

Analysis of the layout of the Dangerous and Toxic Goods (B3) warehouse using the 5S method (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) on PT Mitra Agung Sejati

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ABSTRACT: This research was conducted at PT Mitra Agung Sejati. The purpose of this study is to analyze the layout of dangerous and toxic goods (B3) warehouses using the 5s method (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) at PT Mitra Agung Sejati. The research methodology used in this study is qualitative research method. The results of the study explained that this B3 storage area has not met the 5S principle, namely the absence of sorting, neat and clean arrangement for hazardous and toxic materials and labeling goods. The actual layout of this company is not organized, making operators uncomfortable in picking and storing hazardous and toxic materials to be used or quantities to be stored. However, after being researched and proposed using the 5S method, activities in the warehouse will be more organized and operators will find it easier to pick up goods and store goods such as labeling and making markings for the location of goods and laying work tools and marking for forklift parking. Through the application of this 5S method, the physical condition of the work environment at PT. Mitra Agung Sejati is more neatly organized and affects the comfort of workers.

Keywords: Warehouse Layout, Dangerous Goods, Seiri Method, Seiton, Seiso, Seiketsu, And Shitsuke



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INTRODUCTION

According to the Warehousing Management Institute (2008), a warehouse or warehouse is a storage place used to store inventory before further processing. The procurement of warehouses in the company shows that the company's production output is large enough to control the flow of goods in and out. Therefore, the warehouse is a solution to handle effectively and efficiently when planning the availability of production of the enterprise (Asgari Siahboomy et al., 2021; Kang, 2020; Pillai, 2010; Tagashira, 2022).

According to Warman (2012) the definition of the warehouse management system itself is an information system about warehouse management, which is used to control activities in the warehouse ranging from receiving, storing goods (putaway), moving (moving), picking (picking), and shipping (transportation).

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According to PP No. 74 of 2001 concerning the Management of Dangerous and Toxic Goods, what is meant by Dangerous and Toxic Goods or abbreviated as B3 is a material because of its nature and / or concentration and or amount, either directly or indirectly, can pollute and or damage the environment, and / or can endanger the environment, health, survival of humans and other organisms (Lazar et al., 2022; Przybylska et al., 2023; Rintala et al., 2022; Sudapet et al., 2019; Wang et al., 2018; Woudsma et al., 2016).

While the definition according to OSHA (Occupational Safety and Health of The United State Government) B3 is a material that due to its chemical properties and physical conditions has the potential to cause interference with human health, damage and / or environmental pollution.

PT. Mitra Agung Sejati is a company engaged in the storage and delivery of dangerous and toxic goods. PT. Mitra Agung Sejati also provides services that aim to use chemicals such as removing rust and paint that fail production on goods from other companies. To meet the demand for goods and services that are quite numerous and diverse every year, PT. Mitra Agung Sejati has two warehouses, namely a warehouse devoted to the production and storage of chemicals and a warehouse devoted to customer goods that use rust and paint removal services that fail production at PT. True Great Partner (Erdem, 2022; Giordano et al., 2018; Gong & Liu, 2020; Heitz et al., 2017; Klauenberg & Cauduro, 2019).

The warehouse devoted to this production has a much larger area. The warehouse stores a greater amount of chemicals than the warehouse area. There are also many customers from this warehouse, therefore for the process of goods that come out there are also more in this warehouse. Therefore, the warehouse devoted to production was chosen as the object of research from improving the layout of dangerous and toxic goods storage at PT. True Great Partner.

All goods stored in the warehouse have various types of packaging, such as jerrycans, drums, IBC tanks, and jumbo bags. Customer from PT. Mitra Agung Sejati itself mostly buys chemicals from PT. Mitra Agung Sejati to be sold to consumers again, but some are used for the needs of the customer himself. For new customers from PT. Mitra Agung Sejati itself usually before ordering goods they ask for product samples to ensure the ordered goods will be appropriate, as well as old customers if they order new products, product samples will be sent first.

Based on the previous explanation of the warehouse layout, at PT. Mitra Agung Sejati for its warehouse layout is messy and often results in hampered production processes for chemicals. This problem is mainly the placement of messy goods, there is no marking, making it difficult to access and search for goods and there are several drums that are physically damaged outside and affect the state of the chemical contents inside (Delfmann et al., 2018; Fan et al., 2020; Fottner et al., 2021; Gonzalez et al., 2022; Maas et al., 2014; Yu et al., 2019).

The absence of a marking process greatly hampers the placement of goods to be stored both from goods that rarely leave the warehouse and goods that often leave the warehouse. Even for the place of production equipment there is also no marking, so when it is necessary to use the tool, the operator must find the last history of using the tool needed. Such as handlifts, mixer machines, sewing machines, hoses to connect from the camp to the car tank, pumps to suck from the container to the car jackfruit and parking for forklifts.

Irregularity of the work area in the B3 storage warehouse will have an impact on threats to security and safety for workers and companies. Based on the results of inspections and interviews of workers, irregular conditions of use and storage of hazardous and toxic materials were found, and

operators had difficulty in carrying out activities in the B3 warehouse. In the B3 storage warehouse, it is not neatly arranged and there is no MSDS (Material Safety Data Sheet), which may be one of the causes of B3 work accidents such as exfoliation due to B3 spills. Operators also have difficulty using B3 due to the absence of B3 information labels.

This study is intended to provide proposals for improving the layout of the B3 warehouse using the 5S method. According to Osada (2015) suggests that 5S is a form of movement that comes from determination to carry out sorting at work (Seiri), organize (Seiton), clean (Seiso), maintain steady conditions (Seiketsu) and maintain the habits needed to carry out work well (Shitsuke). The 5S method is used in improving the layout of the B3 warehouse by analyzing the warehouse layout according to the dimensions of the goods and also maintaining the cleanliness of the warehouse so as not to hamper the workflow process of the warehouse operator. Therefore, this 5s method can be used to provide proposals on improving the layout of the B3 warehouse.

B. Literature Review

1. Logistics Management

According to Firmansyah (2018: 4), management is the art and science of planning, organizing, compiling, directing, and supervising human resources to achieve goals that have been set in advance.

Then according to Siahaya (2012), logistics management is part of supply chain management that plans, implements and controls the flow of goods effectively and efficiently, including transportation, storage, distribution and services as well as related information starting from the place of origin of goods to the place of consumption to meet customer needs.

From the above understanding, management is a process carried out by someone in managing activities carried out by one or more people. While logistics management is the application of management principles in logistics activities with the aim that the movement of people and goods can be carried out effectively and efficiently.

2. Warehouse

All companies must have a method to use the warehouse layout process regarding the placement of goods so that production activities run effectively and efficiently. Then a neatly arranged warehouse for the placement of goods, it will make it easier for operators to find the goods needed.

According to Warman (2012), a warehouse is a building used to store goods. The goods stored in the warehouse can be raw materials, semi-finished, spare parts, or in the process prepared for absorption by the production process.

3. Warehouse Layout

Then according to Heizer and Render (2009) about warehouse layout is a design that tries to minimize total costs by looking for clues that are best between the area for space and handling goods. The warehouse should be designed taking into account the speed of movement of goods.

4. Dangerous and Toxic Goods (B3)

According to OSHA (Occupational Safety and Health of the United State Government) B3 is a material that has chemical and physical properties that can cause interference with the health of living things and the environment. So, for B3 management must have good safety for self-safety.

According to Larastika (2011) hazardous and toxic goods waste (B3) is the remainder of a business and / or activity that contains hazardous and / or toxic materials which due to their nature and / or concentration and / or amount, either directly or indirectly, can damage or endanger the environment, health, survival of humans and other living things. B3 waste with certain characteristics that is discharged directly into the environment can pose a danger to the environment and the health of humans and other living things.

Then according to Niken (2014) the determination of the characteristics of B3 waste usually refers to the Material Safety Data Sheet (MSDS) on each chemical substance in B3 waste. Material Safety Data Sheet or MSDS is a sheet that contains descriptions of physical data information (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, safe storage and disposal, protection equipment, and hazard handling procedures.

From the research above, Dangerous and Toxic Goods (B3) are goods that can endanger the safety of humans, animals, and the environment and for the handling process must also be in accordance with the procedures listed in the MSDS of these goods.

5. Inventory Checking and Control

According to Jhon Warman (2012: 53) Supervision is separating two types of checking, namely regular checking and routine checking, which is adjusted to the daily work schedule. Then there are periodic checks and

Sudden checking. To ensure that all checks are carried out, it is better to include it in the daily work plan. The checks must be planned and listed at the beginning of the year, and must be adhered to. The following year the diary is based on the experience of the previous year, so that no one check is forgotten. Then there are a large number of checks that will occur in the warehouse.

A checker or supervisor must know about the entry and exit of everyday items. In order to know and remember every entry and exit of goods, a daily workbook is needed to control daily work in the warehouse. In addition to recording the occurrence of goods in and out of goods per day, daily workbooks are also used to record important events and how to handle them.

Then according to Harahap (2011: 89) control is an act of supervision accompanied by rectification (corrective) actions. According to Hiezer and Render (2014) said all organizations have some type of planning system and inventory control system, because in essence inventory planning and control need attention.

6. Warehouse Evaluation

According to Ma'ruf (2014) there are three words that have similar meanings that are sometimes used in a series. The three words in question are:

- a. Evaluation, is an assessment of an object to be evaluated.

- b. Assessment is an activity that selects the position of an object in a number of variables that are in focus. The word assessment is also used to capture news about certain needs.
- c. Measurement is the activity of placing numerical values or numbers on an object using an instrument such as an analytical tool. Measurement is rarely done alone, but is often done in relation to evaluation, assessment or research.

METHOD

A research method is a scientific way to obtain data with a specific purpose of use. The scientific method means that research activities are based on scientific characteristics, namely rational, empirical, and systematic (Darmadi 2013: 153). In this study using qualitative which aims to get a general understanding of the existing conditions after analyzing the existing facts that are the focus of research, and drawing a conclusion in the form of a general understanding of these realities.

Sugiono (2005) argues that qualitative methods are more suitable for this kind of research to understand social phenomena from the perspective of participants. In simple terms, it can also be understood as a research that is more suitable for assessing the condition or situation of the object of research.

The selection of the use of qualitative approaches is used to analyze the condition of the warehouse layout on operator activities and arrangements for the placement of B3 goods. Various individual field findings are used as the main material in revealing the problems studied by adhering to normative provisions.

The data collected from the field directly to the object concerned, namely PT. True Great Partner. This approach was used by researchers because they wanted to see, take a closer look at warehouse layout analysis using the 5S method used in Japan.

Researchers must understand research methods. A systematic and logical set of knowledge about the steps (ways) about searching for data related to a particular problem. There is a world of education, a well-known research method, divided into two studies, namely qualitative and quantitative. At the time of writing this paper, researchers use qualitative methods, in this study more emphasize meaning and process, rather than the results of activities to conduct research can use research methods. In accordance with the problem, purpose, usefulness and capabilities.

Basically, qualitative descriptive research is a method of checking the status of an object, the purpose of which is descriptive, systematically, honestly and accurately describes the fact or phenomenon under investigation.

B. Operationalization of the Concept

Sugiyono (2015), Understanding operational definitions in research variables is an attribute or property or value of objects or activities that have certain variations that have been determined by researchers to be studied and then drawn conclusions. In this study, the operationalization of concepts that can be formulated are:

1. Efforts to Arrange B3 Placement in the Warehouse

- a. Regular placement so that chemicals have a specific place by sorting or separating goods, chemicals with low entry and exit activity are in front of the warehouse to be moved to the back area of the warehouse adjusted to the dimensions of the goods so that they can be used for goods that often occur activities and dispose of work tools that are not used or damaged so that the place can be used for other goods.
- b. Arrangement of goods by installing labels on pallets so that they are specific in placement then each item that has been on the pallet is wrapped, named and stacked per pallet and adjusted the dimensions of the goods for goods with large volumes such as drums or kempu are behind with the aim of making it easier for operators to pick and find goods.
- c. Cleaning empty chemical containers such as empty drums to be placed in front of the warehouse so that they are easily transported by supplier trucks for refilling. Then dispose of the empty sacks and run out of contents so as not to hamper the process of B3 warehouse operators in taking chemicals. Then cleaning the chemicals that are splattered due to the collection of goods by wiping using a Spill Kit that complies with safety standards or in accordance with the MSDS on the item.

2. Efforts to Facilitate B3 Warehouse Operator Activities

- a. Consolidating the three efforts to regulate the placement of B3 in the warehouse by consistently grouping B3 on pallets, wrapped and labeled or named according to the type of packaging and its dimensions then checking and supervising the B3 grouping periodically whether it is still in accordance with the type of packaging, dimensions, and location that has been determined.
- b. Conduct regular habituation for chemical extraction activities by making written SOPs signed at least at the same level as warehouse managers with the aim of ensuring the success of the 5S program as a disciplined regulation.

RESULT AND DISCUSSION

Research Results

Researchers will describe the results of observations and research interviews in the field based on the title of this study, namely about Analysis of Dangerous and Toxic Goods (B3) Warehouse Layout Using the 5S Method (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) at PT. True Great Partner.

Warehouses can have different activities according to the specifications of the products stored. Therefore, warehousing management needs to understand how the layout for goods in the warehouse, so that the flow in and out of goods can be efficient and the work of employees becomes more effective.

The results of the study were obtained through data collection techniques with interviews, these techniques were carried out to obtain natural data. The interview structure that the researcher designed is not a standard guideline, so if the answer given by the informant is not clear, then the researcher asks other questions so that the answers given can be further as they describe, then the researcher can analyze.

1. Current B3 Storage Conditions

The raw materials used in the production process are usually arranged and stored somewhere so that they are easy to find and use when needed. B3 is an important material in the coloring process. This B3 cannot

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be stored carelessly because if one B3 reacts or mixes with other B3, it can cause accidents such as the occurrence of reactions between B3 which can cause fire or explosion.

Therefore, in accordance with the information provided by Mr. Ridhomeri about warehouse capacity, "Related to warehouse capacity, the capacity is indeed classified as full and related to the layout of the placement of goods, we place it flexibly, if there is an empty place, we will put the goods in an empty place" (Research interview July 1, 2018). Therefore, for storage at PT. Mitra Agung Sejati is already very full which results in hampering the work of production operators. The following are the actual B3 storage conditions addressed in the following figure:

- a. Irregular placement and there are still many items that are not needed

Figure 4.24 East Warehouse Condition from above



- b. Access in and out of forklifts and handlifts is so narrow.

Figure 4.25 Road Conditions for Forklifts and Handlifts in East Warehouse



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c. B3 material type of bag packaging that is not neatly arranged and there are used work tools and sacks that should not be in the stock place.

Figure 4.26 Material Condition B3 Type Bag Packaging



d. Irregular placement of drums in front of the warehouse. Figure 4.27 East Warehouse condition in front of warehouse



2.Point Analysis of Current Warehouse Condition Problems Related to the 5S Method

The 5S method (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) is used to perform an analysis of the condition and layout of B3 storage using 5W + 1H. The following is a sorting analysis of the B3 used in the company using 5W + 1H.

a. Seiri Analysis of B3 Warehouse Layout

Table 4.6 Seiri Analysis of Warehouse Layout B3.

<i>Seiri</i> Analysis		Already Applied
<i>What</i>	Sorting that Intended be Orderly placement of goods in order Chemicals have a place that Specific	x
<i>Who</i>	Person responsible for Warehouse layout checking	x
<i>Why?</i>	With the sorting of goods, the flow Getting in and out of goods will be easy Looking for items that will come out.	x
<i>When</i>	Sorting performed when there is items that should not be on Location	x
<i>Where</i>	Sorting is carried out in the premises of the premises B3 storage	x
<i>How</i>	Sorting is carried out by starting Group from goods that <i>slowmoving</i> Moved to Area back of the warehouse until the goods are <i>fastmoving</i> is in the front area, type	x

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	packaging B3, and dimensions B3.	
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Figures 4.21 and 4.23 show that there are still many items that are not used and are still scattered in the storage area. From table 4.5 above, it is also obtained that the sorting of what chemical goods should be in the back area of the warehouse and the front area of the warehouse has not been implemented by the company at this time, sorting by grouping the type of B3 packaging and the dimensions of B3 packaging in determining the location of storage is also not applied. This can be seen from the messy B3 warehouse area and it looks like a lot of B3 is stacked on top of each other but different types of packaging can hinder production operators in searching for goods.

b. Seiton Analysis of B3 Warehouse Layout

Table 4.7 Seiton Analysis of B3 Warehouse Layout

<i>Seiton</i> Analysis		Already Applied
<i>What</i>	Setup that orderly to B3 storage so that each- Each chemical has a place which is specific.	x
<i>Who</i>	Person responsible for checking warehouse layout.	x
<i>Why?</i>	Setup this will Facilitate uptake of chemicals that will used or taken out and avoid error deep the use of chemicals.	x
<i>When</i>	Setup Done moment Operator	x

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	take chemicals that will	
	used and stored chemicals.	
<i>Where</i>	Setup Done at place	x
	B3 storage	
<i>How</i>	Setup Done by the way	x
	Putting a large label on top of the stack	
	items that have already been grouped or	
	then for the limiter Given	
	marking on the warehouse floor.	

According to Gasperz (2007) that the purpose of seiton is to facilitate the search for material if needed in the future, especially if it is sought by others who previously did not know the storage location. From the results of table 4.6 analysis, it is known that the arrangement has not been done properly, it can be seen that each B3 does not have a specific place. This can make it difficult for the operator when retrieving the B3 to be used because a search must be made for the B3 to be used.

c. Analysis of Seiso Warehouse Layout B3

Table 4.8 Seiso Analysis of B3 Warehouse Layout

Seiso Analysis	Already Applied
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<i>What</i>	Cleaning that Intended be move container or wrap Chemicals that are no longer in use and cleaning Storage Area B3 from chemical spills at the time of chemical pickup.			x
<i>Who</i>	Person who is respon sible answer to			x
	checking warehouse layout.			
<i>Why?</i>	With Done Cleaning not			X
	there will be a B3 storage area that			
	dirty that can			cause
	inhibits the uptake of chemicals.			
<i>When</i>	Cleaning Done every day			X
	before working hours are over (closing).			
<i>Where</i>	Cleaning Done at place			x
	B3 storage			

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<i>How</i>	Cleaning Done with manner	x
	Move an empty drum	
	to the front of the barn to be washed and there	
	recharged or	
	Returned to the supplier	to
	recharge, then discard	
	sacks that are no longer used in order	
	not Inhibit process	Operator
	deep Retrieval material	chemistry
	then wipe Spill material	
	chemistry by using a spill kit	
	according to the MSDS on the goods.	

According to Gasperz (2007) that the purpose of seiso is to keep or maintain a clean work area. In this company, the seiso principle has not been applied in B3 storage which affects the layout of the B3 warehouse. This can be seen in the B3 container garbage in warehouse storage or on the B3 warehouse floor. This is very dangerous because it can cause work accidents such as fire, skin exposure, or dizziness caused by the smell of B3. Therefore, this cleaning must be done so that the flow in and out of goods is more effective.

d. Seiketsu Analysis of B3 Warehouse Layout

Table 4.9 Seiketsu Analysis of B3 Warehouse Layout

<i>Seiketsu</i> Analysis	Already
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		Applied
<i>What</i>	Stabilization referred to in the system location of B3 storage in this warehouse be raise regularity storage material stry and maintain a clean state on every Agar chemical storage location The flow in and out of goods is smooth.	x
<i>Who</i>	The person responsible is warehouse head.	x
<i>Why?</i>	With do Stabilization It is expected that every chemical is organized neatly, will be clean, and The flow in and out of goods becomes effective.	x
<i>When</i>	Stabilization is carried out daily on working hours.	x
<i>Where</i>	Stabilization Done at place B3 storage	x
<i>How</i>	Stabilization is carried out by checking and supervising the tidiness of the warehouse layout and the cleanliness of the warehouse layout.	x

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According to Gaspersz (2007), that the purpose of seiketsu is to create consistency from the implementation of seiri, seiton, and seiso. In this company, the seiketsu principle has not been applied in the layout of the B3 warehouse. This can be seen by the absence of a checking and supervision system for the layout of the B3 warehouse and the cleanliness of B3 storage cannot be monitored.

e. Shitsutke Analysis of B3 Warehouse Layout

Table 4.10 Shitsuke Analysis of B3 Warehouse Layout

<i>Shitsuke</i> Analysis		Already Applied
<i>What</i>	Habituation that Intended be accustom operators to taking and store chemicals in a timely manner. regular and Doing cleaning when there is a chemical spill.	x
<i>Who</i>	The person responsible is all production divisions.	x
<i>Why?</i>	Because by doing habituation It is expected that everything that has been arranged previously get Done with good.	x
<i>When</i>	Habituation is carried out every day during working hours	x

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<i>Where</i>		x
	Habituation is carried out in storage place B3	
<i>How</i>	Habituation is carried out by making written SOPs (Standard Operation Procedures) for chemical collection and storage activities.	x

According to Gaspersz (2007) that the goal of shitsuke is to ensure the success of the 5S program as a discipline. In this company, the principle of shitsuke has not been applied in the layout of the B3 warehouse. With SOPs, operators when retrieving and storing B3 are expected to carry out a series or sequence of activities on a regular basis for habituation. There needs to be habituation so that the operator can maintain the cleanliness and regularity that has been done.

It can be concluded that the condition and layout of B3 storage have not been good according to the 5S concept. B3 sorting has not been carried out, B3 storage arrangement, cleaning of the B3 storage warehouse area, there is no checking and supervision system for B3 storage, and habituation from operators.

Discussion

The discussion at this point is about proposals or recommendations that will be given to improve the warehouse using the 5S method point.

1. Proposal Using the 5S

Method a. Seiri Activities

Seiri's activities in actual conditions have not been good, this is with the discovery of many unused items stored in storage locations so that a lot of B3 is stored in a mess so that it is necessary to sort these items so that useless items can be disposed of immediately such as items (garbage) seen in figure 4.23. Unused items (used sacks, non-production-related items, used jerry cans, used drums) should be moved from the B3 warehouse if they are no longer used can be disposed of, so as not to fill the warehouse and interfere with picking and storage activities in the B3 warehouse.

b. Seiton Activities

Seiton's activities in actual conditions have not been good, this is evidenced by the discovery of items placed carelessly and scattered on the floor so that road access becomes hampered when going to pick up goods and go in and out of the flow of goods. Therefore, the researcher proposes seiton activities as follows:

- Arrangement of existing goods so that boundaries between regions (coloring for B3 grouping) can be clearly seen and the goods placed do not exceed the specified limit in order to improve obstructed road access.
- Labeling pallets that have been arranged and wrapped to make them look clearer.

c. Seiso Activities

Seiso's activities in actual conditions have not been good, as evidenced by the amount of dirt such as spilled materials and liquids splattered. For this reason, it is necessary to propose a cleaning picket schedule to ensure the condition of the storage warehouse is always clean and propose to complete cleaning activity equipment in the warehouse (brooms, dustpans, and mops) so that if there are spilled materials can be cleaned as soon as possible.

d. Seiketsu Activities

Seiketsu activities are required within the company to maintain the consistency of the three previous activities namely Seiri, Seiton, and Seiso. Therefore, it is proposed that the checklist be equipped with a checklist column that will assist the company in inspecting the state of the warehouse. The checklist is proposed to be filled out every week so that the situation in the company is more controlled. The checklist proposal can be seen in the picture below and is recommended to be done by other parties such as production leaders, not people related to the work in the B3 warehouse.

e. Shitsuke Activities

Shitsuke's activities are necessary to discipline in order to perform activities correctly. For this reason, it is necessary to propose making banners or posters containing slogans to maintain 5S values in the company so that these values are embedded in each individual, periodic assessments in each department that successfully implement the 5S program well by posting operator photos as a sign of reward on the notice board.

2. Proposed Warehouse Layout a.

Determination of Storage Area

The storage area used is wooden pallets and kempu cages, to save area, 2 levels of stacking are carried out on each pallet, where for the type of drum packaging 1 pallet contains 4 drums, for bag packaging 1 pallet contains 50 bags, for jerrycan packaging 1 pallet contains 80 jerrycans, for pail packaging 1 pallet contains 18 pail and 3 levels on each kempu cage. Done to facilitate the preparation of products into storage areas and also to save space utilization.

b. Determination of Alley Width

Determination of the width of the alley used as an alley or path, material handling is a work tool used, namely a forklift. So what is needed based on the need for the line according to the size of the forklift dimensions. The determination of the required aisle area is based on one time the longest dimension of the forklift, that is, the width of the forklift when picking up or storing the product.

CONCLUSION

This B3 storage area has not met the 5S principle, namely the absence of sorting, neat and clean arrangement for hazardous and toxic materials and labeling goods. The actual layout of this company is not organized, making operators uncomfortable in picking and storing hazardous and toxic materials to be used or quantities to be stored.

However, after being researched and proposed using the 5S method, activities in the warehouse will be more organized and operators will find it easier to pick up goods and store goods such as labeling and making markings for the location of goods and laying work tools and marking for forklift parking. Through the application of this 5S method, the physical condition of the work environment at PT. Mitra Agung Sejati is more neatly organized and affects the comfort of workers.

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