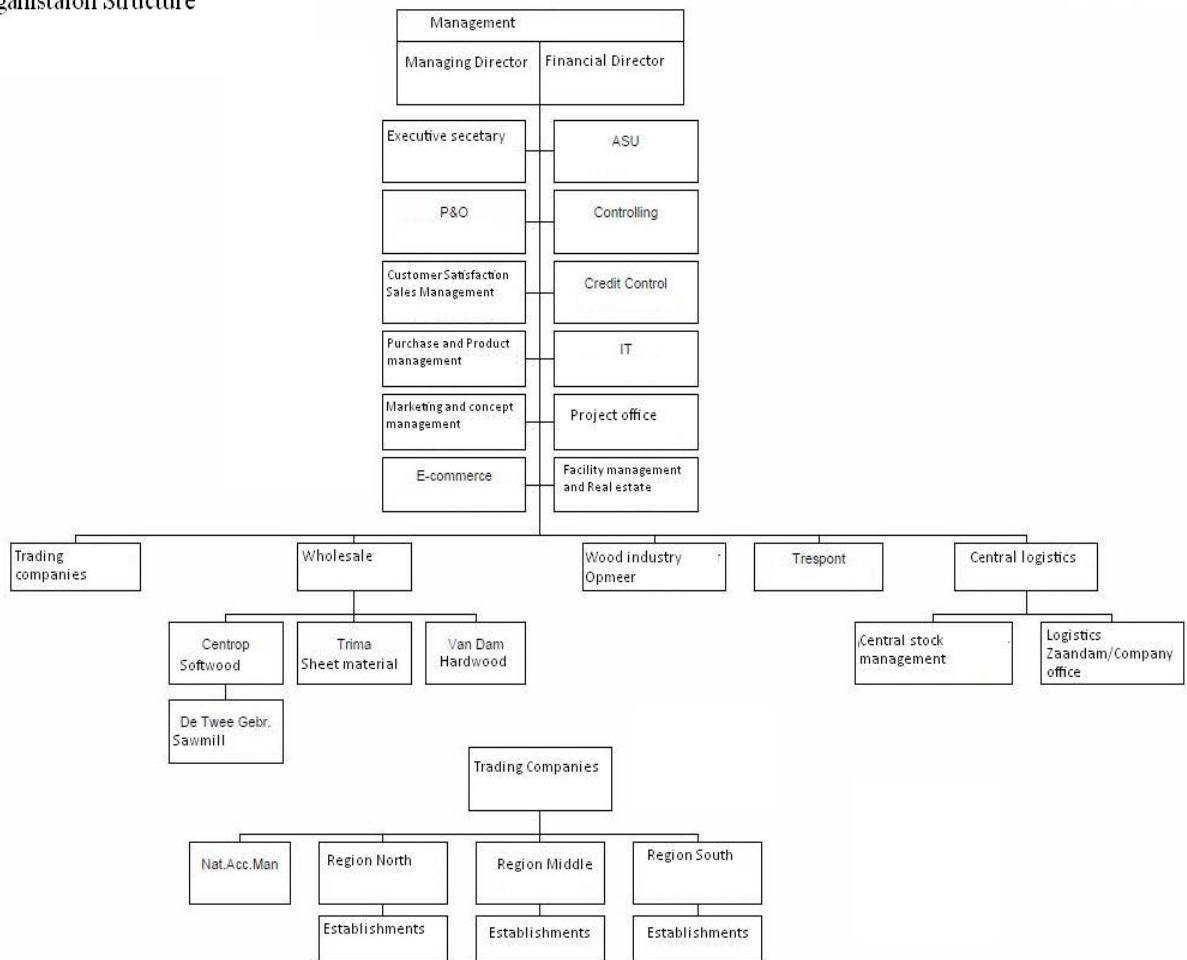
¹¹ www.houthandelvandam.nl

7.5 Organization structure

The structure of the company is showing the connection and involvement of the different departments. For the research it is important to know the structure to put emphasis on the involved departments. The company of PontMeyer is structured as follows:

PontMeyer Organistaion Structure

01-11-2014



3 Organisation structure of PontMeyer

8 What is the main complaint concerning quality and what may cause this?

To find out the main complaint and cause of the quality issues a research is performed at the head location of PontMeyer in Zaandam and at establishments throughout the Netherlands. The research are performed to reveal the current situation and find out what may solve the quality issues.

8.1 The interviews at the departments

The different departments are interviewed to find out what is the current situation regarding quality and what the interviewed departments think of as solutions. During the interviews the departments indicated different assumptions in order to improve quality. Following are the summaries of the interviews:

Logistics manager¹²

“In the current market the customer is changed. The customer used to accept the quality which PontMeyer offered. Nowadays the customer is demanding a higher quality” mentioned the logistics manager. He based this statement on the increased number of complaints from the clients in the last couple of years.

“The demand of the customer of higher quality products is also reasoned by changes in the import of lower quality products. The buying of wood is emphasizing more on price compared to quality. The value for money is the main focus of the purchasing department and this is noticeable in the quality level of incoming goods” says the logistics manager. The departments are working closely together and changes by the purchasing departments are noticed by the logistic department. Also reduction of employee cost is an example of how changes effect the different departments. Currently PontMeyer works with a lot of temporary employees. This results in a loss of wood specific knowledge. There used to be employees educated in the selection of wood. “This knowledge is slowly vanishing from the company” stated the logistics manager.

Another conclusion mentioned by the logistics department is the current stock management system. The system ensures that every bundle is placed on a specific place on the yard. However this system is working flawlessly it causes bundles to be moved very often. The yard is designed that multiple bundles are placed on top of each other or in multiple rows. The stock management system is not taking this into account and trough this the bundles have to be moved often. This creates a large risk of damage when moving bundles. When concerning quality this should be a focus point.

When logistics is confronted with quality issues from the establishments throughout the Netherlands it is clear the establishments are managing these issues in different ways. “A single method of handling quality issues would make the handling of these problems easier” says the logistics manager.

Yard manager¹³

The bundles of wood are not opened when entering the stock. Due to this there is always a chance products with quality flaws are accepted. At the moment the products are included in the stock the

¹² Interview performed with Peter Staats, logistics manager

¹³ Interview performed with Michael de Groen, Yard Manager

responsibility of failure of products is on account of the yard. This is not always justified because the purchasing is done on a lower level, the loss of products must be on the account of all involved.

“To improve the quality the introduction of a FIFO-system (First In First Out) is advised” mentions the yard manager. “This is not yet implemented in the current stock management system. At this moment some bundles are depreciated because the FIFO method is not maintained. Wood should be managed as a product with an expiration date” is stated the yard manager.

“The bundles with quality issues are mostly reported at the purchasing department. In most cases there is little feedback communicated from the purchasing department. Due to this it is hard to keep employees motivated to report quality issues”. Analyzing the statements of the yard manager the employees like to see result from their work.

Sawmill manager¹⁴

“There is for a couple of years a noticeable decrease in quality of Spruce wood. The quality grouping is shifting whereby a lower quality is classified in a higher segment. The C quality spruce wood from years ago is now the B quality” stated the sawmill manager. This market changes are due to the implementation of machine grading and excluding visual control.

The sawmill is equipped with modern machinery which work according to the quality demands of PontMeyer. In case of large quantities of wood with quality deviations it is possible to upgrade this at the sawmill to make it suitable for sale.

8.2 Results and Analysis of the field research performed at establishments

As mentioned in the methodology a research is performed.

To reveal the current situation concerning the quality of the spruce wood a research is performed at 16 establishments. After the research a clear description of the current quality can be drawn. The research uncovers some situations which are mentioned at the different establishments. In the Annex the data is processed and concluded upon (See Annex 3, 4, 7, 8) The following conclusions are drawn:

“The project is a current important issue within the company”

Most of the establishments were welcoming the activities of the research at the establishments. There is great interest in the development and improvement of the current quality of the spruce wood products. Every visit of the research uncovers a clear situation description of the quality issues. The amount of attention to the current situation regarding quality indicates improvements are needed for the quality.

¹⁴ Interview performed with Rob Ravenhorst, sawmill manager

“The most problematic products”

There is a different way of handling the quality of spruce wood products per establishments. Every establishment has indicated where in the product range most problems occur. The following products were mentioned as problematic.

Product dimension (mm)	Number of establishments
50x75	14
50x100	3
50x150	3
22x50	2

The most frequent returning problem in these products is deformation. The deformation mostly occurs in the dimension to two inch. Other frequent occurring problems are wane, cracks and knots. (See annex 8 for the occurring quality issues)

“An incoming goods control is accepted”

At the establishments the idea of implementing an incoming goods control focussed on quality was mentioned. This idea was well accepted.

In the current situation the control on quality for incoming goods is in some cases already done but not structured. A standardized format for the incoming goods control is desired.

The scrap procedure

The current situation regarding the scrap procedure on the establishments visited is well structured. Most of the establishment's follow the procedure of;

- Selecting of unsellable products and removing from the display
- Transfer the product to scrap in the stock
- Sell to the highest bidder.

Another possibility is to shorten an unsellable product to another product. With this method these are checked in as another product.

When certain shipments of wood are sent in with quality issues the following steps toward a quality report for the purchasers are well known. Nevertheless a clear description of the steps towards a claim, complaint or comment is desired.

“Adding an extra condition in the stock management system is doubted”

An option for adding an extra condition in the stock management system of PontMeyer to scrap the products with quality issues under a specific condition in the system was also researched. The idea of this extra condition will result in a clear overview of loss of products due to quality flaws. This will make the quality failures more transparent which. The information resulting from the system can be used to take specific actions to improve quality.

The acceptance of adding an extra condition to the stock management system was received with reluctance. A frequently heard comment is that there are already enough conditions in SAP.

When mentioning the reason for this condition, to gather information and data about quality loss, the idea was more accepted.

“Too little feedback on reported complaints”

A constantly heard complaint was the poor feedback on quality reports. When the establishments were reporting a quality flaw about one of the shipments the complaint is passed through to purchase (Centrop) but the feedback on these complaints was minimal and resulted in a low motivation to report occurring quality issues.

“It is not known what is acceptable”

The establishments are not aware of the minimal quality demands of the incoming goods. None of the visited establishments are making use of the drawn up NEN-standard when performing an incoming goods control. When mentioning quality flaws the current control is based on experience and common sense. There is a wish for a clear instruction mentioning what is acceptable.

“Keep the shelves filled”

The first impression of the customer determines the quality perception. When the shelves are filled the customer has a wide choice of products. When the shelves run low of products the customer is unable to find a satisfying product since every customer performs a selection process. In shelves which run low the best products are taken which leaves less good products. This results in a dissatisfied customer. When the shelves are full of products the customer has plenty of choice to find suitable products.

The establishments mentioned that full shelves results in less complaints regarding the quality.

“Know your customer’s demands results in less scrap”

The establishment employees are mentioning that when you are well aware of who your customers are you can reduce scrap. The knowledge of the customers and their applications with the spruce wood products is valuable. When you are aware of which customer is very critical and which customer is less critical you can anticipate on this. In this way you also keep the customer satisfied. The great majority of the establishments are having a large share of frequently returning customers. Due to this most establishments are applying this knowledge with success.

“Having more time for your customer results in less scrap”

The base of the scrap problem is due to the fact that the customers are selecting the good products from the shelves and leave the less good products. The establishments mention that the more intensive you help the customer (loading, selecting and assisting) the less strict the customer select.

“There is loss of specific know-how and specialism of timber within PontMeyer”

The specific wood knowledge of timber is not common anymore. The employees of PontMeyer are not trained with specific knowledge of the timber products. This used to be different when timber was selected by the employees for shipments to customers. This results in more scrap since the employee cannot convince the customer to take certain products.

“There is loss of specific know-how at the customer level”

The current customer is for a great majority a self-employed professional (SEP, in the Netherlands known as ZZP). The specialised carpenter, furniture maker or other specialists are a minority of customers at PontMeyer.

The SEP is in most cases not able to process timber the way a specialist is able to process timber. The SEP is in most cases active on a broad sense of the construction market, while a specialised carpenter is more focussed on a single aspect of this market. This results in loss of specific specialism in this market.

For PontMeyer this results in a less specialised customer who is more judicial on the quality of the products. A specialist is able to process products with lesser quality in an effective way while the SEP is not granted with this knowledge. This means the SEP is demanding products without deformation or other quality deviations.

“A higher price for an improved quality is hard to justify to the customer”

PontMeyer is not the only spruce wood trader in the Netherlands. The competition is strong and the amount of spruce wood on the market is high.

Currently PontMeyer is not distinguishing on the field of quality. The offered quality in the market is uniform. However the name of PontMeyer is still well known in the market as the specialised timber trader where you can find wood products of high quality.

Currently the spruce wood market can be described as a discounters market where it will be hard to justify a higher price. The establishments are reacting differently on these situations. When a normal price increase results in a clearly higher quality the customer will be interested.

“Varying reactions on the introduction of adding a top quality assortment”

The interest in a top brand is resulting in varying reactions. The establishments mention different opinions for and against it:

Disapproving reactions top quality	Approving reactions top quality
Space at the establishment is minimal	The demand for this high quality already exist
Demand for the products will be low	It takes the discussion away of not being able to offer the right quality
Trust in the product will be hard to win	It will bring specialism back to PontMeyer
The higher price of the product will not be accepted	

The idea of adding a top quality to the current assortment is showing varying reactions. The majority of the interviewed persons was wondering if the higher price will be accepted by the customer. The majority of the persons interviewed was interested to measure the acceptance of the customer in a trial of introducing these products.

Conclusion of the research of employees

The project is received with great enthusiasm. This reveals the importance of the project and the interest of the employees to improve the current quality of the spruce wood. Since the most problematic products are known it is easier to design targeted actions for improvements. The mentioned quality issues by the employees are forming the base of the design of the procedures.

9 Customer research

9.1 Implementation of the customer satisfactory survey

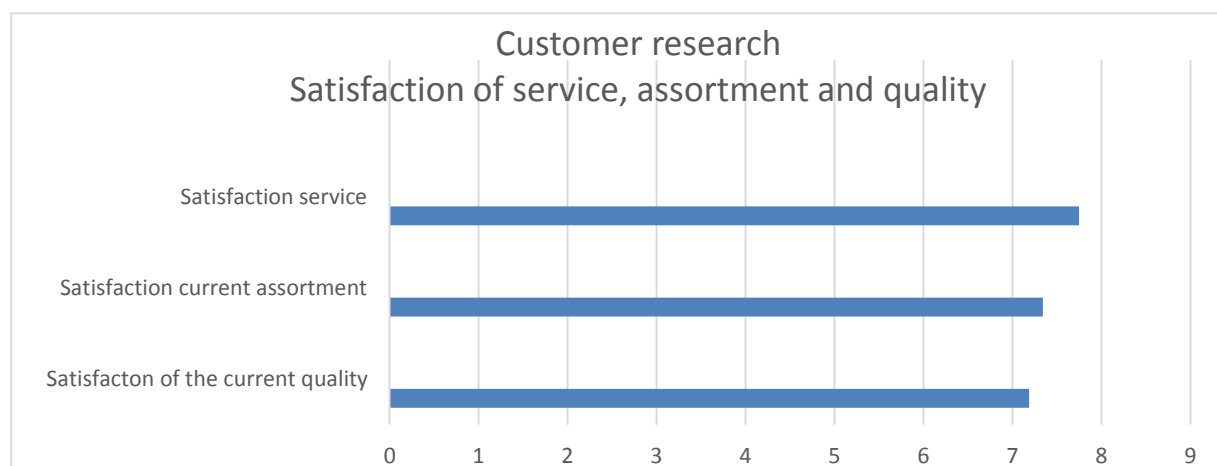
The customer research is performed to gain insight in the current satisfaction regarding the quality of the spruce wood products. Eventually the customer visiting the establishment is the main target when concerning the improvements of the quality. The customer's opinion regarding the quality is important to research to reveal what they encounter when using the spruce wood of PontMeyer. As mentioned in chapter 'Validity and reliability' the usability of the customer research is measured. It was made clear that the customer research is of small scale to give leading information, however the data recovered can reveal the point of view of the customer.

9.2 Data of the customer survey

The first part of the customer survey was focusing on the satisfaction on three different aspects;

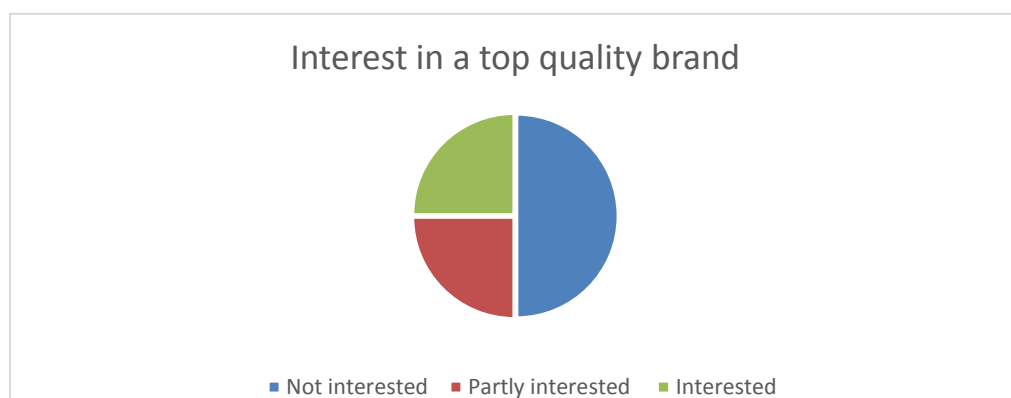
- The satisfaction concerning the service at the establishment
- The satisfaction concerning the completeness of the spruce wood assortment
- The satisfaction concerning the current quality of the spruce wood products

(Data can be found in Annex 2)



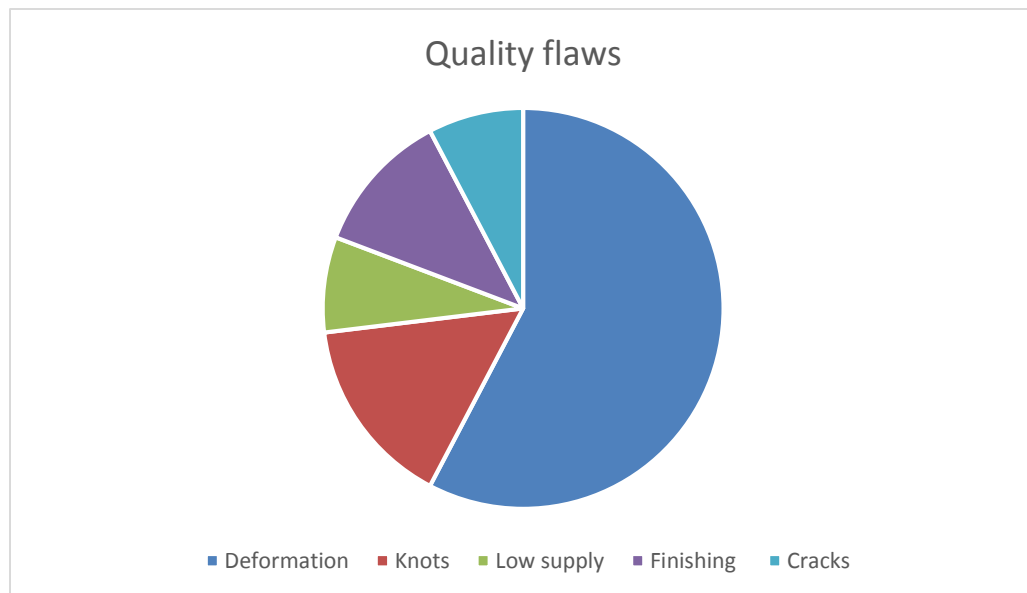
This table is showing that the satisfaction of the customer is positive. The service, assortment and quality is considered good.

The second part of the research focussed on the customer interest in a top quality brand added to the current assortment;



However the majority of the customers indicated that a high quality is not demanded still, a group of 25% of the interviewed customers are interested. This can be considered high when taking into account that the high quality products are meant for a specific group of customers.

During the survey the customer was questioned about the quality of the products. The customer indicated what quality flaws they encountered. The following flaws were mentioned at the establishments.



The most mentioned quality flaw by the customer is deformation of the products. The customer is not buying products with deformation since it makes the application of the products harder. Also knots was mentioned often, the customer noticed that products with knots easily crack. The finishing of products was mentioned often in relation to deviation in size and rough surface makes it hard to apply paint. The low supply of products is also mentioned, the customer is not satisfied when products are out of stock.

9.3 Conclusion of the customer survey

The customer is satisfied about the service, assortment and quality when looking at the data recovered from the survey. The customer is indicating the quality flaws they encounter where deformation has the largest share. Regarding the flaws the customer seems content with the quality, also the implementation of a top quality spruce wood product line is by half of the customers interviewed not requested.

Concluding on the customer research the data is not in line with the data recovered from the employees of PontMeyer. Since the employees are in closer contact with a larger share of customers (than addressed during the customer survey) the data from the employees are considered more reliable.

10 What can be done to improve the quality and reduce rejecting because of quality flaws?

The research revealed improvement on quality is needed. The realization of a higher quality needs to be structured. This chapter focus on what needs to be reached in order to gain a higher quality. The first part of this chapter is to answer the questions drawn up in the beginning of the report, in chapter 'Problem analysis'. The Second part of this chapter is explaining the following steps.

10.1 Defining the customer

10.1.1 Who is buying my products?

This question is basically the description of the customer. When you are aware of the description of the customer you are able to focus on this target group.

In case of the spruce wood products of PontMeyer the customer can be classified as contractors and freelancers who are visiting PontMeyer for small quantities of timber. The spruce wood products the customer consume is used for a wide range of construction purposes.

10.1.2 What is the customer's demand?

The research at the establishments revealed the customer demands a product what is applicable in a wide range of construction purposes. When the customer is selecting products the selection of the right products is based on specific expectations. The customer demand a product what is:

- Straight (free of deformation)
- Free of cracks
- Free of large knots
- Free of stains or mold

(Data recovered from Annex 2)

10.1.3 How can I reach the customers expectation?

The customers' demands are considered when supplying the products but the customer demands are actually unreasonably high when considering the properties of spruce wood. This makes it unrealistic to reach these demands, but the demands should be pursued.

Spruce wood is a natural product with characteristics that causes natural deviation of quality. This makes it unable to supply a product what can 100% fit the customers demand. What can be done to satisfy the customer is constantly pursue a high quality product. By putting emphasis on the quality control it is possible to reject the poor quality products. This quality control will prevent bad quality products to be offered to the customer. The quality control also makes it possible to address the supplier on quality levels and necessitate them to supply the demanded quality.¹⁵



4 Total quality management

¹⁵ www.businessballs.com

10.2 Following steps

For the improvement of the current quality level certain procedures were designed. These procedures are investigated and partly implemented to research the effect of the procedures. The procedures are designed on the outcome of the field research.

10.1 Design and implementation of the procedures and actions

This chapter is describing the procedures and where implemented. The chapter covers three procedures for the improvement of the current quality. The first procedure is the incoming goods control. This is the main tool for improving the quality. The second part is the communication with the suppliers. This is an action to be performed by Centrop.

The third part of this chapter is the procedure of implementing a standard for the displaying of the spruce wood products of PontMeyer.

10.2 Design of the incoming goods control

The procedure of an incoming goods control is designed to secure an acceptable quality level at the first stage where the products enter PontMeyer. At this point it is important to have a strict focus on quality and avoid products with quality flaws to enter the sales chain. It must be assumed that unsellable products should be removed as soon as possible from the chain.

The incoming goods control will be designed and implemented at the establishments, this implementation is substantiated by the following questions;

- Where will the incoming goods control be implemented?
- Who will perform the incoming goods control?
- How is the incoming goods control performed?
- How is the incoming goods control implemented within the company of PontMeyer?
- What changes are needed within the establishments and logistic service points to install the incoming goods control?
- What will be covered by the IGC? Why?
- What will not be covered by the incoming goods control?
- What are expected effects of implementing the incoming goods control?

These questions are drafted to substantiate the reasons and motivation of the procedure. It will clarify what the procedure covers. (The outline of the incoming goods control is substantiated by Annex 11)

Where will the incoming goods control be implemented?

The incoming goods control is designed to be used by the establishments of PontMeyer. The procedure will also be implemented at the logistic service points.

Who will perform the incoming goods control?

This control is performed by the employees of the establishment. In most cases a yard employee is designated to perform this task. The incoming goods control procedure is designed with as target group the yard employees.

How is the incoming goods control performed?

The incoming goods control is performed at the moment spruce wood products enter the establishment. The procedure is divided in 3 main steps and a number of sub steps in between. The

procedure is focusing on the visual aspects of a shipment of goods. The procedure is designed to be performed without unpacking the shipments.

How is the incoming goods control implemented within the company of PontMeyer?

The procedure of the incoming goods control will be implemented by contacting the managers of every establishment of PontMeyer. The responsibility for implementing the procedure lies with the management of the establishments. This responsibility is motivated by emphasizing that the improvement of quality is beneficial to the establishment itself.

What changes are needed within the establishments and logistic service points to install the incoming goods control?

At the establishments and logistic service points the implementation of the incoming goods control can be done without large changes. The specific knowledge needed to perform the quality control are not always present at the establishments, while at the logistic service points this knowledge is available.

What will be covered by the incoming goods control?

The incoming goods control is focusing on the visual quality of products. The quality is monitored by checking ten aspects of the goods. Here is explained what aspects are controlled and why these are included.

When performing an incoming goods control ten quality aspects are covered;

- Visual damage caused by external factors
- Color of the timber
- Cracks in the timber
- Deformation
- Wane
- Boxed in heart
- Knots
- Finishing quality
- Moisture content of the wood
- Insect damage

Visual damage caused by external factors

This aspect is added to the incoming goods control to prevent damaged products are accepted at the establishment. Damaged products are under no condition acceptable and should always be reported to the supplier. This is also the reason why it is placed at first in the procedure. Damage can be caused by transport or caused at the supplier's side. Damage on products is easily visible on the outside of a shipment. In case of damage an establishment is the decisive factor of taking steps of reporting damage. When a small number of products are damaged there can be decided to refrain from reporting the claim. Ideally the cases where shipments come in damaged are always reported.

Color of the timber

The color of the timber is assessed to prevent quality deviations to enter the shelves of establishments. Discolorations can indicate different deviations such as mold, weathering or rot. These indications are clearly visible from the outside and thus can be assessed during the control.

Cracks in the timber

Due to fast drying or deforming cracks are occurring, most often it occurs in spruce beams. The cracks we distinguish are longitudinal cracks and end cracks. These cracks are most often observed. This quality issue is often referred to as unsellable at the establishments. However it is to large degree acceptable according to the quality demands according to the NEN (??).

When come across products with cracks it is up to the establishment to take action. Since the NEN is allowing large cracks it is not always possible to claim the products.

Deformation

This is the most referred to quality issue of the spruce wood. There are four types of deformation occurring.

This quality issue is hard to observe since the bundles are strapped in. However it is possible to make judgments about a bundle when looking closely to the front and end. The head side of the bundle can show if there is deformation occurring. When a bundle looks 'restless' and 'messy' or not 'neatly stacked' you can conclude that the products are deformed. At this point the establishment can decide to open the bundle to inspect the products.

Wane

This is when products contain bark at one or more sides of the product. This is when the products are actually too big to fit in the size they were intended to be sawn in. This is often seen in products and is easily visible during an incoming goods control. It is important to control if the amount of wane is acceptable.

Boxed in heart

The spruce wood products should be sawn through the heart. When the products contain boxed in heart it means the wood is not sawn properly. Boxed in heart causes deformation. When detecting boxed in heart you should look at both sides of the bundle. In most cases the products are at one side sawn properly, but due to the fact not every tree is straight the heart can be present at one side of the product.

Knots

Knots are included in the control because of the strength issues it can cause. Different knots should first be checked if it is solid or soft. Also must be checked if the knot is stuck or loose. The size and number of knots is decisive for the acceptance of this.

Finishing quality

The spruce wood products are sawn at the supplier and control on this aspect is necessary. The finishing of the products must be done according to the quality demands of PontMeyer. A lot of products are entering the shelves with a low finishing quality. This results in products with a rough surface and this causes problems for the customer who wants to paint the timber.

The moisture content

This aspect is added to the control because in some cases the products are not properly dried. This causes mold, stains and deformation.

Since most establishment are not equipped with a moisture content meter it only can be assessed by the visual aspects of a wet bundle. The wood is feeling moist and the surface can be described as 'hairy'. Also an increased weight is noticeable when moving the bundle by forklift.

Insect damage

This quality flaw is not reported often but is included in the control because it can be observed during a visual inspection. It is important to report damage by insects since it is possible the insects are still present in the products.

10.2.1 What will not be covered by the incoming goods control?

The incoming goods control is designed on the control of spruce wood with C quality. This is the main focus since the main assortment of PontMeyer consist of this quality.

There are however some products which are purchased at a lower quality which cannot be checked with this procedure;

- Betonbaddingen
This product is fresh sawn without being dried
- Scaffolding wood
This product is fresh sawn without being dried
- Battens
These products are purchased at a lower grade (Spruce wood D) which increases the risk of wane, deformations and knots.

(The outline of the incoming goods control is taken up in Annex 9)

10.2.2 What are expected effects of implementing the incoming goods control?

An expected result of the IGC is an increase of remarks concerning the quality of the products. These remarks will be send to Centrop, they will process the remark in a claim, complaint or remark towards the supplier of the products.

10.3 Communicate with suppliers, demanding a higher quality

The communication towards the suppliers is an important side effect of the implementation of the research. The communication is potentially increased when the incoming goods control have the right effect, namely the exclusion of bad quality products. Also notifying the suppliers that PontMeyer is initiating this project and demanding a higher quality is an important effect of the project. This chapter will explain the communication towards the suppliers.

10.3.1 Expectations of Centrop

Before demanding a higher quality of suppliers it is necessary to reveal the expectations of Centrop. These expectations will be communicated with the suppliers.

Centrop demands products which meet the requirements of the quality demands for sorted European softwood drawn up by VVNH, Centrum Hout and PontMeyer (see document annex??). The supplier is notified on these quality requirements to be informed about the requirements. The supplier will also be informed about the activities concerning quality management improvements what is internally motivated at PontMeyer. This is done to notify the suppliers that there will be improved focus on quality.

If the suppliers have the capability of supplying the required quality has to be monitored. The implementation of the procedures and improvements on quality management will reveal incapable suppliers.¹⁶

10.3.2 The incoming goods control as a tool

Use the IGC as a communication tool toward the supplier. When quality flaws are communicated towards the suppliers the message of demanding a higher quality is underpinned.

10.3.3 Current activities

Based on the second step of the project (improve quality at the establishments for take away products, see chapter project boundaries) there are steps taken.

Negotiations are started with a supplier to realize a supply of higher quality specifically for the take away shelves of establishments. First step in this process will be implementing of a trial at 10 establishments of PontMeyer. This trial will be monitored closely to measure the success of the implementation of a higher quality at establishments.

Currently the process is in a developing stage where the realization of an acceptable price difference is the determining factor. When this is resolved to the satisfaction of both parties the trial will be started in 2015.¹⁷

¹⁶ www.businessballs.com

¹⁷ Jan Voet, managing director Centrop

10.4 Storage standards of timber

The research revealed that full shelves are a reducing factor for the complaints on quality (BRON??). This initiated the design of a procedure of storage standards. This chapter is introducing the effect of the procedure and the desired effect.

10.4.1 Motivation of this procedure

To emphasize the importance of the first impression of the customer a standard of how to display the products will be implemented. The manual will describe the standard of properly displaying the spruce wood products.

The storage standard is based on two subjects, the commercial aspects of storage and the technical aspects of storage.

10.4.2 Commercial

The establishments should focus on the commercial aspects of selling the spruce wood products. The shelves where the products are presented should be managed with the following aspects in mind;

Full shelves

- The shelves should be full to give the customer the chance to select the products that suits the needs and expectations. When shelves are running low on products the best products are selected and sold, the products with quality issues are remaining in the shelves. Research shows at that point an increase in complaints. Customers are having trouble finding suitable products which fulfil their need. While when the shelves are full a customer is putting less effort in selecting the right products, the customer is satisfied with the quality.

Clean the shelves

- The shelves should be cleaned and sorted on a regular base. During the cleaning and sorting the products with quality flaws are removed to make sure the first impression of the customer is positive. The products are put ordered in the shelves. This should be done at least once a week.

Keep the establishment clean

- The establishment should manage a representative reputation. This can be managed by keeping the surroundings of the shelves clean and ordered. This also anticipates on the first impression of the customer.

Tidy marking of the products

- PontMeyer establishments are using colours on the head of products to indicate what product it is. When this is done properly it is more representative.

10.4.3 Technical

There is also a technical aspect involved within the management of the spruce wood shelves. Spruce wood is a natural product which reacts on its surrounding. When taking into account the following aspects the timber should be stored with this in mind

Moisture content

Wood reacts on the moisture content of the environment it is placed in. Wood has the property to adopt the moisture content of the place it is located. When the moisture content of the wood is changing there is a great chance the wood will deform. This needs to be taken into account when placing the wood in the shelves. The establishments are in most cases closed. This results in low humid conditions where the wood will deform quickly. It is advised to add moisture to the environment by placing containers with water close to the shelves.

At logistic service points there are in most cases moisture content measurer available. These can be used to monitor the situation of the timber. The spruce wood should be around 15%-20% moisture content.

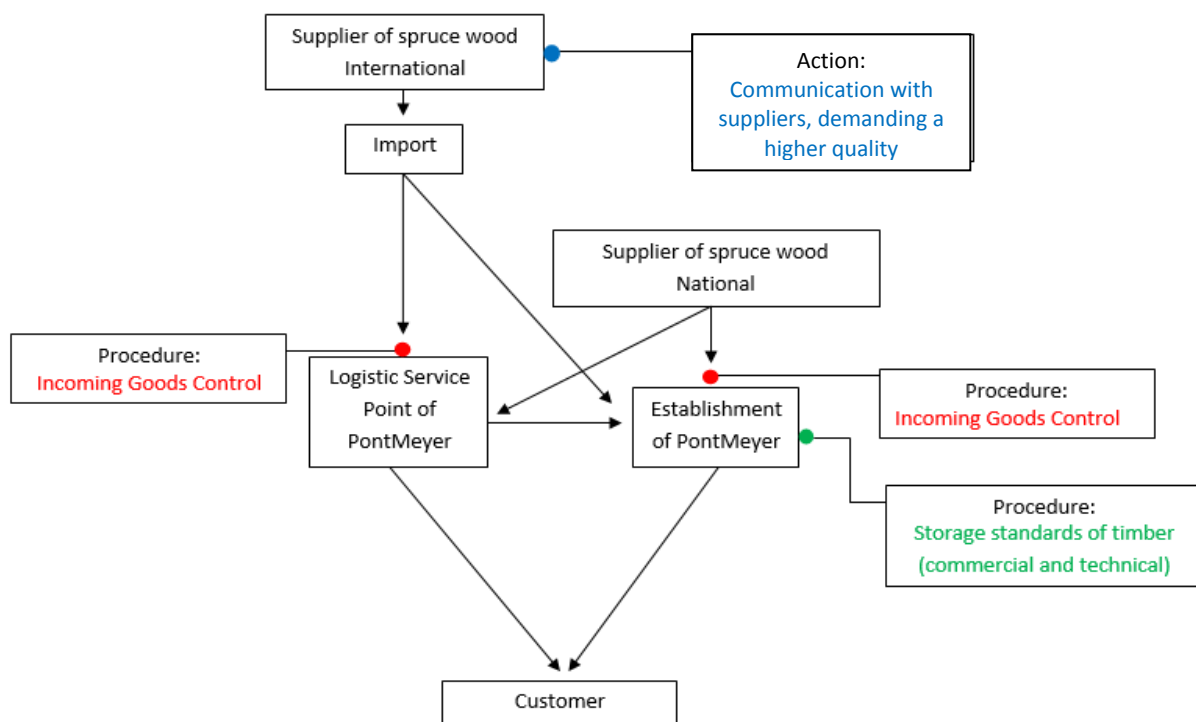
How to place wood

Wood should be placed well in order to prevent damage or downgrading. Most of the establishments have well designed shelves where the wood is well supported. When wood is not well supported there is a chance on deformed wood. To prevent this the following aspects should be taken into account;

- When bundles of wood are placed the stacks should be well placed. The stacks should be in one line with the other stacks.
- Use enough stacks and prevent wood from bending.
- Use stacks of similar size

10.4.4 Implementation of the Procedures

This diagram is a description of where the procedures are implemented. It is based on the product chain of spruce wood bought by PontMeyer. It starts at the beginning of the chain, at the international supplier. At this level the action of addressing the supplier is implemented. The incoming goods control is implemented at the points where products enter PontMeyer. The procedure of the storage standards is implemented at establishments of PontMeyer.



5 Product chain with the implementation of procedures and actions

11 What can be done to improve the processing of quality complaints?

In this chapter the complaint procedure is described. The complaint management is important for the improvement of the quality. The processing, handling and feedback on complaints must be standardized. This will form the gathering of data to support the information about quality loss.

11.1 Claim, complaint and comment.

When a quality complaint is reported towards Centrop it is translated into a claim, complaint or comment towards the supplier. Centrop is deciding what type of complaint to send to the supplier.

A claim

When a quality deviation is observed and reported towards Centrop a claim towards the supplier can be enforced. A claim is a reimbursement of the cost price of the products. When making a claim it is important to take into account that the buyer of the products has to meet the requirements of the claim right. A claim must be fulfilled within two weeks after receiving the shipment. The products cannot be opened or sold during the actuation of the claim procedure. The supplier will need time to adjudicate upon the claim and negotiate the reimbursement with Centrop. After the supplier communicated a solution for the claim Centrop will inform the establishment about the following steps.

A complaint

When a quality deviation is observed in one of the shipments for an establishment a remark towards Centrop will be made. Not every remark will be suitable to translate into a claim. Centrop can also decide not to reinforce a claim. The remark will be sent to the supplier as a complaint. These complaints can be used to monitor the quality. When a pattern is noticed, or an increasing amount of complaints is reported a supplier will be called to account for the situation.

A comment

A comment is made to create awareness among your supplier. The comment has no further effects, it is only a message towards the supplier that a quality deviation is noticed. The comments can support a claim or complaint. When a lot of comments are made towards a supplier it is possible to use these as 'evidence' of an often recurring problem.

11.2 "Desire of communication"

During the research it became clear that there is desire for more feedback on complaints. When complaints were reported towards the purchasing department the handling of the complaints was not communicated. This resulted in the idea that complaints are not taken serious or are not processed. The motivation of taking steps of reporting quality issues is due to this conception low. When a quality complaint is reported the feedback is of great importance to keep employees motivated to keep reporting complaints. (See Annex 8)

11.3 Procedure of reporting a quality remark

The remark procedure will be described in three steps. These steps are clearly mentioned to provide knowledge on how to report a quality deviation.

Before proceeding to the reporting of a remark a minimal value has been linked to the situation.

When the complaint is considered to be of less value than €50 the complaint is not necessary to report. There are two main reasons of linking a minimal value to the decision of reporting a quality deviation. The main reason is to prevent an overflow of complaints considering quality. When every quality flaw is reported the processing of complaints will not be manageable nor realistic.

Another reason of linking this minimal value to a complaint is a financial motivation. When every quality problem is reported the time invested in processing the complaint will not cover the expenses made. (Expenses made during the reporting of a complaint are based on the time spend). The reporting of a complaint must be financially attractive and possibly cover the cost of making a report. If establishments are abiding this rule is up to the managers. If they decide to report every quality issue they are free to do so.

Step: Reporting a complaint

With the support of the incoming goods control manual a shipment of spruce wood products is rejected. The products do not meet the requirements drawn in the document and are considered to be unsellable.

The decision of proceeding with the complaint procedure is up to the establishment. When proceeding with a complaint take into account that it will affect the stock and stock management.

11.4 The complaint outline

When proceeding to reporting a complaint a message will be send to the buyer of the spruce wood products. In case of PontMeyer this will be Centrop, they will process the quality deviation reports. When reporting a complaint the following information is necessary to share;

- Order number
- Name of the supplier
- Description of the encountered quality deviation
- Name of the contact person (of the PontMeyer establishment) for the communication of following steps
- Pictures of the quality issue (best in small file sizes)

(The actual quality remark outline is added to the annex 10)

The quality deviation report will be send to the information email address of Centrop who will process the email. At this point the decision is made of processing the complaint in a claim, complaint or report towards the supplier. The emails send to Centrop are saved and will act as a database of quality complaints.

Step: What to do with the shipment which has been reported?

When a shipment has been reported to the supplier because of insufficient quality the products must be kept on hold. This is necessary because an opened package is in most cases unable to claim. The complaint procedure needs time to be processed and the supplier needs time to react on the report. The products will be set on hold. The shipment will be taken into the current stock but under a specific code. This code will prevent the products to be sold but also prevents the stock management system to automatically order new products. This stock is mentioned with a Q-codification. (Specific codification of the stock management system of PontMeyer, Q stands for Quality)

What will be the expected time of putting products on hold?

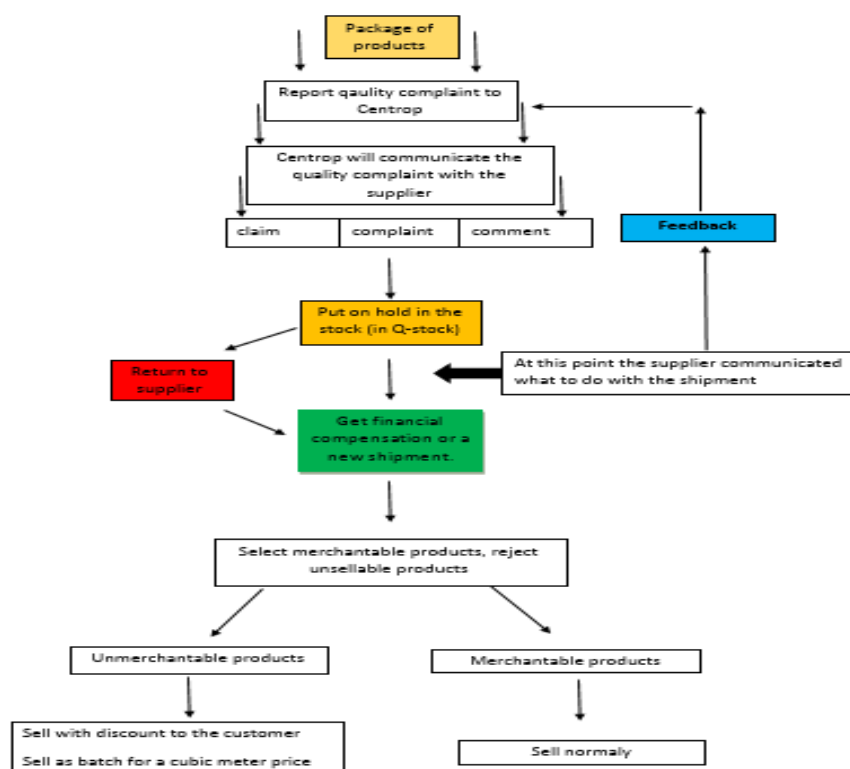
When placing products on hold it is important to handle complaints within a reasonable timeframe. The products are unable to use as long as they are under the Q-codification. Establishments can expect an answer on the complaint within five working days. This will give both parties clearness about what to expect when reporting a quality deviation. Within the period of five working days Centrop will answer back to the establishment what to do with the shipment.

Step: what to do with the unsellable products?

When the quality complaint is reported it is possible the products are reimbursed and released for sale. The supplier has financially compensated the damage but did not requested to return the products. In this case it is possible to sell the products but a strict policy regarding the quality of products in shelves must be maintained. The company of PontMeyer must exclude low quality or damaged products from the shelves at establishments.

The shipments which have succeeded the claim procedure can be sorted out. The products suitable for the shelves can be sold normally. The products unsuitable for sale are sold separately. Ways of providing as much value as possible are listed below. In this way a minimal amount of wood is wasted and maximum price is pursued;

- Sell rejected products with discount to the customer
- Collect the rejected products and sell as batch, manage a cubic meter price.



11.5 Conclusion of the complaint procedure

The complaints are actually the data for monitoring the quality. The processing of complaints makes it possible to have information about the suppliers and the current quality issues.

The improvement of processing of quality complaints is mainly making the path clear of reporting a quality remark. This was in most cases unknown for the establishments. Also the standardizing of the processing of complaints makes it easy to report quality deviations. By mentioning the different ways of processing a complaint (claim, complaint or comment) it is made clearer of what can be expected of Centrop.

The steps after reporting a quality issue are also mentioned. This makes it clear that the products are not being offered to the customer or the bundles being opened what effects the claim right.

12 What is the financial incentive of this project?

The project is partially motivated with a financial incentive. Centrop is motivating the project to increase customer satisfaction and stimulate market differencing aspects. These aspects are also motivated from a financial point of view. The following chapter is substantiating these point of views.

12.1 Increased customer satisfaction

The overall effect of the project will be to improve the current quality of the spruce wood product range. The quality improvements are providing an increased customer satisfaction level.

The research revealed that the customer is not always content with the quality offered by PontMeyer. When the customer is not content with the quality it is possible the customer goes to the competition for a better quality. This reveals that the financial benefits can be measured in potential loss of customers who are not satisfied by the current quality PontMeyer offers. However, this is not measurable.

12.2 Decrease financial loss of damaged products

Currently there are a low amount of claims filed by the establishments. The low amount of claims is due to the ignorance of the employees of PontMeyer. There is minimal knowledge about the moment of reporting and processing a quality deviation. Due to this the products with quality issues where regularly accepted and put in the shelves.

When implementing the procedures and recommendations of the research an expected result is a decrease in financial loss due to damaged products.

This was not initiated by the project. It is hard to predict the effect of the project and calculate the financial effect.

12.3 Differentiating in the market

The project is initiated for improvement of the current quality of the spruce wood products and gaining a better product. These improvements will be a market differentiating aspect what can be used for the marketing of PontMeyer. The research revealed that PontMeyer is not differentiating in terms of quality compared to other suppliers of spruce wood while a better quality is demanded by the customer. These market differentiating aspects are performed to keep the customer satisfied. The increased satisfaction might increase the market share of PontMeyer.

13 What will be the effect of adding a range of top quality spruce wood products to the assortment?

The research revealed a varying demand for a high quality product assortment for PontMeyer (Annex 8). However the research did not motivated the introduction of this high quality products it is investigated. In this chapter the options and desired effect of the introduction is described.

13.1 Options

Glue laminated timber, finger jointed timber, cross laminated timber, higher quality timber without modifications.

13.1.1 For who are these products interesting

During the research the desire for the high quality products was not high but some establishments did mention they were very interested in it. (See Annex??). The target group of these products are customers who appreciate a higher quality with a minimal amount of quality flaws and do accept the higher price. A benefit of these products is a decreased time of applying the products in construction or other end-purposes. This is because the products with deformation, cracks or other quality issues take more time to apply.

13.2 Glue laminated timber

This product is solid timber consisting of two or more components glued together. When gluing the components together a strong product is provided. The glue laminated timber has a big advantage compared to the solid timber, which is the exclusion of deformation. When the prepared components are glued together the grain is arranged in the opposite direction of the other. When deformation occurs the one component is deforming in a certain direction, the other component is deforming in the opposite direction. This results in a deformation free product. Another advantage is the possibility of removing quality flaws from the products. It is also possible to make long lengths and it is even possible to make curved products.^{18 19 20}

13.3 Finger jointed timber

A finger joint, also known as a comb or box joint, is a woodworking joint made by cutting a set of complementary rectangular cuts in two pieces of wood, which are then glued. It is a connection of two product ends where both ends have matching fingerlike projections that fit together. The advantages of finger jointed timber is the option of defect free wood. Defects in the wood can be removed by sawing out the piece where the defect is located. After removing the defect the pieces can be connected with a finger joint. This also makes it possible to produce any length required. The finger jointed timber is not excluding deformation.²¹

¹⁸ www.glulam.co.uk

¹⁹ www.rethinkwood.com

²⁰ Brigitte Decker, owner of Eugen Decker, German supplier of glue laminated timber

²¹ www.parallel55.com

13.4 Cross laminated timber

Cross laminated timber is a product that consists of different layers of components glued together. The components are oriented at the opposite direction of the other components to construct a product that consists of different layers.

The cross laminated timber products are strong, dimensionally stable and stiff. The products can be produced in large dimensions and are suitable for construction purposes. This product is already well known in the prefabrication applications.^{22 23}

13.5 Higher quality timber

Simply providing solid timber to the customer is the solution of choice. However when guaranteeing a product without quality flaws it is hard to reach with solid timber. Solid spruce wood is too vulnerable to exclude deformation, cracks, knots and other flaws. Also the supply of this high quality product will be hard to manage. Solid wood is not as stable as glue laminated products.

13.6 Specialism

During the research a cause of the current quality issues was addressed to the loss of knowledge and specialism within the organization of PontMeyer (BRON??). The addition of a high quality product range will emphasize the specialism. Adding a high quality product will provide an option for the customers who require a high quality spruce wood product.

The research also revealed the demand for a higher quality of spruce wood. When adding a high quality product range this demand is fulfilled. The product range of PontMeyer is improved to fit a wide variety of demands.

13.7 Marketing tool

The high quality product range will provide a marketing tool. When looking at the current market the quality of Spruce wood is the same everywhere. The competitors of PontMeyer are providing more or less the same quality. Due to this unity of quality in the market it is interesting to use the high quality Spruce wood as a marketing tool.

The top range products will be marketed as a PontMeyer brand. The products will be designed to look unique and distinctive from the normal product range of PontMeyer. This will be reached with a color or stamp on the products.

The high quality product range will be used to distinguish the spruce wood assortment of PontMeyer in the market.

13.8 Implementation of the high quality products

To implement the high quality products a trial will be implemented. This trial will examine the demand for the high quality products. Also other aspects of the implementation will be tested, for example the placement at establishments, supply of the supplier, acceptance of a higher price and applicability for the customer.

When the trial is showing positive results the products will be added to the assortment throughout the Netherlands. The results of the trial will be measured by the employees at establishments. They will report on the success of the implementation. Centrop will initiate the gathering of feedback from establishments.

²² www.rethinkwood.com

²³ Brigitte Decker, owner of Eugen Decker, German supplier of glue laminated timber

13.9 Conclusion of the introduction of a top quality

Adding a high quality product line to the current assortment is still in the developing stage. The options are listed to provide an overview and emphasize the characteristics of the different products. In this case the glue laminated option is the most suitable for the high quality products. This product excludes the problem of deformation what is determined as the most occurring quality flaw.

14 Conclusion and recommendations

In this chapter concluded upon the main question. Thereafter the recommendations are formulated and the outline and interpretation of the research is discussed.

14.1 Conclusion

The conclusion of the research is formulated in this section. The sub-questions formed the directory and guidance of answering the main question. The main question of the research is:

What actions and changes are required in the business operations of PontMeyer to improve quality and quality-awareness of the product range of Spruce wood?

The project revealed the demand of a higher quality and better quality management. The research outcome indicated the specific quality issues.

The research performed at the head office of PontMeyer confirmed the decrease in quality. The departments mentioned internal improvements are needed to improve the quality. The absence of a FIFO-system and bundles being moved multiple times at the yard due to the stock management system are the main quality threats on the location of Zaandam.

The second part of the research performed at the establishment also confirmed the reduced quality of the spruce wood products. The project is welcomed with interest at the establishments. This is an indication that the quality problems are a current important issue what needs attention. The main complaint regarding quality was deformation of the products. All 16 establishments and interviewed customers for the research mentioned the deformation of products as the main quality issue. The quality problems are mainly in the 50x75mm products. Overall the products with dimensions below two inch are mentioned often. It is recommended to focus on these products when implementing quality improvements. Other often mentioned quality issues are knots, mold, cracks, boxed in heart, to high moisture content of the products and wane.

To prevent the quality issues to enter the shelves of the establishments the introduction of the incoming goods control is made. This procedure is designed to check bundles, without opening them, on 10 visual quality aspects. The incoming goods control will eventually have the result to prevent unsellable products to enter the shelves. It will also be used as a tool of communication with the supplier and demanding a better quality.

The incoming goods control will make it possible to report quality flaws within the demands of the claim right. This will make it possible to be reimbursed for the cost of the products.

The establishments mentioned that there was minimal feedback when reporting quality issues. The reporting of quality issues is hereby not motivated enough. The establishments want to see result of the quality reports. The quality complaint procedure outline will make this clearer and will motivate to return feedback on the progress.

The research concluded on a decrease of specific product knowledge of the employees. This results in higher scrap amounts since the employees are unable to detect quality flaws or convince the customer to buy products with a certain quality flaw.

The research at establishments concluded that filled shelves are reducing the amount of quality complaints. This is due to the fact that the customer is given enough choice when the shelves are filled with products. The customer is able to find products what fit their demands. This knowledge is spread at the establishments with the procedure of storage standards of timber.

The introduction of a top quality product line is doubted. Most establishments and customers interviewed during the research did not approve this concept. However, the research also revealed the loss of specialism within PontMeyer related to the quality problems. The introduction of this top

quality can be a solution for the increase of specialism through the eyes of the customer, improve the quality of the issued products and market differentiation with competitive advantages. The project will have financial benefits, however this is not the intention of the project. The main financial intensive of this project is to improve customer satisfaction and improve the competitive position of PontMeyer.

14.2 Discussion

The discutable aspects of the research are mentioned below:

The validity of the research

The project is interesting for PontMeyer to monitor the current quality of their spruce wood products. Since the wholesaler of Pontmeyer, Centrop, noticed a quality decrease the project is of extra importance.

The limitations of the research

The fulfilment of the project is performed in a period of 4 months. This is enough for performing a research and the design of actions but is not enough for installing these actions.

The research on the action of implementing a top quality product line is only investigated on possibilities. The action of a trial at establishments is not possible to perform within the time frame of the project.

Reccomended continuation of the research

During the research there were more indications mentioned which were not implemented during the project. The following aspects are mentioned in the report but further research is recommended:

- The introduction of a FIFO-system is recommended to investigate further. Reduction of bundles to be moved is also a quality threat. Research in how to reduce this is recommended and can have a positive effect on the quality and reduction of scrap.
- It is recommended to introduce the incoming goods procedure at the establishments at a personal level to explain the outline and use of this procedure. This can be combined with the aspect of improving knowledge of employees.
- The procedure of storage standards is introduced to emphasize the commercial and technical aspects of offering spruce wood products. It is recommended to introduce this procedure at the establishments on a personal level. This can be combined with the introduction of the incoming goods control.
- The introduction of the top quality products is firstly introduced in a trial at establishments. It is recommended to monitor the trial at establishments closely to conclude on the success of the products.

Annex

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Annex 1 Demarcation of the questionnaire

Demarcation of the questionnaire for the establishments

For the design of the questionnaires the demarcation is important. The questions were designed to answer the three steps which are drawn up at the start of this project. These questions made it possible to draw up the following subjects;

Description of the current situation regarding insufficient quality
Description of the current situation regarding customer satisfaction
Possibilities of implementing certain procedures beneficial to the quality and quality management
Possibilities of adding a high quality product line to the current assortment
Description of the current used scrap procedures and find out the most effective way
Description of the current position of PontMeyer compared to the competitors

Design of the questionnaire

The questionnaires are designed to answer the questions formulated above.

The questionnaire will be focused on the following subjects and will include the following questions.

- **What are the most common quality problems?**

The current situation regarding the decreasing quality is not known. It is unknown what quality problem is occurring in common. This question is added to the questionnaire to provide information for the current situation.

The specific questions asked are;

- What is your opinion on the current quality of spruce wood?
- Is the quality of spruce wood declining? If so, can you indicate since when this decrease is occurring?
- What products are above average when mentioning failure by quality issues?
- Is there a noticeable increase in complaints?

- **What is the current situation regarding the customer satisfactory?**

What is the reaction of the customer when being confronted with quality issues or what is the customer's point of view on quality? Questions are asked to find out where customers select on when picking products and what the frequent complaints are. This question is asked to the employees of the establishment since they can provide an overview of the customer's reactions.

The specific questions asked are;

- How satisfied is the customer with the product range of spruce wood?
- Does the customer mention products missing from the product range?
- What type of customer is picky, what does the customer select on when choosing products?
- What product is often rejected by the customer? What quality issue is not accepted by the customer?

- **Is the establishment performing actions regarding the incoming goods control and what is the opinion about implementing such a procedure?**

To prevent the accepting of bad quality in the stock of PontMeyer an incoming goods control is discussed with the employees. The questions are related to the actual proceedings regarding the inspection of incoming goods and what the opinions are towards the implementation of such a procedure. This question is asked to find a suitable form of designing the incoming goods control.

The specific questions asked are;

- Is there an inspection carried out when goods enter the establishment?
 - Is there a standard procedure concerning the inspection of goods?
 - What is checked when products enter the establishment?
 - What are common quality issues when products enter the establishment?
 - Is there sufficient knowledge to determine the quality of spruce wood?
 - Is there enough time and possibilities to perform an inspection on quality before the products are taken up in the stock?
 - Is there time and possibilities to perform a random quality test?
 - What is done when a quality issue is noticed?
- **General acceptance of the current quality?**

The question is to provide knowledge about the acceptance of the current quality by the customer and the employees of PontMeyer. What is the reaction of the customer when being confronted with quality issues or how is the employee experiencing the current quality level. This question is asked to provide information about the general quality.

The specific questions asked are;

- In what product range or group are the most quality issues?
 - Which suppliers are accountable for an above average amount of quality issues?
 - Is the establishment interested in an incoming goods control?
 - Is the current quality sufficient enough to keep the customer satisfied?
 - What is your idea on improving the current quality?
- **Is there interest in adding a high quality product range of spruce wood?**

Centrop is considering options to introduce a top brand of high quality spruce wood at the establishments. This product range will pursue a flawless product regarding the quality. This idea is an answer on the current demands of the market, a high quality product which reaches the demands of the customers.

The specific questions asked are;

- What is your opinion on a high quality product range?
 - Do you think the customer is willing to pay more for this product?
 - Would you be interested in adding this product to your product range?
- **How is the scrapping procedure performed?**

The right way of scrapping of products is important for the gathering of the correct information of scrap amounts per establishment. At this moment different ways of scrapping are executed which are do result in untraceable scrapping amounts. To find out what the right way of scrapping is the employees are questioned to elaborate on their idea of the best procedure.

The specific questions asked are;

- What is the current procedure when dealing with unmerchantable spruce wood products?
- Do you apply different procedures of scrapping products or do you maintain a fixed procedure?
- What is submerged within the data of the scrap amounts? Are the amounts of theft and damage caused at the establishment also included?
- Is there interest in adding an extra condition to the stock management system to be able to register loss specifically due to quality?

- **What is the current situation regarding complaints?**

The research has a focus on requiring information about the current situation. When taking a close look to the incoming complaints a conclusion can be drawn. The processing of complaints is important to be managed in an effective way.

The specific questions asked are;

- Can you give information about the current situation regarding complaints?
- What complaint is frequently returning?
- Who is complaining?
- How are complaints processed or dealt with? Are complaints registred?

- **What is the situation regarding competitors in the area of the establishments?**

Every establishment is questioned regarding the position it is in regarding local competition. This part of the questionnaire will provide information about the performance of PontMeyer compared to the competitors. It will reveal the strength and weaknesses of PontMeyer.

The specific questions asked are;

- What competitors are present in your area?
- How do you compare this establishment with the competitors in your area?
- Do customer mention difference between different dealers of spruce wood in the area? Do customers mention quality differences between PontMeyer and another stores?

Annex 2 customer satisfactory survey

Customer satisfactory survey

To assess the satisfaction among the satisfaction of customers at the establishments a customer satisfactory survey is performed. This survey will focus on the following subjects;

- What type of customer is using the spruce wood products of PontMeyer? Is the customer regular visiting the establishments of PontMeyer?
- What are the applications the customer is applying spruce wood products?
- What is the customer's opinion about the current quality of spruce wood?
- Is the customer interested in adding a high quality range of products?
- Is the customer pleased with the service and assortment of PontMeyer?

The survey will be performed by the student. At the establishments the student is visiting a small number of clients (with a minimum of 5) will be addressed to participate in the survey. The information gathered will be processed to conclude on the satisfaction of the customer who visit PontMeyer.

Vestiging	vraag 1	vraag 2	vraag 3	vraag 5	vraag 6
	Kwaliteit	Assortiment	Service	A-merk	Genoemde klachten
Almere	7	8	7,5	geen interesse	vervormingen, indeling van de vakken. Zwaar hout ligt hoog
Amersfoort	7	7,5	8	geen interesse	vervormingen, lage voorraad
Amsterdam	7	7,5	7,5	2/5 interesse	vervormingen
Beverwijk	7	7,5	7,5	geen interesse	vervormingen, kwasten, kopscheuren
Breda	7	7	8	2/3 interesse	vervormingen, afwerking producten, gewicht producten laag
Den Bosch	7	6,5	8	geen interesse	krom, knoesten, weinig voorraad
Den Haag	7	8,5	7,5	interesse	vervormingen, maatvoering, knoesten
Deventer	7	7	7	interesse	vervormingen, afwerking producten
Groningen	7,5	6	8	geen interesse	vervormingen
Heerenveen	7,5	6,5	7,5	geen interesse	vervormingen, scheuren
Hilversum	7,5	8	8	2/4 interesse	vervormingen, knoesten, afwijkende maten, nat
Oudkarspel	7,5	8	8	1/3 interesse	afwerking producten
Tilburg	7,5	7,5	7,5	geen interesse	vervormingen, prijs
Utrecht	7	7	7	interesse	vervormingen
Westland	7,5	8	8,5	geen interesse	vervormingen
Wormerveer	7	7	8,5	interesse	vervormingen

Annex 3 Data of the research performed at establishments.

1. Waar komen de meeste problemen met de kwaliteit voor in het assortiment?	
2. Wat zijn de kwaliteitsklachten van het hout?	
Product	Aantal vestigingen die deze klacht melden (van de 16)
50x75	13
50x100	3
50x150	3
75x75	1
22x100	1
18x95	1
32x200	1
22x50	1
22x100	1
180x200	1
32x75	1
Steigerdelen	1
Rabatdelen	1
Klacht	Aantal vestigingen die deze klacht melden (van de 16)
vervormingen	15
gaten	2
schimmel/bruinrot	2
knoesten	3
(kop)scheuren	2
Hart in het hout	2
machinale bewerking/afw	2
schade (lepelschade, trans	1
nat	2
waan	3

Annex 4 Additional quality remarks and complaints

Overige opmerkingen of Klachten

Vestiging	Overige opmerkingen of klachten na onderzoek
Almere	<ul style="list-style-type: none"> - Minimaal assortiment Douglas - Minimaal aanbod afmetingen FSC - Geen FIFO systeem van de LSP's
Amersfoort	<ul style="list-style-type: none"> - Verlies van specialisme binnen PM - Uitgangscntrole minimaal
Amsterdam	<ul style="list-style-type: none"> - Met een bezorgservice minder uitval producten - Voorraad en beleving minimaal
Beverwijk	<ul style="list-style-type: none"> - Problemen met vrachten met bijmenging - Te laag aanbod FSC producten - Geen resultaat van klachten
Breda	<ul style="list-style-type: none"> - Meer aandacht aan kwaliteit geven bij belangrijke klanten
Den Bosch	<ul style="list-style-type: none"> - Invloed van het weer op kwaliteit - Geen resultaat van klachten - Slechte kwaliteit bij leveringen LSP's, geen uitgangscntrole.
Den Haag	<ul style="list-style-type: none"> - Slechte afwerking producten
Deventer	<ul style="list-style-type: none"> - Pas op met kwaliteit voor de veiligheid van constructiehout - Alleen geselecteerde mensen boeken af
Groningen	<ul style="list-style-type: none"> - Geen resultaat van klachten - Slechte afwerking producten DTG
Heerenveen	<ul style="list-style-type: none"> - Verlies van specialisme binnen PM
Hilversum	<div>klant</div> <ul style="list-style-type: none"> - Volle en nette vakken behouden voor kwaliteitsbeleving - Geen wind meer door de loodsen - Aanleversnelheid producten laag
Oudkarspel	<div>klant</div> <ul style="list-style-type: none"> - Volle en nette vakken behouden voor kwaliteitsbeleving
Tilburg	<ul style="list-style-type: none"> - Te wisselende kwaliteit - Uitgangscntrole minimaal binnen PM - Verlies van specialisme binnen PM - Volle en nette vakken behouden voor kwaliteit
Utrecht	<ul style="list-style-type: none"> - Slechte afwerking producten - Problemen met vrachten met bijmenging
Westland	<ul style="list-style-type: none"> - Aanleversnelheid producten laag - Slechte kwaliteit bij leveringen LSP's, geen uitgangscntrole. - Verlies van specialisme binnen PM
Wormerveer	<ul style="list-style-type: none"> - Hogere kwaliteit voor de afhaalvestiging

Annex 5 Scrap data from all establishments from the period of June 2013 till may 2014

KP Omzet (HLN + BRG) versus Verschrotting in productgroep A* (excl. IC-omzet)				
Periode 2013-jun tm 2014-mei (12 mnd)				
	Rijlabels	Kostprijs Omzet	Verschrotting m/3	%Verschrotting
DeTweeGebroeders	10	0		
PontMeyer Westland	102	562.085	-4.953	-0,9%
PontMeyer Zaandam	103	217.485	-587	-0,3%
Centrop Houtimport	105	6.449.274		0,0%
PontMeyer Amersfoort	106	176.186	-276	-0,2%
PontMeyer Huizen	107	260.271	-1.896	-0,7%
PontMeyer Amsterdam	108	239.240	-70	0,0%
PontMeyer Wormerveer	109	305.086	-1.064	-0,3%
PontMeyer Arnhem	112	324.854	-462	-0,1%
PontMeyer Breda	113	521.080	-647	-0,1%
PontMeyer Brielle	114	171.408	-570	-0,3%
PontMeyer Deventer	115	2.283.040	-3.252	-0,1%
PontMeyer Drachten	118	83.479	-159	-0,2%
PontMeyer Eindhoven	121	160.781	-412	-0,3%
PontMeyer Den Haag	123	512.755	-21	0,0%
PontMeyer Hilversum	127	360.840	-6.030	-1,7%
PontMeyer Hoorn	128	322.349	-200	-0,1%
PontMeyer Alkmaar	129	210.289	-305	-0,1%
PontMeyer Middelburg	132	220.990	-813	-0,4%
PontMeyer Rotterdam	136	377.346	-1.176	-0,3%
PontMeyer Steenbergen	138	324.060	-154	0,0%
PontMeyer Tilburg	139	377.530	-787	-0,2%
PontMeyer Den Bosch	141	166.410	-352	-0,2%
PontMeyer Utrecht	144	1.697.775	-1.216	-0,1%
PontMeyer Loosduinseweg	147	86.467	-177	-0,2%
PontMeyer Heemstede	148	241.801	-42	0,0%
PontMeyer Winschoten	149	277.977	-567	-0,2%
PontMeyer Nijmegen	154	285.463	-3.194	-1,1%
PontMeyer Gorinchem	159	203.449	-23	0,0%
LSP Tilburg	166	5.120.564	-5.362	-0,1%
PontMeyer Dordrecht	167	105.215	-454	-0,4%
PontMeyer Amsterdam Zuid Oost	168	141.895	-1.267	-0,9%
PontMeyer Groningen	171	404.119	-3.435	-0,8%
PontMeyer Raalte	174	214.329	-2.349	-1,1%
PontMeyer Roosendaal	179	137.526	-5	0,0%
PontMeyer Oudkarspel	201	3.507.482	-13.089	-0,4%

PontMeyer Heerenveen	207	2.977.051	-748	0,0%
PontMeyer Emmeloord	208	218.124	-386	-0,2%
PontMeyer Oud-Beijerland	212	218.554	-214	-0,1%
Houthandel Van Dam Bunnik	217	9.260		0,0%
PontMeyer Zwaag	223	228.453		0,0%
PontMeyer Den Helder	224	129.670	-1.491	-1,1%
PontMeyer Beverwijk	225	605.703	-201	0,0%
PontMeyer Amsterdam Centrum	226	71.278		0,0%
PontMeyer Limburg	229	125.198	-895	-0,7%
PontMeyer Terborg	240	81.708	-298	-0,4%
PontMeyer Winterswijk	242	132.155	-1.401	-1,1%
LSP Zaandam	257	3.901.843		0,0%
PontMeyer Almere	269	89.036	-1.305	-1,5%
Eindtotaal		35.838.932	-62.306	-0,2%

Annex 6 The ISO 9000 principles

ISO 9000 (ISO 9001:2008)

The standards provide guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customer's requirements, and that quality is consistently improved by the following principles:

Principle 1 – Customer focus

Organizations depends on their customers and therefore should understand current and future customer's needs, should meet customer requirements and strive to exceed customer expectations.

Principle 2 – Leadership

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organizations objectives.

Principle 3 – Involvement of people

People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.

Principle 4 – Process approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

Principle 5 – System approach to management

Identifying, understanding and managing a system of interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Principle 6 – Continual improvement

Continual improvement of the organization's overall performance should be a permanent objective of the organization.

Principle 7 – Factual approach to decision making

Effective decisions are based on the analysis of data and information.

Principle 8 – Mutually beneficial supplier relationships

An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

Source: Quality management principles ISO 9000:2005

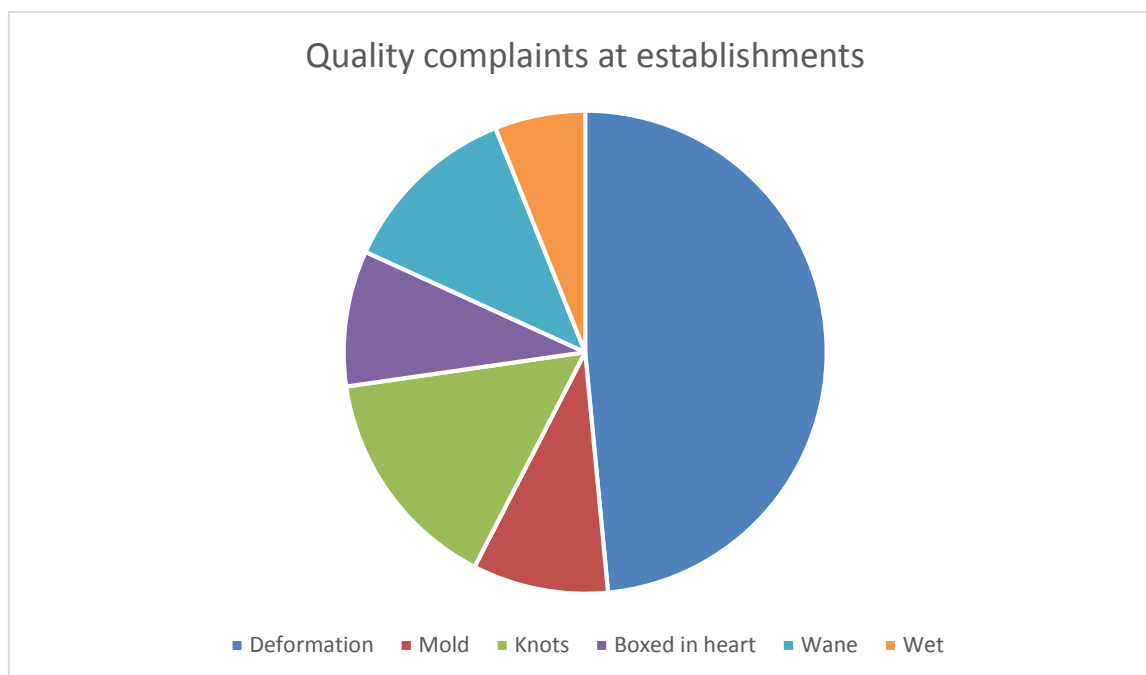
Annex 7 Data from the establishments questionnaire

Vestiging	vraag 1 -1 Waarin het assortiment zitten de meeste problemen?	vraag 2 Welke klachten zijn er over de producten?	vraag 3 Kwaliteit afgenomen 5-10 jaar?
Almere	steigerdelen, 75x75x4200, 22x100, tuinhout 50x75	vervormingen, gaten, schimmel, knoesten	nee, verbeterd
Amersfoort	50x75, 50x100	vervormingen	nee
Amsterdam	50x75	vervormingen	ja
Beverwijk	50x75	bruinrot, hart, scheur, vervormingen	ja
Breda	50x75, 50x100, 50x150 alles tot 2 duims	vervormingen	nee, minimaal
Den Bosch	50x50	vervormingen	ja
Den Haag	18x95, 50x75	bewerking, vervorming	ja
Deventer	22x50, 50x75, latten, 32x150	knoesten, stempels, hart, jaarringen, waan, vervormingen, afwerking	ja
Groningen	50x75, rabatdelen	vervormingen, slechte bewerking, hart, schade, gaten	ja
Heerenveen	32x200, 22x50, 22x100, 50x75	vervormingen, waan, knoesten	nee, wisselend
Hilversum	50x75	waan, vervormingen, krom, nat, schimmel	ja
Oudkarspel		vervormingen	nee, wisselend
Tilburg	50x75, 50x100, 50x150	vervormingen, waan, valbreuk/knoest	ja
Utrecht	180x200, 50x75	slechte bewerking, waan, vervormingen, afwijkende maten	ja
Westland	50x75, 2 duims tot 32x75, tuinhout	(kop)scheuren, vervormingen	ja
Wormerveer	50x75, balkhout	vervormingen, scheuren, nat	ja
		Totaal: 16	

vraag 4	vraag 5	vraag 6	vraag 7
Hogere kwaliteit met hogere prijs?	Ingangscontrole procedure gewenst?	Duidelijk beeld van verwachte kwaliteit?	vervolgstappen na afkeur bekend?
nee	ja	nee	ja, maar weinig terugkoppeling*
nee	nee	nee	ja, maar weinig terugkoppeling*
nee	nee	nee	nee
nee	ja	nee	nee
ja	ja	nee	nee
nee	ja	nee	ja, maar weinig terugkoppeling*
nee, lastig	ja	nee	ja
nee	ja	ja	ja
ja	ja	ja	ja, maar weinig terugkoppeling*
nee	al voldoende	nee	ja, maar weinig terugkoppeling*
ja	ja	nee	ja, maar weinig terugkoppeling*
ja	nee	nee	ja
nee	ja	nee	ja, maar weinig terugkoppeling*
ja	Nee, geen tijd	nee	ja, maar weinig terugkoppeling*
nee	ja	nee	nee
ja	ja	nee	ja
Totaal : 16	Totaal : 16	Totaal : 16	Totaal : 16

vraag 8	vraag 9	vraag 10
Vaste schroefprocedure?	Extra conditie SAP toevoegen?	Interesse in een A-merk? Gevingerlast/gelamineerd
nee	nee	nee
ja	ja (€)	ja
ja	ja (€)	nee
ja	x	nee
nee, meerdere manieren	nee	ja
nee, meerdere manieren	nee	nee
nee, meerdere manieren	ja	ja
nee, meerdere manieren	ja	nee
ja	ja	nee, onbekend bij klant
ja	ja	nee, afhankelijk van de prijs
ja	ja	nee
ja	nee	nee, geen ruimte en vraag
ja	ja (%)	ja
ja	x	nee, geen ruimte
ja	?	ja
Totaal : 16	Totaal : 16	Totaal : 16

Annex 8 Data from the research at establishments



Is the quality decreased in the last 10 years?

Yes	11
No	5

Is a higher price accepted for a better quality?

Higher price for better quality accepted	6
Higher price for better quality not accepted	10

Is the implementation of an incoming goods control accepted?

Incoming goods control is accepted	11
Incoming goods control is not accepted	5

Is it known what is acceptable in terms of quality?

This is not known	14
This is known	2

Are the following steps known after determining a quality flaw?

This is not known	4
This is known	4
This is known but there is no feedback after reporting a complaint	8

Does the establishment use one procedure of scrapping products?

One procedure	11
Multiple procedures	5


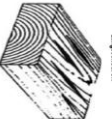
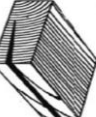

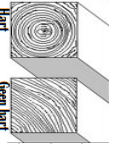
Is the establishment interested in adding a condition to the stock management system?


Yes	9
No	4
No opinion	3

Is the establishment interested in a top quality product line?



Yes	6
No	10

Annex 9 Incoming goods control form

Visuele ingangs controle. Versie December 2014		Kwaliteitscontrole Vuren C		
				
Visuele controle				
Bij deze controle wordt er gekeken naar hoe de partij eruit ziet. Het is niet de bedoeling de pakken open te maken! Geef aan wat er te zien is aan de buitenkant van het pakket in het onderstaande formulier.				
Product (controle alleen voor vuren C)	Kloppen de hoeveelheden? (stuks)	Bewerking	Import of lokale zending?	
	Kloppen de afmetingen? (LBD)	Geschaafd	Import (buiten Nederland) (A/tijd afnaden)	
Let op! Onderstaand geen vuren C:		Ruw	Lokaal (binnen Nederland)	
Stiegenderen	Klopt de sterkte? (C18, C24)	Gebost	(kan bij constatering kwaliteitsafwijking eventueel geweigerd worden)	
Latten		Pakgootte		
beetnaden	Klopt de certificering? (FSC, PEFC)			
1 Schade	2 Kleur van het hout	3 Scheuren in de producten	4 Vervormingen in het pakket	5 Waan
Lepeltransportschade	Eventuele schimmel of verkleuring		Zit het hout rustig in het pakke? Kijk naar de kloppen	Kijk naar de kop- en zijkanten van het pakket
Lepeltransportschade	Blauw		Gedogen	Max 0,3x de houtbreedte en max op 2 ribben van het product
is niet toelaatbaar	Bruin		Krom	
Let ook op schade door	Zwart		Scheuw	
te strakke bandjes	vergroening		Hol	
6 Hart in het hout	7 Kwasten	8 Machinale afwerkingschaafkwaliteit		
Kijk naar het aandeel hart in het pakket	Bekijk het aandeel kwasten in het pakket	Kwaliteit afwerking		
Bekijk beide kappen van het pakket, neem een gemiddelde van beide kanten	Er zijn verschillende kwasten te onderscheiden.			
Het hout wordt hartgekloofd. Het kan zijn dat het hart er in boort over de lengte van het product.	Hard en raszand Hard en boszand Zacht	Ruwe plekken Uitlopers Machineslag	Het hout dient goed afgewerkt te zijn. Slechte afwerking is beperkt toelaatbaar	
				
9 Is het pakket zichtbaar na?	10 Schade door insecten			
Merkbaar zwaarder bij afnaden				
Een nat pakket heeft meer kans op	Bordegangen			
schimmel en vervorming.	Kleine gaatjes, gangen			
Dit is niet toelaatbaar.				
	Dit is niet toelaatbaar			

Wat is Acceptabel?								
Hoe onder is per kwaliteitswijzing aangegeven wat acceptabel is.								
1.Schade		2.Neur van het hout		3.Scheuren in de producten		4.Vernormingen in het pakket		5.Waan
Niet acceptabel:	Blauw: max 10% van het opp	Laagscheuren (gevolg van versneld drogen)	Beijk het pakket aan de kopsse kant en zijvanten. Hier kan in veel gevallen a vernorming worden waargenomen.	Het doos is een kant van het product				
selecteer de overkoopte delen en maak hiervan een melding	Bruin: Niet toestaar! Zwart: max 10% van het opp Vergrijping: max 10% van opp	Max toestaar = 0,4 x de lengte van het product Voorbeeld: Product van 270cm x 0,4 = 108cm max	Zet het hout er omhoog uit in het pakket? Grote kans op vernorming.	Niet afgewerkt max 0,2 x de houtbreedte				
		Ernst scheuren (duidelijk aan de kop te zien. Max 2mm breed en 500mm lang)	Bevat het pakket in ruime mate vernormingen? (meer dan 35%) laat dit dan niet toe in het vak	max op één rand				
6.hart in het hout		8.Mechanische afwijking		9.is het pakket zichtbaar met		10.Schade door insecten		
Bij een groot aantal ingesloten hart in het pakket hout is er een grote kans op vernormingen.	Begreft toestaar.	Scheur de overkoopte delen en maak hiervan een melding	Een mat pakket heeft een verdere maken met schimmelveorming of vernormingen	Zijn er kleine gaatjes of gangen zichtbaar? Max 2 gangen per ml wanneer er geen uitbreiding is (insecten niet aanwezig)				
ingesloten hart is in principe geen afleerpunt maar kan resulteren in vernormingen in het pakket. Wanneer er een hoog aantal producten met ingesloten hart wordt geconstateerd kan er een melding aan inkoop worden gemaakt.	Wastegrothe breedte zijde: max 2,5 van de niet acceptabel. Maak hiervan een melding	Zachte wast: niet toestaar	een melding	Bij aanwezig insecten moet toestaan				
								

Annex 10 complaint form

Melding maken																					
Stuur dit formulier door naar info@centrop.nl of klacht@centrop.nl																					
 																					
Vestiging					Naam					Datum											
Bestelnummer																					
Product																					
Aflader																					
Hoeveelheid																					
Omschrijving van de klacht																					
.....																					
.....																					
.....																					
Foto's in kleine resolutie toegevoegd?																					
Voeg foto's toe van de specifieke klacht, voeg ze toe aan de mail																					
					Ja		Nee														
					<input type="checkbox"/>		<input type="checkbox"/>														
<p>1. Als je hout claimt moeten de pakken onaangebroken en separaat opgeslagen zijn. Het hout mag dus ook niet verwerkt zijn. Deze importregel is bedoeld om de verkopende partij de gelegenheid te geven om een controle uit te kunnen (laten) voeren.</p>																					
<p>2. Beschadigingen of direct zichtbare kwaliteitsproblemen moeten op de vrachtbrief worden vermeld. Bovendien dienen hout claims binnen 8 dagen na ontvangst goederen te worden gemeld. Deze importregel is bedoeld om te voorkomen dat het hout na aflevering beschadigt en dan alsnog wordt geclaimd.</p>																					
<p>NB: Ingeval van een kwaliteitsprobleem bij een lokale aankoop, gelden in principe dezelfde spelregels. In de praktijk wordt hier vaak vanuit commerciële motieven flexibeler mee omgegaan.</p>																					

Annex 11 Kwaliteitseisen naaldhout

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