**DATA DELIVERY REQUIREMENTS FOR ENGINEERING, INFRA AND EQUIPMENT SUPPLIERS**

Contents

[1 General 3](#_Toc189145864)

[2 Data delivery templates 5](#_Toc189145865)

[2.1 Delivery scope for engineering suppliers 5](#_Toc189145866)

[2.2 Delivery timeline for engineering suppliers 5](#_Toc189145867)

[2.3 Delivery scope for equipment/infra suppliers 5](#_Toc189145868)

[2.4 Delivery timeline for equipment/infra suppliers 8](#_Toc189145869)

[2.5 Delivery method - all suppliers 8](#_Toc189145870)

[3 Requirements on filling in the templates 8](#_Toc189145871)

[3.1 Usage of index numbers / unique IDs 8](#_Toc189145872)

[3.2 Functional location data standard 9](#_Toc189145873)

[3.2.1 Functional location data as part of Mill Hierarchy 9](#_Toc189145874)

[3.2.2 MG Mill hierarchy standard 10](#_Toc189145875)

[3.2.3 What is a Functional location 10](#_Toc189145876)

[3.2.4 When Functional location should be created and Metsä Group level business rules 10](#_Toc189145877)

[3.2.5 Field specific instructions 11](#_Toc189145878)

[4 Data delivery details 13](#_Toc189145879)

[4.1 Equipment 13](#_Toc189145880)

[4.2 Equipment BOM 13](#_Toc189145881)

[4.3 Equipment properties 14](#_Toc189145882)

[4.4 Functional location 15](#_Toc189145883)

[4.5 Functional location BOM 15](#_Toc189145884)

[4.6 Functional location properties 16](#_Toc189145885)

[4.7 Material data 17](#_Toc189145886)

[4.8 Measuring point 18](#_Toc189145887)

[4.9 Preventive maintenance 19](#_Toc189145888)

[4.10 Spare parts material BOM 19](#_Toc189145889)

Revision History

|  |  |  |
| --- | --- | --- |
| Revision / Date |  | Change |
| 0.1 / 28.10.2024 |  | Initial draft, Sanni Seppälä, Eevaliisa Takalahti, Paula Hantula, Kari Aho |
| 0.2 / 20.11.2024 |  | Changes based on internal review with Procurement, Sanni Seppälä |
| 0.3 / 15.1.2025 |  | Material data print screens updated based on template updates, Sanni Seppälä |
| 0.4 / 30.1.2025 |  | Updated templates to latest version, Sanni Seppälä |

# General

Purpose of this document is to outline the Metsä Group data delivery requirements for engineering and equipment suppliers.

**Key terminology:**

* By **equipment suppliers**, we mean e.g. suppliers of production equipment and related components, and infra (including buildings, underground structures, construction technology, safety technology). See section below for examples on infra
* By **data delivery** in this context, we mean the structured master data describing equipment, related materials (e.g. spare parts, production supplies), equipment & functional location properties, Bill of Materials, preventive maintenance information, and information about Measurement Points / Counters
* By **document delivery**, we mean the delivery of documents defined in the S37 standard. This file includes the requirements for document delivery in general and document metadata gathering

All information given in this document is based on Metsä Group guidelines.

**Templates in scope of these requirements:**

* 1-Equipment\_data\_supplier\_template.xls
* 1-Equipment\_properties\_supplier\_template.xls
* 1-EquipmentBOM\_supplier\_template.xls
* 1-FunctionalLocation\_supplier\_template.xls
* 1-Functional location\_properties\_supplier\_template.xls
* 1-FunctionalLocationBOM\_supplier\_template.xls
* 1-Material data template Investment project.xls
* 1-MeasuringPoint\_supplier\_template.xls
* 1-Preventive\_Maintenance\_Supplier\_template.xls
* 1-SparePartsMaterialBOM\_supplier\_template.xls

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**What infra related items are in scope for delivery?**

If the object/equipment needs regular inspections or maintenance, the data delivery requirements apply.

**Examples of infra objects requiring Functional location and Preventive maintenance data delivery**

* Radon gas protection
* The inspection wells of the sewers & drains – each well its own FL – all types of wells
* Dam walls
* Green areas requiring gardening
* Rails, railway tracks
* Raw water pipes, waste water pipes and drains, sluices, where the factory's water is cut off
* Masts/light poles and lamps

**Examples of infra objects requiring functional location, Equipment + all related data**

* Ventilation machines, Cooling machines, Sprinklers, Fire detectors, Gas extinguishing systems
* Shut-off valves, Air valves and other valves
* Fire posts, water posts etc
* Equipment within water treatment plants
* Gates, barriers
* Contents of traffic guidance and control systems, e.g. electromechanical signs and signs, information boards, traffic lights
* Electrical, telecommunication and mechanical equipment, e.g. air pumping stations, standby power machines, auxiliary electrical systems, transport equipment
* Deicing systems, e.g. wells, pipes, slope heating
* Population protection premise equipment
* Water ceiling objects
* Roof security devices such as ladders, footbridges
* Elevators
* Kitchen equipment

# Data delivery templates

## Delivery scope for engineering suppliers

The data delivery template:

* Functional locations



The template outlines the mandatory fields. The template needs to be delivered with all mandatory fields. Functional locations must comply with the Functional location data standard as described later in this document.

## Delivery timeline for engineering suppliers

Template is to be provided fully:

* When planning is complete

In case changes occur, changes are to be provided.

## Delivery scope for equipment/infra suppliers

Data must be delivered for all equipment included in the contract, with respective properties, spare parts, spare part recommendations, production supplies, bill of materials and other details stated below. All respective files must be filled in for all equipment.

Functional locations will be delivered for the supplier.

The data delivery templates include:

* Material (e.g. spare parts, production supplies)
* Equipment
* Equipment properties (classification)
* Functional location properties (classification)
* Equipment, Functional Location & Material BOMs
* Preventive maintenance
* Measurement Points / Counters / IoT
* Documentation metadata (delivered later)



Each template outlines the mandatory fields. All of the relevant templates need to be delivered with complete data. Metsä will inform supplier if some of the above templates are not relevant for the contract.

Properties will be collected for each type separately. The template above is an example of the level of detail needed.

Property type excels will be separately collected for:

|  |  |  |
| --- | --- | --- |
| Class | Description FI (max 40 CHAR) | Description EN |
| PM\_EQ | Yhteinen laiteluokka | Common EQ class |
| PM\_EQ\_EDE | Sähkölaite | Electric device |
| PM\_EQ\_EDEC | Ohjauskaappi | Control cabinet |
| PM\_EQ\_EDECS | Ohjausjärjestelmälaite | Control system equipment |
| PM\_EQ\_EDES | Sähkökeskus | El device Switchgear |
| PM\_EQ\_EDET | Muuntaja | Transformer |
| PM\_EQ\_EDESW | Katkaisija, erotin | Disconnect. switch |
| PM\_EQ\_EMO | Sähkömoottori | Electric motor |
| PM\_EQ\_EMOA | Vaihtovirta moottori | Alternative current motor |
| PM\_EQ\_EMOD | Tasavirta moottori | Direct current motor |
| PM\_EQ\_IAC | Toimilaite | Actuator |
| PM\_EQ\_IMI | Mittauslaite | Measuring instrument |
| PM\_EQ\_ITE | It-laite | IT equipment |
| PM\_EQ\_MAA | Sekoitin | Mixer |
| PM\_EQ\_MBA | Allas | Basin |
| PM\_EQ\_MBL | Puhallin | Fan |
| PM\_EQ\_MCM | Kompressori | Compressor |
| PM\_EQ\_MCMP | Mäntäkompressori | Piston compressor |
| PM\_EQ\_MCMS | Ruuvikompressori | Screw compressor |
| PM\_EQ\_MCO | Kuljetin | Conveyor |
| PM\_EQ\_MCOA | Kolakuljetin | Scraper conveyor |
| PM\_EQ\_MCOB | Hihnakuljetin | Belt conveyer |
| PM\_EQ\_MCOC | Ketjukuljetin | Shain conveyer |
| PM\_EQ\_MCOD | Laahakuljetin | Drag conveyer |
| PM\_EQ\_MCOL | Lastausvarsi | Loading arm |
| PM\_EQ\_MCOLC | Lamellikuljetin | Lamella conveyer |
| PM\_EQ\_MCOPC | Raappakuljetin | Pusher conveyer |
| PM\_EQ\_MCOR | Kääntölaite | Rotating device |
| PM\_EQ\_MCOS | Ruuvikuljetin | Screw conveyer |
| PM\_EQ\_MCOT | Rullakuljetin | Roller conveyer |
| PM\_EQ\_MCT | Kuljetuslaite | Transport device |
| PM\_EQ\_MCTV | Ajoneuvo | Vehicle |
| PM\_EQ\_MDR | Voimansiirrin | Transmission |
| PM\_EQ\_MDRC | Kytkin | Clutch |
| PM\_EQ\_MDRDS | Käyttöakselisto | Drive shaft |
| PM\_EQ\_MDRGA | Vaihteisto | Gear assembly |
| PM\_EQ\_MDRGB | Vaihde | Gear box |
| PM\_EQ\_MDRGM | Vaihdemoottori | Gear Motor |
| PM\_EQ\_MDT | Turbiini | Turbine |
| PM\_EQ\_MEF | Uuni | Furnace |
| PM\_EQ\_MEK | Kattila | Boiler |
| PM\_EQ\_MFF | Syötin | Feeder |
| PM\_EQ\_MFS | Suodatin | Filter |
| PM\_EQ\_MHE | Lämmönsiirrin | Heat exchanger |
| PM\_EQ\_MHY | Hydraulilaite | Hydraulic equipment |
| PM\_EQ\_MLA | Nostolaite | Lifting appliance |
| PM\_EQ\_MLAB | Siltanosturi | Bridge grane |
| PM\_EQ\_MLAC | Nosturi | Grane |
| PM\_EQ\_MLAE | Hissi | Elevator |
| PM\_EQ\_MLI | Nostin | Lifting device |
| PM\_EQ\_MMB | Kuorin | Debarking machine |
| PM\_EQ\_MMBD | Kuorimarumpu | Debarking drum |
| PM\_EQ\_MMBM | Kuorimakone | Debarking machine |
| PM\_EQ\_MMG | Materiaalimuokkain | Shaping machine |
| PM\_EQ\_MMGG | Hiomakone | Drinding mashine |
| PM\_EQ\_MMI | Mylly | Mill |
| PM\_EQ\_MMK | Pakkauskone | Packaging machine |
| PM\_EQ\_MMP | Puristin | Press |
| PM\_EQ\_MMT | Seula | Sieve |
| PM\_EQ\_MMU | Murskain | Crusher |
| PM\_EQ\_MMW | Saha | Saw |
| PM\_EQ\_MMWB | Vannesaha | Band saw |
| PM\_EQ\_MMWC | Pyörösaha | Circular saw |
| PM\_EQ\_MMWE | Särmäsaha | Edging saw |
| PM\_EQ\_MMWH | Pelkkahakkuri | Chipping canter |
| PM\_EQ\_MMWR | Tukin sievistin | Log reducer |
| PM\_EQ\_MMWT | Trimmeri | Trimmer |
| PM\_EQ\_MPU | Pumppu | Pump |
| PM\_EQ\_MPUC | Keskipakopumppu | Centrifugal pump |
| PM\_EQ\_MRL | Tela | Roll |
| PM\_EQ\_MTT | Sakeutin | Thickener |
| PM\_EQ\_MTV | Säiliö | Vessel |
| PM\_EQ\_MTVP | Painesäiliö | Pressure vessel |
| PM\_EQ\_MWA | Pesuri | Scrubber |
| PM\_EQ\_MXL | Nuohoin | Soot blower |
| PM\_EQ\_MXX | Muu laite | Other eq |
| PM\_EQ\_MXXRS | Säteilylähde | Radiation source |
| PM\_EQ\_PLC | Kudos | Machine clothing |
| PM\_EQ\_PLCF | Huopa | Felt |
| PM\_EQ\_PLCW | Viira | Wire |
| PM\_EQ\_RET | Kiinteistötekniikka | Real estate technology |
| PM\_EQ\_TPA | Putkistovaruste | Piping equipment |
| PM\_EQ\_TPL | Putki | Pipeline |
| PM\_EQ\_TVA | Venttiili | Valve |
| PM\_EQ\_TVAS | Varoventtiili | Safety valve |
| PM\_EQ\_VVH | LVI-lämmitin | HVAC heater |
| PM\_EQ\_VVHC | Kiertoilmalämmitin | Circulating air heater |
| PM\_EQ\_VVHR | Lämmityspatteri | Heating radiator |
| PM\_EQ\_VXX | Muu LVI-laite | Other HVAC equipment |

## Delivery timeline for equipment/infra suppliers

Templates are to be provided in three stages:

* When design/planning is complete
* Changes, when goods have been delivered
* Changes after installation (as-built)

## Delivery method - all suppliers

All filled in templates are to be delivered on a shared M-files vault or a solution otherwise agreed with the investment project. In larger investments, the engineering supplier creates the functional locations for example within ProElina. Engineering supplier must comply with the requirements stated later in this file in “Functional location data standard”. More detailed instructions on document format, storing and numbering given by the project must be followed. Only templates attached to the contract by Metsä are to be used.

The supplier must inform the Metsä investment project contact person when the files are ready in M-files or otherwise agreed solution. Each stage must be separately informed, that changes have been provided. Investment project will check the completeness and quality of delivered data and request adjustments from supplier if the data does not comply with requirements and instructions. The requested adjustments must be provided within 2 weeks of the request. The delivery of all data and requested adjustments has to be completed before the agreed payment for supplier.

# Requirements on filling in the templates

Field specific instructions are available on all templates and must be followed.

In case there are unclarities or questions about instructions, please contact the investment project for assistance.

## Usage of index numbers / unique IDs

The index numbers joins the data between the templates together. Please ensure you use the same numbering across templates, so that data doesn’t get mixed up.

A screenshot of a computer

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## Functional location data standard

This instruction is applicable to engineering suppliers that create or modify functional locations.

### Functional location data as part of Mill Hierarchy

Technical structure is based on technical objects. It is built by using Functional locations representing technical departments, subdepartments and deeper levels until functional locations in where equipment are installed.

Functional locations represent a complex, generally multilevel structure for technical systems, where you create each element of the technical system structure as a functional location. Therefore, functional locations are used to establish a vertical asset structure.

Functional locations represent immovable, functional units. Examples include process plants, power plants, production lines, buildings, conduits, infrastructure, and computer networks etc.

A functional location represents the place at which a maintenance activity is to be performed. Functional location can have historical data. Equipment and material can be attached on to it.

### MG Mill hierarchy standard

A diagram of a plant

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### What is a Functional location

Functional location typically is representing location, functional or logical hierarchy that helps to maintain, report or find information of equipment's to be maintained or serviced.

Hierarchy also can optimize the data maintenance work by defining data that could be inherited by the lower-level hierarchy nodes automatically

### When Functional location should be created and Metsä Group level business rules

Functional location will be created for all structural objects.

In Metsä Group the functional location structure is standardized in Mill Hierarchy Standard.

Functional location hierarchy level 1-4 are defined at the Metsä group level

### Field specific instructions

**Functional location naming convention**

* Plant specific prefix
  + Prefix AAA
  + Example Tissue Mariestad
    - MAR
* Functional location ID max. 30 char

**Functional Location categories**

* Fixed value M in Metsä Group

**Functional Location description**

* Maintained in local language and English
* Max length 40 char

**Location data**

* Is inheriting from superior function location
* When entering data, you must ensure that superior functional location is found. Only at level 1 there is no superior functional location

**Functional Location General data**

* Object type
  + Object type is configuration data. Type of technical object according to PSK standard. For example, MPU = pump and EMO = electrical motor etc.
* Data which is Functional Location specific can be entered
  + Weight, side / dimension, inventory number, start update, reference data acquisition data & value,
  + Manufacturer data
    - Manufacturer, manufacturing country, model number, construction year and month, manufacturer part number and serial number

**Organization**

* Maintenance plant, Location, Plant section, ABC indicator, Business area, Cost center, Planning plant, Planner group, Main work center, Plant of work center, Catalog profile
* Is inheriting from superior function location
* Planner group G0 will be used in mill level and block level functional locations to indicate the responsibility.

**Functional Location master data: Classification and Characteristics**

* Classes can be linked to functional locations
* For classes and characteristics (properties) are separate templates

**Functional Location Structure Indicators**

In Metsä Group standard the Structure Indicators are:

**MGH1** and **MGH2** for Hierarchical functional locations

* ***MGH2*** is meant for legacy hierarchical functional locations. Will be used for migration of hierarchical functional locations from legacy systems and if there is need to extend the hierarchical structure based on current logic. Optional.for investment project

***MTH2 & MTH3*** Only for Metsä Tissue

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**Group functional locations**

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**Example**

Tissue functional locations:

* MTH3
* AAASNNN-NNN-SSSSSSSSSSSSSSSSSS

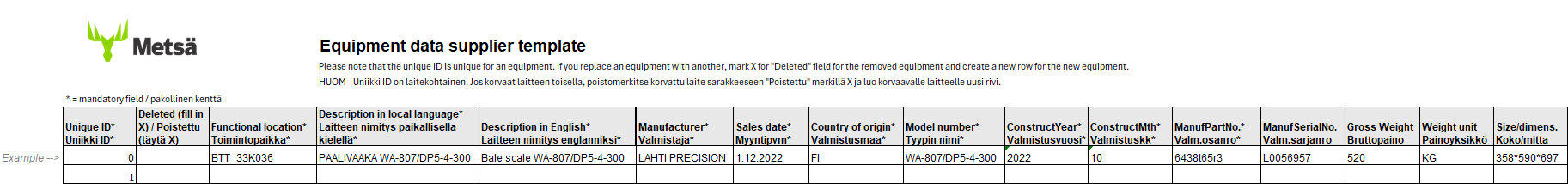
A close-up of a structure

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# Data delivery details

The below images outline the data delivery requirements with examples. Actual templates are embedded into this file as excel files.

## Equipment



## Equipment BOM

A screenshot of a computer

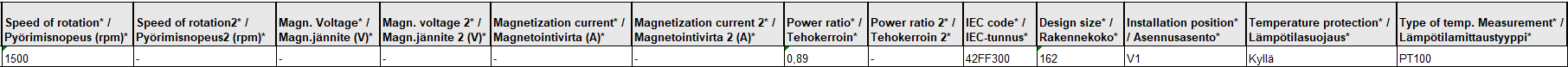
Description automatically generated

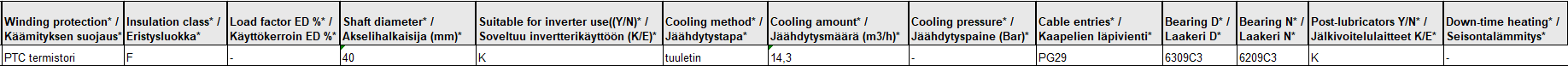
## Equipment properties

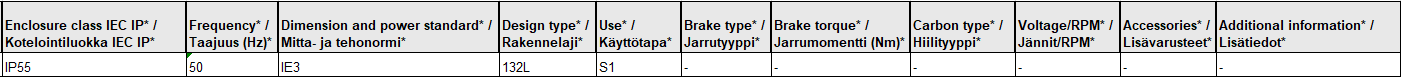
The below example illustrates the required fields for Electric motors, with example of level of details needed. The templates for each type of objects are provided later.

A screenshot of a computer

Description automatically generated

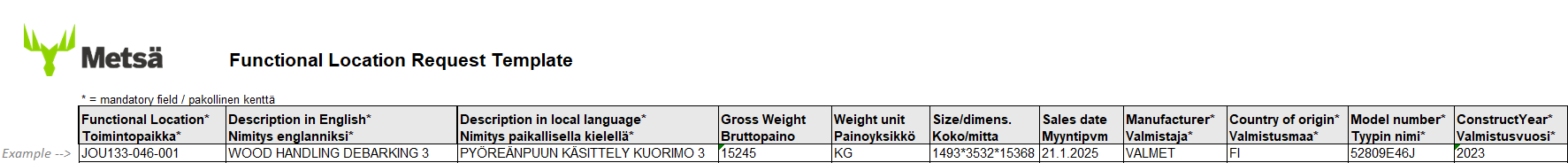






## Functional location

A close-up of a sign

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## Functional location BOM

A screenshot of a computer

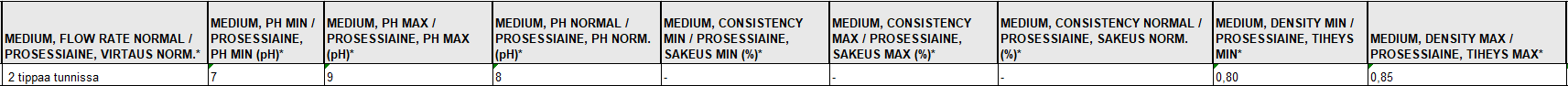
Description automatically generated

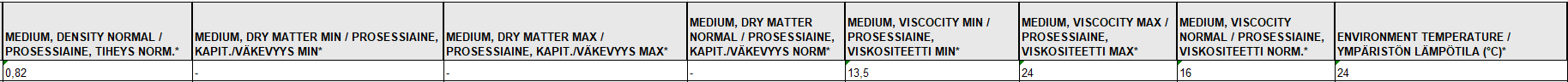
## Functional location properties

The below example illustrates the required fields for Process data, with example of level of details needed. The templates for each type of objects are provided later.

A screenshot of a computer

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## Material data

A screenshot of a computer

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A screen shot of a computer

Description automatically generated

A close-up of a computer screen

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## Measuring point

A screenshot of a computer

Description automatically generated

A white rectangular box with black text

Description automatically generated

## Preventive maintenance

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

## Spare parts material BOM

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