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Akulux d.o.o.

Doboj JUG-Podruznica Doboj
N.Tesle 71
74 000 Doboj
Bosna i Hercegovina

Production instructions for PVC

These production instructions describe the system for internal quality control (IKB) in accordance with BLR 0703 in conjunction with the KOMO-Attest-met-Productcertificaat for the production of plastic façade elements.

Authorisation: Almin Mehanovic

Representation and responsibility of Akulux d.o.o.

Name: Almin Mehanovic

Position : Directeur

Date : 19 februari 2021

Signature:

On behalf of SKG-IKOB:

Name: Guido Saenteus

Position : Sector Coördinator

Date : 25-2-2021

Signature:

SKG-IKOB Certificatie B.V.
SKG-IKOB
Poppenbouwing 56-58 4191 NZ Geldermalsen

Authorised by: Almin Mehanovic
Date: 19 februari 2021

Initials: AM

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Content

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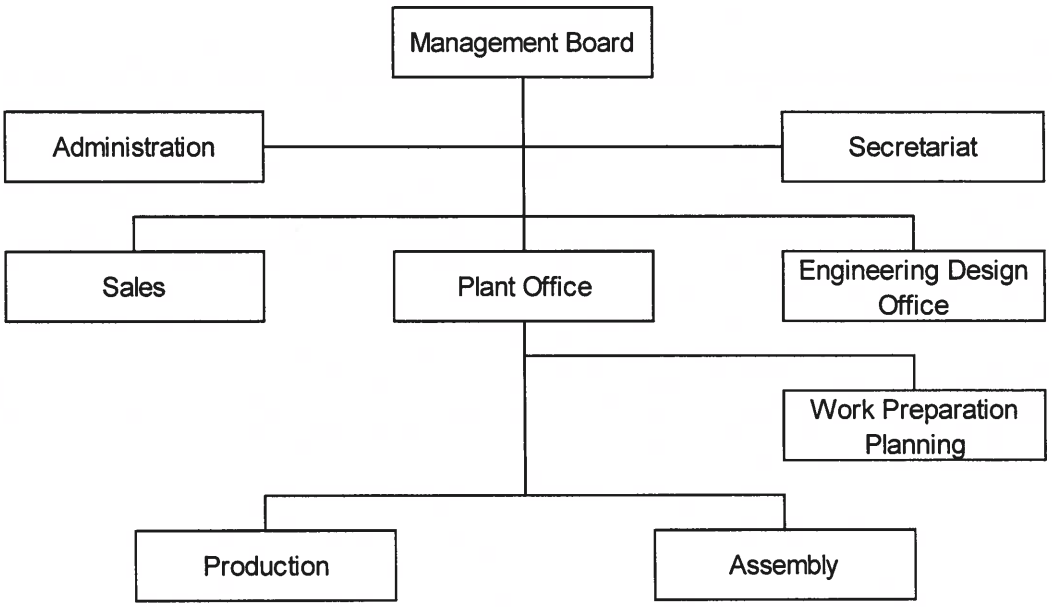
1. Corporate structure

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. Mirel Suljic

Responsible for production:
Mr. Haris Muratovic

Responsible for the registration and processing of complaints:
Mr. Mirel Suljic

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2. Procedure

Procedure 2.1
"Performance features and the specification of requirements"

Storage materials:

The storage of materials (plastic and steel profiles) is stored in such a way that they are protected from harmful weather influences. Preferably under a canopy or covered with a tarp. First and foremost, that is;

- the profiles should not be contaminated;
- the profiles must not be deformed or damaged;
- the profiles must not become damp;
- excessive temperatures should be avoided.

Ventilation is necessary if packages are not actually airtight. It should also be taken into account that when the stock is up, the buffer stock will be addressed. Acclimatising the profiles to be welded is so important that it is necessary to provide for them procedurally. There should be no temperature differences between work stock and workspace where condensation may occur. Profiles are in the workspace for at least 48 hours to acclimatise. Packaged profiles should be used for this purpose.

Storage transport of semi- and finished products:

The finished products are stored/transported in such a way that no damage and deformations can occur. The façade elements are preferably stored inside, standing and under the styles supported. Between the façade elements, stand-ups should be placed to prevent damage from excellent hanging and locking.

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, Water tightness, safety, deflection and burglary-resistance, whereby the location of the façade element (terrain I, II or III, coast, developed or undeveloped 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.

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

Burglary-resistance:
Regarding the burglary-resistance requirement, it must be checked whether the façade element is intended for a 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 0703: Plastic façade elements
- BRL 0709 Mounting
- NEN-EN 514: Façade fillings with frames, windows and doors made of uncoated PVC - requirements and testing methods for weld joints and determination of the fracture safety.

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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 certificate Profiles available?	KOMO certificates	
				General certificate available?	Burglary-resistance certificate available?
Schüco	Living VARIANT	yes	yes	yes.	yes
Schüco	Living Slide	yes	yes	yes	yes

Hardware supplier

Supplier	KOMO certificate available?	Assembling instructions available?
Roto	yes	yes
Fuhr	yes	yes

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Date: 19 februari 2021

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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(1);
Mr. Nadir Ibrahimovic and mr. Haris Ibrisic The receiving inspection comprises (if applicable) the checking of identity, damage, numbers of units, lengths, layer thicknesses, technical specifications and similar of:
- Profiles;
- Glazing seals;
- Hardware;
- 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. Mirza Tufekcic*** , 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(1).

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

The inspections are performed by the production staff and entered in the inspection lists(2).

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.Alan Alicic , Ms. Amina Ibrisic , Ms. Natasa Lazarevic and Ms. Almedina Cabric*** 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. Haris Muratovic***, 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 performance indication 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"

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.

Pressure testing machine Plastic façade elements
A pressure testing machine for testing welded corners and T-joints is calibrated every 2 years by an approved calibration laboratory. The results of the checks are recorded in the report of the calibration laboratory.

Temperature meters and sensors Plastic façade elements
A temperature meter and sensor for measuring the temperature of welding mirrors is calibrated every 2 years by an approved laboratory. The results of the checks are recorded in the report of the calibration laboratory.

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.

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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(1).

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, ***Mr. Mirel Suljic*** convenes a meeting every 3 months to analyse complaints and take corrective measures(2).

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-Attest-met-Productcertificaat", 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 and cleaning instructions"

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(1).

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Date: 19 februari 2021

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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 Hardware 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 Hardware 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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Date: 19 februari 2021

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3. FORMS

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

Receiving inspection for plastic profiles;
- Inspection frequency: upon delivery (spot checks)

Receiving inspection steel profiles;
- Inspection frequency: upon delivery (spot checks)

Inspection of sawing machine;
- Inspection frequency: 1 time per day

Inspection of welding machine;
- Inspection frequency: at least 1 x per day

Inspection of the breaking force according to NEN-EN 514;
- Always the same T-profile, no recessed profile
  Inspection frequency: at least 2 x per week

Final inspection;
- Inspection frequency: at least 2 x per week

Calibration;
- Roller tape measure, reference angle and callipers

Registration of complaints and corrective measures

Processing of rejects

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Date: 19 februari 2021

Initials: AM

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PODRUŽNICA DOBOJ

Control form for procedure
“Receiving inspection”
Version 1.0

Receiving inspection for plastic profiles
Inspection frequency: upon delivery (spot checks)

Supplier Schuco
Order number
Order date
Delivery date

Performed by Haris Ibrisic
Inspection date

Profile code	Ordered length	Delivered length	Fit in the profile	Appearance/colour	Damage	Colour Rejects (comments)

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Control form for the procedure
"Receiving inspection"
Version 1.0

Receiving inspection steel profiles
Inspection frequency: upon delivery (spot checks)

Supplier .....
Order number .....
Order date .....
Delivery date .....

Performed by Nadir Ibrahimovic
Inspection date .....

Profile code	Ordered length	Delivered length	Fit in the profile	Appearance	EN 1461 > 50 µm	EN 10346 > 10 µm	Rejects (comments)

Note:
A delivery report from the supplier is sufficient. A layer thickness must also be specified in it.

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Control form for procedure 2.4
"Production and intermediate inspection"
Version 1.0

Inspection of sawing machine
Inspection frequency: 1 time per day

Machine no. Pertici SC55

Performed by Ezedin Becirovic
Inspection date

Date	Setting	Actual sawed length	Length	Mitre	Notes:

Note:
Measurement tolerance ± 0.5 mm; in the event of a discrepancy, the sawing machine must be calibrated.

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Control form for procedure 2.4
"Production and intermediate inspection"
Version 1.0

Inspection of welding machine
Inspection frequency: at least 1 x per day

Machine no. Urban 4 kops 1 **Performed by** Armin Hasanic
Inspection date

	Temperature					**Teflon sheet**					**Note: sufficient / not sufficient**	**Initials**
Require-ment	247 ± 2 °C (see system housing info)					Clean/not damaged						
Welding head	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**		
from												

Note:
With a “not sufficient” result, the welding head must be reset immediately and/or the Teflon sheet must be replaced.

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Control form for procedure
"Production and intermediate inspection"
Version 1.0

Inspection of the breaking force according to NEN-EN 514 <u>Always the same T-profile, no recessed profile</u>
Inspection frequency: at least 2 x per week
(Send welded corners, if necessary, or provide it to the inspector SKGIKOB for checking in the SKGIKOB lab, 2 x per year).

Machine no. :

Profile system : Schuco

Profile number :

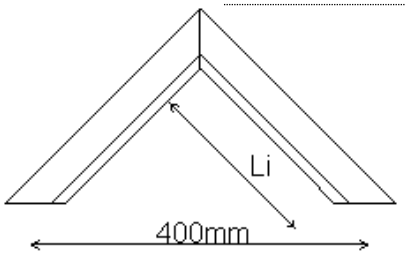
Minimum fracture resistance (F-min) : 80 % =

Profile certificate number :

PVC implementation
O white or light coloured
O with PMMA layer
O dyed throughout
O miscellaneous, i.e.

Performed by : Mensur Suljakanovic

Inspection date :



Mach./button no.	Mirror temperature	approx. start grinding	Fracture limit	Fracture code	Result (V/O)

Note:
The fracture pattern is determined, after the failure load of the welded corners has been reached.

Note:
With a “not sufficient” result, the welding head must be reset immediately and/or the Teflon sheet must be replaced.

Fracture pattern:
A: The fracture runs almost entirely through the weld
B: The fracture runs more than 50% through the weld
C: The fracture runs approx. 50% through the weld / the profile
D: The fracture runs less than 50% through the weld
E: The fracture runs almost entirely alongside the weld.

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Control form for procedure
"Final inspection"
Version 1.0

Inspection frequency: at least 2 x per week

Project .....
Order number .....
Position .....

Performed by Alan Alicic
Inspection date .....

Terrain **I** / **II** / **III** O built area O unbuilt area
Height ..... m
Burglary-resistant Class 2 ..... yes - no
System Schüco .....

Aspect			**Requirement**	**Measured**	**Correct/incorrect C/I)**
Measuring accuracy	Width	mm	1 mm/m	mm	
	Height	mm	1 mm/m	mm	
	Perpendicularity Diagonals	mm	< 3 mm	mm	
Steel	Available	As per drawing	Centre-to-centre 500 mm	mm	
		Condition	Hinge side / colour profile		
Appearance	Drainage	5 x 25 / Ø 8 mm	Flawless / clean		
	Scratches		None		
	Damage		None		
	Dirty				
	Finishing welded corner	≤ 0.5 mm	Flawless / clean		
		flat	Flawless / clean		
Filling	Glass mm	Glass bar ……	Groove / fold mm		
	Panel mm	Glass bar ……	Groove / fold mm		
	Glass bar assembly	Mitre/blunt	< 0.5 mm	< 0.5 mm	
	Glazing profile	Table system	Rubber no. …….		
Anchorage	Anchor	200 mm L	Centre-to-centre distance 600 mm		
	Screws	200 mm L	Centre-to-centre distance 600 mm		
Cover measurement	Door / window	Indicated system	8 / 10 mm	mm	
Hardware	Door / window	Operable	Locks	According to hardware manufacturer	
Complete	Delivery	Grille / glass / panels i.a.		Available	
Identification	KOMO sticker		Available on product	Available	
	CE sticker		Performance feature indicated	Available	

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Calibration list for the procedure
"Monitoring of the inspection and measuring instruments"
Version 1.0

Roller tape measure, reference angle and callipers

Owner of the roller tape mes. Ezedin Becirovic / Sadmir Omercic

Calibration method Comparative measurement with reference roller tape measure measurement

Validity period 6 months

Storage location Office / plant office

Admissible discrepancy ± 1.0 mm

Date	Discrepancy	Approved yes/no

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Complaint form for the procedure
"Registration of complaints and corrective measures"
Version 1.0

Principal	:	Form no.	:
Project	:	Guarantee	: yes - no
Product	:		
Spoken with	:	Material	: Plastic
Order no.	:		
Telephone number	:	Solution before	: (Date)

Description of the complaint:

Solution proposal:

Customer agrees to solution and implementation	: yes – no
Written confirmation received on	: (Date)
Completed	: (Date)
Costs incurred from completion	: €
Initials of the Quality Representative	:

Original in the project folder:
Copy: Complaints file
Complaints analysis folder

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Reject form for the procedure
"Processing of rejects"
Version 1.0

Set up by : Mirel Suljic
Date :
Project number :

Subject
O Aluminium O Steel O Rubber seals
O Plastic O Fittings O Miscellaneous

Rejects regarding :

Rejects due to :

Solution proposal : Repair – replacement – sawing – disposal

Corrective measures :

Costs incurred : €

New inspection by the
Quality Representative on : (Date) Initials :