

Strength. Performance. Passion.

Global Material Master Data Directory Maintenance Procedure

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1. Introduction

The present document regulates the master data maintenance process for defined materials categories and classification of EMEA Material Master Data Directory at EMEA region. Focus of this document is the list of materials under the Virtual Warehouse initiative at initial stage, including business flow , roles and responsibilities and workflow, and for selected Global Multi-local Procurement material categories.

The mission of this document is to guarantee a common understanding and compliance to the key principles, guidelines and standards for EMEA Material Master Data Directory across all OpCos in EMEA region, in order to enable high quality Material Master Data.

To achieve this goal an EMEA implementation of common policies, standards and guidelines for Master Data Management is required.

Organizational workflow is needed to manage the way data is treated, used and reported.

The result of EMEA Material Master Data Standardized Directory at EMEA region will be:

- Unique identification and data set for MAN/P2P Materials for certain materials categories, increasing inventory accuracy and transparency, as well as standardization and quality of common master data.
- Standardize the processes of creation and maintenance of Materials.
- Avoid material duplication and achieve meaningful description in Local and English Language
- Easier and more effective implementation of processes and tools for cross –region supply chain optimization
- Better capturing the supply base options and their impact on operations
- Increase efficiency for statistics consolidation across EMEA

This procedure will be put in force for EMEA Region starting 1st January 2014.

The classification procedure is the subject of separate documents under the responsibility and led by the Category Managers for individual categories.

2. Scope

This procedure is mandatory for all materials under Naming Convention and all Companies involved in the EMEA Material Master Data Standard directory initiative and all parties involved in the maintenance process and request of creation, changes or deletion of materials in SAP.

All PCS (product classification system) included under the scope will be classified in the SAP classification system.

The records are subject to consolidation exercise avoiding duplications across EMEA and assuring the quality and consistency of data.

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A. Materials under Virtual Warehouse

Virtual Warehouse is recognized as one of the best practice to improve inventories of materials. Main target is to share materials in order to reduce inventories by keeping safety stocks for several countries and not for each plant.

The objective of the Virtual Warehouse is reduction of net working capital through a better management of procured inventory, by implementing a program for improving the way procured inventory is managed whilst assuring and maintaining the plants availability.

The procedure covers the following material categories:

- **Virtual Warehouse 1**st **phase:** Refractories, Grinding Media, Bearings, Electric Motors, Geared Motors, Filter Bags, Belts, VSD at later stage 1st January 2013
- Additional phases to be discussed

B. Materials belonging to selected Global Multi-local Procurement categories

Materials under Global Multi-local procurement initiative are standarised under common values per characteristics for each PCS and are subject to consolidation exercise, avoiding duplication in plants across EMEA, in line with LEAP Project.

• 1st phase includes standard PCS of Refractories, Grinding Media, Bearings, Electric Motors, Geared Motors, Filter Bags, Belts, VSD and Traditional Solid Fuels

Annexe 7.

3. Definiton of characteristic and values

Definition and approval of common standard Materials characteristics and values must be agreed and performed by Category Managers and Business Experts community.

Definition of the naming convention, characteristics and values is subject to additional business process and business procedure partially reflected in annexe1.1 (VW materials) and annexe2 standard materials) for defined categories.

4. Approval Process

Materials maintenance request for creation/modification consists of three steps:

- **Request creation:** Three different activities can be requested:,
 - o new data creation
 - o Extension
 - o deletion.

This step should be performed by requester role.

• Requester Approval level 1: Approval level step performed by EMEA Master Data Administrator (EMEA MDM Team) for materials standardized under Naming Convention.

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 Data Completion: Completion and data store of the request in SAP. Performed by EMEA Master Data Administrator (EMEA MDM Team) for VW and Traditional Solid Fuels materials or Local Master Data Administrator for certain material categories defined under LEAP Project.

Annexe 3.

5. Maintenance process

After completion of approval process, EMEA MDM team is responsible for material maintenance in SAP system.

EMEA MDM team is the responsible for timely maintenance in line with Service Level Agreement (SLA) deadlines as well as quality of the centralized materials under EMEA Material Master Data Directory.

In order to fulfill the defined EMEA Master Data Standard Directory, the short description (mandatory) and long description will be automatically maintained by the system, by using the specific characteristics defined for each SAP class, and reviewed by MDM Administrator. Search function is via classes and characteristics, for materials managed with classification system. Z2 language is used for the automatically generated description.

Additionally any changes must be reflected as well in the standard SAP description out of Naming Convention (Applicable at first stage only for Traditional Solid Fuels)

6. Roles and responsibilities

Material Classification Responsibility: Material classification is the object under the responsibility of Procurement Category Manager and Business (MAN/P2P) Experts, depending on the material category.

Material Maintenance Resposibility: Specific roles are defined, including relevant responsibilities for Material Master Data Directory maintenance:

- **Requester:** All requests should be created by requester, filling all mandatory fields and optionally consulted with specialist. Requester is responsible for accurate and quality of request.
- **VW Coordinator**: VW coordinator must support the requesters when creating the requests in order to ensure integrity and quality of data enterered regarding the Naming Convention (Material classification). This info is key to ensure that materials will not be duplicated in the system
- **Opco Specialist:** This person must support the requesters when creating the requests in order to ensure overall integrity and quality of data enterered in the requests (Purchasing, MRP, Inventory, Accounting).

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• EMEA Master Data Administrator: All requests should be accepted/rejected and performed timely, according to defined SLA, and stored in SAP. EMEA Master Data Administrator is responsible for the quality check, duplications and accuracy of the data.

Accountability: The accountability of the proper implementation and maintenance of defined rules for EMEA Master Data Directory belongs to EMEA Material Master Data Administrator based on quality input from relevant stakeholders (Local Material Master Data Administrators, EMEA Material Master Data Administrator, Specialist, Warehouse Responsible, Business & Process Experts and Local Management)

Annexe 4

7. IT Solution

SAP MDM tool (Masimo) is proposed solution starting 2014. SAP MDM tool is object oriented, allowing several approvals levels and communication to main stakeholders involved in request process, with the clear target to define clear approval process, minimize manual interference and reduce possible errors during creation of materials under EMEA Material Master Data directory in SAP, and to avoid duplications and to increase efficiency of the maintenance, reducing local OpCos workload.

Main issue detected in SAP Masimo tool is that this tool needs to manage material requests with local approval flow and central approval flow, depending on the material category

- 1. Material categories standardized under NC (Virtual Warehouse) will be approved by EMEA MDM team -> Central Aproval flow at EMEA level
- 2. Material categories not standardized under NC will be approved by local MDM administrators in Opcos-> Local Aproval flow at EMEA level

Temporary excel/Mail solution, will be used till July 2014 for VW materials and Traditional Solid Fuels until SAP solution (Masimo tool) is updated. Change request is ongoing to update Masimo tool allowing this functionality. Deadline expected to have the tool updated is 01/07/21014.

Enclosed you can find excel template actually in use:



8. Cleansing

A lack of standards in master data records that are distributed across multiple systems can produce poor quality data and duplicate data as well as incomplete, inconsistent, and inaccurate information.

The resulting difficulties in retrieving master data can result in inefficiencies in transactional, analytical, and reporting processes. These factors can produce unreliable business information, leading to inaccurate or suboptimal decisions and missed opportunities for cost savings and improved efficiencies.

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In order to ensure a clean, reliable and sustainable material master data in EMEA, the Master Data Administrators in coordination with Master Data Specialists will perform cleansing activities as well as track the defined PPIs on the regular basis (minimum once per year).

The cleansing activities are performed on regular basis in line with Business Expert Community Guidelines. Separate cleansing activities procedures established in EMEA Region for Material Master Data.

9. Reporting

EMEA MDM team should provide the review of procedure compliance on a regular basis to all OpCos, by performing of regular reporting (minimum once per half year).

10. SLA HSEE

Service Level Agreement (SLA) has been defined and implemented at EMEA level for EMEA MDM central team.

In this service contract has been defined the delivery time that EMEA MDM team has to accomplish for the full approval and completion of a request coming via defined IT tool solution.

Annexe 5

11. Process Risk and Controls

In accordance with Holcim's Internal Control System and Business Risk management, key risks related to master data management have to be mitigated by adequately implemented controls.

According to EMEA Material Master Data Directory, an incorrect classification or the non-material classification following defined rules and standards, will lead to data inaccuracy and not compliance of correct business processes.

Main risk and mitigation controls have been defined. Annexe 6.

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12. Annexes

13.1 Annexe 1. Procedure for material naming convention definition under VW

Common standards defined across EMEA region needs to be implemented and followed. Selected materials in EMEA region will be classified in the SAP Classification System, including those impacted by the Central Virtual Warehouse.

These records are subject to consolidation exercise, avoiding duplications across EMEA region and data harmonization.

Materials to be included in the Virtual Warehouse have to be decided based on a closed list of values per characteristic, same group of materials, material used for a specific plant or non-standard materials.

For materials categories classified under Virtual Warehouse, specific criteria are defined per material PCS. List attached in Annexe 1.1.

Common characteristics and values defined by the Catergory owners jointly with business experts are centrally maintained by EMEA MDM team.

For the creatiton or modification of Material under the VW, defined approval flow must be follow. EMEA MDM team will be reaponsible for the maintenance of the data in SAP.



Regular Procedure review: Procedure is at least reviewed and updated on a yearly basis before the end of December with current insights regarding Governance and way of business process set up of master data and should include as minimum requirement:

- Update and review of classification rules based on business requirements and market conditions
- Update and review of the scope material categories.

In case of major changes it will be updated in between the yearly update.

Annexe 1.2

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13.1.1. Annexe 1.1. Materials categories classified under VW. Specific criteria per material ID.

Enclosed in the next excel file you can find PCS standardized under Naming Convention and in scope of Virtual Warehouse



13.1.2. Annexe 1.2. Communication flow and technical flow for VW

Technical flow

#	Action	Procurement Leads	HSEE MDM Team	HSEE IT Team	P2P expert (e.g. buyer)	Experts (e.g. manufacturing)	Procurement S&D (Standards and Developments)
	Review current status of Material category (NC already available, already worked on?) Check blueprint, check MDM team, check procurement lead, gather all available data. And provide the full list of existing material id's for all opco's in scope.	А	R		R	R	С
2	Define technical file (characteristics, values) and NC for the category(s) in scope	R	А		R	R	С
3	Customize NC in <u>SAP quality system</u> , including new PCS code. (Create characteristic structure and values in the system based on the technical files) *	I	A/R		1	I	1
4	Fill data templates according NC (excel template for MDM team) building mapping between old codes and new descriptions	R/I	А		R	R	I
5	Data validation according to new NC rules. Validation of mapping done	1	А		R	R	I
6	Ensure data is complete/correct (if template match customizing)	I	R		R	R	I
7	Material data upload in <u>SAP quality system</u> (manual or mass upload)	1	I	R	ı	1	1
8	Validation of Material data uploaded in <u>SAP quality</u> <u>system</u> by business	I	R		R	R	I
9	Transactional data cleansing (e.g. open PO's)	I	I		R	R	
10	Customize NC in SAP production system , including new PCS code. (Create characteristic structure and values in the system based on the technical files)	I	A/R		I	I	ı
11	Transfer data to Production System		С	R	ı	1	
12	Validation of Material data uploaded in SAP production system by business	I	R		R	R	I
13	Transfer stocks, transfer BOM, transfer inforecords, update contracts, update open POs, update open PRs, update open quotations	I	I/R	R	С	С	I
14	Validation (by business) of transactional data uploaded	I	R		R	R	I

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15	Block usage of old codes	I	R	I	I	1	I
16	Go Live readiness	I	R	I	I	I	I

Legend: R=Responsible person; A= Accountable person; C=Consulted person; I=Informed person

Communication Flow

#	Action	Procurement Leads	HSEE MDM Team	P2P Experts	MAN Experts	Procurement S&D
	Materials under Procurement Corporate strategy definition and high level planning (e.g. Solid fuels)	R	С	1	ı	С
2	Kick off meeting: Scope definition, roles and responsibilities, deadlines and process monitoring flow.	С	R	I	ı	С
3	Inform stakeholders	R	С	1	1	I
4	Regular monitoring reports to main stakeholders	Ī	R	Ī	I	1
5	Follow up actions	1	Α	R	R	1

13.2 Annexe 2: Materials categories classified under standard warehouse. Specific criteria per material ID.

- **A. Traditional Solid Fuels:** Criteria, characteristics and values to include solid fuels under Naming Convention for PCS:
- 020101-Coal
- 020102-Petcoke
- 020103-Lignite



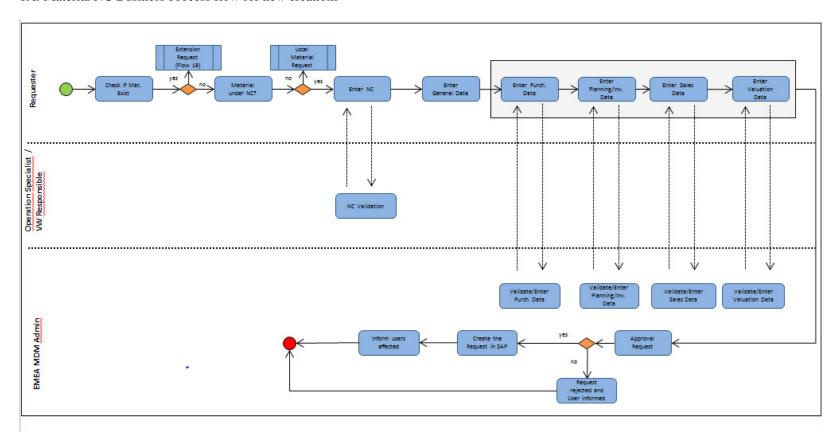
13.2.1 Annexe 2.1: Technical and communication flow for standard warehouse

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13.3 Annexe 3. Process and approval flow.

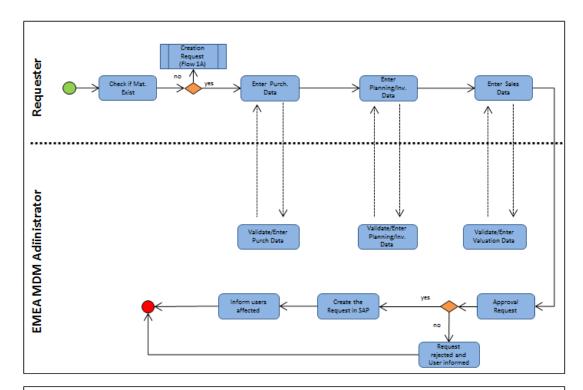
1A: Material NC Business Process flow for new creations



Comments

- · Once created the material in SAP system, Requester, VW coordinator and Local MDM administrator must be informed by informative e-mail.
- For Local Material request, please check topic 3.2 from P2P Material Master Data Blueprint to check detailed flow about material request managed locally (materials out of scope for Naming Convention)

1B: Material NC Business Process flow for extension



Comments

Once created the material in SAP system , Requester, VW coordinator and Local MDM administrator must be informed by informative e-mail

13.4 Annexe 4. Roles and Responsibilities.

Roles and responsibilities RACI matrix for material master data maintenance:

R = Responsible person A = Accountable person C = Consulted person I = Informed person		MD Requestor	VW Coordinator	Operation Specialist	Local MDM Administrator	EMEA MDM Administrator
1	Check if material exists	A,R	C	С		
2	Enter Naming Convention	R	A	C,I		
3	Validate NC	I	A,R			
	Enter General data	R,A		С		
4	Enter Purchasing data	R,A		С		
5	Enter Planning/Inventory data	R,A		С		
6	Enter Sales data(if required)	R,A		C		
7	Enter valuation data	R,A		C		

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9	Validation of request	I,C		I,C		A,R
	Approve / reject Material MD Request	I	I		I	A,R
10	Create Material Master Data	I	I		I	A,R

13.5 Annexe 5. Service Level Agreement.

EMEA Master Data Management SLA (HSEE MDM Central Team)

Respons ible	Service Parameter	Dimensi on	Agreed Target Value	ОрСо
Master Da	ta Objects Operational Maintenance			
MDM Team	1. Maintenance of the Master Data at EMEA Level (create/change/delete) 1.1 High Priority Request: Operations stopped more than 1 day 1.2 Medium Priority Request: Relevant for the Months End Closing 1.3 Low Priority: Other requests not included in 1.1 and 1.2 2. Ensure the quality master data (completeness, accuracy, timeliness) based on information provided on the request and in accordance with applicable EMEA EBM master data standards. 3. Use the correct IT Tools and the correct workflow according to EMEA Master Data Policies and Procedures 4. Do not accept requests which do not follow the Master Data Policies and Procedures, which do not follow the establish workflow or with not enough quality of the data provided 5. Accept and follow the authorizations restrictions dictated by the Master Data Policies and Procedures 6. Regular MD cleansing and feedback to OpCos (including removal of duplicate master data records)	Time	1 working day (from receipt of final OpCo approved request in Holcim Services EMEA MDM Mail Box) 2 working days (from receipt of final OpCo approved request in Holcim Services EMEA MDM Mail Box) 3 working days (from receipt of final OpCo approved request in Holcim Services EMEA MDM Mail Box) 3 working days (from receipt of final OpCo approved request in Holcim Services EMEA MDM Mail Box)	EMEA OpCos
Reporting	Canarata analyza and distributa pariodic raports relevant to master data	I		
MDM Team	Generate, analyze and distribute periodic reports relevant to master data management: 1. Quality Report per Object (Data quality assurance 100% following EBM standards/not data duplication) 2. Request errors tracking per Master Data Object (Requested/Rejected + Rejection Reason + Requester and Approvers Responsibles) 3. Response Time tracking per approval level and per object monthly and per OpCo (SLA tracking) 4. Authorizations reporting (correct follow-up of the Roles and Responsibilities Defined)		Quaterly Monthly Monthly Monthly	Separate report per EMEA OpCo
Sustainabl				
MDM Team	Define escalation and issue resolution procedures for data usage decisions where appropriate and lead definition of corrective measures when processes or standards are not followed. Communicate and promote MDM messages throughout the organization, and ensure executive sponsorship supports and participates in promoting MDM initiative: 1. Regular updates of the policies and procedures, training materials and agreed templates. 2. Assurance of the communication between EMEA and the OpCos		Regular activities	EMEA OpCos

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13.6 Annexe 6. Risk Matrix.

Risk description	Impact	Likeliho od	Control description	Responsible
Delay in the creation / extension process EMEA Master Data Administrator	Delay in Procurement process	Low	Clear SLA settlement and escalation flow available	Requesters/ MD Administrator/ MD Manager/MD specialist
Data Validation and Quality	Wrong Procurement process involved	Low	Proper validation process involving Master Data Specialist and escalation flow available. Regular monitoring of data performance and clear follow up procedures	Requesters/ MD Administrator/ MD Manager/MD specialist
Communication (Language)	Possible misunderstanding in the completion of request or process interruption	Medium	Correctness and accuracy of request. Follow up defiened language rules (English defined as mandatory language9	Requester
Timing	Delay in the approval process and completion of request	Low	Clear SLA signed, approved and respected	Requesters/ MD Administrator/ MD Manager/MD specialist
Experience, general and technical knowledge of people involved	Incorrectness of request created or data inserted in target system	Low	Clear procedures and policies, as well as regular trainings.	Requesters/ MD Administrator/ MD Manager/MD specialist
Tool Complexity	Incorrectness of data and request . Delay in the business process, affecting Procurement and Finance process ,impacting NWC indicator.	Low	Define and use user friendly tools	MD Manager / MD Administrator
Roles and responsibilities for MDM are not assigned or unclear	Wrong process. Incorrectness of data. Affecting Procurement and Finance process	Low	 Common roles for MDM have been defined and documented; all roles have been assigned to staff on EMEA and OpCo level. Staff with MDM roles are required to complete training and receive instructions via the EBM programme. Training materials are available. 	MD Administrator/ MD Manager
Master data is created/ changed by unauthorised staff	Wrong process. Possible incorrectness and inconsistency of data. Affecting Procurement and Finance process.	Low	- System access to maintain master data in SAP is restricted to staff with MD Administrator role Provisioning of system access to maintain master data in SAP is only allowed after approval from the EMEA MD Manager.	MD Administrator/ MD Manager

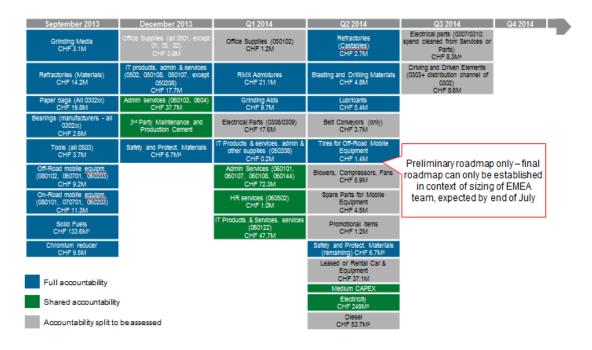
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			- On a monthly basis users with system access to maintain master data in SAP is reviewed by the EMEA MDM Manager.	
Available master data is incomplete, inaccurate or invalid	Errors in the business process. Affecting Procurement and Finance process.	Medium	- MD rulebooks are available for each MD objects, listing business and technical rules for MD completeness, accuracy and validity Upon receipt, the MD Administrator reviews the change request for completeness, accuracy and validity, including a check on potential duplicate master data On a monthly basis master data is reviewed (on a sample basis) by the EMEA MDM team for completeness, accuracy and validity, using the MD rulebooks On a yearly basis all master data is reviewed for validity and usage. Master data inactive for more than 18 months is blocked for usage.	MD Administrator/ MD Manager
Master data is not consistent in source and target systems	Errors in the business process. Affecting Procurement and Finance process.	Low	For all master data source systems, target systems and related interfaces have been identified and documented Errors in automated interfaces are reviewed and followed up by [ROLE] on a daily basis Manual updates to master data in target systems are included in the different MDM Handbooks On a monthly basis master data in both source systems and target systems is reviewed for consistency.	MD Administrator/ MD Manager

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13.7 Annexe 7. Project LEAP

EMEA transition roadmap for multi-local categories



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13. Glossary of Terms

The table below lists all the abbreviations used in the document with their complete description.

Abbreviation	Description		
B2R	Book to Report		
EBM	EMEA Business Model		
EMEA	Europe, Middle East and Africa		
ERP	Enterprise Resource Planning		
HSEE	Holcim Services EMEA		
ICS	Internal Control Systems		
IT	Information Technology		
PPI	Process Performance Indicator		
MAN	Manufacturing		
MD	Master Data		
MDM	Maser Data Management		
N/A	Not applicable		
NC	Naming Convention		
O2C	Order to Cash		
OpCo	Operating Company		
P2P	Procure to Pay		
PCS	Product Classification System		
SAP	ERP System		
SLA	Service Level Agreement		
VW	Virtual Warehouse		

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