How to add products in Madaster

Process description for adding different
product types in the Madaster Platform

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How to add products in Madaster

For a more accurate building passport in Madaster and the ability to provide insight into elements and their numbers, so that they can be reused at the highest possible level in the long term, it is recommended to link as many building elements as possible from a source file (IFC and / or Excel) to a 'product' in the Madaster database (in the manual 'Madaster Action plan' this is referred to as 'level 2').

To be able to link a building element to a product in the Madaster platform, the product must be available in the Madaster database. If this is not the case (which means that an element from the source file cannot be automatically linked), the Madaster platform offers the functionality to add products themselves, including their material composition.

In addition, adding products in Madaster also allows the user to add circular data (e.g. applied raw materials, recycled materials, etc.). Subsequently, the Madaster platform, by means of the Madaster Circularity Index, then provides insight into the degree of circularity of the entire building (in the manual 'Madaster Action plan' this is referred to as 'level 3').
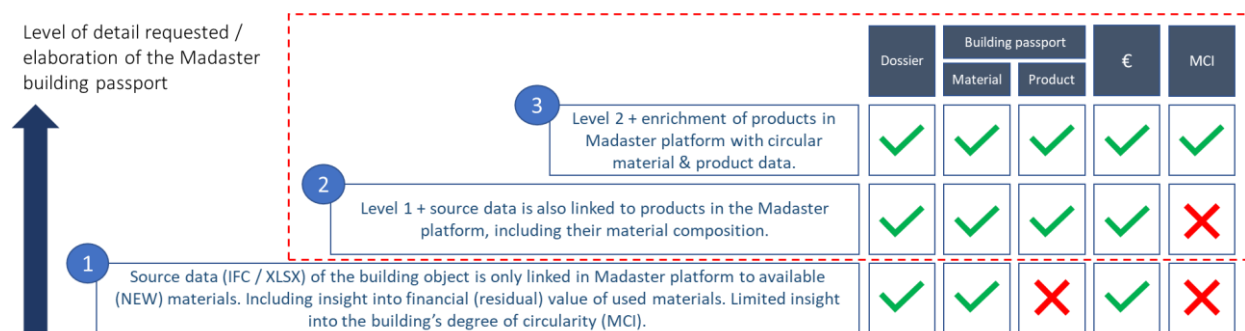
Picture 1: Elaboration levels of the Madaster building passport

By adding products in Madaster, a 'private' materials/products database is also built up on your own (company) account, which can then be applied again when registering each successive building in Madaster. If desired, this database can be shared with other Madaster users and accounts, so that the materials and products from this database are also available for buildings in other accounts, folders or buildings.

In Madaster a distinction is made between four different types of products, namely: volume, area, length & Quantity products. The choice for one of these types depends primarily on the available geometric data of the relevant building element in the source file. This means that if, for example, the volume of a building element is included in the source file (IFC and Excel), it is best to set up a so-called 'volume' product in Madaster. If a building element in the source file does not contain volume information, but does contain area (m^2) information, it is best to select an 'area' product in Madaster. Etc. Ideally, "volume" products are used as much as possible, because the Madaster system mainly displays this unit in its "Building" tab. However, it is also possible to work towards this unit using area and / or length products.

All product types in Madaster can be added (and changed) by the user via the main menu "Administration" and then by clicking the button "Add product".

Picture 2: Administration (add product)

In this way, products added in Madaster are made available at the account level. This means that this product dataset is also available on the underlying (folder type) levels (e.g. portfolio, area, project, etc.) of the Madaster account. If this is not desirable, the user can also choose to create his own dataset at a specific (folder type) level in Madaster. For example, only at portfolio, company and / or building level. This means that the private product dataset is only available at the selected (folder type) level (incl. underlying levels). In picture 3, a product dataset is created at "portfolio" level in Madaster by clicking the "New database" button. Products listed in this database are then only available in this portfolio and the levels below it.
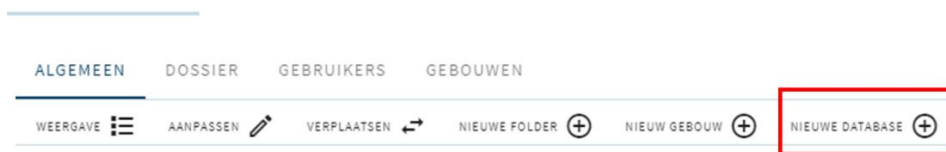
Picture 3: Add new database (portfolio level)

FYI: Products can be added to the Madaster platform at any time; i.e. before or after the source data (IFC / Excel) of the building in Madaster has been uploaded. To automatically link as many building elements from the source data to newly added products, it is recommended to first add the products in Madaster and then upload the source file in Madaster. If a source file is already uploaded in Madaster, then after all products have been added in Madaster, the source file must simply be enriched again (via: Dossier> "View details" button >"Enrich again" button).

Below, it is first described per product type how a product is added to Madaster ("level 2"). Where circular information ("level 3") is added to the product, this has been indicated by means of the text: [level 3].

The following chapters describe how newly added products are linked; in an automatic and manual way. In addition, it is briefly explained how comparable products can be easily copied. Finally, it is described how self-added products can be activated and deactivated in Madaster.

Add Volume product (level 2 & 3)

This section describes how to add a "volume" product to Madaster. First, the minimum input to add this product is considered. Then it is described step by step how this type of product is added in Madaster ("level 2"). It also considers additional optional fields.

Minimum requirements to set up this type of product in Madaster:

- Building elements in the source file (IFC and Excel), for which a volume product is set up in Madaster, must actually contain volume information.
- (Brand) Name / description of the product to be set up.
- Use of raw materials (% ratio of new product vs. being reused).
- Product composition (in % used materials).

Add Volume product in Madaster:

Tip: Determine in advance at which (folder type) level the new product to be added should be created. The steps below assume that a volume product is entered at the "account" level and is then available at all underlying levels. If it is desired to deviate from this standard and to list products on a specific (folder type), a database must first be created at this specific (folder type) level (see image 3 on the previous page). Then the steps below can be followed.

1. In the "Materials & Products" tab, click the "Add Product" button (see picture 2 on the previous page). A new product screen (with tab "Product information") is displayed (see image 1).

PRODUCTINFORMATIE	ZOEKCRITERIA
Merknaam *	Beschrijving

Picture 1: New product

2. Enter the Brand / name of the new product to be added in the (mandatory) "Brand *" field. For example: "UNIDEK SIPS PANELS 250 MM".

Suggestion: If the brand / name of an element in the source file (IFC / Excel) is unique, consider giving the new product to be added in Madaster the exact same name / description. By including this exact name / description also in the product's tab 'Search criteria', the Madaster system will automatically link the element to the newly added Madaster product.

3. In the field "Type *" (mandatory) select "Volume".

Type *
Volume

Picture 2: Product type: Volume

4. If available, enter a description of the new product in the "Description" field (optional).

5. If available, enter a product code of the new product to be added in the "Product code (EAN or GTIN, ...)" field (optional).

Picture 3: Product code

6. If available, enter the name of the supplier / producer of the product to be added in the "Supplier" field (optional).
7. **[level 3]** If available, enter the functional lifespan of the product to be added in the field "Functional lifespan (years)" (optional).
8. **[level 3]** If available, enter the technical lifespan of the product to be added in the field "Technical lifespan (years)" (optional).
9. If available, select ("yes", "no" or "unknown") in the "Toxicity" field (optional) if the product contains materials that are on the cradle-to-cradle list of banned chemicals.
10. By default, the volume unit of a "volume" product should be set to $1m^3$. When processing an element from the source file (IFC / Excel), the Madaster system will take the initial volume metric of the element (calculation method: volume element source file multiplied by 1m3).

Picture 4: Volume unit

11. Click on the "Save" button. The data entered is now saved in the product sheet "Product information". At the same time, the other tabs of the product are now visible.

Picture 5: Product sheets

12. **[level 3]** If available, insert the field 'Feedstock sources' (optional field) on the left hand: % reused vs. % virgin product. If unknown, select 100% virgin.

    a. "Reused" here means that the product (in this example: Unidek sips panel) has already gone through a full life cycle at the same level (product) and is now being reused again in the construction of a new building.

    b. "Virgin" here means that the product (in this example: Unidek sips panel) has never been used in the processing of another building and is delivered as new by the supplier.

Picture 6: Feedstock sources

Note: the percentages in the fields "recycled" and "% rapid renewables" (on the right hand side) cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

13. **[level 3]** If available, select one or more options in the "End of life scenario Checklist reusability" field (optional field), which indicate the degree of disassembly of the new product to be added. Selected values are shown in green colour (check mark).
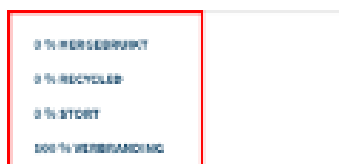

Picture 7: End of life scenario: checklist reusability

Note: The field "% reuse" (on the right hand side; see picture 7) cannot be entered here. This field is automatically displayed by the system if one or more <u>self-added</u> materials are selected in the "bill of materials" sheet, with these values entered.

<u>Picture 8</u>: End of life scenario

Note: the percentages in the fields "recycled", "% landfill" and "% incineration" cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

14. **[level 3]** If desired, change the value of the "% efficiency recycling process raw materials" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**
15. **[level 3]** If desired, change the value of the "% efficiency recycling process End of Life" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**

<u>Picture 9</u>: Efficiency recycling process

16. Click on the "save" button. The entered data is now saved in the product sheet "Product information".

17. Click on the second tab "Bill of Materials" and then click on the "Add" button. The fields "Element *" and "Number *" are displayed.

<u>Picture 10</u>: Bill of Materials

18. Click the button "Pick element *" (required field) and then select a material from the Madaster database or the user's "own material library".

TOEVOEGEN

Element   KIES ELEMENT

Picture 11: Pick element

19. Then fill in the field "Number *" (mandatory field) with the percentage (between 1 and 100%) of the selected material.

Aantal
90,46   %

Picture 12: Material ratio

20. Click the "save" button (at the bottom of the page). The entered data is now stored in the "Bill of Materials" product sheet.
21. If the new product to be added consists of several materials, repeat steps 19 to 21 until the material composition is 100%.

UNIDEK SIPS PANELEN 250 MM

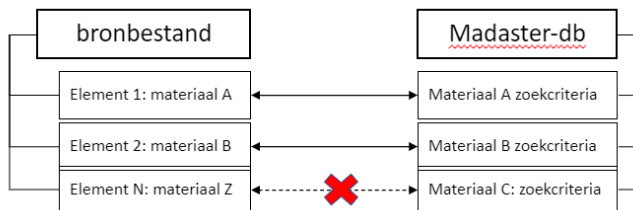| PRODUCTINFORMATIE	PRODUCTSAMENSTELLING	ZOEKCRITERIA	DOSSIER	FINANCIEEL	
TOEVOEGEN ⊕					
Naam	Type	Waarde	% Recycled	% Snel hernieuwbare bronnen	
EPS Polystyreen	Materiaal	90,46%	0%	0%	
Spaanplaat	Materiaal	9,54%	0%	0%	

Picture 13: Product with material ratio (example)

22. Click on the third sheet 'Dossier' and then click on the button 'Upload file'. Here, relevant building files (e.g. product certificates, etc.) can be linked to the product to be added.
23. Click on the "..." button to select the file to be added (e.g. product certificates, etc.).
24. Select the destination folder in the Madaster Dossier, in which the file to be added (e.g. product certificates, etc.) is saved.
25. If desired, add "tags" (keywords), which will facilitate the search for this file to be added in the file in Madaster.
26. Finally click on the "Upload" button. The selected file (eg product certificates, etc.) is added and is visible in this tab.

27. Click on the third sheet "Search criteria" and then click on the "Add criterion" button. Here, one or more search criteria can be added, which enable the Madaster system to automatically link elements from the source file (IFC and / or Excel) of the building to be read to this new product to be added.

Picture 14: Search Criteria

Note: When importing a source file (IFC and / or Excel), the materials of each element are validated against these search criteria. This examines whether the material of an element matches one of the search criteria at product / material level.

Picture 15: Matching of element (from source file) to added product in Madaster database (draft view).

A search criteria can be set up in different ways:

- Contains the search criterion
- Equals the search criterion
- Starts with the search criterion
- Ends with the search criterion

If multiple matches are found, the largest match (largest number of matching characters) will be used.

If the material of an element matches one of the search criteria at product / material level, the Madaster system will automatically link the element. If no automatic linking takes place, the user can manually link the element in Madaster (in sub step "Enrich").

28. Add one or more search criteria (optional field) to this new product to be added, so that the Madaster platform can automatically link this product to a corresponding element from a source file (IFC / Excel). Note: To do this, the user's "own" product library must be selected as a data set when uploading and / or when enriching the source data again.

Picture 16: Search Criteria (example)

29. Return to the first sheet "Product information". Scroll down and finally click on the "save" button. The entered data is stored, with which the self-added 'volume' product is stored in the user's 'own' product library.
30. If desired, multiple files can be added in the product Dossier sheet.

Picture 17: Product Dossier

31. Then go back to the first tab 'Product information'. Scroll down and finally click on the 'save' button. The entered data is saved with which the self-added 'volume' product is stored in the 'own' product library.

Add Area product (level 2 & 3)

This section describes how to add an "area" product to Madaster. First, the minimum input to add this product is considered. Then it is described step by step how this type of product is added in Madaster ("level 2"). It also considers additional optional fields.

Minimum requirements to set up this type of product in Madaster:

- Building elements in the source file (IFC and Excel), for which an Area product is set up in Madaster, must actually contain area (m^2) information.
- (Brand) Name / description of the product to be set up.
- Use of raw materials (% ratio of new product vs. being reused).
- Product composition (in m^3/m^2 used materials).

Add Area product in Madaster:

Tip: Determine in advance at which (folder type) level the new product to be added should be created. The steps below assume that an area product is entered at the "account" level and is then available at all underlying levels. If it is desired to deviate from this standard and to list products on a specific (folder type), a database must first be created at this specific (folder type) level (see image 3 on the previous page). Then the steps below can be followed.

1. In the "Materials & Products" tab, click the "Add Product" button. A new product screen (with tab "Product information") is displayed (see image 1).

Picture 1: New product

2. Type the brand / name of the new product to be added in the "Brand name *" (mandatory field) field. For example: "GYPROC GF 100 RD / 1.75.1.A".

Suggestion: If the name / description of an element in the source file (IFC / Excel) is unique, consider giving the new product to be added in Madaster the exact same name / description. By including this exact name / description in the product tab 'Search criteria' in this product, the Madaster system will automatically link the element to the Madaster product.

3. In the field "Type *" product (mandatory field) select "Area".

Picture 2: Product type: Area

4. If available, enter a description of the new product to be added in the "Description" field (optional field).

5. If available, enter a product code of the new product to be added in the "Product code (EAN or GTIN, ...)" (optional field) field.

Picture 3: Product code

6. If available, enter the name of the supplier / producer of the new product to be added in the "Supplier" field (optional field).

7. **[level 3]** If available, enter the functional lifespan of the product to be added in the field "Functional lifespan (years)" (optional).

8. **[level 3]** If available, enter the technical lifespan of the product to be added in the field "Technical lifespan (years)" (optional).

9. If available, select ("yes", "no" or "unknown") in the "Toxicity" field (optional) if the product contains materials that are on the cradle-to-cradle list of banned chemicals.

10. By default, the unit of an "Area" product must be set to 1m^2. When linking the element from the source file (IFC / Excel), the Madaster system will take the initial area metric of the element (calculation method: volume element source file multiplied by 1m^2).

Picture 4: Area product unit

If the height of the new Area product is known, this can also be entered. This allows the Madaster system to calculate the (desired) volume, so that this data can also be displayed on the "Building" tab.

11. If available, enter the height (in meters) in the field "the average [height] of this area product" (optional).

Picture 4: Area product: insert height (optional)

12. Click on the "save" button. The entered data is now saved in the product sheet "Product information". At the same time, the other sheets of the product are now visible.

Picture 5: Product sheets

13. Scroll down on the "product information" sheet.
14. **[level 3]** If available, insert the field 'Feedstock sources' (optional field) on the left hand: % reused vs. % virgin product. If unknown, select 100% virgin.

   a. "Reused" here means that the product (in this example: Gyproc GF 100 RD/1.75.1.A) has already gone through a full life cycle at the same level (product) and is now being reused again in the construction of a new building.
   b. "Virgin" here means that the product (in this example: Gyproc GF 100 RD/1.75.1.A) has never been used in the processing of another building and is delivered as new by the supplier.

Picture 6: Feedstock sources

Note: the percentages in the fields "recycled" and "% rapid renewables" (on the right hand side) cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

15. **[level 3]** If available, select one or more options in the "End of life scenario Checklist reusability" field (optional field), which indicate the degree of disassembly of the new product to be added. Selected values are shown in green colour (check mark).

Picture 7: End of life scenario: checklist reusability

Note: The field "% reuse" (on the right hand side; see picture 7) cannot be entered here. This field is automatically displayed by the system if one or more <u>self-added</u> materials are selected in the "bill of materials" sheet, with these values entered.

Picture 8: End of life scenario

Note: the percentages in the fields "recycled", "% landfill" and "% incineration" cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

16. **[level 3]** If desired, change the value of the "% efficiency recycling process raw materials" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**
17. **[level 3]** If desired, change the value of the "% efficiency recycling process End of Life" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**

Picture 9: Efficiency recycling process

18. Click on the "save" button. The entered data is now saved in the product sheet "Product information".

19. Click on the second tab "Bill of Materials" and then click on the "Add" button. The fields "Element *" and "Number *" are displayed.

Picture 10: Bill of Materials

20. Click the button "Pick element *" (required field) and then select a material from the Madaster database or the user's "own material library".

Picture 11: Pick element

21. Fill in the field 'Number *' (mandatory field), expressed in cubic meters (m3) per square meter (m2) of the selected material.

Picture 12: Material ratio

22. Click on the "save" button (at the bottom of the page). The entered data is now stored in the "Bill of Materials" product sheet.
23. If the new Area product consists of several materials, repeat steps 19 to 21.
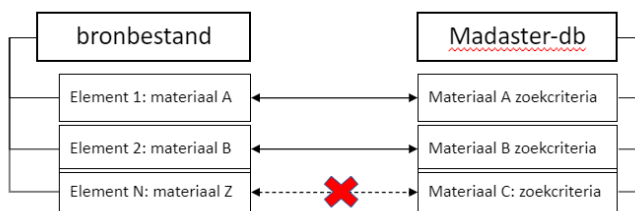

Picture 13: Product with material ratio (example)

24. Click on the third sheet "Search criteria" and then click on the "Add criterion" button. Here, one or more search criteria can be added, which enable the Madaster system to automatically link elements from the source file (IFC and / or Excel) of the building to be read to this new product to be added.

Picture 14: Search Criteria

Note: When importing a source file (IFC and / or Excel), the materials of each element are validated against these search criteria. This examines whether the material of an element matches one of the search criteria at product / material level.

Picture 15: Matching of element (from source file) to added product in Madaster database (draft view).

A search criteria can be set up in different ways:

- Contains the search criterion
- Equals the search criterion
- Starts with the search criterion
- Ends with the search criterion

If multiple matches are found, the largest match (largest number of matching characters) will be used.

If the material of an element matches one of the search criteria at product / material level, the Madaster system will automatically link the element. If no automatic linking takes place, the user can manually link the element in Madaster (in sub step "Enrich").

25. Add one or more search criteria (optional field) to this new product to be added, so that the Madaster platform can automatically link this product to a corresponding element from a source file (IFC / Excel). Note: To do this, the user's "own" product library must be selected as a data set when uploading and / or when enriching the source data again.

Picture 16: Search Criteria (example)

26. Click on the fourth sheet "Dossier" and then click on the button "Upload file". At this location, relevant files (e.g. product certificates, etc.) can be linked to the product to be added.
27. Click on the "..." button to select the file to be added (e.g. product certificates, etc.).
28. Select the destination folder in the Madaster Dossier, in which the file to be added (e.g. product certificates, etc.) is saved.
29. If desired, add "tags" (keywords), which will facilitate the search for this file to be added in the file in Madaster.
30. Finally click on the "Upload" button. The selected file (e.g. product certificates, etc.) is added and is visible in this tab.
31. If desired, multiple files can be added in the product Dossier sheet.

Picture 17: Product Dossier

Return to the first sheet "Product information". Scroll down and finally click the "save" button. The entered data is stored and the 'Area' product is added to the user's 'own' product library.

Add Length product (level 2 & 3)

This section describes how to add an "length" product to Madaster. First, the minimum input to add this product is considered. Then it is described step by step how this type of product is added in Madaster ("level 2"). It also considers additional optional fields.

Minimum requirements to set up this type of product in Madaster:

- Building elements in the source file (IFC and Excel), for which an Area product is set up in Madaster, must actually contain area (m^2) information.
- (Brand) Name / description of the product to be set up.
- Use of raw materials (% ratio of new product vs. being reused).
- Product composition (in m^3/m used materials).

Add Length product in Madaster:

Tip: Determine in advance at which (folder type) level the new product to be added should be created. The steps below assume that a length product is entered at the "account" level and is then available at all underlying levels. If it is desired to deviate from this standard and to list products on a specific (folder type), a database must first be created at this specific (folder type) level (see image 3 on the previous page). Then the steps below can be followed.

1. In the "Materials & Products" tab, click the "Add Product" button. A new product screen (with tab "Product information") is displayed (see image 1).

Picture 1: New product

2. Type the brand / name of the new product to be added in the "Brand name *" (mandatory field) field. For example: "Aanrijdbeveiliging vangrail staal 4000 x 310 x 710 mm (lxbxh)".

Suggestion: If the name / description of an element in the source file (IFC / Excel) is unique, consider giving the new product to be added in Madaster the exact same name / description. By including this exact name / description in the product tab 'Search criteria' in this product, the Madaster system will automatically link the element to the Madaster product.

3. In the field "Type *" product (mandatory field) select "Length".

Picture 2: Product type: Length

4. If available, enter a description of the new product to be added in the "Description" field (optional field).

5. If available, enter a product code of the new product to be added in the "Product code (EAN or GTIN, ...)" (optional field) field.

Picture 3: Product code

6. If available, enter the name of the supplier / producer of the new product to be added in the "Supplier" field (optional field).
7. **[level 3]** If available, enter the functional lifespan of the product to be added in the field "Functional lifespan (years)" (optional).
8. **[level 3]** If available, enter the technical lifespan of the product to be added in the field "Technical lifespan (years)" (optional).
9. If available, select ("yes", "no" or "unknown") in the "Toxicity" field (optional) if the product contains materials that are on the cradle-to-cradle list of banned chemicals.
10. By default, the unit of a "Length" product must be set to 1m. When linking the element from the source file (IFC / Excel), the Madaster system will take the initial area metric of the element (calculation method: volume element source file multiplied by 1m).

Picture 4: Area product unit

If known, the width and height of the new product to be added can also be entered. This allows the Madaster system to calculate the (desired) volume, so that this data can also be displayed on the "Building" tab.
Select the radio button "SPECIFY THIS SIZE THE DIMENSION".

11. If available, enter the Width and Height (in meters) in the field "the average [area] of this length product" (optional).

Picture 5: Area product: insert height (optional)

12. Click on the "save" button. The entered data is now saved in the product sheet "Product information". At the same time, the other sheets of the product are now visible.

Picture 6: Product sheets

13. Scroll down on the "product information" sheet.
14. **[level 3]** If available, insert the field 'Feedstock sources' (optional field) on the left hand: % reused vs. % virgin product. If unknown, select 100% virgin.

     c.   "Reused" here means that the product (in this example: Gyproc GF 100 RD/1.75.1.A) has already gone through a full life cycle at the same level (product) and is now being reused again in the construction of a new building.

     d.   "Virgin" here means that the product (in this example: Gyproc GF 100 RD/1.75.1.A) has never been used in the processing of another building and is delivered as new by the supplier.

Picture 7: Feedstock sources

Note: the percentages in the fields "recycled" and "% rapid renewables" (on the right hand side) cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

15. **[level 3]** If available, select one or more options in the "End of life scenario Checklist reusability" field (optional field), which indicate the degree of disassembly of the new product to be added. Selected values are shown in green colour (check mark).

Picture 8: End of life scenario: checklist reusability

Note: The field "% reuse" (on the right hand side; see picture 7) cannot be entered here. This field is automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

Picture 9: End of life scenario

Note: the percentages in the fields "recycled", "% landfill" and "% incineration" cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

16. **[level 3]** If desired, change the value of the "% efficiency recycling process raw materials" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**
17. **[level 3]** If desired, change the value of the "% efficiency recycling process End of Life" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**

Picture 10: Efficiency recycling process

18. Click on the "save" button. The entered data is now saved in the product sheet "Product information".

19. Click on the second sheet "Bill of Materials" and then click on the "Add" button. The fields "Element *" and "Number *" are displayed.

Picture 11: Bill of Materials

20. Click the button "Pick element *" (required field) and then select a material from the Madaster database or the user's "own material library".

Picture 12: Pick element

21. Fill in the field 'Number *' (mandatory field), expressed in volume (m^3) of the selected material.


Picture 13: Material ratio

22. Click on the "save" button (at the bottom of the page). The entered data is now stored in the "Bill of Materials" product sheet.
23. If the new length product consists of several materials, repeat steps 19 to 21.


Picture 14: Product with material ratio (example)

24. Click on the third sheet "Search criteria" and then click on the "Add criterion" button. Here, one or more search criteria can be added, which enable the Madaster system to automatically link elements from the source file (IFC and / or Excel) of the building to be read to this new product to be added.
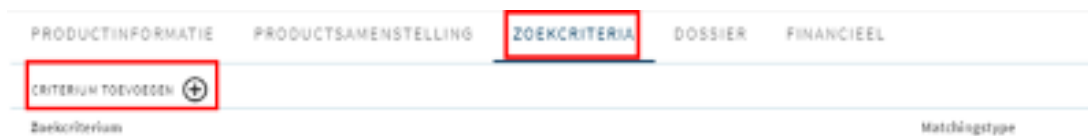
Picture 15: Search Criteria

Note: When importing a source file (IFC and / or Excel), the materials of each element are validated against these search criteria. This examines whether the material of an element matches one of the search criteria at product / material level.
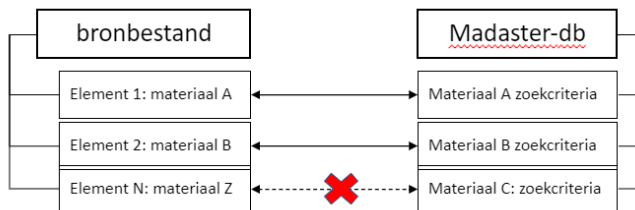
Picture 16: Matching of element (from source file) to added product in Madaster database (draft view).

A search criteria can be set up in different ways:

- Contains the search criterion
- Equals the search criterion
- Starts with the search criterion
- Ends with the search criterion

If multiple matches are found, the largest match (largest number of matching characters) will be used.

If the material of an element matches one of the search criteria at product / material level, the Madaster system will automatically link the element. If no automatic linking takes place, the user can manually link the element in Madaster (in sub step "Enrich").

25. Add one or more search criteria (optional field) to this new product to be added, so that the Madaster platform can automatically link this product to a corresponding element from a source file (IFC / Excel). Note: To do this, the user's "own" product library must be selected as a data set when uploading and / or when enriching the source data again.
26. Click on the third sheet "Dossier" and then click on the button "Upload file". At this location, relevant files (e.g. product certificates, etc.) can be linked to the product to be added.
27. Click on the "..." button to select the file to be added (e.g. product certificates, etc.).
28. Select the destination folder in the Madaster Dossier, in which the file to be added (e.g. product certificates, etc.) is saved.

29. If desired, add "tags" (keywords), which will facilitate the search for this file to be added in the file in Madaster.
30. Finally click on the "Upload" button. The selected file (e.g. product certificates, etc.) is added and is visible in this sheet.
31. If desired, multiple files can be added in the product Dossier sheet.

Picture 17: Product Dossier

Return to the first sheet "Product information". Scroll down and finally click the "save" button. The entered data is stored and the 'Length' product is added to the user's 'own' product library.

Add Quantity product (level 2 & 3)

This section describes how to add a "quantity" product to Madaster. First, the minimum input to add this product is considered. Then it is described step by step how this type of product is added in Madaster ("level 2"). It also considers additional optional fields.

Minimum requirements to set up this type of product in Madaster:

- Building elements in the source file (IFC and Excel), for which an Area product is set up in Madaster, must actually contain area (m²) information.
- (Brand) Name / description of the product to be set up.
- Use of raw materials (% ratio of new product vs. being reused).
- Product composition (in m³ used materials).

Add Quantity product in Madaster:

Tip: Determine in advance at which (folder type) level the new product to be added should be created. The steps below assume that a quantity product is entered at the "account" level and is then available at all underlying levels. If it is desired to deviate from this standard and to list products on a specific (folder type), a database must first be created at this specific (folder type) level (see image 3 on the previous page). Then the steps below can be followed.

1. In the "Materials & Products" tab, click the "Add Product" button. A new product screen (with tab "Product information") is displayed (see image 1).

Picture 1: New product

2. Type the brand / name of the new product to be added in the "Brand name *" (mandatory field) field. For example: "GU-LICHTKOEPEL".

Suggestion: If the name / description of an element in the source file (IFC / Excel) is unique, consider giving the new product to be added in Madaster the exact same name / description. By including this exact name / description in the product tab 'Search criteria' in this product, the Madaster system will automatically link the element to the Madaster product.

3. In the field "Type *" product (mandatory field) select "Quantity".

Picture 2: Product type: Quantity

4. If available, enter a description of the new product to be added in the "Description" field (optional field).

5. If available, enter a product code of the new product to be added in the "Product code (EAN or GTIN, ...)" (optional field) field.

Picture 3: Product code

6. If available, enter the name of the supplier / producer of the new product to be added in the "Supplier" field (optional field).

7. **[level 3]** If available, enter the functional lifespan of the product to be added in the field "Functional lifespan (years)" (optional).
8. **[level 3]** If available, enter the technical lifespan of the product to be added in the field "Technical lifespan (years)" (optional).
9. If available, select ("yes", "no" or "unknown") in the "Toxicity" field (optional) if the product contains materials that are on the cradle-to-cradle list of banned chemicals.
10. Click on the "save" button. The entered data is now saved in the product sheet "Product information". At the same time, the other sheets of the product are now visible.

Picture 5: Product sheets

11. Scroll down on the "product information" sheet.
12. **[level 3]** If available, insert the field 'Feedstock sources' (optional field) on the left hand: % reused vs. % virgin product. If unknown, select 100% virgin.

e. "Reused" here means that the product (in this example: Gyproc GF 100 RD/1.75.1.A) has already gone through a full life cycle at the same level (product) and is now being reused again in the construction of a new building.

f. "Virgin" here means that the product (in this example: Gyproc GF 100 RD/1.75.1.A) has never been used in the processing of another building and is delivered as new by the supplier.

Picture 6: Feedstock sources

Note: the percentages in the fields "recycled" and "% rapid renewables" (on the right hand side) cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

13. **[level 3]** If available, select one or more options in the "End of life scenario Checklist reusability" field (optional field), which indicate the degree of disassembly of the new product to be added. Selected values are shown in green colour (check mark).

Picture 7: End of life scenario: checklist reusability

Note: The field "% reuse" (on the right hand side; see picture 7) cannot be entered here. This field is automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

Picture 8: End of life scenario

Note: the percentages in the fields "recycled", "% landfill" and "% incineration" cannot be entered here. These are automatically displayed by the system if one or more self-added materials are selected in the "bill of materials" sheet, with these values entered.

14. **[level 3]** If desired, change the value of the "% efficiency recycling process raw materials" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**

15. **[level 3]** If desired, change the value of the "% efficiency recycling process End of Life" field (optional field) for this new product to be added. **If unknown, leave the value of 75%.**

Picture 9: Efficiency recycling process

16. Click on the "save" button. The entered data is now saved in the product sheet "Product information".

17. Click on the second sheet "Bill of Materials" and then click on the "Add" button. The fields "Element *" and "Number *" are displayed.

If the **complete product composition (material & volume)** of the new product to be added is known, click on the second sheet "Bill of materials" and then click the "Add" button. The fields "Element *" and "Number *" are displayed. Then also go through steps 18 to 21.

If material and / or volume of the new product to be added is not known, the 'Bill of materials' sheet cannot be filled in. Then go directly to step 22 in this section.

Picture 10: Bill of Materials

18. Click the button "Pick element *" (required field) and then select a material from the Madaster database or the user's "own material library".

TOEVOEGEN

Element	KIES ELEMENT

Picture 11: Pick element

19. Fill in the field 'Number *' (mandatory field), expressed in volume (m^3) of the selected material.

Aantal

0   m^3 / #

Picture 12: Material ratio

20. Click on the "save" button (at the bottom of the page). The entered data is now stored in the "Bill of Materials" product sheet.
21. If the new quantity product consists of several materials, repeat steps 19 to 21.

GU-LICHTKOEPEL

PRODUCTINFORMATIE	PRODUCTSAMENSTELLING	ZOEKCRITERIA	DOSSIER	FINANCIEEL

TOEVOEGEN ⊕

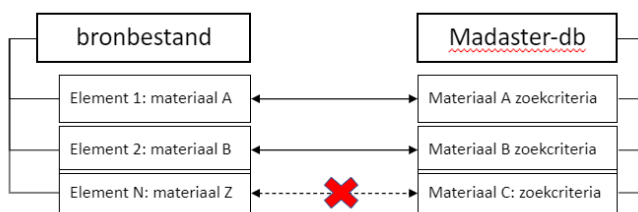| Naam	Type	Waarde	Is Recycled	Is deel hernieuwbare bronnen
Kunststof verharding	Materiaal	8,305m3	0%	0%

Picture 13: Product with material ratio (example)

22. Click on the third sheet "Search criteria" and then click on the "Add criterion" button. Here, one or more search criteria can be added, which enable the Madaster system to automatically link elements from the source file (IFC and / or Excel) of the building to be read to this new product to be added.

PRODUCTINFORMATIE	PRODUCTSAMENSTELLING	ZOEKCRITERIA	DOSSIER	FINANCIEEL

CRITERIUM TOEVOEGEN ⊕

Zoekcriterium   Matchingstype

Picture 14: Search Criteria

Note: When importing a source file (IFC and / or Excel), the materials of each element are validated against these search criteria. This examines whether the material of an element matches one of the search criteria at product / material level.

Picture 15: Matching of element (from source file) to added product in Madaster database (draft view).

A search criteria can be set up in different ways:

- Contains the search criterion
- Equals the search criterion
- Starts with the search criterion
- Ends with the search criterion

If multiple matches are found, the largest match (largest number of matching characters) will be used.

If the material of an element matches one of the search criteria at product / material level, the Madaster system will automatically link the element. If no automatic linking takes place, the user can manually link the element in Madaster (in sub step "Enrich").

23. Add one or more search criteria (optional field) to this new product to be added, so that the Madaster platform can automatically link this product to a corresponding element from a source file (IFC / Excel). Note: To do this, the user's "own" product library must be selected as a data set when uploading and / or when enriching the source data again.

Picture 16: Search Criteria (example)

24. Click on the third sheet "Dossier" and then click on the button "Upload file". At this location, relevant files (e.g. product certificates, etc.) can be linked to the product to be added.
25. Click on the "..." button to select the file to be added (e.g. product certificates, etc.).

26. Select the destination folder in the Madaster Dossier, in which the file to be added (e.g. product certificates, etc.) is saved.
27. If desired, add "tags" (keywords), which will facilitate the search for this file to be added in the file in Madaster.
28. Finally click on the "Upload" button. The selected file (e.g. product certificates, etc.) is added and is visible in this sheet.
29. If desired, multiple files can be added in the product Dossier sheet.

Picture 17: Product Dossier

Return to the first sheet "Product information". Scroll down and finally click the "save" button. The entered data is stored and the 'Quantity' product is added to the user's 'own' product library.

Link added products

Elements of a source file (IFC and / or Excel) of the building can be linked to newly added products in the Madaster platform. In the Madaster system this works in the same way as with existing materials and / or products. There are two ways to link elements of a source file, namely: (1) automatic and (2) manual.

Link automatically

During the import process of a source file in Madaster, the platform will, based on the material description, automatically try to link each element in the source file to a corresponding material or product (based on the defined 'search criteria') registered in the Madaster database. For this reason, it is therefore very important that, when adding your 'own' set of products (and materials) in Madaster, the search criteria (of these products (and materials) are filled in and correspond to the naming of the elements of the source file. Products in Madaster that are set-up without search criteria cannot be found and subsequently cannot be automatically linked by the system.

If a source file is already uploaded into Madaster (in Dossier) and products (or materials) have been added afterwards in Madaster, the source file does not have to be uploaded again. Instead the import process can be reactivated in the platform by using the "Enrich again" function (File> "View details" button> "Enrich again" button). The system will then attempt to reconnect each element in the source file to a product (or material) in the Madaster database. Alternatively, the source file is modified and a new version of the IFC file has to be uploaded and processed in Madaster.

Note: by using the "Enrich again" function in Madaster, existing manual links will be lost.

Link manually

If there is no automatic link between an element from a source file (IFC and / or Excel) and a product (or material) in the Madaster database, it is possible to manually link the element (at a later stage) in Madaster to a corresponding product (or material) in the Madaster database (see also step 4 "Checking & enriching source data" in the Madaster Step-by-Step Manual). This manual process is briefly explained below.

1. In the "Dossier" sheet, click the "View details" button (shown after the source file).

Picture 1: View details

2. The "Quality Source file " screen is displayed. Click on the "Enrich" step in the submenu of this page. The "Enrich" page is displayed.


Picture 2: Submenu 'Enrich'

In the 'Enrich' page, the 'Element' column shows the name of the element of the source file (including the material description) and in the column 'Product / Material' the linked / yet to be linked product or material from the Madaster- database. In the column "Quantity" the linked elements are shown in blue colour and the non-linked elements in red colour. To the left of the page, using various filters, the variety of elements of a source file can be displayed (see picture 3).

Picture 3: Submenu 'Enrich'

3. Select one or more elements (in the 'Element' column) by selecting the radio button for the element.
4. Click the "(Re) Link Selection" button in the submenu. The "Link elements" screen is displayed.

Picture 4: Select elements

5. Search for and select the (added) product in the Madaster database (see picture 5).

Picture 5: Link elements to newly added product

6. Click the "Link" button. This links the selected elements of the source file to a product (or material) from the Madaster database.

Picture 6: Linked elements

Note: Changes in linked elements as well as changes in products (and materials) in the Madaster database must first be manually confirmed before these changes are visible in the various Madaster sheets (e.g. "Building" tab, etc.). To do this, click on the "Confirm" submenu, select the "yes" radio button and finally click on the "Confirm" button (see picture 7).

Picture 7: Confirm changes

Copy products

If several comparable products need to be added to the user's "own" product library in the Madaster platform, it is possible to copy an existing product and then adjust this copied product as desired. The copy function is available within the "manual enrich" process and on database level. This function is briefly explained below.

Manual enrich process

1. Repeat steps 1 to 5 as described above in the section "Link manually". This selects one or more elements of the source file (IFC and / or Excel) that you want to link (to a product that is already available in the Madaster database or own products library and you want to copy).

2. Click the "Copy selected product" button (on right hand side) in the "Link" screen.

Picture 1: Copy selected product

3.   In the "Create new product" screen you change the fields (e.g. "Brand name", etc.), with which you distinguish the copied product from the original.


Picture 2: Create new product

4.   Click the "Save" button. The copied product is saved and the other product sheets (including "Bill of materials ", "Search criteria", etc.) are displayed.

5.   Where required, change the information on these sheets to match the set-up of the copied product.

6.   Click the "Save" button to save any changes made to the product sheets of the copied product. The "Linking elements" screen is then displayed.

7.   Click the "Link" button. This links one or more selected elements of the source file to the copied product.

Copy on database level

1.   In the navigation drawer, select the relevant database that contains the product to be copied.

2.   Subsequently, select the product to be copied. The "Copy selected" button appears in the sub-navigation bar (see picture 3).
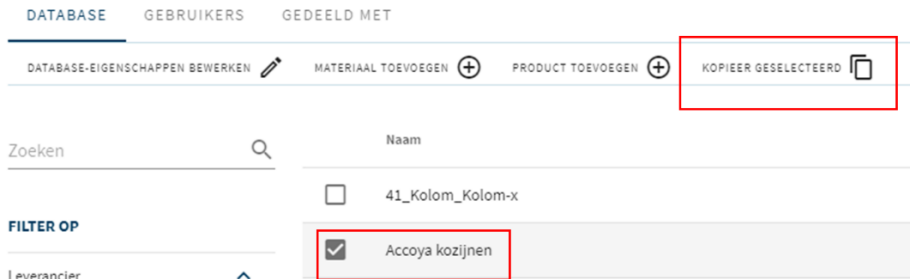
Picture 3: Copy selected element

3. Click on the "Copy selected" button. The product opens.

4. If desired, change one or more product characteristics in the various tabs and save the copied product with the "Save" button. The product will now be added to the relevant database

Deactivate products

If a self-added product is no longer needed and should no longer be part of the user's 'own' library to link elements of the source file manually or automatically, this product can be deactivated. This means that the product no longer appears in the (active) selection of its own product set and the Madaster system will no longer automatically be able to link this product. Pre-existing links will be maintained. This function is briefly explained below.

1. In the main menu, click on 'Administration'.

Picture 1: Administration

2. Use the search function or filters to find the product to be deactivated.
3. Click the "cog" icon behind this product. The product features of this product (incl. The different product sheets) are displayed.

Picture 2: cog icon (adjust product)

4. Click the "Deactivate" button in the top left of the "Product information" sheet. The "Confirm" screen is displayed.

GYPROC GF 100 RD/1.75.1.A
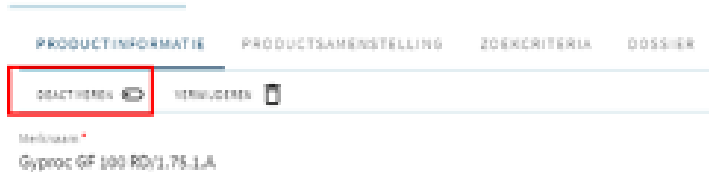
Picture 3: Deactivate product

5. Click the "Yes" button in the "Confirm" screen.

PRODUCT DEACTIVEREN - GYPROC GF 100 RD/1.75.1.A

Picture 4: Confirm product deactivation

The product is now deactivated in the Madaster system. This is made clear as the fields of this product are now shown in Gray colour.

Search deactivated products

If desired, a deactivated product can be reactivated. This makes the product part again of the active selection of the user's 'own' products library in Madaster and the product is included in the process of manually or automatically linking elements from source files. This function is briefly explained below.

1. In the main menu, click on 'Administration'.

Picture 1: Administration

2. Open the filter 'Status' in the bottom left of the 'Administration' screen.

Picture 2: Filter 'Status'

3. 3. Select the radio button "inactive" in the filter "Status" (see picture 2). The "Administration" screen now shows all deactivated (inactive) products under the user's own Madaster account.

Activate products

1. Repeat steps 1 to 3 as described above in the chapter "Search deactivated products".
2. In the list of deactivated products, find the product to be activated.
3. Click on the "cog" icon behind this product. The product features of this product (incl. The different product sheets) are displayed.

Picture 1: cog icon (adjust product)

4. Click the "Activate" button in the top left of the "Product information" sheet. The "Confirm" screen is displayed.

Picture 2: Activate product

In the "Confirm" screen, click the "Yes" button. The product is now (re)activated in the Madaster system. This is visible because the fields of this product are now displayed in white colour again.

Share Products (& materials)

By adding products (and materials) in Madaster, a ("private") products (and materials) database is built up at the account level. Besides the fact that this database remains available for each successive building under your own Madaster account, it can also be shared with external users. To this end, the party that makes its database available must explicitly share it with the receiving party. The private database can be made available in Madaster in three ways:

(1) by inviting an external user (personally by email) to the account, folder or building in Madaster, which includes the specific database and assigning this user a specific role as 'administrator', 'Manager & contributor', 'Manager' or 'reader' (see picture 1).

Picture 1: Invite user (account, folder or building)

(2) by inviting an external user (personally by email) to a specific database at account, folder or building level and assigning this user a specific role as "administrator" or "contributor" (see picture 2).

Picture 2: Invite user (account, folder or building database)

(3) by making the database available at account or folder level ("sharing with") an external Madaster account with different rights and properties:

- Map – elements can be linked to the materials and products in this database.
- Copy – the materials and products from this database can be copied.
- Contribute – new materials and products can be entered into this database by the users with whom this database is shared.
- Manage – the database can be managed by the users with the rights, on the account/folder/building with which this database is shared.

FYI: before a database can be shared in the above manner, the external party (who gains access to the database) must first grant you access to its account, folder or building in Madaster. This external party does this at the desired level by means of assign the "add user" role and the role "Manager & Contributor to Database".

Picture 3: Share database (account or folder level)

Madaster Support

The Madaster Service desk can be reached by telephone during office hours (+31 85 060 1242).

When logged in your Madaster environment, you can always consult the available online support documentation. Each page in the Madaster platform contains an "I" button on the right side (mid-screen). This provides information about the relevant page and available functions at all times.

This information and additional guides and reference works on the use and development of the Madaster platform can also be found directly at the following link.