WS1: General Workshop Instruction

Document Number: 1000024420

Chapter 1: Scope and Purpose

This document specifies standard requirements for items purchased or manufactured for FLSmidth. Included in this document are

- A list of workmanship standards that govern requirements for specific manufacturing methods and other specific criteria
- General requirements that apply to all parts manufactured based on FLSmidth designs
- An overview of FLSmidth requirements for Quality Assurance / Quality Control (QA/QC)

1.1 Engineering Specifications

FLSmidth uses multiple documents to specify manufacturing requirements and acceptance criteria. The supplier is responsible for ensuring compliance with all specifications relative to their scope of supply. The required documents are outlined below:

Tier/order of precedence	Title	Scope	Overview	Called out in
1	Drawing	Applies only to **individual** part(s).	Detailed specification, providing material, dimensional and other requirements	Parts List / Purchase Order Notes
2	Other Specifications (ex: client specifications)	Applicable only if called out on PO. Applies to items listed in a specific purchase order.	Specifications that apply to a specific FLSmidth purchase order	Purchase Order
3	WS-3, Component Group	Applies only if called out on individual drawings. Applies to a range of parts/components that have similar requirements.	Provides additional acceptance criteria for areas of the component group that require specific testing, etc.	Drawing Notes
4	WS-2, Manufacturing Type Workmanship Standards	Applies to **all** parts manufactured by the specified means, for example: • Fabrication • Casting	Provides general requirements/acceptance criteria for specific methods of manufacture	Drawing Notes / WS-1
5	WS-1, General Workshop Instructions	Applies to **all** parts	Provides minimum general requirements common for all parts specified by FLSmidth	Title Block of Drawings

1.1.1 List of WS2 Documents

Document Number	Description
1000024422	WS2, Fabricated Metal & Welded Parts
1000024423	WS2, Castings
1000024425	WS2, Forgings

Chapter 2: Material Requirements

2.1 General

All material shall be supplied in accordance with FLSmidth requirements.

2.1.1 Material Specifications

FLSmidth shall specify material on the drawing in one of the following ways:

- National/International Standards designation (ISO, ASTM, etc.)
- FLS Material Code Guide Book (MCGB) designation. MCGB designations provide the flexibility to use locally available materials that meet the requirements specified in the individual MCGB material specifications. MCGB material requirements contain the following:
    - Material code, for example: FLS MAT 1100
    - Required properties that must be met (chemical, mechanical, etc.)
    - Listing of alternative international standards (if applicable)

2.1.2 Dimensions

Unless otherwise stated all specifications represent the final condition of the part/assembly. The supplier is responsible for making any process adjustments needed to meet the specifications.

2.2 Material/Item Identification and Traceability

2.2.1 Material/Item Identification

Each item for transport and erection shall be marked in the workshop with the part number(s). Like parts consolidated for shipping shall be marked according to the packing list. Marking shall not disturb final surface treatment.

All raw materials shall meet the requirements for material identification as specified in **2005 AISC Specification M5.5**:

> "Material identification procedures shall be sufficient to show the material specification designations and to tie the material to any special material requirements...."

Suppliers shall be able to demonstrate by written procedure and/or by practice a material control process that ensures materials are used as specified.

Material Test Report (MTR) shall be submitted to FLSmidth per the Project Surveillance Plan– Inspection and Test Plan (PSP/ITP). See section on Quality Assurance / Quality Control for more information on PSP/ITP's. The MTR shall include the following:

- Material name
- Class
- Grade
- Heat number
- Chemical properties
- Mechanical properties
- Other information, as needed

2.2.2 Material Traceability

When required by FLSmidth purchase order, suppliers shall show evidence that materials meet the requirements of the applicable material standard (MTR). All plates, piping, beams, or other materials that are cut into different sections shall have the applicable material type, grade, and applicable heat number stamped onto them by using low-stress stamps, etching or other FLSmidth-approved method.

2.3 Stainless Steel and Other Non-Ferrous Alloys

Stainless steel and other non-ferrous alloys must be handled and worked in such a way as to avoid contamination from other steels.

Chapter 3: General Tolerances

Dimensional tolerance on FLSmidth drawings follow the same order of precedence outlined earlier in this document.

In the absence of specific tolerance called out on an individual drawing, and or general tolerances listed in respective WS2 documentation, tolerances shall be in accordance with **ISO 2768** – General Tolerances.

Tolerance refers to the permissible dimensional deviations at 20° C.

3.1 Linear Dimensions—Acceptance Criteria

FLSmidth defines sheet tolerance per **ISO 2768-1** General Tolerances - Part 1. Tolerances for linear and angular dimensions without individual tolerance indications.

3.1.1 Default Tolerance

In the absence of a defined requirement on the drawing or an applicable WS-2 requirement, the following shall apply (**ISO 2768-1** designation M):

Tolerance class	**General Tolerance (mm)**									
	Dimension (mm)	>	0.5[1)]	3	6	30	120	400	1000	2000
		≤	3	6	30	120	400	1000	2000	
Designation	*Description*									
M	Medium	**Max deviation (mm)**	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
1) For nominal sizes below 0.5 mm, the deviations shall be indicated adjacent to the relevant nominal size(s)										

Tolerance class	**Tolerances for Broken Edges (mm)**				
	Dimension (mm)	>	0.5[1)]	3	6
		≤	3	6	
Designation	*Description*				
M	Medium	**Max deviation (mm)**	± 0.2	± 0.5	± 1
1) For nominal sizes below 0.5 mm, the deviations shall be indicated adjacent to the relevant nominal size(s)					

Tolerance class	**Tolerance for Angular Dimensions (mm)** **Dimension of the shorter side of the angle concerned**						
	Dimension (mm)	>	0	10	50	120	400
		≤	10	50	120	400	
Designation	Description						
M	Medium	**Max deviation**	±1 °	±0 ° 30'	±0 ° 20'	±0 ° 10'	±0 ° 5'

3.1.2 Additional Sheet Tolerance Options

Sheet tolerance may be specified in the notes of the drawing per **ISO 2768-1**, by calling out the specific tolerance designation (for example: "Tolerances per ISO 2768-1 designation F"). **ISO 2768-1** tolerances are shown below for reference.

Tolerance class	**General Tolerance (mm)**									
	Dimension (mm)	>	0.5[1)]	3	6	30	120	400	1000	2000
		≤	3	6	30	120	400	1000	2000	
Designation	*Description*									
F	Fine	**Max deviation (mm)**	± 0.05	± 0.05	± 0.1	± 0.15	± 0.2	± 0.3	± 0.5	-
M	Medium		± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
C	Coarse		± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2	± 3	± 4
V	Very Coarse		-	± 0.5	± 1	± 1.5	± 2.5	± 4	± 6	± 8
1) For nominal sizes below 0.5 mm, the deviations shall be indicated adjacent to the relevant nominal size(s)										

Tolerance class	**Tolerances for Broken Edges (mm)**				
	Dimension (mm)	>	0.5[1)]	3	6
		≤	3	6	
Designation	*Description*				
F	Fine	**Max deviation (mm)**	± 0.2	± 0.5	± 1
M	Medium				
C	Coarse		± 0.4	± 1	± 2
V	Very coarse				
1) For nominal sizes below 0.5 mm, the deviations shall be indicated adjacent to the relevant nominal size(s)					

Tolerance class	**Tolerance for Angular Dimensions (mm)** **Dimension of the shorter side of the angle concerned**						
	Dimension (mm)	>	0	10	50	120	400
		≤	10	50	120	400	
Designation	Description						
F	Fine	**Max deviation**	±1 °	±0 ° 30'	±0 ° 20'	±0 ° 10'	±0 ° 5'
M	Medium						
C	Coarse		±1 ° 30'	±1 °	±0 ° 30'	±0 ° 15'	±0 ° 10'
V	Very coarse		±3 °	±2 °	±1 °	±0 ° 30'	±0 ° 20'

3.2 Geometric Dimensioning and Tolerance

FLSmidth drawings may specify tolerance controlling geometric form, orientation, and location. Application and interpretation of these symbols is according to **ASME Y14.5**.

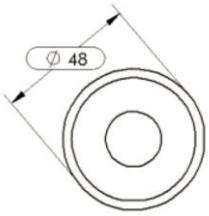
3.3 Dimensional Inspection / Reporting

The supplier is responsible for ensuring all dimensions / requirements are within the specifications called out on the individual drawings and that applicable workmanship standards have been applied. Any deviations from those requirements shall be documented and submitted to FLSmidth QA/QC for dispositioning.

The supplier is required to maintain inspection data and have it available for review by FLSmidth on request.

In some instances FLSmidth may require an inspection report or an FLSmith drawing may require the reporting of specific dimension measurements. FLSmidth uses two (2) methods for this report:

1. Dimensional inspection drawing(s) (FLSmidth drawing specifically called out on the part/assembly drawing and/or the PO):
    - Pictorial representation of the part to be marked up and submitted to FLSmidth.
    - Inspection drawing may be used for multiple similar parts.
2. Dimensional inspection report (called out through the use of inspection designations for dimensions on the drawing):
    - Report will be marked up and submitted to FLSmidth per FLSmidth form F82464SLC (see Appendix A for reference).
    - Each dimension that is required to be listed on the inspection report shall be designated on the drawing as an inspection dimension. Inspection dimensions are designated by an oval box surrounding the dimensions (If the PSP-ITP or PO require dimensional reporting on a drawing without the use of the above designation, all dimensions shall be reported).
    - Example of an inspection dimension:



3.4 Surface Finish

Surface finish requirements are specified per **ISO 1302** - Geometrical Product Specifications (GPS).

3.4.1 Surface Finish Minimum Acceptance Criteria

If surface finish or coatings are not specified, a mill finish (absent excessive rust, scale, corrosion, discoloration, and any other deleterious contamination) is acceptable.

3.4.2 Surface Finish Inspection

When a surface finish is specified, the measured surface finish values shall be expressed as the average of five random measurements taken on the specific surface. No individual measurement may exceed the maximum specified roughness indicated on the drawing.

All measured values that exceed the specified tolerance shall be reported to FLSmidth for review and disposition at the time of inspection.

Chapter 4: Corrosion Protection

Corrosion protection methods include painting, galvanizing and other surface treatments. Corrosion protection shall handle the conditions of sea transportation as well as storage on wharfs and at plant sites.

The following shall not be present when corrosion protection is applied:

- Scratched surface and sharp edges due to torn off material
- Defects due to machining
- Weld deposits, deep pores in welds, severe undercuts or any welded defect outside of the defined acceptance criteria

To avoid damage, make sure all surface treatments are sufficiently dry before moving, stacking or transporting.

4.1 Machined Surfaces

All machined and other non-coated surfaces (uncoated machined surfaces, cast iron surfaces, shafting, mating surfaces, threaded and bolting surfaces and flange faces, etc.) shall be cleaned, and free of rust and other foreign matter; likewise, all machined and other non-coated surfaces shall have a corrosion protection treatment applied that is adequate for a storage time of two years. Examples of corrosion protection treatments include the following:

- Tectyl 505 WD
- Chesterton, Heavy Duty Rust Guard
- Esguard Pipe Coatings
- VCI Plast

When the FLSmidth drawing requires machined surfaces to be painted, the machined surfaces that require paint shall be blasted and then painted with the same Dry Film Thickness (DFT) that is applied to non-machined surfaces.

4.2 Galvanized Surfaces

Unless otherwise specified, all galvanization shall be hot dip galvanizing. Hot dip galvanized components shall comply with **ISO1461** - Hot dip galvanized coatings on fabricated iron and steel articles -- Specifications and test methods or **ASTM A123 / A123M -** Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

The galvanization shall be guaranteed for a minimum of five (5) years.

4.3 Painted Surfaces

All paint must be applied using the paint manufacturer's recommended processes and environmental conditions.

When paint is required, specific color, surface preparation (blast) and paint thickness requirements will be provided with each purchase order, or through notes on the FLSmidth drawings.

Unless otherwise specified by FLSmidth, the manufacturer's standard coating on standard components and electrical equipment is acceptable. All liabilities and guarantees of paint quality and corrosion protection will then be the responsibility of the component manufacturer.

4.3.1 Surface Preparation

Surface preparation shall comply with the **American Steel Structures Painting Council (SSPC)** or **ISO 8501-1** - Preparation of steel substrates before application of paints and related products. The specific surface preparation requirements will be provided with each Purchase Order, or through notes on the FLSmidth drawing.

4.3.2 Masking

Non-painted surfaces (such as uncoated machined surfaces, cast iron surfaces, shafting, mating surfaces, threaded and bolting surfaces and flange faces, etc.), as well as signs, rating plates, valve spindles and other such items, shall be appropriately masked during painting, and shall be free of paint splash.

4.3.3 Finish

Finish surfaces shall be even and smooth without imperfections and impurities. Orange peel appearance and /or wrinkles, runs, sags, drips or other surface defects are unacceptable and shall be removed and recoated.

Finish surfaces shall have a uniform appearance in terms of color and gloss. Touch ups, if needed, shall blend with the original paint as much as possible.

All coated surfaces shall meet the required minimum Dry Film Thickness (DTF). If the coating does not meet the required minimum thickness, another layer of coating shall be applied. (The paint manufacturer's recommended procedures for drying time between coats shall be followed.).

4.3.4 Corrosion Protection Inspection

Painted surfaces shall be inspected in accordance with **SSPC-PA2** or **ISO4628** parts 1-5. At a minimum, the following information shall be recorded for all painted surfaces and then submitted to FLSmidth per the PSP/ITP (the purchase order may require additional information):

- Coating used
- Blast profile applied
- Measured dry film thickness (DFT) per PA2
- Climatic conditions
- Visual inspection results
- FLSmidth paint specification(s) used

4.3.5 Inspection Reports

FLSmidth uses two (2) different inspection reports for painted surfaces. In most cases, suppliers will be required to fill out a generic report (see Appendix C). Suppliers may, however, be required to adhere to a more comprehensive report when required by the PSP-ITP (see Appendix D).

Chapter 5: Quality Assurance/Quality Control

5.1 QA/QC Contacts

For all QA/QC-related correspondence with FLSmidth, contact the purchasing agent or email SLC-QAQC@flsmidth.com.

5.2 Project Surveillance Plan–Inspection and Test Plan (PSP-ITP)

When a component has specific quality requirements, a PSP-ITP will be attached to the associated FLSmidth purchase orders.

The PSP-ITP shall be used in conjunction with engineering drawings and documents to define all quality and manufacturing requirements.

The cover page of the PSP-ITP briefly describes contractual requirements and protocols between FLSmidth, customers and suppliers.

The PSP-ITP specifies the quality and manufacturing requirements including, but not limited to, the following:

- Procedures
- Reports
- Inspection and hold points

Some items listed in the PSP-ITP will require a supplier ITP. The supplier ITP governs the manufacturing of the required parts and shall be signed by the supplier. When a supplier's ITP is not required, the PSP-ITP shall be signed by the supplier as each item is completed; it shall also be signed by inspectors during visits.

5.3 Inspection and Reporting

All inspection and test reports required for a contract shall be specified in the PSP-ITP. The supplier's reports to FLSmidth shall have all necessary information to maintain traceability between parts and documentation.

All reports submitted to FLSmidth shall contain at a minimum:

- FLS PO number
- Contract number
- Type of report
- Must be signed by the supplier's representative

Any report submitted to FLSmidth **without** the required content specified in this document is subject to rejection.

Report Requirement Matrices M1 and M2 (below) indicate all mandatory information for each type of report.

NOTE: The supplier's procedures must be signed by qualified personnel.

M1

FLSmidth QA/QC Report Requirement Matrix

Fabrications, Assemblies, Elastomers, and Electrical Components

	FLS PO and Line	Contract Number (N/A for Warehouse items)	Type of Report	Drawing and Revision Number(s)	Heat/Casting Number(s)	Serial Number(s) (If Separate than Heat/Cast Number)*	Vendor Signature and Date of Report	Approved Procedure and Revision Number(s)	FLS Specification (If Separate than Drawing)	Personnel Qualification	Instrument Used/Calibration	Areas Evaluated	Date of Testing	Photos	Comments
Calibration Reports	■	■	■			■	■				■		■		Instrument Used, as Applicable
Certificate of Conformance	■	■	■			■	■								
Cleanliness Report	■	■	■				■						■		
Contact Test Report	■	■	■			■	■						■	■	
Dimensional Inspection Report	■	■	■	■		■	■								Provide Critical Dimensions**
Elastomer Report	■	■	■	■			■		■				■		
Factory Acceptance Test	■	■	■				■						■		
Flatness Report	■	■	■	■			■						■		
Joint Tightness Report	■	■	■			■	■						■	■	Provide Match Marking Verification
Leak Test Report	■	■	■				■						■		
Liquid Penetrant Test	■	■	■				■	■		■		■	■	■	
Magnetic Particle Inspection	■	■	■				■	■		■		■	■	■	
Match Marking Report	■	■	■				■							■	
Material Test Certificate	■	■	■		■										
Non-Conformance Report	■	■	■	■	■	■	■		■					■	
Packaging Verification Report	■	■	■											■	
Coating Report	■	■	■	■			■	■	■				■		
Performance Run Test	■	■	■			■	■						■		
Positive Material Identification	■	■	■	■	■		■				■		■		
Request for Information	■	■	■				■								
Roundness Test Report	■	■	■	■		■	■						■		
Rubber Lining Report	■	■	■	■			■	■	■				■		
Run-Out Test Report	■	■	■	■		■	■						■		
Stress Relief Heat Treatment	■	■	■	■		■	■	■	■				■		
Template Report	■	■	■	■		■	■						■	■	
Trial Fit-Up	■	■	■	■			■						■	■	
Ultrasound Test	■	■	■				■	■	■	■	■	■	■		
Visual Verification Report	■	■	■						■			■		■	
Visual Weld Inspection Report															

*If items such as Bearing Housing & Shaft Assemblies are serialized by heat/cast number, provide the heat/casting number only
**If a Critical Dimension drawing is provided with the PO, Dimensional Inspection reports must reflect the highlighted dimensions

M2

FLSmidth QA/QC Report Requirement Matrix

Castings, Forgings, and Gears

	FLS PO	Contract Number	Type of Report	Drawing and Revision Number(s)	Heat/Casting Number(s) (If Applicable)	Serial Number(s) (If Separate than Heat/Cast Number)	Vendor Signature and Date of Report	Approved Procedure and Revision Number(s)	FLS Specification (If Separate than Drawing)	Material Standard	Personnel Qualification	Instrument Used/Calibration	Areas Evaluated	Date of Testing	Photos	Comments
Certificate of Conformance	■	■	■		■	■	■									
Contact Test Report	■	■	■		■	■	■							■	■	Provide Tooth Number
Dimensional Inspection Report	■	■	■	■	■	■	■									Provide Critical Dimensions**
Elastomer Report	■	■	■	■			■		■					■		
Excavation Map	■	■	■		■	■	■			■					■	
Gear Data Report	■	■	■	■	■	■	■		■					■		Provide AGMA #
Hardness Test Report	■	■	■		■	■	■		■					■		Includes Transverse Hardness
Heat Treatment Chart	■	■	■	■	■	■	■	■	■	■				■		Chart N/A for In-Mold Stress Relief
Joint Tightness Report	■	■	■		■	■	■							■		
Liquid Penetrant Test	■	■	■		■	■	■	■	■		■		■	■	■	
Magnetic Particle Inspection	■	■	■		■	■	■	■	■		■	■	■	■	■	
Match Marking Report	■	■	■				■								■	
Material Test Certificate	■	■	■		■	■	■		■	■				■		
Non-Conformance Report	■	■	■	■	■	■	■		■						■	
Packaging Verification Report	■	■	■												■	
Coat Report	■	■	■	■			■	■	■					■		
Positive Material Identification	■	■	■	■	■		■					■		■		
Request for Information	■	■	■				■									
Roundness Test Report	■	■	■	■	■	■	■							■		
Rubber Lining Report	■	■	■	■			■	■	■					■		
Run-Out Test Report	■	■	■	■		■	■							■		
Template Report	■	■	■	■		■	■							■	■	
Trial Fit-Up Report	■	■	■	■			■							■	■	
Ultrasound Test	■	■	■				■	■	■		■	■	■	■		
Visual Verification Report	■	■	■		■	■	■							■		

**If a Critical Dimension drawing is provided with the PO, Dimensional Inspection reports must reflect the highlighted dimensions

5.4 Request for Deviations

Requests for deviations from FLSmidth requirements/specifications shall be emailed to SLC-QAQC@flsmidth.com for review and approval **prior** to manufacturing.

The supplier can use the supplier's company form or the FLSmidth form F82458SLC (see Appendix B for reference).

As a minimum, all requests for deviations shall contain the following:

- FLS PO number
- Contract number
- Detailed explanation of deviation
- Information per the relevant item called out in Matrix **M1** and **M2**

5.5 Non-Conformance Reporting and Authorization

Any supplier non-conformance to an FLSmidth specification/requirement shall be reported to the FLSmidth quality department for further review and disposition. The supplier shall not proceed with work until a disposition is given.

When appropriate, a corrective action will be initiated by FLSmidth and submitted to the supplier to identify the root cause and the actions that must be taken to avoid re-occurrence of the non-conformance.

All suppliers' NCRs shall contain at least the following:

- FLS PO number
- Contract number
- Detail explanation of non-conformance
- Information per the relevant item called out in Matrix **M1** and **M2**

Appendices

5.6 Appendix A: Dimensional Inspection Report (Reference: Form F82464SLC)

Contract Sales No.:	Unit Size:
Unit Serial No.:	Ship Date:

Dimensional Inspection Report

Part No:	**Rev:**	**Drawing No:**	**Rev:**
Inspector Name:		**Inspection Date:**	

Identifier	Drawing Sheet No. & Zone	Design Upper Limit	Design Lower Limit	Measured Value	In Tolerance (Y/N)	Deviation (±)
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
K						
L						
M						
N						
O						
P						
Q						
R						
S						
T						
U						
V						
W						
X						
Y						
Z						

Dimensional Inspection Report (continued)

Document Acceptance: This checklist must be completed by the Fabricator prior to shipment. All questions, concerns and identified non-conformances need to be forwarded to an FLSmidth representative.	
AGREED TO AND COMPLETED BY:	REVIEWED AND/OR WITNESSED BY:
Company Name: _____ By: _____ Title:_____ Date Signed: _____	Company Name: FLSmidth. By: _____ Title:_____ Date Signed: _____

5.7 **Appendix B**: Deviation Request Form (Reference: Form F82458SLC)

DEVIATION REQUEST FORM

REQUEST NO. (BY FLS):

BY SUPPLIER

FLS CONTRACT NO.:	**SECTION NO.:**	**DATE:**

COMPANY: _____

_____

REQUESTED BY: _____

PART NO. / DWG NO.: _____
REV NO.: _____

PURCHASE ORDER NO.: _____
REV. NO: _____

PHONE NO.: _____

SPECIFICATION: _____

PART SERIAL NO.(S): _____

_____

_____

PART DESCRIPTION: _____

DESCRIPTION OF DEVIATION:

SUPPLIER SIGNATURE:	TITLE:
PRINT NAME:	DATE:

BY FLS

FLS COMMENTS:

ACCEPT: ☐

REJECT: ☐

Quality Signature:	Engineering Signature:	Buyer Signature:	PM Signature:
Print:	Print:	Print:	Print:
Date:	Date:	Date:	Date:

5.8 Appendix C: Surface Preparation & Painting Inspection Checklist (General) (Reference: Form F82427SLC)

Surface Preparation & Painting Inspection Checklist

CONTRACT SALES No.: _____ UNIT SIZE _____

UNIT SERIAL No: _____ SHIP DATE _____

INSPECTION COMPLETED BY: _____

ITEM	TASK DESCRIPTION	DATE	INSP
	BLAST & PAINT INSPECTION		
A1	Specification: Paint Drawing No.: _____ BOM (Bill of Materials) Notes: _____ _____ _____ _____		
A2	Blast Profile: Surface Preparation Specified: SSPC-_____ ISO 80501-_____ Surface Profile Specified:_____		
A3	Paint Thickness: Specified DFT:_____ Actual *: _____ ☐ µm or ☐ mills _____ _____ _____ _____ _____ _____ _____ _____ * Show six (6) measurements taken at least six feet apart.		

Surface Preparation & Painting Inspection Checklist (General) (continued)

ITEM	TASK DESCRIPTION	DATE	INSP
1.	RECORD ALL DRAWING AND REVISION NUMBERS OF ITEMS INSPECTED _____ _____ _____ _____ _____ _____ _____ _____ * Use Note Section to record additional information.		
2.	CHECK 1ST COAT OF PAINT FOR APPEARANCE AND FINISH. THE COAT IS: _____ DFT ☐ µm or ☐ mills TYPE OF PAINT USED: _____		
3.	CHECK FINAL PAINT FOR APPEARANCE AND FINISH. THE FINISHED COAT IS: _____ DFT ☐ µm or ☐ mills TYPE OF PAINT USED: _____ COLOR:_____		
4.	COAT ALL UNPROTECTED AND MACHINE SURFACES WITH RUST INHIBITOR.		
5.	GOOD GENERAL APPEARANCE OF COMPLETE UNIT.		

NOTES/ COMMENTS:

CONCLUSIONS:

Document Acceptance: This checklist must be completed by the Fabricator prior to shipment. All questions, concerns and identified non-conformances need to be forwarded to an FLSmidth representative.

AGREED TO AND COMPLETED BY:	REVIEWED AND/OR WITNESSED BY:
Company Name: _____	Company Name: FLSmidth.
By: _____	By: _____
Title:_____	Title:_____
Date Signed: _____	Date Signed: _____

5.9 **Appendix D:** Surface Preparation & Painting Inspection Checklist (Special) (Reference: Form F82423SLC)

CONTRACT SALES NO.: _____ UNIT SIZE _____

UNIT SERIAL #: _____ SHIP DATE _____

INSPECTION COMPLETED BY: _____

Paint Inspection Report No. _____

BLAST & PAINT RECORDS FOR UNIT SERIAL # LISTED ABOVE

SPECIFICATION Paint Drawing No.: _____

Parts:

Surface Preparation:

Environmental Conditions:	°C	°F	*Surface Preparation:*	Inspector Readings: ☐	Shop Readings: ☐
Air Temperature	☐	☐	Preparation Method / Material		
Wet Bulb Temperature	☐	☐	Surface Finish Actual (specification)		
Dew Point	☐	☐	Surface Measurement Method		
Relative Humidity %			Surface Profile Actual : ☐µm ☐mills	Number of Readings:	
Inspector Readings ☐			Start Time & Date:	Stop Time & Date:	
Shop Readings: ☐			Surface Temperature:* ☐°C ☐°F	* (must be 3°C [5°F] above dew point)	

Inspector Signature		Date		☐ Accept	☐ Reject	NCR No.

Primer Coat:

Environmental Conditions:	°C	°F	*Coating:*	Inspector Readings: ☐	Shop Readings: ☐
Air Temperature	☐	☐	Coating Product		
Wet Bulb Temperature	☐	☐	Application	Measurement Procedure	
Dew Point	☐	☐	Start Time & Date:	Stop Time & Date:	
Relative Humidity %			Actual DFT: ☐µm ☐mills Low	High	Average
Inspector Readings ☐			No. of DFT Readings		
Shop Readings: ☐			Surface Temperature:* ☐°C ☐°F	* (must be 3°C [5°F] above dew point)	

Inspector Signature		Date		☐ Accept	☐ Reject	NCR No.

Intermediate Coat

Environmental Conditions:		°C	°F	*Coating:*	Inspector Readings: ☐	Shop Readings: ☐
Air Temperature		☐	☐	Coating Product		
Wet Bulb Temperature		☐	☐	Application	Measurement Procedure	
Dew Point		☐	☐	Start Time & Date:	Stop Time & Date:	
Relative Humidity		%		Actual DFT: ☐µm ☐mils	Low	High	Average
Inspector Readings	☐			No. of DFT Readings		
Shop Readings	☐			Surface Temperature:*	☐°C ☐°F	* (must be 3°C [5°F] above dew point)

Inspector Signature		Date		☐ Accept	☐ Reject	NCR No.

Final Coat:

Environmental Conditions:		°C	°F	*Coating:*	Inspector Readings: ☐	Shop Readings: ☐
Air Temperature		☐	☐	Coating Product		
Wet Bulb Temperature		☐	☐	Application	Measurement Procedure	
Dew Point		☐	☐	Start Time & Date:	Stop Time & Date:	
Relative Humidity		%		Actual DFT: ☐µm ☐mils	Low	High	Average
Inspector Readings	☐			No. of DFT Readings		
Shop Readings:	☐			Surface Temperature:*	☐°C ☐°F	* (must be 3°C [5°F] above dew point)

Inspector Signature		Date		☐ Accept	☐ Reject	NCR No.

Surface Protection:

Coat all unprotected and machined surfaces with rust inhibiter.

Coating Product: _____

Inspector Signature		Date		☐ Accept	☐ Reject	NCR No.

Document Acceptance: This checklist must be completed by the Fabricator prior to shipment. All questions, concerns and identified non-conformances need to be forwarded to an FLSmidth representative.

AGREED TO AND COMPLETED BY:	REVIEWED AND/OR WITNESSED BY:
Company Name: _____	Company Name: FLSmidth
By: _____	By: _____
Title: _____	Title: _____
Date Signed: _____	Date Signed: _____