

0 Preamble

The information in this document originates from an earlier version named “Definition of the KPI return rate”. The definition and calculations are the same. The previous rejection flow chart and internal material handling have been removed.

1 PURPOSE & SCOPE

This document describes Husqvarna Group’s return rate calculation for direct material suppliers. valuate direct material supplier performance.

There can be minor local adaptations of the handling of rejected quantity within Husqvarna Group sites.

2 DESCRIPTION

The return rate definition supports the standardization to evaluate supplier quality performance.

3 Return Rate Definition

Husqvarna Group use the standard return rate equation to calculate a direct material supplier's quality performance:

$$ppm_{s,t} = \frac{(Rejected\ Quantity)_t}{(Received\ Quantity)_t} \times 10^6$$

t: Time period

s: Supplier

A supplier's return rate is calculated for all part numbers rejected and delivered over a defined period of time. The most common time periods for return rate evaluation are:

- Month
- Year To Date
- Year

3.1 Rejected Parts

A rejection can either contain only nonconforming parts or be a mix of conforming and nonconforming parts. A rejection can also include unopened and unsampled pallets (suspect material) if they belong to a batch where significant yield of nonconformities have been found. Suspect material is included in the rejection for continued handling by the supplier.

The terms "sorted" or "unsorted" parts are general descriptions to be used to keep track on sorting operations when separating nonconforming parts is needed.

It is always the suppliers responsibility to find out the status of a rejection, however, the rejection information is commonly communicated to the supplier before a rejection is made.

3.1.1 Sorting Operations

When nonconformities have been detected and are not able to be used in production, the preferred action is always for the supplier to replace the affected parts.

If the supplier can not replace the affected batch to avoid production stop, the supplier can come to Husqvarna to handle the sorting. If the supplier is not able to arrive in person to sort, a 3rd part sorting operation can be utilized. For some Husqvarna sites, Husqvarna can provide contacts for 3rd part sorting companies, but the supplier is always responsible for training, work instructions and sorting outcome.

3.1.2 Rework Operations

Any rework of nonconforming parts must be approved by Husqvarna before delivery. Depending on the complexity and effect of the rework, technical testing and PPAP might be needed to be approved before delivery.

3.2 Deviation Approval

A nonconformity supported by a deviation approval that was issued prior to the delivery, is not subject for rejection.

A part where the characteristic exceeds any limits of the deviation approval or have additional nonconformities not covered by the deviation approval, is subject for rejection.

Parts reworked in order to regain a specified function but will exceed the tolerances in that area, will not contribute to return rate if approved by deviation approval.

3.3 Special Cases

There are a few special cases concerning rejections and ppm contributors. As example:

- A wrong part number on a batch will be handled case by case.
- Parts damaged during transport are handled case by case depending on shipment agreements and type of damage.
- Etc.