

General terms and conditions for preparing documentation for the Company MAERZ OFENBAU AG, Zurich

Valid as of 13 February 2020

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1 Introduction

This catalogue of requirements for preparing a documentation defines requirements for preparing the supplier documentation. It is integral part of the procurement process of Maerz Ofenbau AG.

The quality of the supplier documentation is controlled by the tools used and methods applied. The supplier documentation must inform the end customer about the safe handling and use of the product. The user must be enabled to implement the necessary measures and processes independently and properly. The end customers' high demands require the provision of a project-specific supplier documentation from the supplier. For this purpose, the provision of standardized supplier documentation by all suppliers involved in a project is indispensable.

All information needs to be compiled in a comprehensive and coherent supplier documentation. The editorial requirements to be met by the supplier with regard to structuring and describing information, preparing the documentation and its submission are explained below.

With the order, the supplier is obliged to adhere to this catalogue of requirements. Deviations from this catalogue of requirements need to be bindingly agreed between the supplier and Maerz Ofenbau AG.

2 Contractual requirements and agreements

2.1 Rights of use

- The supplier documentation shall be submitted to Maerz Ofenbau AG as agreed.
- Documents may be used, passed on and duplicated by Maerz Ofenbau AG within the framework and scope of the plant. Passing on parts of the documentation to third parties is permitted in direct connection with the use of the plant.

2.2 Responsibility for correctness of content

- The supplier assumes responsibility for the correctness of content at the time of delivery.
- The supplier documentation must always be submitted as released and authorised by the supplier.
- The copyright for the supplier documentation and its content remains with the supplier.

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3 General requirements

3.1 Quantity and language

- The supplier documentation shall be submitted as requested/ordered with regard to quantity and language.
- The supplier shall implement and assume responsibility, if required, for the translation of the supplier documentation according to the request/order.

3.2 Identifiability

- The supplier documentation shall be prepared with unambiguous reference to the component and without any multiple references.
- The following rules shall be applied by the supplier:
 - Use unambiguous document numbers
 - Use understandable document titles
 - Use unique identification of the components, e.g. by type or model number

3.3 Description depth

- If the supplier supplies more than one component, he shall submit separate sets of supplier documentation for each component.
- The supplier documentation shall contain all details down to the smallest replaceable unit. The description depth is defined by the supplier.
- A description of how to remove and install all components / assemblies shall be provided.

3.4 Compliance with applicable standards

The supplier undertakes to comply with, and indicate

- any applicable laws and regulations
- the state of the art.

3.5 Measurement units

- Dimensions must be indicated in SI units (International System of Units) or in derived SI units.
- In the supplier documentation units indicated need to be identical to those applicable to the components, consumables and tools.

3.6 Spare parts list

The spare parts list is **not** part of the supplier documentation. The spare parts list shall be directly delivered to the spare parts department (<u>service@maerz.com</u>).

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4 Types of the supplier documentation

The complete technical documentation which Maerz Ofenbau AG submits to the customer consists of several types of documentation. These different types are described in the following chapters.

Depending on the delivered object, the supplier documentation needs to be prepared in different ways. As a basic principle, there are the following types of documentation.

- Supplier documentation for the firing system (▶ 4.1)
- Supplier documentation for the hydraulic system (► 4.2)
- Supplier documentation for the compressed air system (▶ 4.3)
- Supplier documentation for the burner cooling system (► 4.4)
- Supplier documentation for the electrical equipment (► 0)
- Supplier documentation for remaining kiln equipment (▶ 4.6)

4.1 Firing system

For the firing system, the compressed air system and the burner cooling system a distinction is made between technical documentation and quality documentation. Technical documentation is prepared separately from quality documentation.

M-REG	S-REG	
А	Schematic diagram & bill of materials	Maerz Ofenbau AG
В	Quality documentation	Supplier
C Technical Documentation		Supplier

4.1.1 Main register B - Quality documentation

The quality documentation is stored in the main register B (▶ 5.1.3). Also quality documents of purchased third-party components need to be stored. Items which only refer to a Maerz drawing can be left out.

Hard copies

The hard copies are stored in a separate register based on the item number of the Maerz Ofenbau AG bill of materials (BOM). The register shall be labelled with the associated item number (> Appendix 3).

Electronic form

For the electronic form a separate folder shall be created for each item number. In this folder all necessary documents are stored as PDF files (▶ Appendix 1). The designation for the documents (PDF) shall come from the bill of materials (BOM) "certificate" column. If a certificate is applicable to several items, then the document shall be reproduced and stored again under each item number.

4.1.2 Main register C - Technical Documentation

The technical documentation is stored in the main register C. The technical documentation contains the following documents:

- Data sheets (see 5.1.1)
- Drawings and schematic diagrams (see 5.1.2)

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- Operating instructions (see 5.1.4)

Hard copies

The hard copies are stored in a separate register based on the item number of the Maerz Ofenbau AG bill of materials (BOM). The register shall be labelled with the associated item number (Appendix 3).

Electronic form

For the electronic form of the technical documentation a separate folder shall be created for each item number. In this folder all necessary documents are stored as PDF files (> Appendix 2). The documents (PDF) shall be given a meaningful file name (data sheet, drawing, operating instructions, etc.). Label the folders only with the item number.

4.2 Hydraulic system

M-REG	S-REG	
Α	Schematic diagram & bill of materials	Maerz Ofenbau AG
В	Quality documentation	Supplier
С	Technical Documentation	Supplier
D	Installation drawings & electrical wiring diagram	Supplier
E	Declaration of incorporation	Supplier
F	Acceptance reports	Supplier
G	General operating & assembly instructions	Supplier
Н	Installation & commissioning instructions	Supplier

4.2.1 Main register B - Quality documentation

The quality documentation is stored in the main register B (▶ 5.1.3). Also quality documents of purchased third-party components need to be stored. Items which only refer to a Maerz drawing can be left out.

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4.2.2 Main register C - Technical Documentation

The technical documentation is stored in the main register C. The technical documentation contains the following documents:

- Data sheets (► 5.1.1)
- Drawings and schematic diagrams (► 5.1.2)

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- Operating instructions (► 5.1.4)

Hard copies

The hard copies are stored in a separate register based on the item number of the Maerz Ofenbau AG bill of materials (BOM). The register shall be labelled with the associated item number (> Appendix 3).

Electronic form

For the electronic form of the technical documentation a separate folder shall be created for each item number. In this folder all necessary documents are stored as PDF files (Appendix 2). The documents (PDF) shall be given a meaningful file name (data sheet, drawing, operating instructions, etc.). Label the folders only with the item number.

4.2.3 Main register D - Installation drawings & electrical wiring diagram

All installation drawings and electrical wiring diagrams are stored in the main register D.

4.2.4 Main register E - Declaration of incorporation

The declaration of incorporation is stored in the main register E.

4.2.5 Main register F - Acceptance reports

All acceptance reports are stored in the main register F

4.2.6 Main register G - General operating & assembly instructions

All general operating & assembly instructions are stored in the main register G.

4.2.7 Main register H - Installation & commissioning instructions

All installation & commissioning instructions are stored in the main register H.

4.3 Compressed air system

► 4.1 Firing system

4.4 Burner cooling system

► 4.1 Firing system

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4.5 Electrical equipment

The electrical equipment comprises the delivery of the switching cabinets, the control system and the instruments in accordance with the instrument list. The electrical equipment is divided into the following main registers:

M-REG	S-REG		
А	PI diagra	ım, instrument, motor and I/O list	Maerz Ofenbau AG
В	Electrica	l wiring diagrams	Supplier
	Electrica	l cabinet	
	1	Frequency converter	Supplier
С	2	PLC	Supplier
	3	Electrical cabinet components	Supplier
	4	Emergency Off switch	Supplier
D	Control	system	Maerz Ofenbau AG
E	Instruments according to TAG numbers		Supplier
	Quality d	locumentation	Supplier
	1	Frequency converter	Supplier
F	2	Electrical cabinet components	Supplier
	3	Emergency Off switch	Supplier
	4	Instruments according to TAG numbers	Supplier

If not all main registers are used, these will be deleted and the registers that follow will move accordingly.

4.5.1 Main register B - Electrical wiring diagrams

The electrical wiring diagrams are stored in the main register B.

4.5.2 Main register C - Switch cabinet

The documentations for the switch cabinets are stored in the associated sub-registers in the main register C.

4.5.3 Main register E - Instruments according to TAG numbers

In the main register E the individual instruments are sorted into the subregisters on the basis of their TAG numbers. The various TAG numbers are taken from the list of instruments and depicted on the overview sheet (AK000_Übersicht_TAG-Nr.)(► Appendix 4). The TAG numbers are assigned to the subregisters in an alphanumerical order. Hence, the register of the lowest TAG number is register 1.

Identical instruments have identical documentations, however different TAG numbers. These documentations, however, are only stored in the first register of the instrument and merely referred to in the subsequent ones. If, for instance, TAG No. K1026PT1 (register 4) and K1079PT are identical instruments, the documentation is stored in register 4 only. The overview sheet (▶ Appendix 4) depicts the references to the registers in a clear and understandable manner.

The supplier documentation for instruments shall contain the following documents:

- Data sheets (► 5.1.1)
- Drawings and schematic diagrams (► 5.1.2)

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- Operating instructions (► 5.1.4)

4.5.4 Main register F - Quality documentation

The quality documentation is stored in the main register F (\triangleright 5.1.3). The quality documentation is structured in the same way as the instruments (\triangleright 4.5.3 Main register E - Instruments according to TAG numbersnumbers). The instruments' quality documents are stored according to the TAG no. in the same way as the instruments (main register E).

4.6 Remaining kiln equipment

The remaining kiln equipment are all the assemblies used on the kiln which are not part of the systems listed above. For instance, waste gas filters, skip winch, air flaps, blowers and fans, conveyor devices, air blast units, components for catalysts, etc. are such kiln accessories.

The documentation is to be created using a table of contents.

Maerz Ofenbau AG recommends the following content structure:

number		Title	Register
1	Data	1	
2	Draw		
	2.1	PI diagram	2
	2.2	Installation drawings	
	2.3	Detailed drawings	
3	Qual	3	
4	Oper	4	
5	Oper		
	5.1	Component 1	5
	5.2	5.2 Component 2	

Hard copies

The hard copies shall be sorted into separate registers based on the table of contents.

Documentations with just a few pages (<100 pages) can also be filed loosely in display folders.

Electronic form

For the electronic form, a separate folder shall be created for each item of the table of contents *. All necessary documents are stored in this folder as PDF files.

The documents (PDF) shall be given a meaningful file name. Label the folders according to the table of contents.

* For smaller documentation (<100 pages), data sheets, drawings and operating instructions can be combined in one PDF file. The quality documentation must be created as a separate document (PDF).

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5 Content of supplier documentation

The supplier documentation consists of several pieces of content such as data sheets, drawings & schematic diagrams, quality documents, as well as the operating instructions.

5.1.1 Data sheets

- Properties, interfaces and parameters (electrical, mechanical, pneumatic, etc.)
- Operating and environmental conditions
- Information on emissions.

5.1.2 Drawings and schematic diagrams

- PI diagram
- Installation drawings
- Detailed drawings

5.1.3 Quality documentation

All quality documents (CE statements of conformity, declarations of incorporation, acceptance test certificates, ATEX certificates etc.) must be compiled separately in a register / folder.

The following documents and certificates can exist:

- ATEX Directives
- Pressure Equipment Directive 97/23/EC
- Pressure and functional test EN 12266-0
- Pressure and tightness test EN 10204-3.1
- Material certificate EN 10204
- SIL 1 / 2 / 3 according to IEC 61508 & IEC 61511
- Machinery Safety Regulation MSV 2010
- Machinery Directive 2006/42/EU
- Automatic shut-off valves for gas equipment EN161
- Quality Inspection Certificate (Calibration certificate)
- Electromagnetic compatibility 2014/30/EU
- Low voltage directives 2014/35/EU
- Quality inspection certificate IEC60770-2
- Test report 2.2 EN10204-2.2

5.1.4 Operating instructions

The following contents of the operating instructions must be adhered to, where possible:

- Safety instructions
- Design and functions
- Packaging, haulage and storage

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- Assembly, disassembly and commissioning
- Operation
- Cleaning instructions
- Maintenance and inspection intervals
- Troubleshooting and fault elimination
- Measures in specific events
- Instructions for disposal

The individual points of the structure are explained without claiming to be exhaustive. Maerz Ofenbau AG considers these to be minimum requirements for contributing to the standardisation of the quality and use of the supplier documentation. The plausibility check results from these minimum requirements.

5.1.5 Operating instructions of purchased third-party components

Separate operating instructions and data sheets must be provided for all components purchased from subcontractors. These operating instructions shall show the same content as described in chapter "5.1.4 Operating instructions".

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6 Formal requirements

6.1 References and links

- References and links shall be valid.
- Referrals within a file are generated by references.
- References to numbered elements are clear and unambiguous.

6.2 Electronic documentation

- The supplier documentation shall be submitted electronically on a data carrier (CD, DVD, USB drive), by e-mail or via FTP server.
- The file name of a PDF file must be generated in the delivery language and must be self-explanatory. The file name must not be longer than 25 characters.
- The data carrier shall be labelled with the project number (AK...) and the name of the supplier.

6.3 Hard copy of supplier documentation

- The quality of the documentation is "easy to read".
- The complete documentation is printed double-sided and supplied in DIN A4 format.
- It is important that the hard copy has four punched holes (DIN A4; 80mm hole spacing) and printed in colour, where possible.
- The submitted documentation must not be stapled. Furthermore, no bound documents (e.g. spiral binders) are accepted.
- Submitted catalogues are 4-hole punched (DIN A4; hole distance 80 mm).
- Preferably, the entire documentation is stored in the specified folder.
 - Presentation book A4, with clear window, 4-ring, white

Back: 77 mmRing Ø: 50 mm

- Weight: 275 x 318 x 77 mm

 Registers (A4 10-part, blank / white, cardboard) should be used for documentations with item numbers.

6.3.1 Delivery address and contact

Maerz Ofenbau AG Patrick Ewert Richard-Wagner-Strasse 28 8002 Zürich Schweiz

Phone: +41 44 287 27 97

Mail: documentation@maerz.com

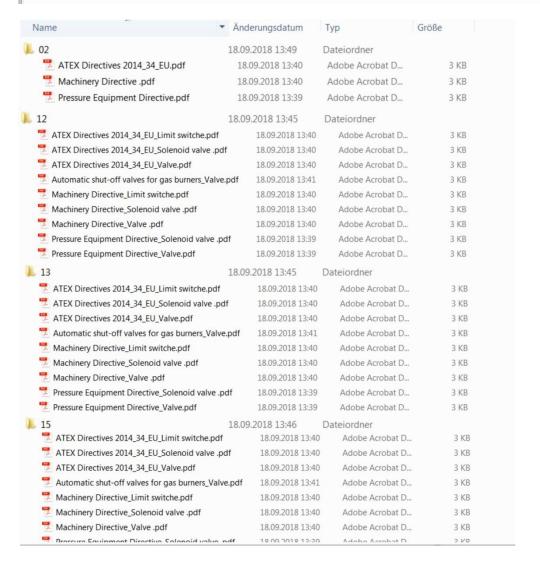
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Documentation for firing system - hydraulics - compressed air system - burner cooling system

Electronic form - quality documentation

Name	Änderungsdatum	Тур	Größe
	Anderdingsdatum	136	GIODE
▶ 02	18.09.2018 13:49	Dateiordner	
1 2	18.09.2018 13:45	Dateiordner	
1 3	18.09.2018 13:45	Dateiordner	
1 5	18.09.2018 13:46	Dateiordner	
1 17	18.09.2018 13:46	Dateiordner	
1 8	18.09.2018 13:46	Dateiordner	
№ 19	18.09.2018 13:47	Dateiordner	
L 20	18.09.2018 13:48	Dateiordner	
II etc	18.09.2018 13:48	Dateiordner	



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Documentation for firing system - hydraulics - compressed air system - burner cooling system

Electronic form - Technical Documentation

Name	Änderungsdatum	Тур	Größe
) 02	18.09.2018 13:49	Dateiordner	
1 2	18.09.2018 13:45	Dateiordner	
1 3	18.09.2018 13:45	Dateiordner	
1 5	18.09.2018 13:46	Dateiordner	
1 7	18.09.2018 13:46	Dateiordner	
l 18	18.09.2018 13:46	Dateiordner	
1 9	18.09.2018 13:47	Dateiordner	
) 20	18.09.2018 13:48	Dateiordner	
▶ etc	18.09.2018 13:48	Dateiordner	
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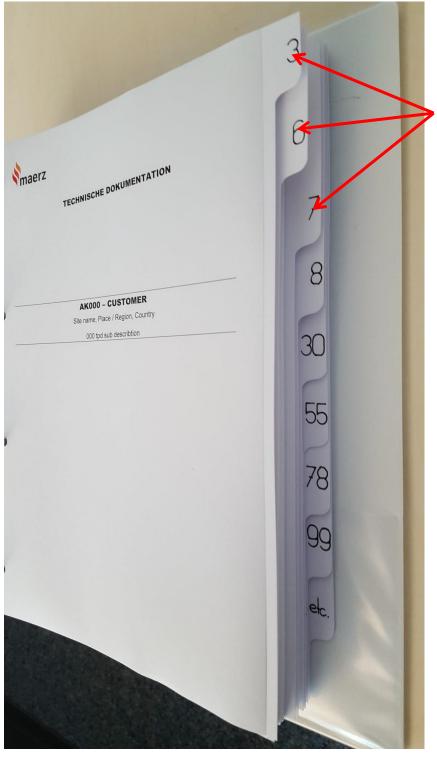
, cic	10.05.2010 15.40	Dateroraner	
	*		
Name	Änderungsdatum	Тур	Größe
<u>L</u> 02	18.09.2018 13:55	Dateiordner	
Data sheet.pdf	18.09.2018 13:50	Adobe Acrobat D	3 KB
Drawing xxx.pdf	18.09.2018 13:54	Adobe Acrobat D	3 KB
Operation Manual.pdf	18.09.2018 13:53	Adobe Acrobat D	3 KB
L 12	18.09.2018 13:59	Dateiordner	
Data sheet_Limit switche.pdf	18.09.2018 13:59	Adobe Acrobat D	3 KB
Data sheet_Solenoid valve.pdf	18.09.2018 13:50	Adobe Acrobat D	3 KB
Data sheet_Valve.pdf	18.09.2018 13:56	Adobe Acrobat D	3 KB
Drawing xxx_Solenoid valve.pdf	18.09.2018 13:54	Adobe Acrobat D	3 KB
Drawing xxx_Valve.pdf	18.09.2018 13:56	Adobe Acrobat D	3 KB
Operation Manual_Limit switche.pdf	18.09.2018 13:58	Adobe Acrobat D	3 KB
Operation Manual_Solenoid valve.pdf	18.09.2018 13:53	Adobe Acrobat D	3 KB
Operation Manual_Valve.pdf	18.09.2018 13:58	Adobe Acrobat D	3 KB
L 13	18.09.2018 14:24	Dateiordner	
Data sheet_Limit switche.pdf	18.09.2018 13:59	Adobe Acrobat D	3 KB
Data sheet_Solenoid valve.pdf	18.09.2018 13:50	Adobe Acrobat D	3 KB
Data sheet_Valve.pdf	18.09.2018 13:56	Adobe Acrobat D	3 KB
Drawing xxx_Solenoid valve.pdf	18.09.2018 13:54	Adobe Acrobat D	3 KB
Drawing xxx_Valve.pdf	18.09.2018 13:56	Adobe Acrobat D	3 KB
Operation Manual_Limit switche.pdf	18.09.2018 13:58	Adobe Acrobat D	3 KB
Operation Manual_Solenoid valve.pdf	18.09.2018 13:53	Adobe Acrobat D	3 KB
Operation Manual_Valve.pdf	18.09.2018 13:58	Adobe Acrobat D	3 KB
] 15	18.09.2018 14:24	Dateiordner	
Data sheet_Limit switche.pdf	18.09.2018 13:59	Adobe Acrobat D	3 KB
Data sheet_Solenoid valve.pdf	18.09.2018 13:50	Adobe Acrobat D	3 KB
Data sheet_Valve.pdf	18.09.2018 13:56	Adobe Acrobat D	3 KB
Drawing xxx_Solenoid valve.pdf	18.09.2018 13:54	Adobe Acrobat D	3 KB
Drawing xxx_Valve.pdf	18.09.2018 13:56	Adobe Acrobat D	3 KB
Operation Manual_Limit switche.pdf	18.09.2018 13:58	Adobe Acrobat D	3 KB
Operation Manual_Solenoid valve.pdf	18.09.2018 13:53	Adobe Acrobat D	3 KB
Operation Manual_Valve.pdf	18.09.2018 13:58	Adobe Acrobat D	3 KB

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Documentation for firing system - hydraulics - compressed air system - burner cooling system

Hard copies



Register with the associated item number

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TECHNISCHE DOKUMENTATION

AK000

INSTRUMENTE

TAG-NR.

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1		

*	
TAG-No.	Register
K1001 TE	01
K1002 TE	01
K1007 LSH	02
K1008 LSH	02
K1020 QE	03
K1021 QE	03
K1022 QE	03
K1026 PT1	04
K1026 PT2	05
K1026 TE	06
K1027 TE	07
K1028 TE	07
K1029 TE	08
K1030 TE	08
K1045 LE	09
K1046 LE	09
K1051 TE1	10
K1051 TE2	10
K1053 TE1	10
K1053 TE2	10
K1052 TE1	10
K1052 TE2	10
K1054 TE1	10
K1054 TE2	10
K1063 LE	11
K1075 PT	04
K1075 TE	12
K1078 PT	04
K1078 TE	01
K1079 PT	04
K1000 LSH	02
K1091 LSH	02
K1020 GSC	13
K1020 GSO	13
K1003 GSF	13
K1003 GSF	13
K1005 GSK	13

K1005 GSF	13
K1006 GSK	13
K1006 GSF	13
K1007 GSU	13
K1007 GSD	13
K1008 GSU	13
K1008 GSD	13
K1009 GSI	13
K1009 GSO	13
K1009 GSU	13
K1009 GSD	13
K1010 GSI	13
K1010 GSO	13
K1010 GSU	13
K1010 GSD	13
K1055 GSAI	13
K1055 GSAO	13
K1055 GSBI	13
K1055 GSBO	13
K1056 GSAI	13
K1056 GSAO	13
K1056 GSBI	13
K1056 GSBO	13
K1057 EAG1	14
K1057 EAR1	14
K1057 HS1	15
K1057 EAG2	14
K1057 EAR2	14
K1057 HS2	15
K1057 EAG3	14
K1057 EAR3	14
K1057 HS3	15
K1061 GSO	13
K1061 GSC	13
K1062 GSO	13
K1062 GSC	13
K1074 GSO	13
K1076 GSK	13

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