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Production instructions for aluminium

These production instructions describe the system for internal quality control (IKB) in accordance with BLR 2701: 2016 in conjunction with the KOMO Certificate with Product Certificate for the production of aluminium façade elements.

Authorisation:

Representation and responsibility of Akulux d.o.o.

Name: Almin Mehanovic

Position : Directeur

Date : 19 februar 2021

Signature:

On behalf of SKG-IKOB:

Name: M. Kloppenberg

Position : Sr. sector coördinator SKG-IKOB

Date : 01-03-2021

Signature:

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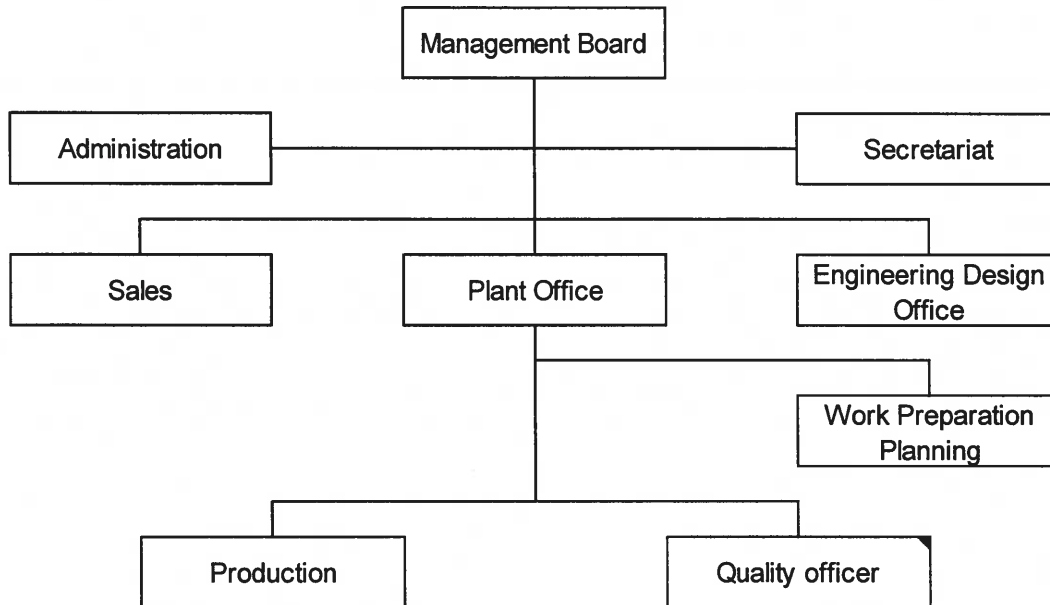
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1. Corporate structure

1.1 Example of the organigram



1.2 Responsibilities

Within the company, agreements were concluded, regarding which persons are responsible for specific procedures in the company. The responsibilities are distributed as follows:

Responsibility for maintaining and updating the production instructions and the system manual.
Mr. Almin Mehanovic

Responsible for production:
Mr. Senad Huskic

Responsible for the specification of the performance features of the produced façade elements. These service data are indicated on the CE document.
Ms Ambera Sabanovic and Ms Muamera Skiljo

Responsible for the quality system, registration and processing of complaints:
Ms . Ambera Sabanovic and Ms Muamera

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2. Procedure

Procedure 2.1 "Performance features and the specification of requirements"

Purpose:

The purpose of this procedure is to achieve that the façade element to be delivered is suitable for the application.

General:

The Calculation and/or Work Preparation department must determine and also specify which requirements the façade element to be delivered must fulfil. This particularly relates to the features of Air permeability and Water tightness, safety, deflection and burglary-resistance, whereby the location of the façade element (terrain I, II or III, coast, built or unbuilt and the height of the building, see NEN-EN 1991-1-4) are of significance. On the basis of the ITT reports/ITT results and/or KOMO certificates of the various profile systems, it is checked whether the profile system offered to the principal can fulfil the set requirements (also refer to the "Processed systems and performance features" procedure).

Air permeability and Water tightness:

Regarding the requirements for Air permeability and Water tightness (the test pressure), the procedure according to the table in NEN 2778 can be followed.

Safety:

Regarding the safety requirements, the speed pressure as a consequence of the wind load in accordance with NEN-EN 1991-1-4, including NEN-EN 1991-1-4/National Supplement, must be multiplied by various correction factors or NEN-EN 1991-1-4/National Supplement.

Deflection:

For the calculation of the deflection, a load of 2/3 of the wind load must be taken into consideration for the strength NEN 2608.

Burglary-resistance:

Regarding the burglary-resistance requirement, it must be checked whether the façade element is intended for building with a residential function and whether the façade element is accessible in accordance with NEN 5087. If this is the case, the façade element must at least have resistance class 2 in accordance with NEN 5096.

Apart from the above-mentioned requirements, the façade elements must fulfil additional requirements in accordance with:

- BRL 2701:2016 Aluminium façade elements

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Procedure 2.2
"Processed systems and performance features"

Purpose:

The purpose of this process is to achieve that for the profile systems that are being processed, it is known which performance features they provide in which way.

General:

A registration overview of the system used in production is maintained. This overview indicates whether the relevant ITT reports / ITT results exist within the company or via the system supplier's website.

In the registration overview, it is also indicated, for which system a general KOMO certificate (Air permeability and Water tightness, as well as safety and deflection) exists and for which system, a KOMO certificate for burglary-resistance exists.

Registration overview for procedure 2.2
"Processed systems and performance features"

System suppliers


Supplier	Systems	ITT results available? (regarding CE)	KOMO certificates	
			General certificate available?	Burglary-resistance certificate available?
Schüco	AWS/AWS	yes	yes	yes
Schüco	ASS/ASE	yes	yes	yes
Schüco	ASS/FD	yes	yes	yes

Hardware supplier

Supplier	KOMO certificate available?	Assembly instructions available?
Schuco	yes	yes

Surface treatments on aluminium (plate or profiles) to the extent specified for use in external partition designs, must verifiably comply with the requirements according to Qualicoat or Qualanod.

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Procedure 2.3
“Receiving inspection”

Purpose:

The purpose of this procedure must be achieved by exclusively processing materials that have been determined to fulfil the set requirements.

General:

A receiving inspection is performed with each delivery by the receiving inspector : **Mr . Edin Cabric**
The receiving inspection comprises (if applicable) the checking of identity, damage, numbers of units, lengths, layer thicknesses, technical specifications and similar of:

- Profiles;
- Surface treatments;
- Glazing seals;
- Fittings;
- Glass;
- Adhesive, putty, fastening elements and similar;
- Miscellaneous.

For the inspection, the inspection form that belongs to the article and/or a copy of the purchase order is used.

Products that have been released have an “approved” sticker applied to them⁽²⁾.

Products with defects are clearly separated from the approved products and have a “REJECT” sticker applied to them.

Determined defects must be reported to the Operations Manager, **Mr. Alen Nadj** , who will take the appropriate measures. The measure taken will be noted on the inspection form (see also “Processing of rejected products”).

Retention period:

The receiving inspection form is stored for a minimum of 10 years.

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Procedure 2.4
"Production and intermediate inspection"

Purpose:

The purpose of this procedure must specify how the production process runs for efficient production of the façade elements and the production process must be inspected, such that the probability of defective end products is as low as possible.

General:

For the production guidelines, reference is made to the Schüco system manual or the own system manual.

The system manual is an important part of the production instructions.

The inspections are performed by the production staff.

In the event of defects, a "Reject Form" is filled out and the product has a "REJECT" sticker and is put aside.

Determined defects must be reported to the Operations Manager, who will take the appropriate measures. The measure taken will be noted on the inspection form (see also "Processing of rejected products").

Retention period:

The forms for the production and intermediate inspection are retained for a minimum of 10 years.

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Procedure 2.5
“Final inspection”

Purpose:

The purpose of the final inspection is to ensure that only materials and products are delivered, which can be determined as having fulfilled the set requirements. Therefore, the final inspection is also a check of the flawless processing of the previous inspections.

General:

The inspection of the final product takes place by the final inspector, **Mr. Senad Huskic** on the basis of the final inspection list.

Elements are inspected 2 x per week with the final inspection form.

Products with defects are clearly separated from the approved products and have a “REJECT” sticker applied to them.

Determined defects must be reported to the Operations Manager, **Mr. Senad Huskic**, who will take the appropriate measures. The measure taken will be noted on the inspection form (see also “Processing of rejected products”).

During the final inspection, the yellow KOMO sticker is applied and the CE mark is applied, if appropriate. The use or non-use of the KOMO sticker and the power rating to be applied to it (e.g. the resistance class) is indicated by the engineering design office on the drawings and adopted from these.

Retention period:

The forms for the final inspection are retained for a minimum of 10 years.

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Procedure 2.6

"Monitoring of the inspection and measuring instruments"

"Assessment of suitability of machines and maintenance thereof"

Purpose:

Inspection and measuring instruments must have (permanent) accuracy, which complies with the accuracy requirements of the façade elements to be manufactured. New measuring instruments must be appropriate when they are purchased and remain appropriate during use.

General:

This procedure is used for all of the measuring instruments used in production, which have an influence on the dimensions and/or quality of the product. For each inspection or measuring instrument, it must be specified how its suitability is guaranteed. The calibration can take place with a standard instrument (reference measuring instrument).

Tape measures / roller tape measures

The tape measures / roller tape measures of the sawyers, of the final inspector are each checked once in 6 months for measuring accuracy, readability and damage. The measuring accuracy is checked by comparing with a reference measuring instrument, i.e. a roller measuring tape with a certificate. The inaccuracy must not be greater than 1.0 mm. The reference roller tape measure with a certificate must be replaced every 10 years. The results of the checks are recorded in the calibration register.

Callipers

The final inspector's callipers are each checked once in 6 months for measuring accuracy, readability and damage. The measuring accuracy is checked by comparing it to a reference measuring instrument.

Layer thickness measuring instrument

The layer thickness measuring instrument is calibrated with each initial use with the related calibration films. The calibration films must be replaced if a visual inspection concludes that they are damaged or worn.

Measuring instruments must have e.g. a GREEN sticker applied to them with the calibration date.

Retention period:

The calibration lists are retained for a minimum of 10 years.

Assessment of suitability of machines and maintenance thereof

The machining machines are equipped to the latest developments and requirements for the production of aluminium façade elements. They are subjected to annual inspection and maintenance. If unexpected failures occur, these will be immediately lifted or replaced.

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Procedure 2.7
"Registration of complaints and corrective measures"

Purpose:

The registration and processing of external complaints, the analysis of complaints and taking corrective measures, in order to prevent complaints from reoccurring.

Definition:

A complaint can be defined as a negative assessment of the product after its delivery.

General:

The recipient of the complaint fills a complaint form with as many details as possible. The complaint form is then submitted to the administration office; where the complaint is entered in the complaint file and checked. The administration office decides whether the complaint falls under the guarantee commitments and who is responsible for the complaint. After the complaint has been processed and the complaining party has approved the proposed/implemented repair, the administrative processing takes place.

The original of the complaint form is stored in the relevant complaint file.

The clerk who is responsible for processing the complaint, **Ms . Ambera Sabanovic and Ms. Muamera** Skiljo convenes a meeting every 3 months to analyse complaints and take corrective measures.

Retention period:

The complaint forms are retained for a minimum of 10 years.

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Procedure 2.8
"Processing of rejects"

Purpose:

With the "Processing of rejects" procedure, it is specified how to deal with products for which non-performance of the specific requirements was determined during or after production.

General:

The controller or production employee, who has determined a discrepancy, must apply a "REJECT" sticker to the product and fill out a "REJECT FORM". Furthermore, the product must be taken out of the production line and stored at a designated site. The responsible person (Operations Manager) decides which subsequent measures should be taken. These can be:

- Repair.
- Definitive rejects and destruction, or return shipment to the supplier.
- Subsequent approval.
- Acceptance of the discrepancy after consultation with the principal.

The measures taken will be entered in the form.

The clerk, who is responsible for processing the complaint, convenes a meeting every 3 months to analyse rejects and take corrective measures⁽¹⁾.

Retention period:

The complaint forms are retained for a minimum of 10 years.

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Procedure 2.9
"Identification of products"

Purpose:

The purpose of identification of products is to make the performance features and characteristics of the delivered product easily identifiable for the principal and the inspection instances.

General:

KOMO sticker

On windows and doors that are delivered with the KOMO certificate with product certificate, a yellow KOMO sticker must be applied. A performance feature note (e.g. resistance class) can also be stated on this, which has been indicated on the drawings by the design engineering office.

CE sticker:

After the delivery, the principal will be provided with a CE document, in which the performance features of the delivered façade elements are listed (DoP), together with the guarantee conditions and the instructions for use, maintenance and cleaning.

Retention period:

A copy of the provided CE document is retained for a minimum of 10 years.

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Procedure 2.10:
"Availability of utilisation, maintenance, cleaning instructions"
"Mounting"

The purpose of this procedure is to point out the type of use, maintenance and cleaning to the principle.

General:

Instructions for the use, maintenance and cleaning of façade elements are available internally. The instructions are provided to the principle upon delivery, together with the guarantee conditions and the CE documents.

Mounting:

No mounting work will be carried out on the construction site under the responsibility of AKULUX. Mounting requirements and detailing are referred to the Quality Requirements of the VMRG. This reference shall be made at the time of the confirmation of the contract to the customer.

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**Procedure 2.11:
"Work preparation and production of burglary-resistant façade elements"**

Purpose:

The purpose of this procedure is to ensure that the façade elements that are accessible to burglars are designed in a burglary-resistant form.

Requirement:

Windows, doors, window frames and comparable structural parts in an external partition wall design of a residential building, which can be achieved in accordance with NEN 5087, must at least have the resistance class 2 according to the Dutch construction regulations (Bouwbesluit) according to NEN 5096.

According to the NEN 5087 standard, it can be determined whether windows, doors and window frames can be accessed by the burglar and therefore must be burglary-resistant.

As described in procedure 2.2, the company has KOMO certificates with reference to the burglary-resistance, including the technical specification(s), from which it can be seen how the façade elements need to be manufactured.

Inspection during work preparation

1. During work preparation, it is assessed whether the glass composition according to NEN 5096 has the correct extent of burglary-resistance.
 - If the façade element must fulfil resistance class 2, it can be fitted with standard double glazing (double float glass), if the fittings are lockable with a removable key.
 - If the façade element must fulfil resistance class 2, it can be designed with burglary-resistant glazing (frequently laminated glass) with the resistance class prescribed in NEN 5096. In this case, the requirement for locking capability with a removable key ceases to apply. However, the fittings must be resistant to manipulation from the outside.

Inspection during production:

1. During production, it is checked whether the burglary-resistant façade elements show the correct markings (see also procedure 2.5 "FINAL INSPECTION").
2. During production, it is checked whether the burglary-resistant façade elements are manufactured according to the technical specification(s) of the KOMO certificate.

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3. FORMS

The following pages contain the forms, which are used for the procedures in Chapter 2.

Receiving inspection of aluminium profiles

- Inspection frequency: upon delivery (spot checks)

Receiving inspection of surface treatments

- Inspection frequency: upon delivery (spot checks)

Inspection of sawing machine and saw blades

- Inspection frequency: 1 time per day

Final inspection

- Inspection frequency: at least 2 x per week

Calibration list for the procedure

- Monitoring of the inspection and measuring instruments

Registration of complaints and corrective measures

Rejects form for the procedure

"Processing of rejects"

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