

Da Vinci Smart Manufacturing

BRD S06.03_ Reports Raw Material Size Analysis

Version	Created/Modified by	Description	Date
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1. Overview.....	3
2. Report Configuration Interface (Setup View)	3
2.1 Variant Name Selection	3
2.2 Report Filters (Mandatory fields marked with *)	4
2.3 KPI Selection.....	5
2.4 Action Buttons	5
3. Report Output View	6
3.1 Filters Summary Section	6
3.2 KPI Visualization Section.....	7
3.3 Report Data (Tabular Format)	7
3.4 Notes Section	8
3.5 Navigation – Back to Configuration	8
4. Report Actions	9
4.1 Print	9
4.2 Save Variant.....	9
4.3 Clone Variant	9
4.4 Delete Variant	10
5. Edge Cases & Validations.....	11

This document outlines the detailed specifications for the **Raw Material Sizing Analysis** module. The module enables users to configure, generate, manage, and share reports that analyze raw material elements across furnaces. This supports decision-making, efficiency tracking, and auditing through dynamic filters, KPI selection, and export capabilities.

1. Overview

The Report module consists of:

- Report Configuration Interface (Setup View)
- Report Output View (Generated Report)
- Variant Management System (for saved configurations)
- Export and Print functionalities

2. Report Configuration Interface (Setup View)

2.1 Variant Name Selection

- A dropdown labeled “**Variant Name**” is provided at the top.
 - User selects the Variant ID from a single select dropdown
 - Mandatory - No
 - Default value - No
 - Field Type - Single Select Dropdown Values: All Variants saved (Public and Private). **Dropdown Structure:**
 - **My Variants**

- Private
 - Public (shared icon)
 - **Public Variants** (created by others)
- Validation - No
- **Permissions:**
 - Only the creator can edit, delete, or update their variant.
 - Other users can view or clone public variants.
- Upon selecting a variant, previously saved filters and KPI selections are auto-populated.

2.2 Report Filters (Mandatory fields marked with *)

Filter	Type	Description
Furnace ID*	Multi-select dropdown	Lists all active furnaces assigned to user or organization.
Material Type*	Multi-select dropdown	Options: Quartz, Coal, Charcoal, Wood, Coke.
Material ID*	Multi-select dropdown	Dependent on Material Type. Lists valid material IDs.
Date Range*	Calendar picker	From and To date selectors.
Granularity*	Single-select dropdown	Options: Daily, Weekly, Monthly, Quarterly. No dependency between Date Range and Granularity field.
Client ID	Multi-select dropdown	Clients associated with selected Furnace.
Supplier ID	Multi-select dropdown	Suppliers associated with selected Material ID.

Element ID	Multi-select dropdown	Lists the sizes that belong to the groups selected
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Filter Behavior:

- Filters cascade based on prior selections (e.g., Material Type → Material ID).
- Default values are empty; required fields must be selected to proceed.
- All Filter drop downs should be sorted alphabetically / numerically

2.3 KPI Selection

- KPI checkboxes/toggles are listed for selection.
- Backend provides the available KPIs per report.
- KPIs are not mandatory and report can be generated without selecting any.
- KPI Permissions Logic
 - **Selectable KPIs:** A user can only **select** KPIs for which their role has explicit **permission**.
 - **Visible but Disabled:** KPIs outside the user's permission scope will still be **visible** in the interface but will appear **disabled** (e.g., grayed out) and **cannot be selected**.
- **Max 3 KPIs can be selected.**
 - If a user selects more than 3, an inline validation appears: *"You can select up to 3 KPIs only."*
- Each KPI has a **default chart type** (bar, line, pie, etc.) configured by backend.
- In the **generated report screen**, users can change the chart type per KPI using a dropdown.

2.4 Action Buttons

Button	Function
Generate Report	Validates inputs and transitions to Report Output View.
Reset	Clears all filters and KPI selections to default state.

Raw Material Size Analysis

Variant Name
Select Variant Name

Filters

Furnace ID* Material Type* Material ID* Date Range* Granularity*

Select Furnace ID Select Material Type Select Material ID Select Date Range Select Granularity

Client ID Supplier ID Element ID* Material Category*

Select Client ID Select Supplier ID Select Element ID Select Material Category

Generate

3. Report Output View

Upon clicking **Generate Report**, the system transitions to a new screen with the following sections:

3.1 Filters Summary Section

- Displays all selected filters and metadata.

Fields include:

- Variant Name (default: *Untitled* until saved)
 - Min - 1 and Max - 30 characters, alphanumeric, Only '-' and '_' is allowed, Single space is allowed in between the words, No leading spaces allowed
 - Edit Icon** (): Appears for saved variants created by the user.
 - Enables inline editing of Variant Name and Access Modifier (Private/Public).
 - A **Save** button confirms updates.
- Furnace ID - view only
- Material Type - view only
- Material ID - view only
- Date Range (From - To) - view only
- Granularity - view only
- Client ID - view only
- Supplier ID - view only
- Element ID - view only
- Executed On** – *Displayed only in print view; not saved in variant.* - view only
- Executed By** – *Displayed only in print view; not saved in variant.* - view only

3.2 KPI Visualization Section

- KPIs selected are shown in graphical format.

Features:

- KPIs can be **removed** via a close (×) button on hover.
- KPIs can be **reordered** via drag-and-drop.
- KPI metadata and units are displayed.
- Users can **change the chart type per KPI** via dropdown (Gauge, Bar Chart, Line Chart and Pie Chart).

3.3 Report Data (Tabular Format)

- Data displayed based on filters and granularity.
- It will have the following columns
 - Date
 - Material Type
 - Material ID
 - Furnace ID
 - Supplier ID
 - Element ID
 - Element Size Distribution (%)

Table Features:

- Configurable columns via “Add Columns” menu
- Sorting and rearranging columns via drag-and-drop
- Pagination for large datasets
- Export to Excel (XLSX) “MMDDYY_RawMaterialSizeReport”

Raw Material Size Analysis

Filters

Variant Name
Untitled

Furnace ID
11

Material Type
Quartz

Material ID
Mina Sonia 30/120

Date Range
15/10/2024 - 16/9/2024

Granularity
Week

Client ID
122

Supplier ID
Supplier 1

Element ID
2 mm, 4mm

Executed by
sbadal | Sahana Badal

Executed on
15/10/2024 | 3:15 pm

Report

Date	Material Type	Material ID	Furnace ID	Supplier ID	Element ID	Element Size Distribution (%)
1/1/2025	Coal	MBO1_Serrabal	1	Mine 1	2mm	10
1/1/2025	Charcoal	MBO1_Serrabal	1	Mine 1	4mm	3.5
1/1/2025	Quartz	MCO2_Serrabal	2	Mine 2	2mm	10
1/1/2025	Coal	MBO1_Serrabal	3	Mine 1	2mm	5
1/2/2025	Quartz	MBO1_Serrabal	1	Mine 1	6mm	10
1/2/2025	Charcoal	MBO1_Serrabal	1	Mine 2	4mm	10
1/2/2025	Coal	MBO1_Serrabal	3	Mine 2	2mm	3.5
1/2/2025	Coal	MCO2_Serrabal	1	Mine 1	4mm	10
1/1/2025	Charcoal	MBO1_Serrabal	5	Mine 1	1mm	20

3.4 Notes Section

- Free-text input area for user insights. All (Including special characters), 100 characters
- Not saved with variant — intended for print inclusion only.

Date	Material Type	Material ID	Furnace ID	Supplier ID	Element ID	Element Size Distribution (%)
1/1/2025	Coal	MBO1_Serrabal	1	Mine 1	2mm	10
1/1/2025	Charcoal	MBO1_Serrabal	1	Mine 1	4mm	3.5
1/1/2025	Quartz	MCO2_Serrabal	2	Mine 2	2mm	10
1/1/2025	Coal	MBO1_Serrabal	3	Mine 1	2mm	5
1/2/2025	Quartz	MBO1_Serrabal	1	Mine 1	6mm	10
1/2/2025	Charcoal	MBO1_Serrabal	1	Mine 2	4mm	10
1/2/2025	Coal	MBO1_Serrabal	3	Mine 2	2mm	3.5
1/2/2025	Coal	MCO2_Serrabal	1	Mine 1	4mm	10
1/1/2025	Charcoal	MBO1_Serrabal	5	Mine 1	1mm	20
1/1/2025	Coal	MBO1_Serrabal	1	Mine 1	2mm	10
1/1/2025	Quartz	MBO1_Serrabal	1	Mine 1	4mm	10

Showing 10 of 80

< 1 2 3 ... 8 > Rows Per Page : 10

User Notes

Enter your notes

3.5 Navigation – Back to Configuration

- A **Back** button appears in the report view.

- Clicking it returns the user to the **Setup View**, retaining all previous filter and KPI selections.
- Ensures seamless editing without re-entering data.

4. Report Actions

4.1 Print

- Exports the entire report as PDF.
- User selects sections to include:
 - Filter section
 - Notes section
 - Specific pages of data

4.2 Save Variant

- Saves current report configuration.
- Required fields:
 - Report Name
 - Access Modifier (Private/Public)
- Only the creator can edit or delete saved variants.

The screenshot displays the 'Raw Material Size Analysis' report interface. At the top, there's a header with a back arrow, the title 'Raw Material Size Analysis', and a user profile 'Nora James'. Below the header, there's a 'Filters' section with a table of filter settings. The 'Report' section shows a table of data with columns for Date, Material Type, Material ID, Element ID, and Element Size Distribution (%). A 'Save Report Variant' dialog box is open, prompting for a variant name and a public/private checkbox.

Variant Name	Furnace ID	Material Type	Material ID	Date Range	Granularity
Untitled	11	Quartz	Mina Sonia 30/120	15/10/2024 - 16/9/2024	Week

Client ID	Supplier ID	Element ID	Executed by	Executed on
122	Supplier 1	2 mm, 4mm	sbadal Sahana Badal	15/10/2024 3:15 pm

Date	Material Type	Material ID	Element ID	Element Size Distribution (%)
1/1/2025	Coal	MB01_Serrabal	1	2mm
1/1/2025	Charcoal	MB01_Serrabal	1	4mm
1/1/2025	Quartz	MC02_Serrabal	2	2mm
1/1/2025	Coal	MB01_Serrabal	3	2mm
1/2/2025	Quartz	MB01_Serrabal	1	6mm
1/2/2025	Charcoal	MB01_Serrabal	1	4mm
1/2/2025	Coal	MB01_Serrabal	3	2mm
1/2/2025	Coal	MC02_Serrabal	1	4mm
1/1/2025	Charcoal	MB01_Serrabal	5	1mm

4.3 Clone Variant

- Clones any saved variant (private or public).
- **Confirmation message appears:**

“Are you sure you want to clone this variant? The cloned version will open in edit mode and must be saved separately.”

- Opens the cloned configuration in edit mode with name defaulted to *Untitled*.

Raw Material Size Analysis

Filters

Variant Name

Variant 1

Furnace ID

11

Material Type

Quartz

Material ID

Mina Sonia 30/120

Date Range

15/10/2024 - 16/9/2024

Granularity

Week

Client ID

122

Supplier ID

Supplier 1

Element ID

2 mm, 4mm

Executed by

sbadal | Sahana Badal

Executed on

15/10/2024 | 3:15 pm

Report

Clone Report

The cloned version will open in edit mode and must be saved separately.

Date	Material Type	Material ID		Element ID	Element Size Distribution (%)	
1/1/2025	Coal	MB01_Serrabal	1	Mine 1	2mm	10
1/1/2025	Charcoal	MB01_Serrabal	1	Mine 1	4mm	3.5
1/1/2025	Quartz	MCO2_Serrabal	2	Mine 2	2mm	10
1/1/2025	Coal	MB01_Serrabal	3	Mine 1	2mm	5
1/2/2025	Quartz	MB01_Serrabal	1	Mine 1	6mm	10
1/2/2025	Charcoal	MB01_Serrabal	1	Mine 2	4mm	10
1/2/2025	Coal	MB01_Serrabal	3	Mine 2	2mm	3.5
1/2/2025	Coal	MCO2_Serrabal	1	Mine 1	4mm	10
1/1/2025	Charcoal	MB01_Serrabal	5	Mine 1	1mm	20

4.4 Delete Variant

- Available for user-created variants.
- Delete via dropdown or trash icon with confirmation prompt.
 - “Are you sure you want to delete this variant “Variant Name”?

Raw Material Size Analysis

Filters

Variant Name

Variant 1

Furnace ID

11

Material Type

Quartz

Material ID

Mina Sonia 30/120

Date Range

15/10/2024 - 16/9/2024

Granularity

Week

Client ID

122

Supplier ID

Supplier 1

Element ID

2 mm, 4mm

Executed by

sbadal | Sahana Badal

Executed on

15/10/2024 | 3:15 pm

Report

Delete Variant

Are you sure you want to delete "Variant 1"?

Date	Material Type	Material ID		Element ID	Element Size Distribution (%)	
1/1/2025	Coal	MB01_Serrabal	1	Mine 1	2mm	10
1/1/2025	Charcoal	MB01_Serrabal	1	Mine 1	4mm	3.5
1/1/2025	Quartz	MCO2_Serrabal	2	Mine 2	2mm	10
1/1/2025	Coal	MB01_Serrabal	3	Mine 1	2mm	5
1/2/2025	Quartz	MB01_Serrabal	1	Mine 1	6mm	10
1/2/2025	Charcoal	MB01_Serrabal	1	Mine 2	4mm	10
1/2/2025	Coal	MB01_Serrabal	3	Mine 2	2mm	3.5
1/2/2025	Coal	MCO2_Serrabal	1	Mine 1	4mm	10
1/1/2025	Charcoal	MB01_Serrabal	5	Mine 1	1mm	20

5. Edge Cases & Validations

Scenario	Expected Behavior
Required filter missing	Prompt user to complete all mandatory fields
Deleting a variant in use	Show confirmation and warn about unsaved changes when traversing to another module
Selecting public variant	Load values in read-only mode unless cloned
No KPIs selected	Section remains empty; no validation error
Selecting > 3 KPIs	Show inline warning and prevent further selections