DES - Defect Elimination System

Go PRO with the Glass Container - Defect Elimination System.

This glass container forming defect elimination system with open content management enables glass plants to reduce forming defects without additional machinery and lengthy training of operators - right now. No need to reject containers at the COLD END, as defects are eliminated at the HOT END by humans using an intelligent system.

DEFECT ELIMINATION SYSTEM (DES)

The DES is the 'production consultant' for the operator, with the objective of:

- No training time for operator.
- Eliminate product recalls.

Each glass plant can edit and manage the content within the system according to their local requirements, without losing access to the standard that is being provided by Glass Experts. Today, as never before sharing of information is an essential part of our lives in and outside business. This system enables glass plants to access global information and to act local - with the 'Share me' option it can be seen what others say about a defect, if found useful it can be moved to the local plant standard.

The system's intelligent production floor feedback mechanism is built so that the best solutions, confirmed by practical experience are distributed and issued to the top of the instruction list called 'Fix it', and those instructions that are not used are gradually moved to the system archive. This guarantees that operators always work with the latest information without the need to scroll through pages of information - the system ensures that the operators see the right information at the time.

The DES is offered under the PRO plan that allows to fully edit the system written content, such as defect name, cause, prevention and 'Fix it' steps.

For additional features, such as 'Share me', 'Translate me', 'Add me' or even 'Animate me' a PRO+ plan is offered.

PRO

The PRO plans offer all essential features required to understand, recognize, and eliminate forming defects on the production floor in real time. Simply install the desktop application on a computer near the forming machine to give the operator access to all the information in the system and assign a production engineer as system administrator to manage the content via the web access.

The system allows tracking of each fixed forming defect per production line, product and shift. The system collects all the 'Fix it' step actions that have been used by the operator to fix a particular defect. Should it happen that a defect was fixed in a different way than proposed by the system, the operator can simply add the actions that were taken via 'Message me'.

FEATURES

The essential system features include:

- **Category**, all defects have been sorted in six different categories for faster and easier defect identification, in this way anybody can quickly find and identify a defect on a bottle or jar. The categories are: Appearance, Damage, Fracture, Inclusion, Physical and Protrusion.

- **Classification**, there are three different defect classifications from a quality point of view, these classifications are: Critical, Major and Minor; this makes it very clear how to react if a defect has been found in terms of quality assurance. ❯

Both, the web access and desktop application working together with the digital storage facility (control center) and essentially create the Defect Elimination System (DES). In this way production floor access is given via the portal and in the background from an office environment the production engineer can manage the content, plus management can access different reports.

WEB ACCESS

When using the DES the web application is primarily used as web access to manage the essential and additional system features. With the web access the system administrator can edit all the content text such as defect name, cause, prevention and 'Fix it' - plus the 'Fix it' steps rating can be monitored. It is also possible to use the web access simply as web application, in this way the system administrator can access all defect information from anywhere via web browser.

DESKTOP APPLICATION

When using the DES the desktop application is the portal for the operator to access all defect information from the system. The desktop application is linked with the digital storage facility (control center) and can be fully controlled through the web access. The operator will work with this portal to fix forming defects and to inform the system administrator if a new way to fix a defect was found.

Don't be in a hurry to replace humans with robots - use technologies to assist your employees with their job.

• **Defect name**, for each defect a standard name was defined, plus the system allows the collection of alternative defect names. This feature makes communication between glass plant and brand owner as well as between different glass plants quite easy. It is often that one defect can have more than one name, those names developed over the years due to different dialects.

• **Defect images**, as the saying goes 'A picture is better than thousand words' for each defect images have been created to show the defect from different angles. This makes the visual defect identification very easy for people by comparing the defect with images.

• **Description**, for better understanding clear explanations have been defined for each defect.

• **Detection**, this explains very clearly of how to detect a defect when looking at a bottle or jar. If followed, this guide will assist anybody to find a defect.

• **Effect**, it is important to understand what effect a particular defect can have on the filler and user of the bottle or jar. This has been explained in detail and will help an operator to relate to this defect.

• **Cause**, explains how a particular defect was created, what caused the defect to appear on the bottle or jar. As always in life once something happened the question 'Why?' appears. Now it is clearly explained and fixing a defect becomes easier.

• **Prevention**, is the explanation of how to prevent a defect in the first place, if followed, then there is a lower risk to have this defect during production. This information is very useful for the JOB ON discussion as clear actions can be formulated for the job change.

• **Fix it**, this is a step by step instruction for the operator of how to fix a particular defect. Usually when a defect appears people fix it by 'trial and error' using their experience - this is history. Each 'Fix it' step is monitored for its usage, in this way the system ensures that the operator always uses the most useful step - reducing the fixing time.

• **Message box**, this is the communication tool 'Message me' for the operator to send a message from the production floor to the system for the system administrator. In this way the operator can easily communicate if a new way to fix a defect was found. With this feature

Broken Guide Plate - critical defect.

no more information will be lost.

TRACK AND CONTROL

To enable the system to track any 'Fix it' actions that were taken for a particular defect on a production line and product the following features must be used, which are included in the PRO plan:

• **Plant settings**, here the system administrator can enter the specific data for the plant, production staff (operator name and shift), production line name/number and product data (article information), once these data has been entered the system is able to track the defect fixing.

• **Plant standard**, this allows the system administrator to give specific message from the quality assurance to the operator, for example it can be specified what must be done when a critical defect was found.

• **Analytics**, the DES analytic tool shows what 'Fix it' steps were used for a particular defect. It can also show on which production line and article this defect occurred and how it was fixed - giving full control. ◼

Slug in Neck- major defect.

DESKTOP APPLICATION

A. Minimum:
• OS: Windows Vista SP2/7SP1/8/8.1/10, .Net Framework 4.5.
• CPU: 1.8GHz, SSE2; RAM: 2GB.
• Graphics: min 256MB video memory.
• HDD: 2GB free.

B. Recommended:
• OS: Windows Vista SP2/7SP1/8/8.1/10, .Net Framework 4.5.
• CPU: 2.5GHz, SSE2 (Core i3/Athlon II).
• RAM: 4GB.
• Graphics: min 512MB video memory.
• HDD: 2GB free.

C. Special (to use animation module):
• OS: Windows Vista SP2/7SP1/8/8.1/10, .Net Framework 4.5.
• CPU: 2.5GHz, SSE2 (Core i3/Athlon II).
• RAM: 4GB.
• Graphics: Discrete video card, min 1GB video memory (GeForce GTX 650+/Radeon HD 7750+).
• HDD: 2GB free.

WEB REQUIREMENTS
• Browser: Google Chrome v.39+/Internet Explorer v.11+/Safari v.8.0+.

OTHER REQUIREMENTS
• Int. connection: 512 Kbps.
• Firewall configuration: If the principle of least privilege is used, then special rules must be created for the IP 185.91.217.204 and 443 TCP port.

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