**VELUX General Quality Requirements**

**Introduction**

In VELUX we want to work towards zero defects and it is our belief that the quality of the products is best secured at our suppliers – thereby enabling “ship to line”.

We want to work preventively and we strive to move all aspects of quality control and Inspection as far up-stream as possible. Therefore, VELUX expects its suppliers also to work towards failure prevention.

VELUX General Quality Requirements stated in this document are mandatory for all suppliers.

For specific products, VELUX may require more thorough quality control procedures to be implemented. This will be done by agreeing supplementary requirements with the supplier in a quality agreement.

**Vision**

Our vision for all suppliers is to implement and maintain a quality system that enables the supplier to produce and deliver to VELUX globally competitive products and services clearly perceived by VELUX factories and VELUX customers as superior in durability, performance and value.

**Goal**

The goal of VELUX General Quality Requirements is to provide uniform communication of our general quality requirements to all suppliers. Based on the requirements, our suppliers are expected to implement applicable quality system activities to ensure ongoing quality planning, control and improvement.

**Approach**

The suppliers are expected to understand and implement VELUX General Quality Requirements in their organisations.

These VELUX General Quality Requirements represent the minimum requirements of VELUX.

The supplier is expected always to live up to agreed KPIs and to strive for continuous improvement of the quality level . To achieve continuous improvement, VELUX expects its suppliers to have a fully-implemented quality system and to work with us in a spirit of trust, cooperation and teamwork.

**Definitions**

Specification: Written requirements such as drawings, material specifications, supplier-specific material specifications or any other agreed documents describing the requirements of the product composition, quality, quality control, performance or testing of the products to be delivered by the supplier to VELUX.

Inspection: Any kind of testing, measuring etc. performed to verify the fulfilment of the requirements.

Part approval: Confirmation/release of the part prior to purchase/production.

Q-points: Properties marked as Inspection points in the Specifications with a symbol (square or circle with number or letter).

Pp/Ppk: Defined as preliminary process capability for a process that may not have been demonstrated to be in a state of statistical control. It is used to evaluate a process short-term capability on a specific batch of material, either during its initial set-up in a pre-production run for approval purposes or as an instantaneous study on an isolated and limited production volume – e.g. one batch.

The Pp index describes the preliminary process capability in relation to a specified tolerance, and the Ppk index describes the critical preliminary process capability in relation to upper/lower specification limits. This is also called the offset or bias.

Cp/Cpk: Defined as process capability for a process in a state of statistical control, running under the conditions of mass production. The process capability is used to evaluate a process long-term capability on more batches of materials during its final set-up in an ongoing production.

The Cp index describes the process capability in relation to a specified tolerance, and the Cpk index describes the critical process capability in relation to upper/lower specification limits. This is also called the offset or bias.

Capability indices are calculated according to:

ISO 21747 M1**1.2** (Q-Stat M4**1.2**) (0,135 -  – 99,865).

**Part Approval**

A new or changed product or products originating from a changed process that will change the product, requires approval by VELUX before the supplier may deliver to VELUX.

Thus the supplier must inform VELUX prior to:

* Changing production methods, sequence and materials
* Relocating production sites
* Changing test methods/equipment.

It is the supplier’s responsibility that changes of any kind do not have any negative effect, short or long term, on the quality or performance of the product.

The supplier must forward samples and documentation requested by VELUX to obtain this approval.

For certain products, the documentation requested by VELUX may consist of a predefined VELUX PPAP procedure (production part approval process). The PPAP procedure will, among other things include initial process studies. The level of the initial process capability (Pp/Ppk) must be agreed upon prior to submission. The capability studies must include the properties marked as Q-points in the Specifications and the properties that, based on the supplier’s expertise, will make it probable that the process is under control. Raw measurement data from the capability studies must be calculated according to DS/ISO 21747 M1**1.2** (Q-Stat M4**1.2**) (0,135 -  – 99,865). This can be achieved by entering the data in a Web based analysis tool, supplied by VELUX.along with the required level of the initial process capability (Pp/Ppk). Although capability data are not required for points not marked as Q-points, all characteristics are expected to meet the Specifications.

Submission of application for approval or information will in no way imply a limitation in the supplier's responsibility towards nonconformities or deficiencies of the product.

**Quality Management System**

System requirements:

VELUX encourages its suppliers to establish, document, implement and maintain a quality management system and continuously improve its effectiveness in accordance with the requirements of the ISO 9000 series.

VELUX may demand documented evidence from the supplier showing the effectiveness of the quality management system utilised by its sub-suppliers.

Measuring and Inspection:

The supplier shall implement and maintain systems for monitoring and measuring of relevant product properties and critical process parameters to ensure that all requirements have been met.

The supplier shall, as a minimum, carry out Inspection and maintain evidence of conformity with the requirements of:

* The properties marked as Q-points in the Specifications
* The properties that, based on the supplier’s expertise, will make it probable that the process is under control.

Test or measuring results originating from different tools, cavities or machines must be identified separately and not mixed in the documentation and when reporting. Measuring results from testing shall be available in electronic form or as agreed between supplier and VELUX factory.

Measuring and Inspection is carried out when the process is in a state of statistical control. Graphing of measuring data in e.g. X-bar/R charts can be used to determine if the process is in control.

The results of measuring and Inspection must comply with the agreed capability levels, if any, or demonstrate that all products and properties are expected to meet the Specifications.

Fulfilling the requirements stated as Q-points in the specifications will in no way imply a limitation in the supplier's responsibility for fulfilling other requirements stated in the Specifications.

If the supplier, in connection with his quality inspection, ascertains that products already delivered to VELUX factories are nonconforming, then the supplier shall immediately inform VELUX about the nature and extent of the nonconformity, followed by a plan for containment of the nonconforming products as well as a description of root cause and planned corrective and preventive actions.

 VELUX is only bound to acknowledge goods receipt and to inspect the goods for transport damages, not to inspect the properties of the products upon receipt.

VELUX has the right to issue a complaint for non-conformities found after delivery, even if VELUX assists the supplier during Inspection and/or carries out pre-delivery inspection before delivery.

**Control of incoming products by the supplier**

The supplier is to ensure that the raw materials conform to the Specifications either by carrying out its own Inspection or by obtaining appropriate certificates/reports from the sub-supplier/sub-contractor. The supplier shall grant VELUX the right to inspect the records upon request.

**Control of monitoring and measuring equipment**

Where necessary to ensure valid results, the supplier is obliged to ensure that all measuring equipment and methods used is suitable for the purpose and that it is calibrated. The supplier shall also ensure that records of the results of calibration and verification are maintained.

**Control of documents and records**

The supplier must implement procedures for control of documents and records including the documents of external origin, such as the Specifications of VELUX.

All test results and other documentation on the quality of the product shall be kept with the supplier for not less than five (5) years starting from the date of the testing. Upon request from VELUX, the supplier shall, free of charge and within reasonable time, submit to VELUX copies of all documentation relating to products purchased by VELUX. The documentation submitted shall be signed on behalf of the supplier. If submitted by e-mail, the sender is responsible for the validity of the contents. The documentation submitted by the supplier to VELUX may be subject to thorough statistical analysis. The results from such analysis will be shared with the supplier.

**Audit**

Given reasonable notice to the supplier, VELUX is entitled to conduct audit at the supplier’s plant(s), including test departments, warehouses and adjoining areas as well as on all quality relevant documentation.

Reasonable limitations notified by the supplier to safeguard its technological knowhow will be accepted.

VELUX shall communicate the result of audits to the supplier.

If VELUX, in connection with performed audits, considers that corrective action is needed, then the supplier shall immediately prepare an action plan and implement it on schedule. The supplier shall notify VELUX of all progress made.

Each party shall bear its own costs in connection with quality audits by VELUX.

 VELUX encourages the supplier to implement a system for conducting internal audits.

**Control of nonconforming deliveries**

General requirements

The supplier must deliver products as required in the Specifications. If a delivery – in whole or in part – is nonconforming, the supplier may – immediately and before delivery to VELUX - apply VELUX for exemption. In case exemption is granted, the affected volume will not be included when calculating the defect rate.

The supplier is not entitled to deliver products that do not meet the requirements in the Specifications unless VELUX has authorised their use by granting exemption. If VELUX has granted exemption, a copy of the exemption certificate or an equivalent form, must be attached to each package in the delivery.

**Supplier’s response to nonconforming delivery**

In the event that a supplier delivers nonconforming products, VELUX will inform the supplier and describe the defect in a complaint. To the extent agreed with the supplier, VELUX is obliged to send samples showing the nonconformity to the supplier.

The supplier must use the 8D report of VELUX or an equivalent form to communicate actions initiated as a result of the complaint.

The supplier is obliged to have a suitable system capable of handling the defect and requested actions after receipt of the required documentation and within due deadlines, which are:

Within 2 working days:

* The supplier acknowledges receipt of the complaint and nature of the nonconformity based on the provided documentation
* The supplier and VELUX agree on arrangement/disposal regarding return delivery of the nonconforming products and re-delivery of new products, if requested
* The supplier sends the 8D report including:

1. Problem description

2. Similar part consideration

3. Recall actions

4. Interim containment actions

Within 1 calendar month:

* The supplier sends the 8D report including:

5. Root cause

6. Permanent corrective actions

7. Preventive actions

8. Effectiveness of corrective actions (if the supplier cannot verify the effectiveness of the corrective actions within 1 calendar month , only the planned date is to be filled in).

The 8D report is considered to be completely closed when all actions have been implemented and the effectiveness has been verified.

If so agreed with the customer (VELUX factories), the first delivery after implementation of corrective actions must be clearly marked with labels on each package in the delivery or communicated otherwise.

**Cost recovery**

If it has been agreed between the supplier and VELUX that VELUX shall sort or repair the defective products, the costs relating to the sorting or repair, will be invoiced.

VELUX will use its hourly rates for the persons involved in the work equal to the normal hourly rate at the place of work and the type of work.

After prior agreement with VELUX, the supplier has the right to perform his own sorting or repair at the location where the defective products were delivered.

**Signatures.**

Date: Date:

VELUX The Supplier

**Appendix 1**

Exemption Certificate

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| Supplier |
| Customer (VELUX factories)  |
| Order no.Material no.  |
| Quantity in the order:Quantity which exemption is sought for: |
| Place of production | Month: | Year: |
| Produced according to:Material SpecificationDrawing | No. | Edition no. |
| The Inspection showed that the following properties did not comply with the requirements as given in the above Material Specification/drawing |
| Property | Demand | Measured result |
| Remarks |
| Date of application: | Supplier stamp and signature: |
| Customer remarks to the exemption application: |
| Exemption date: | Customer stamp and signature |

Document must be attached to each package in the delivery.