

FACTORY PROCEDURE CONTROLS MANUAL

ISSUE 8

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INDEX REVISIONS

DATE OF REVISION	DETAILS OF REVISION	DATE MADE LIVE
October 2010	Full review	October 2010
June 2011	Review of standard forms and method statement	July 2011
October 2012	Full review	October 2012
November 2012	Review of meshing controls	November 2012
15 th August 2013	Review of raw panels check procedure	August 2013
18 th July 2014	Addition of Phil Anderton to distribution list	July 2014
3 rd April 2017	Addition of Specialist Check Files (factory and office copies). Addition of Lee Jackson to distribution list	May 2017
22 nd September 2017	Review of aluminium profiles/brackets goods in check procedure. Addition of Russel Davies to distribution list and removal of Lee Jackson	October 2018

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INTRODUCTION

Document Ref FPC1

The factory procedural controls manual is designed to provide a clear process by process overview of the controls within the factory.

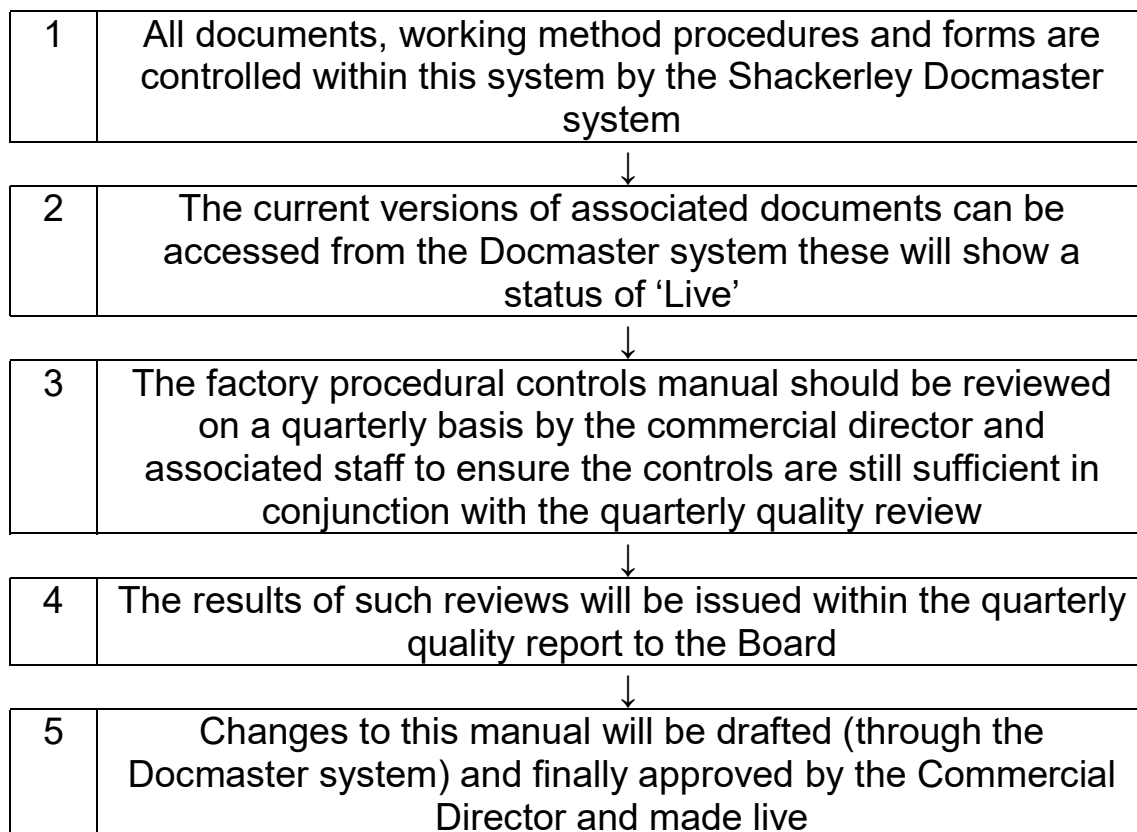
The document will refer to specific working method documents, company forms and associated documentation.

Auditing and Control

The controls and procedures within this document are audited on a schedule basis pursuant to our ISO9001 quality manual. The result of which is referred directly to the board.

DOCUMENTATION CONTROL

Document Ref FPC2



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6	Periodic audits as defined within our ISO9001 quality manual will be undertaken to ensure that documents and forms in use within the factory are utilising controlled forms with the current live version as detailed on the Docmaster system All documents/forms references within this manual are indexed in the Appendix A
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DOCUMENTATION CONTROL

Document Ref. FPC2

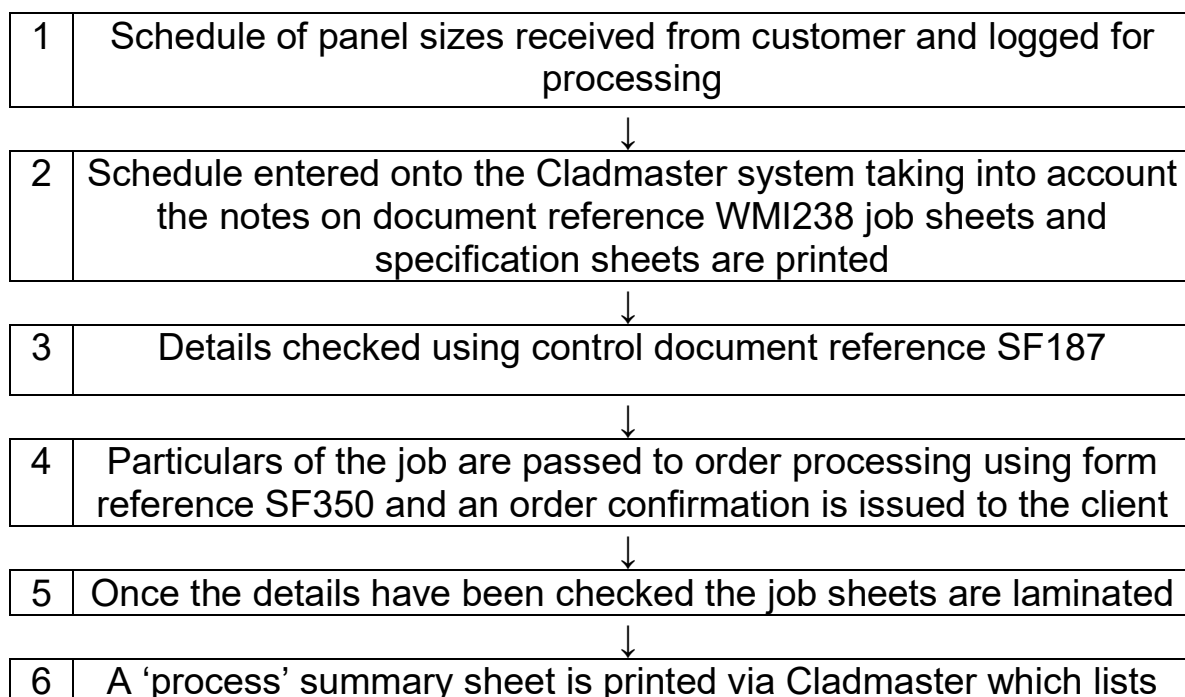
DISTRIBUTION LIST

Name	Position/Department	Current Version	Date Issued On
Steve Lahera	Production Director	FPC22 V.8	10/10/2018
Mick Parr	Supervisor	FPC22 V.8	10/10/2018
Dominic Smith	Supervisor	FPC22 V.8	10/10/2018
Barry Evans	Project co-ordinator (Manufacturing Admin)	FPC22 V.8	10/10/2018
Sharon Nelson	Purchasing Admin	FPC22 V.8	10/10/2018
/	Canteen	FPC22 V.8	10/10/2018
Russell Davies	Factory Admin	FPC22 V.8	10/10/2018

/	Specialist Check File (Office Copy)	FPC22 V.8	10/10/2018
/	Specialist Check File (Office Copy)	FPC22 V.8	10/10/2018

PRE-PRODUCTION JOB SHEET DETAILING

Document Ref FPC3



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	the various production stages
7	The job sheets, specification sheets and summary sheets are packed into a job box and issued to the factory

CALIBRATION OF HAND TOOLS

Document Ref FPC4

1	Certain equipment needs to be calibrated before use on a regular basis during the production of cladding panels
---	---

	Equipment	Frequency	Test range
2.1	Hand torque wrench	Daily	3mm–3.5mm using tester
2.2	Keil undercut test gauges	Daily	Feeler gauge check
2.3	Each piece of equipment should be identified with a unique number		

3	The equipment is returned to the test centre at the end of each working shift
---	---

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4	Trained operatives (trained in the use of the equipment) undertake the test at the beginning of each shift where the equipment is used
---	--

CONTROL OF MEASUREMENTS

Document Ref FPC5

1	All measurements in the production environment should be undertaken with stainless steel rulers (not tape measures)
↓	
2	There are different grades of steel rulers, rulers should be acquired from approved sources and should be calibrated against the 'approved ruler' prior to use
↓	
3	Rulers should be numbered for identification purposes and should be returned to the central storage location at the end of each shift
↓	
4	Rulers should be checked for damage/wear on a regular basis (weekly)

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↓

5	Compliance with the above should be controlled through a daily log
---	--

CONTROL OF RAW FLAT SHEET
Document Ref FPC6

1	Pre-booked deliveries of flat sheet arrives (always sign for goods as received unexamined)
↓	
2	Receive goods-in paperwork from office showing allocation of material
↓	
3	Check delivery against factory/delivery paperwork ensuring quantity delivered balances with delivery documentation
↓	
4	If any damages or shortages or non-compliant goods are found a discrepancy report must be filled in (document ref number WMI87) and the goods-in discrepancy held pending instruction
↓	
5	All cladding materials are subject to specialist goods inwards checks. In addition to the checks listed within this control file, goods should be checked for colour, size, shade/calibre ensure materials are marked 'first choice' and CE marked
↓	
6	Undertake the specific quality check procedure document reference WMI316 which relates to the arrival of flat sheets and the control of pull-out tests. These quality checks identify specific checks required for raw materials and the structure for pull-out testing as required
↓	
7	Materials allocated for stock ensure the materials are labelled accurately and stored in the correct location separate to project materials

8	Materials allocated for projects should be labelled using the raw material control label (red) then the raw material number put into the project pallet log book
9	Raw material pallets put in allocated racking for the project
10	Reject materials held in the reject bay until advised what to do
11	Once booking in is complete the documentation and factory paperwork is sent to the office
12	The goods are booked into the ITC system and the GRN (goods received note is generated)
13	The GRN is matched against the suppliers invoice and filed with the suppliers invoice and the goods inward papers
14	There are additional checks pre-authorisation of the invoice that should be undertaken by the admin team to ensure that the required specialist checks have been undertaken on arrival of the materials and that the required certification for the product is available
15	Ensure that Shackerley pull-out tests have been undertaken for the product/batch as per the specialist check requirements
16	Ensure that we have been supplied a valid test certificate from the factory confirming the materials supplied have been tested in accordance with comply to EN14411 Class B1A (The test certificate should be validated against our minimum requirements checklist using form SF401)

GOODS-IN CONTROL OF ALUMINIUM PROFILES/BRACKETS Document Ref FPC7

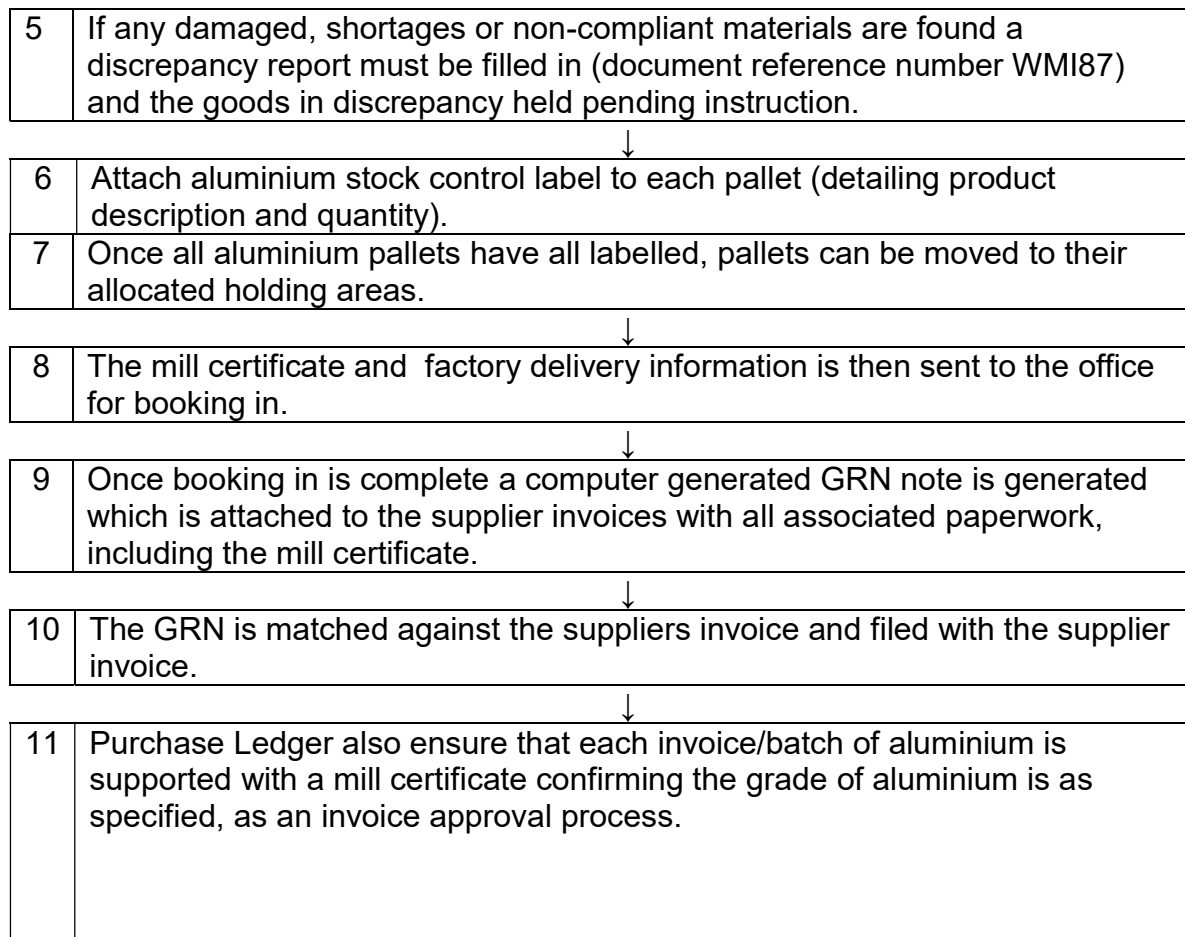
1	Delivery notes for inward deliveries must be signed unchecked when unloaded.
2	Log the delivery in warehouse goods-in book.
3	All support components are subject to specialist goods inwards checks. In addition to the checks listed within this control file, goods should be checked for quality, size, profile and compared to control samples.
4	A primary check is that the goods inward operative must check that the aluminium delivered has a suitable mill certificate confirming the grade of the materials delivered. The format can be referenced in the specialist check file.

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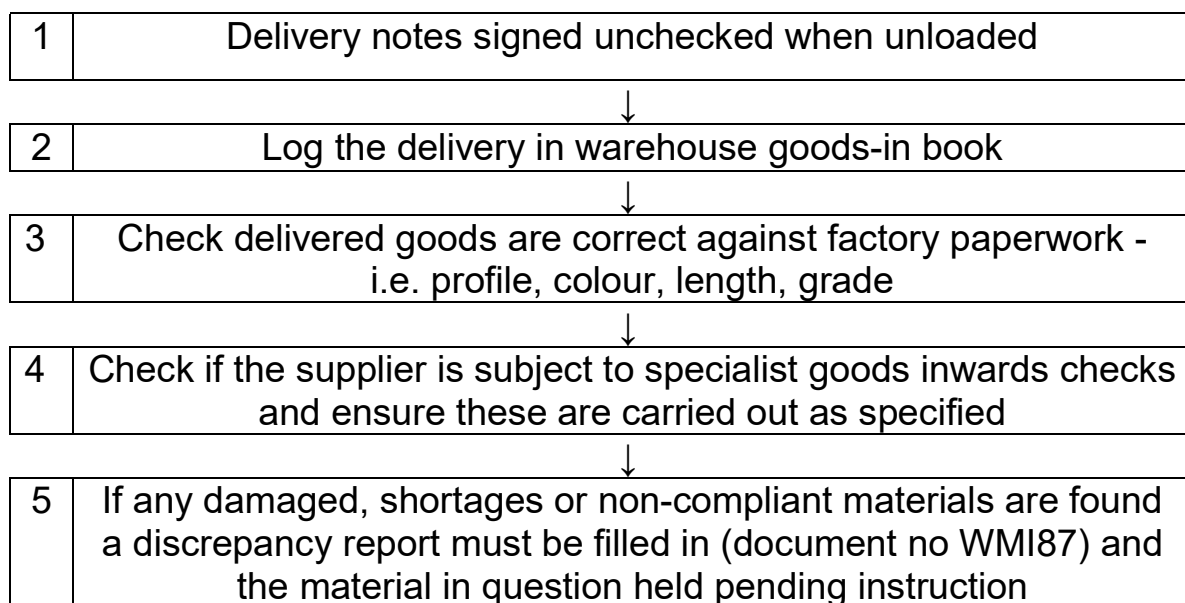
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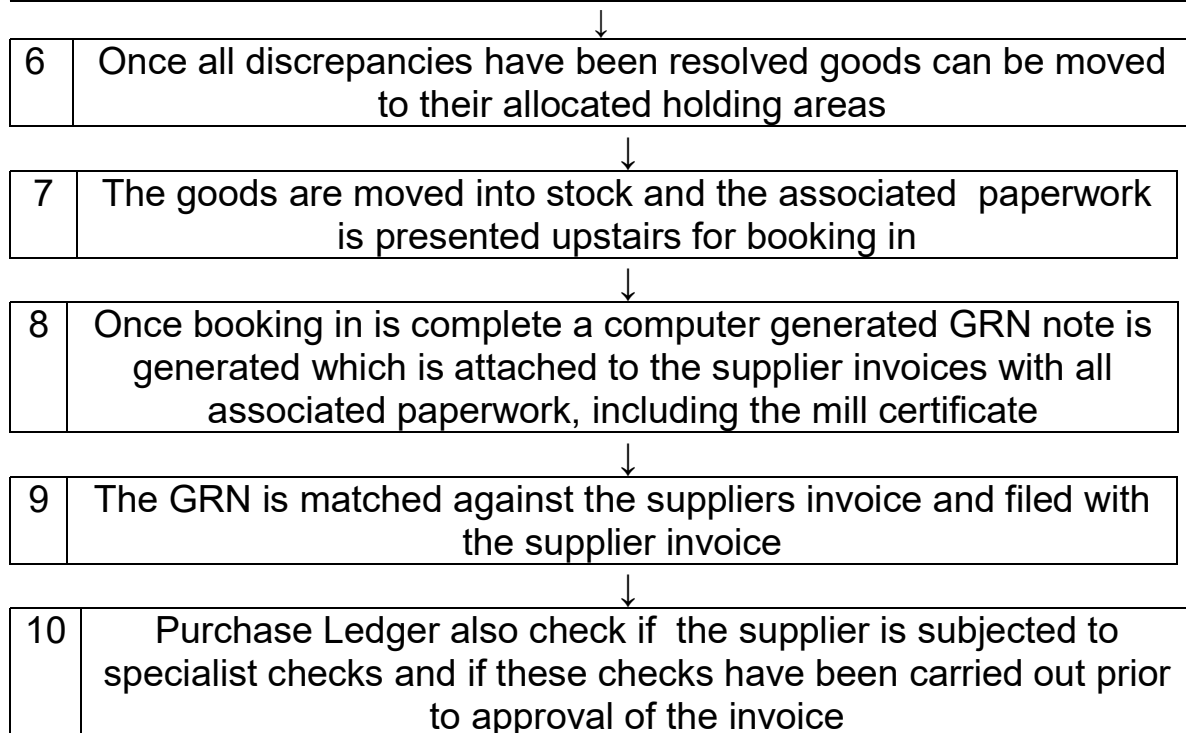


GOODS-IN CONTROL OF OTHER MATERIALS

Document Ref FPC8



FINAL STAGE



GOODS INWARDS SPECIALIST CHECKS

Document Ref FPC9

1	All deliveries that arrive into Shackerley undergo a review to ascertain if the goods being delivered are subject to specialist checks the materials delivered and the supplier is checked to ascertain if they are on the specialist checks register
2	The full specialist checks procedure is controlled with SGI2. The current specialist checks supplier/materials list is listed on this document

3	If the products or materials being delivered are covered by a specialist checks procedure these checks should be undertaken. If materials are not compliant with the checks the materials should be rejected following standard goods inwards procedures.
4	The factory/goods inwards paperwork which is stamped with the goods inwards stamp should be ticked in the appropriate box indicating that specialist checks have been undertaken (or not).
5	On approval of the suppliers invoice. The admin team check the materials supplied against the lists referred to in Section 1 and that the goods inwards paperwork is suitably stamped. The suppliers invoice will not be approved until the required checks have been completed.

JOB SHEET CONTROL - Document Ref FPC10

1	Job box processed in office
	↓
2	Job box handed to factory
	↓
3	Job box contains:- Process Summary Sheet (FPC15) Job Specification Sheet (FPC14) Individual Panel Job Sheets (FPC13) Raw Materials Allocation Form (SF291)

JOB SPECIFICATION SHEET COMBINED CUTTING AND STRAPPING JOB

THIS IS A RAINSCREEN CLADDING PROJECT
THE FOLLOWING WORKING PROCEDURES APPLY TO THIS JOB

Policy Number	Procedure Name
1 & 4	Supervisors Responsibilities - Strapping Room , Cutting Room
2 & 3	Operative Responsibilities - Strapping Room , Cutting Room

Job No :	00191 - 00000007
Kcmi Order Number :	49526
Customer Name :	Kingspan Limited
Job Name :	Tesco, Naas
Issue Date :	3/06/2010
Start Date :	3/06/2010

schedule processed by *BL*
checked by *126*
authorised for production *BE*

Panel Summary										
Panel Ref	Type	Colour Code	Qty req	Overall Size Width x Height	Cut Type	Drilling	Make Straps	Mount Staps	Special Notes	
B9	INT	1	36	1198 mm x 225 mm	SQR	✓	✓	✓		
B11	INT	1	16	482 mm x 598 mm	SQR	✓	✓	✓		
Total Panels			52							

Project Specific Information

Note the information on Panel Production sheets may vary.

Standard Drill Hole Depth :	7mm	Standard Strap :	Access - INT
Standard Graining :	None	Std Strap Height :	
Standard Bolt and Anchor :	7mm Anchors and 19.8mm Bolts		

? Unknown INT = Intermediate BOT = Bottom HG = Hanging SP = Special SQR = Square cut

Colour Code Key

EXAMPLE JOB SPECIFICATION SHEET - Document Ref FCP12

Strap Summary Information

Type	Full Legnth	C section	D section	Hole 1	Hole 2	Hole 3	Qty
AC - Std	213	213	160	50mm f t	53mm f b	n/a	72
AC - Std	586	586	533	110mm f t	78mm f b	n/a	32

Quantity of straps

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EXAMPLE OF JOB PROCESS SUMMARY SHEET - Document Ref FCP13

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Run: 6/14/10
12:06PM

JOB PROCESS SUMMARY SHEET

Job number allocated
to project

Job sheet Number

191-008

Phase number

Customer

KINGSPAN - TESCO NAAS

Total Panels

24

Notes

Date Required
18/06/2010

THIS MATERIAL IS TO BE LAMINATE BACKED USING
EPOXY - PLAIN PANEL NOT TO BE MESHED

Total panels required

Special instructions

Main Processes for this Job

Phase	Qty	Process Type	Start Date	Completion Date	Supervisor Sign Off
1	24				
2	48	Standard 508 straps			
3	24	Standard Job on Hand drill			
4	24	strapping hand drilled ma			
5	0				

Order of processes
for producing
panels

Pallet log

Raw material	PH1	PH2	PH3	PH4	PH5

Quality Notes

Re-work Sheets

Final Sign off

- ☐ Supervisor to scan job on computer to ensure all panels are registered as packed
- ☐ All finished pallets have been QC checked
- ☐ Job set as complete on the works list (Supervisor)
- ☐ Raw materials usage form completed and attached

.....Supervisor Sign off

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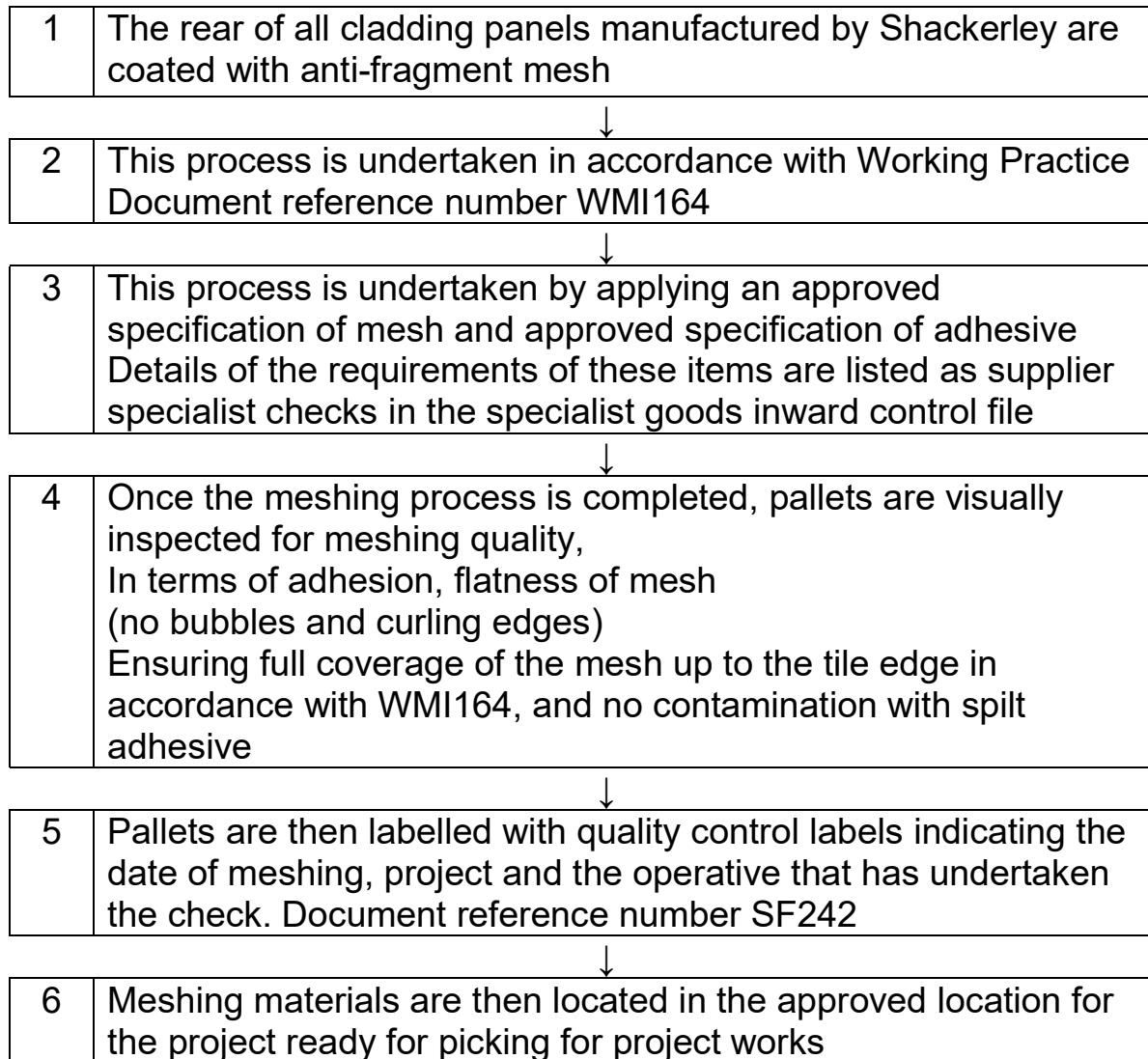
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MESHING CONTROL CHECK

Document Ref FPC14



CUTTING QUALITY CHECKS

Document Ref FPC15

Cutting works are carried out in accordance with the current Working Practice
Document reference WMI22

The following controls should be maintained:-

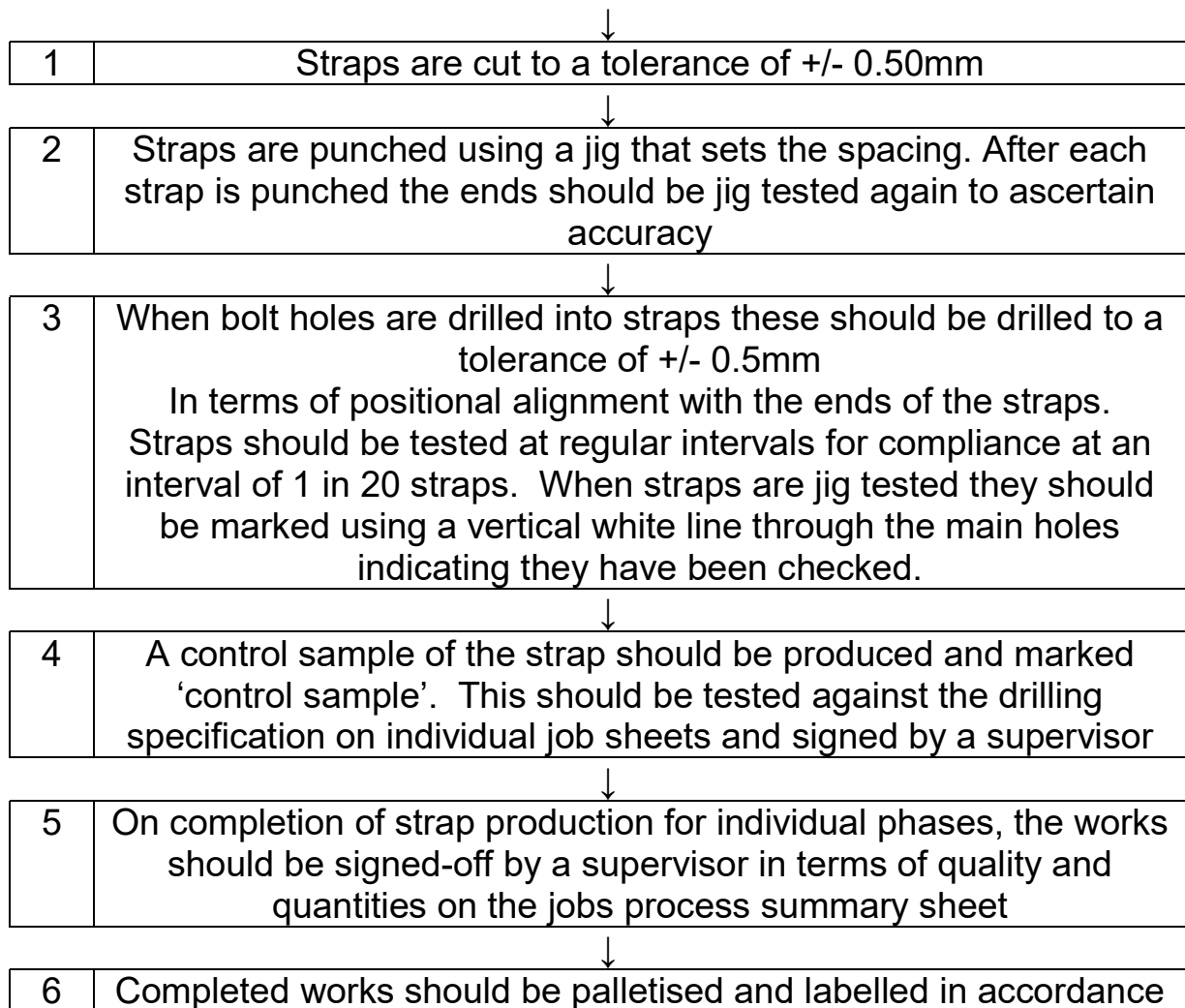
- | | |
|---|--|
| 1 | Raw material for cutting should be pre-picked by the materials controller in accordance with the job box and checked against the specification with the specification then placed into the cutting area ready for processing |
| ↓ | |
| 2 | Materials must be cut in accordance to the job sheet in terms of direction of grain, initial cut and which raw material to use |
| ↓ | |
| 3 | Off-cuts should be marked and palletised in accordance to the job sheet |
| ↓ | |
| 4 | Panels should be checked on a regular basis for size compliance with a tolerance of +/- 0.5mm. A supervisor can permit higher tolerances in selected circumstances which do not exceed the SHG Tolerance Control document TC0162 |
| ↓ | |
| 5 | All panels cut should be dressed in accordance with document reference number WMI156 |
| ↓ | |
| 6 | Panels should always be handled carefully during cutting, dressing and final palletisation to mitigate scratching |
| ↓ | |
| 7 | Polished panels should be washed prior to leaving the cutting area |
| ↓ | |
| 8 | Final cut panels should be labelled with the appropriate cut materials ID label and moved to the next phase of work |
| ↓ | |
| 9 | Once cutting is complete on the phase the section of the work summary should be signed-off by a supervisor and the final QC checks indicated undertaken, such as quantity and quality |

STRAP PRODUCTION QUALITY CHECKS

Document Ref FPC16

It is essential that straps align correctly to drilled undercuts on the panels

THIS IS CONTROLLED AS FOLLOWS:-



	to the job sheet
--	------------------

COMBINED STRAPPING & DRILLING QUALITY CONTROL

Document Ref FPC17

1	Raw panels for drilling/strapping whether undertaken within a combined process or an individual process will be picked by the materials controller and checked for compliance with the specification and then placed into the work area
---	---



2	Materials should be processed in accordance with the job sheet in terms of hole position, strap positions etc
---	---



3	Drilling works and strapping works should be undertaken in accordance with Working Practice Document reference WMI319
---	---



CRITICAL QUALITY CHECKS



4	Operatives should ensure the raw materials to be processed are in accordance to the job sheet in terms of size (cut and un-cut) strapping and drilling, material, colour and finish
---	---



5	Operatives should ensure there are no visible defects on materials before they are worked i.e. chips/scratches
---	--



6	Drilling operatives must mark their id number on the panel when holes are drilled (ID numbers are controlled via the Cladmaster system)
---	---



7	Drilling operatives should test undercuts using the defined procedure reference FPC18
---	---



8	Hole positions should be set-up in conjunction with a strap 'control sample' to ensure both align correctly
↓	
9	Anchors and bolts should be used in conjunction with the job sheet but should also be cross-checked against the control table reference SF3 to ensure compliance

COMBINED STRAPPING & DRILLING QUALITY CONTROL

Document Ref FPC17 Continued

10	Anchors and bolts should be assigned on a 'job by job' basis by authorised personnel. To avoid the risk of mixing anchors and bolts between jobs The anchor and bolts store is locked to prevent access by unauthorised personnel.
----	--

THE FOLLOW QUALITY CONTROLS WHEN APPLYING STRAPS SHOULD BE MAINTAINED

11	Strapping operatives should ensure that undercuts have been checked by observing the red crayon indicator on panels
↓	
12	All bolts on the panel are initially tightened using the air wrench (clutch controlled to a torque of 3nm3)
↓	
13	Once all bolts are tightened the final torque is achieved using a torque controller
↓	
14	The first tightening and final torquing should be completed as two separate processes – i.e. 2 processes per panel rather than 2 processes per anchor Once the panels have been strapped and torqued they should then undergo the 'final panel' QC processes as documented on reference FPC19
↓	
15	Keil anchors are self-testing in that if the geometry of the undercuts is not correct the bolt will not fully engage with the anchor or the bracket will be

	lifted from the panel. Anchors should be carefully inspected for full engagement.
↓	
16	Once panels have been QC checked they are then loaded and scanned into pallets using the job sheet identification barcode

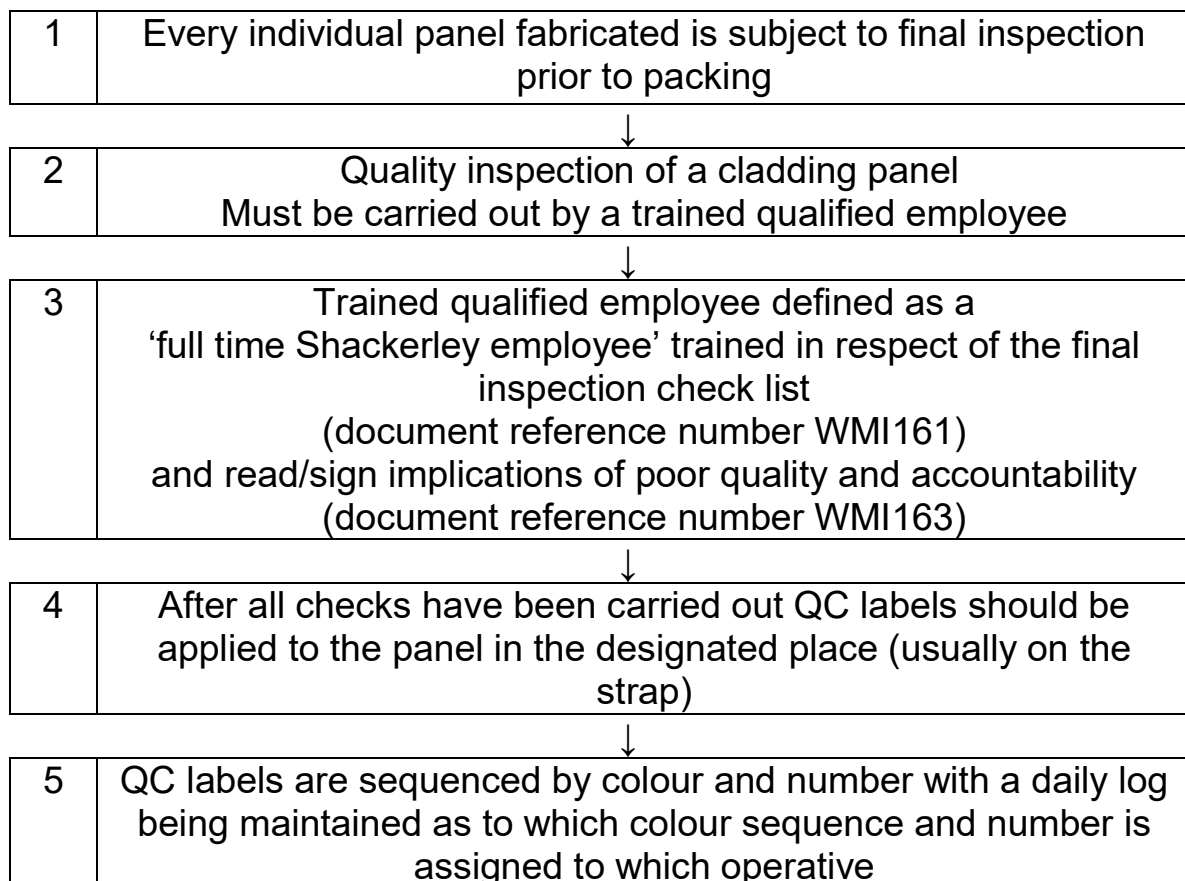
UNDER-CUT HOLE TESTING PROCEEDURE

Document Ref FPC18

1	The undercut holes in cladding panels are tested using the Keil testing gauge the frequency of testing defined within WMI167
↓	
2	Keil testing gauges have to be tested to ensure they have not worn beyond tolerance - see calibration and controls procedure. The test consists of testing the head of the gauge with a second feeler gauge.
↓	
3	<u>All</u> drilling operatives should be trained and tested in the use of the Keil testing gauge
↓	
4	The test method is defined within document reference numbers WMI 23 and WMI 24 (poster)
↓	
5	When holes are tested and 'pass' a single crayon mark is struck through the hole indicating a hole has passed. A red cross indicates a failed hole.
↓	
6	The drilling operator or the lead drilling operator on a two man process, places their operator ID onto the panel indicating he/she has drilled the panel

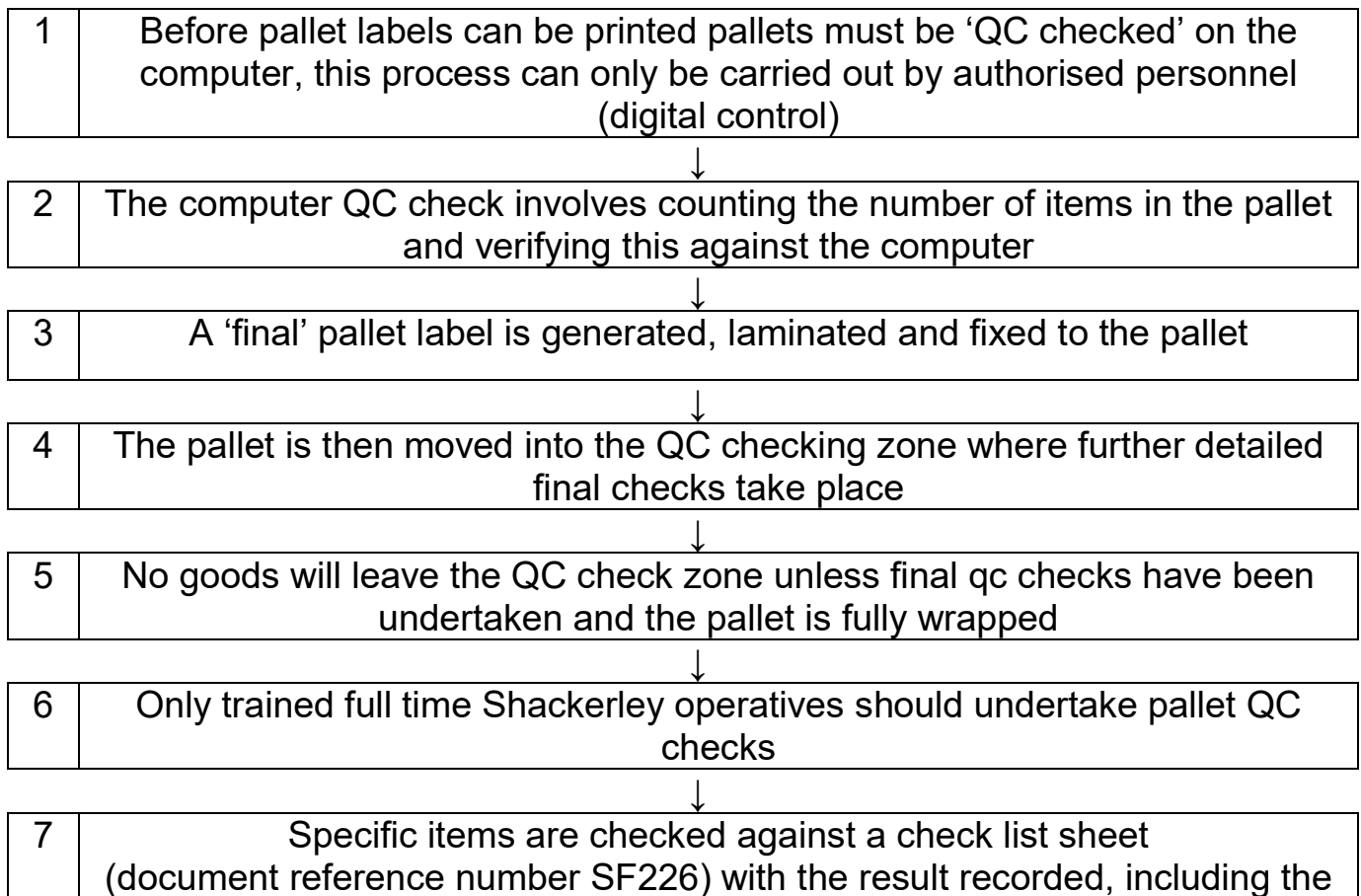
INDIVIDUAL PANEL QC CHECKING PROCESS

Document Ref FPC19



FINAL PALLET QC CHECKING PROCESS

Document Ref FPC20

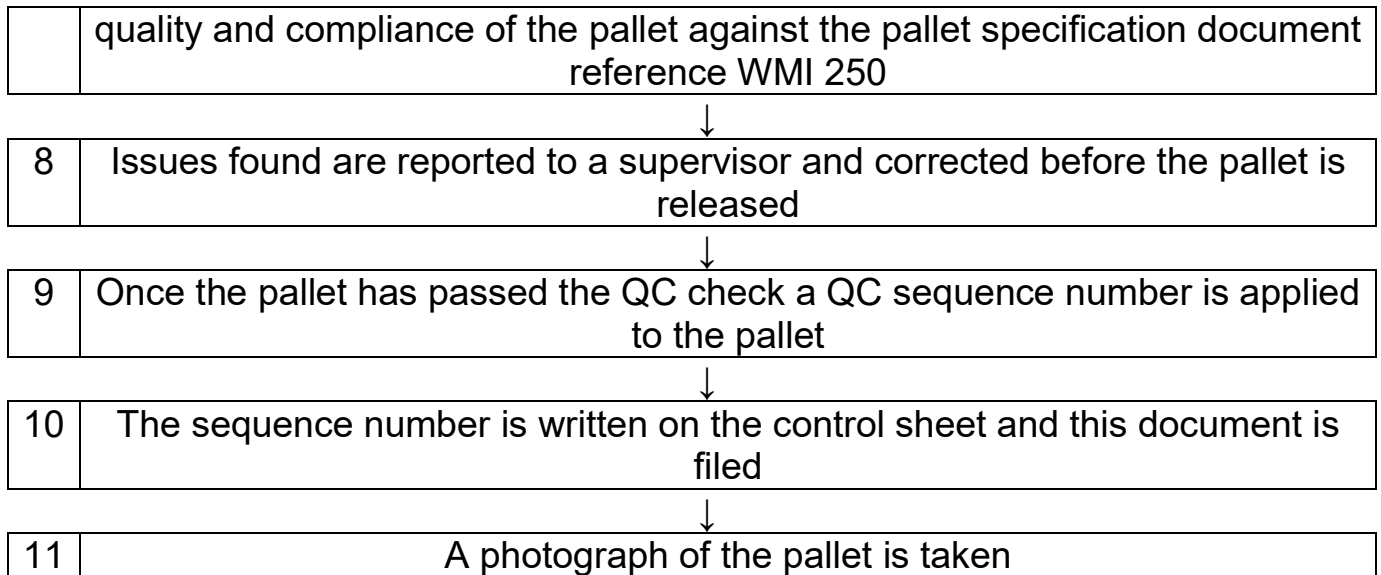


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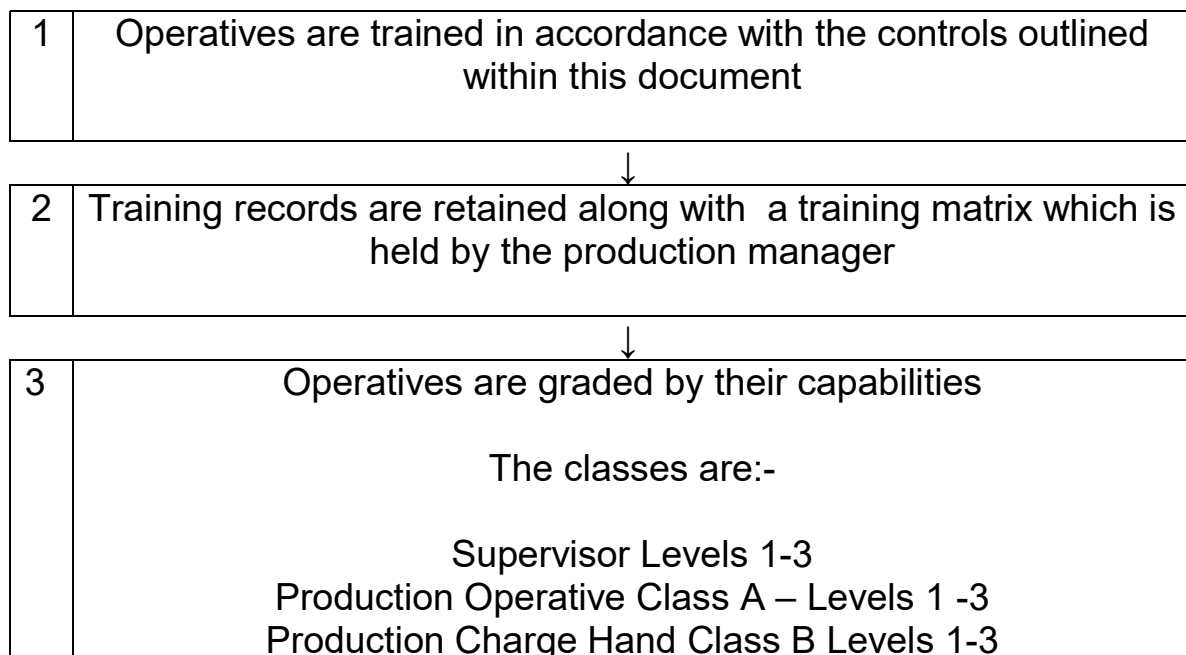
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TRAINING

Document Ref FPC21



APPENDIX A – ASSOCIATED DOCUMENTS

Doc Referred	Name Of Doc
WMI238	Information When Scheduling Jobs
SF187	Processing Cladding Jobs Procedure
SF350	Order Process Check Sheet Procedure
WMI87	Discrepancy Report
WMI316	Goods Inward Flowchart For Flat Sheet Purchases
WMI164	Meshing Procedure
SF242	Quality Assurance Procedure
WMI22	Cutting Room Working Practices
TC0162	Rake, Cut-Out Fabrication Tolerance Procedure

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WMI156	Dressing Tiles Procedure
SF291	Job Sheet Material Usage
WMI319	Instructions For Strapping Procedure
SF3	Anchor & Bolt Panel Size Chart
WMI23	Keil Undercut Test Procedure
WMI24	Keil Undercut Test Procedure Poster
WMI161	Final Quality Control Label Procedure
WMI163	Implications Of Poor Quality & Accountability
SF226	Final Inspection Procedure