

## MQP Level 3

### Procedure for Labelling on Physical Items

This MQP Level-3 document provides procedure for physical labelling complying the MQP Level-2 Procedure for Identification and Controls of Items [U344WG].

This MQP Level-3 procedure describes necessary four types of labelling on hardware (to be manufactured, delivered, stored and installed in the ITER project.

Approval Process			
	<i>Name</i>	<i>Action</i>	<i>Affiliation</i>
<i>Author</i>	<b>Mittag D.</b>	<b>08 Jul 2020:signed</b>	<b>IO/DG/CNST/CMO/SPC</b>
<i>Co-Authors</i>			
<i>Reviewers</i>	<b>Agostini A.</b>	<b>08 Jul 2020:recommended</b>	<b>IO/DG/CNST/CMO/SPC</b>
	<b>Butterfield J.</b>	<b>27 Jul 2020:recommended</b>	<b>IO/DG/CNST/CMO/SPC</b>
	<b>Chiocchio S.</b>	<b>27 Jul 2020:recommended</b>	<b>IO/DG/ENGN/CIO/CMD</b>
	<b>Cordier J.- J.</b>	<b>08 Jul 2020:recommended</b>	<b>IO/DG/ENGN/CIO</b>
	<b>Elbez-Uzan J.</b>	<b>20 Jul 2020:recommended</b>	<b>IO/DG/SQD/EPNS</b>
	<b>Narducci L. *</b>	<b>16 Jul 2020:reviewed</b>	<b>IO/DG/ENGN/DO/CIS</b>
	<b>Neagu S. *</b>	<b>09 Jul 2020:recommended</b>	<b>IO/DG/SQD/QMD</b>
	<b>Olcese M.</b>	<b>22 Jul 2020:recommended</b>	<b>IO/DG/ODG/SA</b>
	<b>Wu S.</b>	<b>21 Jul 2020:recommended</b>	<b>IO/DG/CNST/MCD</b>
<i>Approver</i>	<b>Salamon B.</b>	<b>28 Jul 2020:approved</b>	<b>IO/DG/ENGN/CIO/CMD/DCC</b>
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RO: Khomutnikov Aleksei			
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<i>Change Log</i>			
<b>Procedure for Labelling on Physical Items (VYJ7U2)</b>			
<i><b>Version</b></i>	<i><b>Latest Status</b></i>	<i><b>Issue Date</b></i>	<i><b>Description of Change</b></i>
v0.0	In Work	04 Jan 2018	
v1.0	In Work	04 Jul 2018	First issue - Document created as per MQP Doc Request <a href="https://user.iter.org/?uid=WEYWHH">https://user.iter.org/?uid=WEYWHH</a> .
v1.1	Signed	04 Jul 2018	A duplicated sentence is deleted from the section, "Scope"
v1.2	Revision Required	04 Jul 2018	PDF error corrected (a blank page eliminated)
v1.3	Approved	26 Jul 2018	Reference document [4ALJEU v2.4] is added. Wording were corrected respecting the reviewer's comments. Suggestion for specific information, e.g. font size is currently declined respecting the guideline given by QMD. All evidences justifying the fast track process are attached.
v1.4	Approved	06 Jul 2020	As per approved MQP doc request <a href="https://user.iter.org/?uid=YWE8UC">https://user.iter.org/?uid=YWE8UC</a> the changes are: 1. Figure 1 at page 7 has been updated to the new warehouse label layout 2. Table 1 at page 8 has been adapted to the new layout of the warehouse label

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# 1 Purpose

Labelling physical items is indispensable to control them through design, manufacture, storage, and installation and to realize the ITER plant. This MQP Level-3 document provides general definition and procedure for physical labelling, complying the MQP Level-2 Procedure for Identification and Controls of Items [U344WG]. Detailed requirement shall be specified in Technical Specifications, Annex B of Procurement Arrangements, etc., respecting this MQP L-3 procedure.

# 2 Scope

The scope is the physical labelling on Individually Distinguishable Items, IDIs to be assembled and/or installed in the ITER plant. Following types of items and the labels are in the scope:

- |  |                         |
|--|-------------------------|
| • Physical product, e.g. equipment, component            | (Product Label)         |
| • Shipping container or crate                            | (Shipping Label)        |
| • Stored product or package in the warehouse in the site | (Warehouse Label)       |
| • Product installed at IO as a plant-component           | (Plant Component Label) |

The following are explained in this procedure:

- Environmental durability and convenience,
- Material of label or tag,
- Methodology,
- Dimension, font size, and language,
- Location,
- Contents and format.

## 2.1 Out of Scope

All others are out of scope, especially:

- Any other labelling / signs not related to control of items
  - Labels for safety warning, lockout-tagout (LOTO) ,
  - Sign for operation and maintenance,
- Labels on followings are out of scope:
  - Supply or properties, e.g. personal computers,
  - Chemical substances,
  - Measuring instrument.
- Maintenance labelling after the installation.<sup>1</sup>

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<sup>1</sup> Maintenance Label is affixed to an item in addition to Product and Plant Component Labels. To be specified in Operation and Maintenance, OM process.

### 3 Definitions and Acronyms

#### 3.1 Definitions

Terminology	
Individually Distinguishable Item, IDI	<p>1) IDI is:</p> <ul style="list-style-type: none"> <li>• Item of as-delivered configuration</li> <li>• Item to be assembled, e.g. kit of interface components</li> <li>• Item to be dismantled and re-assembled</li> <li>• Sub-assembly in the site may be an IDI</li> </ul> <p>2) Non-IDI is, for instance, an item assembled before shipping, e.g. interior of IDI, even those may be listed in Manufacturing BOM and/or As-Built BOM.</p> <p>3) Depending on Purpose</p> <ul style="list-style-type: none"> <li>• Items assembled and/or enclosed before shipping and to be physically integrated at the site, e.g. signal conditioner, are not IDIs for logistics or warehouse, but IDI's for construction. Because the connections to be done.</li> </ul>
Tagging	<p>Affixing only identifier(s) to an item is called "Tagging." Tagging instead of labelling can happen, when 1) full set of information is not required and/or 2) area for labelling is not large enough.</p> <p>See examples for cabling [4H5DW6], [UD7GFX].</p>

#### 3.2 Acronyms

	Description	Reference
BOM	Bill Of Material	
CON-C	Contractor for Construction	
CON-M	Contractor for Manufacture	
CRR	Construction Readiness Review	
CST	Construction Department	
DRR	Delivery Readiness Review	
ESP	French Order concerning Pressure Equipment	
ESPN	French Order concerning Nuclear Pressure Equipment	
FR	Functional Reference Number	[28QDBS]
GRR	Goods Receipt Report	[QZ4UEK]
IDI	Individually Distinguished Item	
IRR	Assembly and Installation Readiness Review	
MN	Manufacturer Part Number	[28QDBS]
PA	Procurement Arrangement	
PBS	Plant Breakdown Structure	
PNI	Part Number of ITER	[28QDBS]
RO	Responsible Officer	
SN	Serial Number	[28QDBS]

## 4 Applicable and References Documents

### 4.1 Applicable documents

[1] Procedure for Identification and Controls of Items	[U344WG v1.2]
[2] Sign-Off Authority for Project Documents	[2EXFXU v4.0]
[3] ITER Numbering System for Components and Parts	[28QDBS, Latest]
[4] Article 30 of EU Directive 765/2008	

### 4.2 Reference documents

[5] Procedure for Cataloguing Type References	[UYGU3S]
[6] IO Cabling Rules	[335VF9]
[7] I&C Cubicle Internal Configuration	[4H5DW6]
[8] Specification for Labelling of Equipment on ITER Project	[TL25DK]
[9] Identification of Parts, Components and Physical Items within PBS11 Magnet Systems	[UD7GFX]
[10] Procedure for the Import and Export of Goods	[LF4QST]
[11] Procedure for Transportation of Components to ITER Site	[RY5C6Q]
[12] Procedure for Reception of Components at the ITER Site	[RXCTBZ]
[13] Procedure for the Storage and Preservation of ITER Components at the ITER Site	[RWYED5]
[14] Procedure for Issue of Components from IO Storage	[RW25TC]
[15] ITER Site Signage & Graphics Standards	[4ALJEU v2.4]

## 5 Basic Principles

Labelling is necessary:

- For “Right item in right place”
- No mixing up and no missing item
- To allow people working effectively and communicating with each other, in order to handle items properly.

This section describes general requirements, which shall be specified in each Technical Specification of IDIs to be assembled and/or installed in the ITER plant , e.g. [TL25DK], [UD7GFX], Annex B of Procurement Arrangement, PA.

Firstly, general requirement for all types of labels is described. Then individually 4 types of labels, i.e. 1) Product Label, 2) Shipping Label, 3) Warehouse Label and 4) Plant Component Label are explained.

### 5.1 Environmental Durability and Convenience

The labelling contents shall be clear enough for users over the necessary period, e.g. throughout the IDI lifecycle. Since quality of labeling will degrade, attention should be paid to materials and methods in particular. Typical requirements, as applicable for each specific case, are as follows:

- Visibility
- Adhesion retention
- Chemical resistance
- Outdoor durability
- Fire safety characteristics

- Temperature resistance (high-temperature and cryogenic)
- UV resistance
- Flame retardancy
- Moisture resistance
- Flexibility

Depending on the purpose and/or the environment of the label to be used, attention should be paid in

- Considering environment and technical feasibility to be ensured,
- Selection of material and method of labelling,
- Considering on if the label is permanent or temporary.

## **5.2 Materials of Label or Tag**

- Material shall be selected taken into account of environmental durability and the duration,
- Respect vacuum handbook [2DVBF7], when applicable.

## **5.3 Methodology**

- Typical types of labelling are handwriting, stamps, labels, engraving, ink jet printers, laser markers, and hanging tags,
- Tagging instead of labelling can happen, when 1) full set of information is not required and/or 2) area for labelling is not large enough,
- Tagging, namely only identification code to be allowed as IO-CT and DA/CON-M agreed on the Tech. Spec., etc.

## **5.4 Dimension, Font Size, and Language**

- English and European Number (Translation to mother language can be added for domestic purpose)
- Human readable sizes of characters
- QR or bar code shall be scannable
- Shall be specified in the drawing and/or the Tech. Spec.

## **5.5 Location**

- Labels shall be located visible areas after the production, packing, storage and installation,
- Labels shall not pose any risks in the performance of the IDI (e.g. engraving a label onto a weld),
- Shipping Label is the upper left corner of the largest face of the carton, at least,
- Cables labelling/tagging shall be carried out in one of the following ways [335VF9] and [4H5DW6]

## **5.6 Contents and Format**

There are four types of labelling:

- 1) Product Label: it is affixed to a product and provides the minimum information to identify the Individually Distinguishable Item, IDI;
- 2) Shipping Label: it is a temporary label providing necessary information for delivery;
- 3) Warehouse Label: it is a temporary label to handle the item properly in a warehouse of the ITER site; it is affixed to either a single IDI or to a package;

4) Plant Component Label: it is affixed to IDI installed in the ITER plant.

**Fig. 1** shows examples of four types of labels. Note that necessary contents in each label is specified with the Technical Specification.

**Fig. 2** shows the schematic illustration for the generations and the attachments of those labels within the project life cycle. Regardless status of item, PNI is always attached to the item.

The content of each label is summarized in **Table 1**. Regarding Product and Shipping Labels, the minimum information shall be discussed and agreed between IO-CT and DA/CON-M. Since all relevant data is available in the database with identifier(s), it is not necessary to put full information into a label. Additional explanation for each type of label is as follows:

### **Product Label**

- DA and/or CON-M shall specify Product Label in the product technical specification, the manufacturing drawing etc. for approval by IO-CT, respecting the contractual document taken into account of all the considerations afore mentioned.

### **Shipping Label**

- No additional remarks

### **Warehouse Label**

- For a package enclosing multiple items, not necessary to describe individual PNI's, MN's, etc. Packing List Ref. Num. is the critical data to retrieve all relevant information about those items,
- The warehouses mean those in the ITER Site and off-site storages warehouse, e.g. Port Saint Louis, France.

### **Plant Component Label**

- Technical specification applicable in the construction site is [TL25DK] and according to section 4.5 of [4ALJEU],
- As another accompanying sign is, for instance the location of the electric power shut-off button.

## **5.7 Others**

- For identical products, materials, methods, formats and locations shall be the same.
- Warehouse and Plant Component Labels are entirely managed by IO-CT with CON-C.
- Multiple types of labels, e.g. Product Label and Plant Component Label, can be attached to the same item throughout its lifecycle.
- Since PNI and SN are already included in the Product Label, only FR comprised in the Plant Component Label is finally added at the installation.





Fig. 1 Four Types of Labelling (Examples)

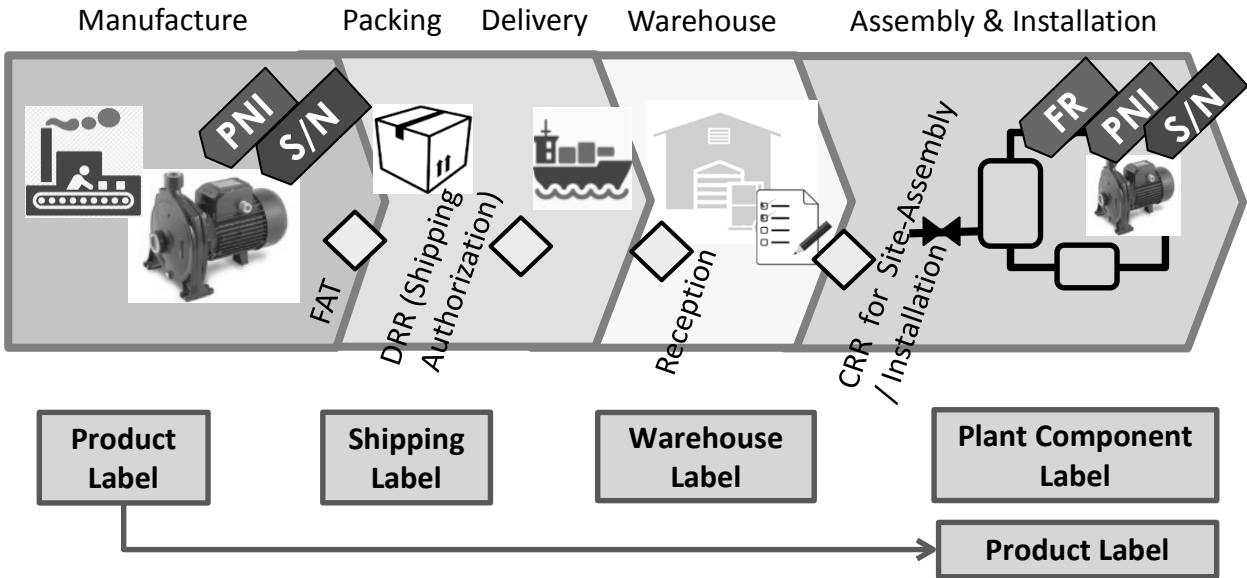


Fig. 2 Four Types of Labelling within Project Lifecycle

**Table 1** Summary for Physical Labels

Label	By whom	When	Lifecycle	Mandatory contents	Additional information may be specified in Tech. Spec., etc.	Note
Product	CON-M	After production	Permanent	1) Title of Product, 2) Manufacture Part Number, MN, 3) PNI, 4) SN, 5) Safety Classification, e.g. PIC/SIC, ESPN, 6) Quality Class.	1) Other Ref. Num., 2) Dimensions, 3) Weight, 4) Supplier, 5) Production Date (MM/YYYY), 6) CE marking, as required [4].	PNI to be provided by IO-CT [28QDB5], [UYGU3S].
Shipping	DA and/or CON-M	After packaging	Temporary	1) Title of crate, 2) Purchase Order, PO, Contract Number, PA code, etc., 3) Shipping/Crate Num., 4) Supplier Ref. Num., 5) MN, 6) PNI, 7) SN, 8) Safety Classification, e.g. PIC/SIC, ESPN, 9) From (CON-M) / To, 10) Net / gross weight, 11) Responsibility, 12) Packing Date (MM/YYYY).	1) Dimensions, 2) Other Ref. Num., 3) Quantity in the crate	For PNI as mentioned above. Accompanying signs, e.g. sign of handling precaution during transportation.
Warehouse	IO-CST with CON-C	After the reception	Temporary	1) PO, Supplier 2) GRR No & Reception Date, 4) 3) Release Note Number & Date 4) Packaging Number 5) PO item & quantity 6) Commodity Code or TAG number(FR) 7) IdentCode/PNI and description of the PNI 8) SN (field SR/HN/Ref.) 9) HN 2 (heat number field 2 in SMat) 10) PIC (Yes/No/SOP) 11) SL (storage level) 12) Certif/ IDM (certification number for qualified material & IDM UID) 13) ESPN	1) SN, Lot/Batch Num. and/or Heat Num., 2) Ship Load, 3) Delivered Dock, 4) Commodity Code, 5) Intentional FR to install, 6) Export License Num., 7) Other Ref. Num., etc.	Accompanying signs, e.g. sign of handling precaution.

				14) Hazard (dangerous goods material) 15) Preservation (Yes/No) and IDM UID		
Plant Component	IO/CST with CON-C	At assembly and/or installation	Permanent	1) Title, 2) FR, 3) Safety Classification, e.g. PIC/SIC, ESPN, 4) QR Code.		Tech. Spec. [TL25DK]. Accompanying signs, e.g. safety labels for hazardous materials, high pressures and/or temperatures.

## 6 Workflow

Timing of affixation of a label is listed in **Table 1**.

## 7 Responsibilities

Responsibility assignments are specified in **Table 1**.

## 8 Link with Other Processes

MQP Processes	Uid	Descriptions
Configuration Management, CM	TZV743	<ul style="list-style-type: none"> <li>Identify items and ensure the installation to the right positions.</li> </ul>
Design Control, DC	U34DDZ	<ul style="list-style-type: none"> <li>Designate designed items and design physical identification taken into account of the environment.</li> </ul>
Handling, storage and transportation, HS	LF4QST, RY5C6Q, RXCTBZ, RWYED5, RW25TC	<ul style="list-style-type: none"> <li>Generate Tech. Spec. or specific procedure respecting this MQP procedure.</li> <li>Identify items in transportation and storage.</li> </ul>
Inspection and Testing, IN	TVL3Y5	<ul style="list-style-type: none"> <li>Ensure a label at each inspection or test.</li> <li>Describe results of inspection in the Maintenance Label.</li> </ul>
Manufacturing, Assembly and Installation, MA	ECBZWE	<ul style="list-style-type: none"> <li>Perform manufacturing design, e.g. manufacturing drawing, Tech. Spec. ensuring physical items are properly labelled.</li> <li>Affix Plant Component Label at the installation.</li> </ul>
Nuclear Safety, NS	9KAZ8T, 347SF3	<ul style="list-style-type: none"> <li>Ensure all PIC/SIC components are clearly labelled with Plant Component Labels.</li> </ul>
Operation and Maintenance, OM	VH9LAB	<ul style="list-style-type: none"> <li>Utilize labels and tags attached to physical items for operation and maintenance.</li> </ul>
Quality Assurance, QA	24VQES	<ul style="list-style-type: none"> <li>Quality classification</li> </ul>

## 9 Outputs (Records, Deliverables, Implementation Plans....)

Not Applicable, N/A.