

# Visual Control of Standard Operating Procedure (SOP), Inspection, Packaging and Storage.

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## ABSTRACT

Visual control is a management technique employed in many places where information is communicated by using visual signals instead of written instructions. Visual controls are a information displays, system of signs layouts, material storage , color-coding and handling tools. Hence such controls accomplish the old-fashioned way of technique i.e. everything in its place and a place for everything. The visual system makes product flow, operations standards, schedules and issues instantly acknowledgeable to even the casual observer. In this paper we also added a case study which we had done in wood furniture industry.

**Keywords:** visual control, management technique, communication, manufacturing.

## 1. INTRODUCTION

More usually than not, visual management is employed to switch textile or numerical knowledge displays with graphical displays. The graphical displays should be straightforward enough that the worker will look at a symptom and simply perceive what's being aforesaid. Some corporations use boards wherever tools square measure unbroken. alternative samples of visual management embrace semiconductor diode displays, colored lights or LED displays. These devices square measure sometimes referred to as Andon boards. Visual management is thought of something that's business connected that's visual. as an example, you'll be able to post the most recent production report on your cubicle wall and this can be thought of visual management

## 2. Purpose of Visual Control

Visual management ways aim to extend the potency and effectiveness of a method by creating the steps therein method a lot of visible. the speculation behind visual management is that if one thing is clearly visible or in plain sight, it's straightforward to recollect and keep at the forefront of the mind. Another facet of visual management is that everybody is given equivalent visual cues and then square measure doubtless to possess an equivalent viewpoint.

There square measure many alternative techniques that square measure accustomed apply visual management within the work. Some corporations use visual management as AN structure tool for materials. A clearly labeled storage board lets the worker understand precisely wherever a tool belongs and what tools square measure missing from the board. Another straightforward example of a typical visual management is to possess reminders announce

on cubicle walls in order that they continue to be in plain sight. Visual signs and signals communicate data that are required to create effective selections. These choices could also be safety orientated or they will offer reminders on what steps ought to be taken to resolve a tangle. Most firms use visual controls to 1 degree or another, several of them not even realizing that the visual controls that they're creating have a reputation and a operate within the work. whether or not it's recognized by the name of "visual control" or not, the actual fact is that replacement text or range with graphics makes a group of knowledge easier to know with solely a look, creating it a lot of economical manner of an act a message.

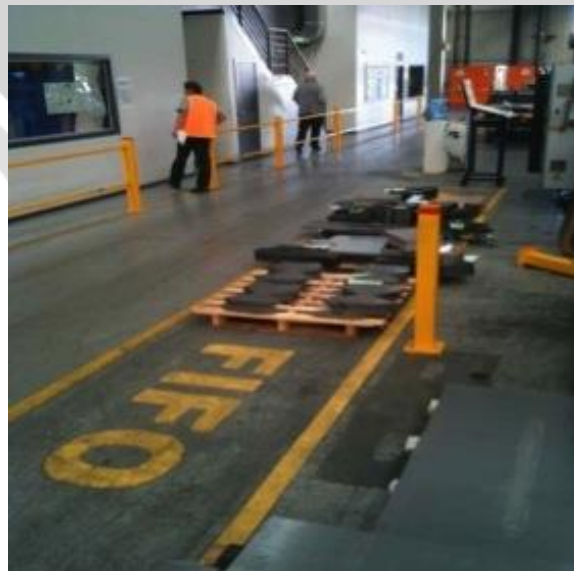
Visual management is designed to form the control and management of an organization as easy as doable. This entails creating issues, abnormalities, or deviations from standards visible to everybody. once these deviations are visible and apparent to any or all, corrective action is taken to instantly correct these issues.

### 3. Benefits of using visual control

1. Provide immediate feedback to consumers
2. Convey information
3. Make the problems, abnormalities, or deviation standards visible to everyone so corrective action will be taken ahead of time.
4. Display the operating or progress status in an easy to see format

### 4. Types Of Visual Control

With the aim of creating certain that we will see the standing of any method, half or person, and choose if it's smart or unhealthy at a look, many alternative 2 main teams of visual managements; show teams and control teams. Controls or area controls incorporate lines on the floor, shading coding and shadow sheets for a scope of procedures. They are planned to direct the activity of our group. These fundamental sort of visual controls require almost no clarification with reference to what they mean and what activity is required. The test with these controls is guaranteeing consistence from everybody in our group. The advantage obviously with these sorts of control is that our brains are hardwired to agree, influencing the proper activity to is the main activity.



**Figure. 1** Area control by lining and shading

Metrics and charts area unit show controls which give info and feedback on the performance of a number of components. the most effective samples of these area units very straightforward to grasp. there's consistency across every chart and across every space at intervals our business, creating it easier for folks moving across areas to grasp the standing and knowing however they have to respond.



**Figure. 2** Performance charts

## 5. Visual Control of SOP, Inspection, packaging and storage.

### -Case study

The furniture industry is the industry with precision. It is very important that the panels that are being machined are to be properly drilled, grooved, edge banded, cut etc. For instance if any hole is not drilled properly or if it is drilled away from the required position, whole set of panel may get rejected because it won't get properly assembled.

Inspection of panels is necessary to maintain the quality of products being delivered. The overall checking and rectifying the errors under control.

Packaging is an important procedure as there might be delicate components for transporting which might get damaged during the process. In visual control process we will takes photographs of each process and each step so that it will be helpful for workers to interpret and follow accordingly.

### 5.1 Standard Operating Procedure (SOP)

#### 5.1.1. Case Study Topic

Reduce the product complaint by eliminating manual errors through visual control while machining.

#### 5.1.2. Different Causes

- Wrong drilling
- Size +/-

- Wrong packing of panels
- Panel missing to pack
- Wrong insertion

### 5.1.3. Remedy

- Standard operating procedure(SOP) was converted to one-point lessons (OPL).
- OPL were converted to visual form by taking photographs and recording videos.
- Written OPL were converted to local language, understandable by operator.
- Photographs were then put sequentially in the power point presentation.
- Also the video of the process of machining of panels was taken.
- Both presentation and video will be displayed on the LCD's in the plant.

### 5.1.4. Result

The amount of planks rejected were less than before as the material handling was discussed before and after the machining process.

Refer the following table:

**Table -1:** Reduction in number of complaints.

Defects/ Months	April	May	June	July
Process Defect	0.18%	0.17%	0.14%	0.14%
Packing Defect	0.58%	0.4%	0.33%	0.32%
Overall	0.78%	0.68%	0.53%	0.56%
Total Product Sold	10,330	10,688	10,557	13,562

## 5.2 Inspection

### 5.2.1 Case Study Topic

Reduce the product complaint by eliminating manual errors through visual control while inspection.

### 5.2.2 Different Causes

- Excess paper marks.
- Excess chip-off at corners.
- Improper cutting of strip at corners after edge banding process.
- Scratches and Glue marks

### 5.2.3 Remedy

- Knowing the defects that can occur, we took photographs of steps wherein the damage to the panel might occur.
- Even minute steps like lifting the panel, alignment on pallets etc. were captured.
- Proper shaving and proper touch-up to the panel at the corners also removing of glue marks was captured.
- All photographs were then arranged sequentially in power point presentation which will be converted to video and displayed on the LCD in inspection area.

### 5.2.4 Result

Workers were able to properly judge whether which panel they are able to rectify up to their permissible limit. The panels which had excess chip off or excess paper mark were rejected.

Hence following this procedure would improve the quality of panels to be delivered.

## 5.3. Packaging & Storage

### 5.3.1 Case Study Topic

Reduce the product complaint by eliminating manual errors through visual control while packaging and loading.

### 5.3.2 Damage Causes

- Storage of large packets on small pallets caused damage at the ends of panels in packet.
- Excess height of stacking.
- Improper placing of small and large packets.

### 5.3.3 Remedy

- For packaging only the photographs were taken for simple panel to packing of mirrors and glasses.
- For proper storage photographs of do's and don'ts were clicked.
- All the photographs were arranged and power point presentation was made and displayed in LCD.

#### 5.3.4 Result

Workers were able to interpret the visuals ease and hence improvement then before.

### 6. Conclusion

- Including visual controls in manufacturing will result in better understanding.
- If implemented properly it will help to reduce the cost of accidents or small defects in the product. Also to convey the information to employees easily.

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