

Suppliers instruction manual

Raw Material Database

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Version 1.0

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1. Introduction

Many resources for products that are purchased by grid operators, such as tubes, cables, meters, and transformers, are scarce and the mining or production of these results in environmental damage. Examples are copper, aluminum and plastics. As grid operators want to use these resources in the most responsible manner, we strive for a circular purchasing policy. The material passport contributes to this purpose as it provides materials with an identity. By using this passport, we know which materials are used where in our production process/value chain and when they will be available for potential reuse in a different production process.

In 2020, grid operators agreed upon a uniform material passport used for requesting information from our main suppliers. This material passport allows suppliers to provide insight into the resources and materials used in their products, the extent to which recycled materials are used and materials' potential for recycling or reuse at the end of product lifetime. The insights gathered facilitate the conversation between grid operators and suppliers on further improvement of sustainability and circularity.

By using a uniform material passport, grid operators reduce their administrative burden and increase the opportunity for joint learning. To further reduce the administrative burden for suppliers, an independent digital platform (system) was created that allows for safe storage and use of materials data. Data which was previously stored in the Excel version of the material passport, are now directly stored in the system that is hosted by Ksandr, a foundation established by the joint grid operators in The Netherlands. This system, the Raw Material Database (RMD), is used by the following grid operators: Coteq, Enexis, Liander, Rendo, Westland Infra and Gasunie.

This instruction manual provides information regarding the contents and use of the Raw Material Database. In sections 3 up to and including 5 the different types of passports, their contents and organization will be discussed. Subsequently, section 6 discusses creating, section 7 signing and section 8 removing passports. Lastly, in section 9 options for exporting data from the system are discussed.

An instruction manual in Dutch is also available.

2. Logging onto the Raw Material Database (RMD)

To gain access to the Raw Material Database, you will first need access to Ksandr's Collectieve Brein. You can request access on the following webpage on Ksandr's website: <https://ksandr.nl/aanvragen-profiel/>. Once you have obtained access to the Collectieve Brein, you can request access to the Raw Material Database via the dedicated contact person with the grid operator or supplier. Your account has one of the following levels of access rights; these are cumulative, i.e., the editor has the same rights as the viewer and more.

- **Viewer:** The viewer can consult all passports and collections but cannot edit these.
- **Editor:** The editor can consult and edit all passports and collections.
- **Administrator:** The administrator can consult and edit all passports and collections. In addition, this role can administer users. The Company cannot be edited, the system administrator is the only person who can do this.
- **Validator:** The validator can consult and edit all passports and collections and administer users. Moreover, the validator can sign passports.

There is no limit to the amount of people within one organization who can have similar roles. There should be at least one validator. This role is only present within supplier organizations, as only suppliers can sign passports. Several grid operators have agreed that a product's raw material passport is only valid when this has been signed by a supplier's CEO or other product executive. This implies that the validator role should be attributed to the CEO or other product executive.

To use the system, please go to the following website: <https://ksandr.nl>. At the top right of the homepage (see Image 1) you will see the text "Het Collectieve Brein". Please click on "Login" here.



Image 1. Screen print of Ksandr website displaying on the top right “Het Collectieve Brein”.

Once you have clicked on “Login”, the login screen will be displayed (see Image 2).

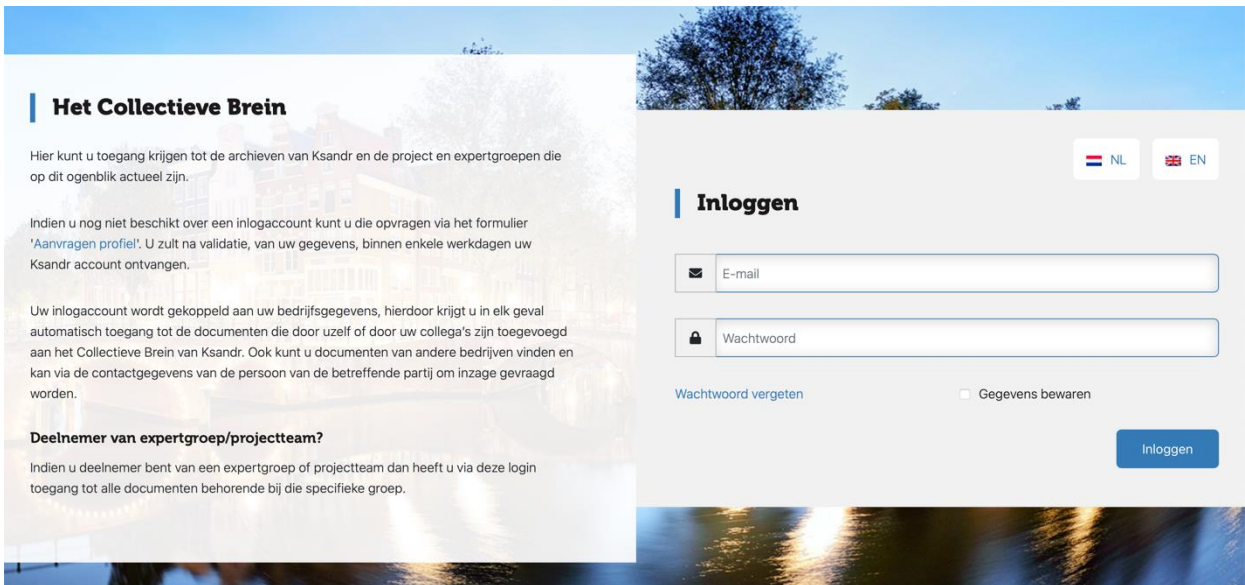


Image 2. Login screen “Het Collectieve Brein”.

To access the homepage of “Het Collectieve Brein”, please login and confirm your agreement with information confidentiality. The left side of the screen will display the menu shown in Image 3.

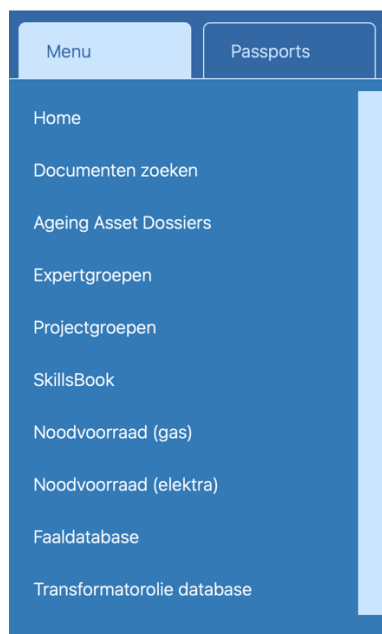


Image 3. Menu displayed on the left-hand side of “Het Collectieve Brein”.

If you click the tab “Passports” you will have access to the Raw Material Database.

Please note: Based on access rights granted to the person logging onto the system, the menu might show (red) lock symbols next to some menu items.

3. The passport

The contents of the material passport are based on the passport template that was agreed upon by grid operators in 2020. Several properties were added in the Raw Material Database that allow you to find and categorize passports more easily.

Representatives from grid operators and suppliers consulted jointly agreed to store the material passport information from the fields specified in Image 4 in the system (excluding the information displayed in ‘Summary’, this is calculated separately).

| General information | | Summary | | Validation | |
|---------------------|--|--------------|-------|------------|--|
| Supplier: | | Total weight | 0,00 | Name | |
| Product name: | | Circularity | ##### | Function | |
| Start date: | | | | Signature | |
| Type number: | | | | | |

| Part | Material | Unit | Measur | Weight (g) | Recycled (%) | Re/Down in | Recyclable (%) | Re/Down out |
|---------|----------|------|--------|------------|--------------|------------|----------------|-------------|
| Part X1 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Part X2 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Part X3 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Part X4 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Image 4. Overview of material passport elements stored in the system.

3.1. Passport types

The passport system differentiates between 2 types of passports that are aligned with the component building types. The passport indicates these with the property 'Built'.

3.1.1. Commodity passports

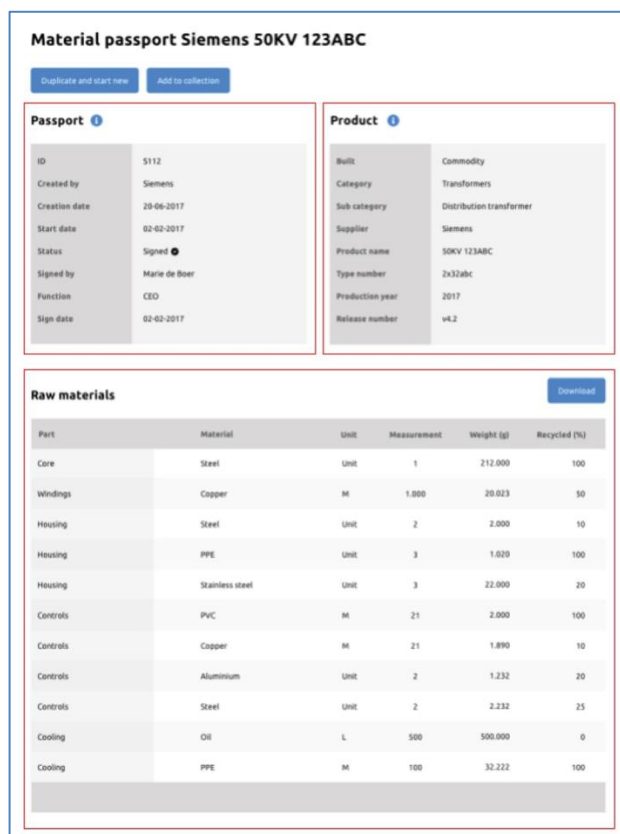
These refer to 'build to stock' components that are of equal composition for all grid operators. These products are not designed especially for a grid operator, but they are delivered off the shelf. Commodity passports are made available through the Commodity passports catalogue. A supplier is requested to enter a Commodity passport only once. Subsequently, this passport will be visible to all grid operators. Should a supplier want this passport to be displayed to a selection of grid operators only, a Custom passport should be created of which duplicates are made for those grid operators who are allowed access to the information. See section 6.2. for further details on how to create duplicates.

3.1.2. Custom passports

These concern the 'Configured to order/Engineered to order' products. These products are custom built or adapted and consequently, their contents vary. This passport is always custom-made by the supplier and is visible only to the grid operator involved.

3.2. Passport contents

The passport consists of 3 sections, the combination of which is the fixed set of information that describes the component.



- **Passport data**
Data on the passport creation and signing.
- **Product data**
Data on the product specified in the passport.
- **Raw materials**
The actual material data.

Image 5. Overview of the 3 fixed sections of which the passport consists.

3.3. Passport data

The Passport data comprise everything that concerns the passport as a document. The fields displayed in Table 1 are part of this section.

| Field name | Description |
|---------------|--|
| ID | Unique ID-number in the portal. This is automatically assigned by the system and it cannot be edited. |
| Grid operator | The grid operator involved. This can always only be one organization. |
| Created by | Name of the organization/person that/who initially created the passport. |
| Created at | The date on which the passport was created in the system. |
| Start date | Date as of which the passport became valid. |
| Status | The passport status. See section 3.4 for further details. |
| Shares | RMD users within the same company group can grant other RMD users within that group per passport access to this specific passport. This function only applies to Custom passports. Per passport, it can be determined which company from the group has access to that specific passport. |
| Signed by | Name of the person who signed the passport. |
| Function | Function of the person who signed the passport. |

| | |
|-------------|--|
| Signed date | Date on which the passport was signed. |
|-------------|--|

Table 1. Field name description of the passport data section.

3.3.1. Created by: person or organization

The name of the person who created the passport is only visible to employees working in the same organization:

- If a passport is created by a grid operator, the supplier will only see the organization name.
- Employees of the grid operator concerned will see the user’s personal name here (e.g., Peter de Wit – Enexis).
- A similar situation applies to the supplier.

3.4. Passport status

A passport’s status can take different statuses.

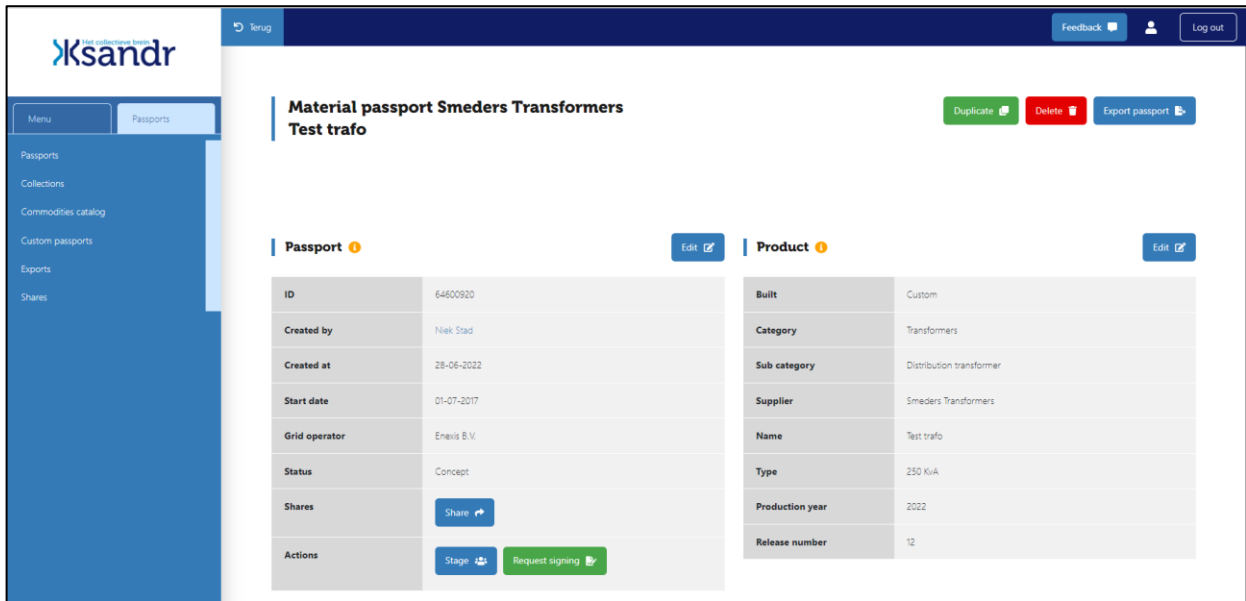


Image 6. Passport overview in which the field “Status” displays which of the statuses detailed below applies to the passport.

3.4.1. Concept

When a passport is created, the grid operator or supplier name is automatically filled out based on the type of organization the user belongs to. In its “Concept” status, this passport is only visible to users who belong to the same organization. If a supplier user creates a passport, the user fills out the name of the grid operator concerned. If a grid operator user creates a passport, the user fills out the name of the supplier concerned.

3.4.2. Staging

If a passport’s status is “Staging” it is visible not only to the organization that created the passport, but also to the other party concerned. This status can be used in situations where both supplier and grid operator must be able to edit the passport simultaneously.

3.4.3. To be signed

If a passport's status is "To be signed" it is visible to both supplier and grid operator concerned, who can both edit the passport. If the passport has not been signed, the grid operator can edit its status to "Concept" or "Staging".

3.4.4. Signed

Once the passport is signed, its status changes to "Signed". This action is final and cannot be undone. The passport is visible to supplier and grid operator concerned. The status can only be edited to "Obsolete".

3.4.5. Obsolete

If an asset is removed from the grid, its status can be changed to "Obsolete". The passport remains visible to the parties concerned and its status could be changed to "Signed". The passport status can only be changed to "Obsolete" once the passport is signed. It is impossible to change a passport status from "Concept" or "To be signed" directly to "Obsolete".

3.5. Product data

The product data comprise everything that concerns the product. The information in this section should allow a supplier to determine exactly what product and which version of it is described here.

| Field name | Description |
|-----------------|--|
| Built | Indicates whether it is a Commodity or Custom-built component. |
| Category | Main category the component is part of (to be chosen from a drop-down list). |
| Subcategory | Subcategory the component is part of (to be chosen from a drop-down list). Options depend on the chosen main category. |
| Supplier | Component supplier. This field is automatically filled out if one is logged in as a supplier. |
| Product name | Name of the product. |
| Type number | The product type number. |
| Production year | The year in which the product was produced. |
| Release number | Version of product release number. |

Table 2. Description of field names displayed in section product data.

3.6. Raw materials data

This section is the actual materials passport. Table 3 specifies the columns in this section. The passport creator can determine how many rows are required. Filling out columns up to and including 'Recycled (%)' is obligatory. The last 3 columns (Re/Down in; Recyclable (%); Re/Down out) are not obligatory. Specification of these columns was copied from the Groene Netten passport.

| Field name | Description |
|------------|--|
| Part | The part of the product that is described (e.g., core or casing). If the part consists of multiple resources, each of these are specified in a separate row. |

| | |
|----------------|---|
| Material | Select a raw material from the predefined list. |
| Unit | The unit for which the weight is filled out (e.g., M, KM, Unit). |
| Measurement | Measurement for which the weight is specified (e.g., 1, 100, 1000). |
| Weight (g) | The material's weight in grammes. |
| Recycled (%) | Percentage of the material that is recycled/not virgin. |
| Re/Down in | Select between recycled (R) or downcycled (D) or not available (N.A.) with reference to the contents of column "Recycled (%)". |
| Recyclable (%) | Percentage of the material that is recyclable. |
| Re/Down out | Select between recycled (R) or downcycled (D) and not-available (N.A.) with reference to the contents of column "Recyclable (%)". |

Table 3. Description of field names in the section raw materials data.

4. Collections

The system allows for collections to be created in which passports can be stored. By using these, one can structure passports. A passport can be part of multiple collections simultaneously. Placing passports in collections is not obligatory. The information detailed in Table 4 is added to collections.

| Field name | Description |
|-------------|---|
| ID | Unique ID within the system. This is assigned automatically by the system and cannot be edited by the user. |
| Created | The date on which the collection is created. This is automatically assigned and cannot be edited. |
| Created by | Name of the person who initially created the collection. |
| Reference | This is a free text field. A reference can consist of letters, numbers, and punctuation marks. |
| Description | A free field for adding additional descriptions. |

Table 4. Description of collection field names.

4.1. Visibility of collections

Both grid operators and suppliers can create collections. A collection is only visible to the employees within the organization that created the collection. A supplier cannot see to which collections the grid operator added its passport, and vice versa. Employees of one organization can see each other's collections.

4.2. Removing a collection

If a collection is removed, the following rules apply:

- The opportunity to transfer all connected passports to another collection is offered.
- If a collection is removed, the connected passports are not removed.

5. Commodity passports catalog

The Commodity passports catalog can be used by grid operators as a catalog with readily available passports of frequently used components. These commodity passports are visible to the supplier concerned only and to all grid operators. Hence, suppliers cannot see each other's commodity passports. Grid operators can see all suppliers' commodity passports.

5.1. Adding a passport to the Commodity passports catalog

Only suppliers can create commodity passports. If these have the status "Concept" or "To be signed" these passports are only visible to the supplier concerned. Once they have been signed, these passports automatically become available in the Commodity passports catalog where they are visible to all grid operators.

5.2. Removing a Commodity passport

If a commodity passport is signed, it is no longer possible to remove this passport, since suppliers do not know which grid operators use this passport. However, the passport's status can be changed to "Obsolete". In contrast, a custom passport can be removed and if this is done, it will be transferred to "Trash".

5.3. Status "Obsolete" with a commodity passport

If its status is changed to "Obsolete", the supplier indicates that a passport is no longer available as of that moment, for instance because the component concerned is no longer produced. The passport is no longer visible in the catalog for grid operators. Passports that are already in use, will remain unchanged for the grid operator, as the component is already in use. The grid operator will see the passport as "Signed" in all collections it is part of. Status changes can only be made by the supplier concerned, who can also edit the passport status to "Signed".

5.4. Signing a commodity passport

Each user within the supplier organization can create a Commodity passport. If this passport has status "Concept", only employees working with the supplier concerned can see and edit this passport. Once the passport has been signed, it will be available in the catalog. The signing process is identical for commodity and custom passports.

The signing process is also identical to the process triggered by a grid operator request. The supplier's validator sees the passport displayed on the page "To be signed" in the passport dashboard. For further details on signing a passport, please refer to section 7 in this document.

6. Creating a new passport

Both grid operators and suppliers can create new custom passports. Commodity passports can only be created by suppliers. There are two different ways in which a new passport can be created: 1. Creating a new blank passport, or 2. Creating a passport by duplicating an existing passport.

6.1. Creating a new blank passport

Creating a new blank passport can start from the commodity passport dashboard or the custom passport dashboard. To create a new blank passport, please go to the dashboard and click the green button in the top right-hand corner (see Image 7). Subsequently, the screen displayed in Image 8 will open.

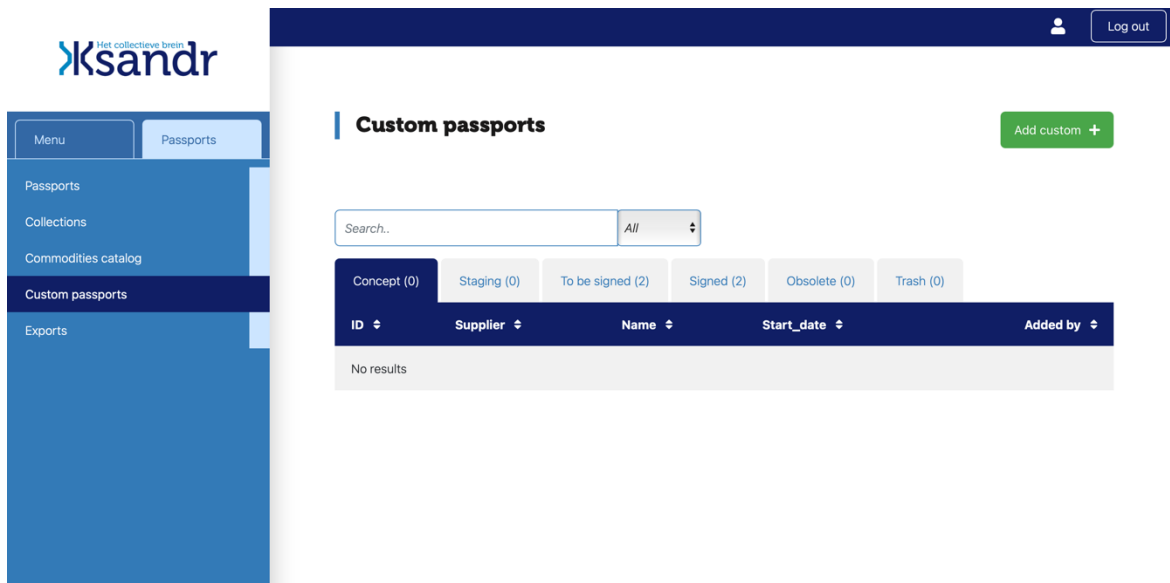


Image 7. Adding a new blank passport from the custom passports dashboard.

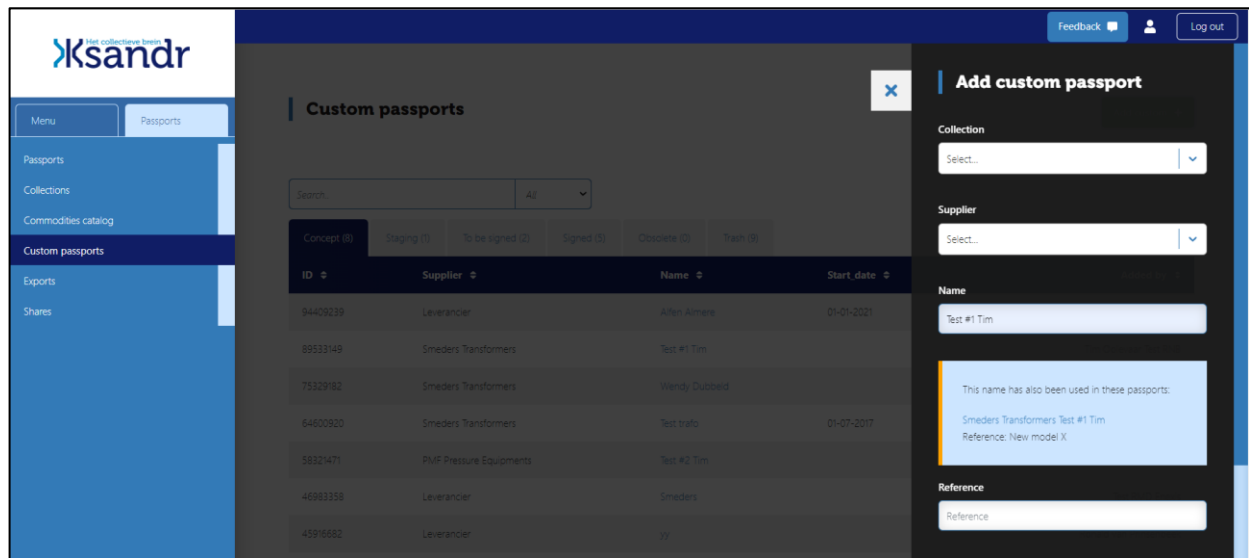


Image 8. Creating a new blank passport from the custom passport dashboard.

You can choose whether you would like to add the passport to a collection. You can edit your choice later. If suppliers fill out the data, the field 'Supplier' is automatically filled out. The field 'Name' should include the name of the product described. The system automatically checks the combination Name and Reference. If a new passport has the same combination as an existing passport, this is automatically indicated (see Image 8).

When creating a blank passport, the fields displayed in Table 5 are automatically filled out.

| Field name | Comment |
|------------|---|
| ID | Unique ID generated by the system, cannot be edited. |
| Created by | The name of the account that is logged in is automatically displayed here. This cannot be edited. |

| | |
|---------------|--|
| Creation date | Date of the initial creation. This cannot be edited. This is not updated when the passport is saved or when its status is changed. |
| Status | Standard setting is Concept. Can be edited by the user. |
| Product data | |
| Built | Grid operators see the standard setting Custom displayed. Suppliers can select the setting. |
| Supplier | Suppliers' organization name is automatically displayed. This cannot be edited. |

Table 5. Description of automatically filled out fields in a blank passport.

6.2. Creating a passport by duplicating an existing passport

Both grid operators and suppliers can create a new passport by duplicating an existing one. If they do so, the existing passport's data are copied and filled out in a new passport. There is no connection between the original and the duplicate. Grid operators can also duplicate a Commodity passport, the duplicate will automatically become a Custom passport.

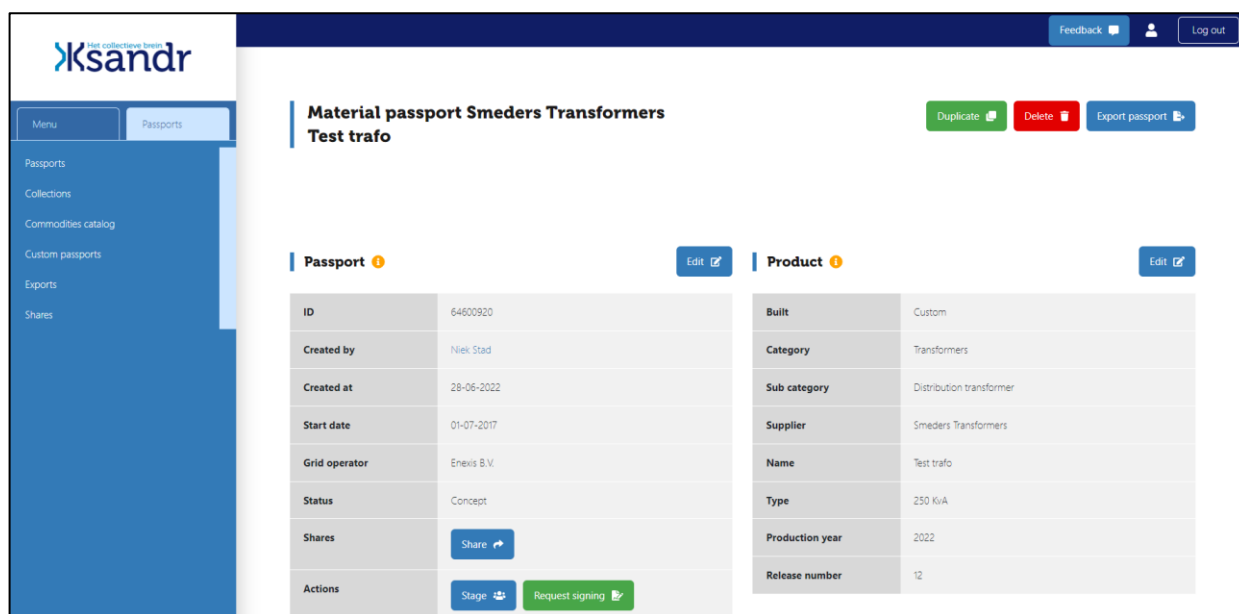


Image 9. Passport displaying the button “Duplicate” at the upper right-hand corner.

Image 9 displays an existing passport. By clicking on the green button “Duplicate” the passport concerned is duplicated. If a duplicate is made, the data in Table 6 are automatically changed in the duplicate compared to the original.

| Passport data | |
|---------------|--|
| Field name | Comment |
| ID | A new ID is generated by the system and this cannot be edited. |
| Created by | Name of the user who generates the duplicate, is automatically filled out. |

| | |
|---------------|--|
| Creation date | Duplication date is filled out. |
| Status | Status is changed into "Concept". |
| Signed by | Field is cleared. |
| Function | Field is cleared. |
| Sign date | Field is cleared. |
| Product data | |
| Built | If the supplier creates a duplicate, the current Built is saved. If the grid operator creates a duplicate, Built always becomes Custom (also when a Commodity passport is duplicated). |

Table 6. Description of field names that are changed in a duplicated compared to the original.

6.3. Filling out passport data

All fields can be filled out via the webinterface. Product and passport data can be filled out by using the "Edit" button on Passport or Product level. See Image 9 in which the blue button "Edit" is shown on the right-hand upper corner of each section. In the screen that opens after having pressed the "Edit" button, data can be edited or filled out. Data are stored and a new (duplicate) passport is created only if the "Save" button in this screen is pressed. This new passport is then added to the Custom passports overview. If no edits are made and saved after pressing the "Duplicate" button, no new (duplicate) passport is created.

When creating a passport, you are requested to fill out the product data. These will be added to the section 'Product', as is displayed in Image 9. The field 'Name' should contain the product name. If information is lacking during the passport creation, you can add this at a later moment in time.

The section 'Raw Materials' should contain the different parts the product exists of. Click the green button 'Add row' and next, click on the row in the column 'Part'. Please fill out the name of the part and add the other requested data for the part concerned. You can select the material the part concerned is made of by using the drop-down menu that appears if you click on the cell. Should the material concerned be lacking from the list, please select 'other'. If the material is unknown to you, please select 'unknown'. Next, you can choose 'Unit', i.e. the unit measured, as well as the amount of this unit ('Quantity unit'). For instance, if you have selected m (meter) as a 'Unit', you are requested to specify the amount of meters of the material concerned in the specific part in the column 'Quantity unit'. Subsequently, you are requested to fill out 'Weight'. Information about the weight is requested as this essential to calculate the total amount of material the grid operator purchases.

In the next column, you are requested to fill out the percentage of recycled material the raw material contains. In other words, what percentage of the weight originates of secondary (recycled) material. Subsequently, you are requested to specify the quality of the recycled material ('Re/down in'), i.e. recycled (R) or downcycled (D). See table 7. for more information. If the percentage in the column for secondary (recycled) material is 0%, the next column will automatically display N.A. The next column concerns the amount of recyclable material. In other words, what percentage of the material's weight can be recycled at the end of its lifetime. The final column ('Re/down out') specifies whether or not the material is recyclable (R), downcyclable (D), or N.A. (if 0% is indicated in the column 'Recyclable %'). We do realize that in practice, it is impossible to recycle 100% of the material due to process losses. However, we see that suppliers often fill out this percentage when it is their intention to fully recycle the entire product.

| Category | Beschrijving |
|----------|--|
| R | Material either recycled or recyclable on the same or higher level. This is a theoretical measurement from the perspective of recyclability and no |

| | |
|------|---|
| | actual agreements have to be made to actually effectuate the recyclability. |
| D | Material either recycled or recyclable at a lower level than the original one. Downcycling does not include thermic recycling for energy generation purposes. |
| N.A. | Either no recycling or thermic recycling takes place. |

Table 7. Description Categories of Re/down

These categories refer to the product's raw material's recyclability potential. The focus is on recyclability of the individual raw material. However, it is important to consider how the raw material is processed into the product and whether this impacts its recyclability. The recyclability category can be assessed by a processor. The recyclability potential is thus based on the present state of technology.

6.3.1. Outcome material passport

Several grid operators use the outcome of the material passport to calculate the level of circularity of their purchases. Please refer to section 9.2 for further information on the circularity percentage.

6.3.2. Correctness material passport

Filling out the material passport is a first step towards insight into raw materials used and the chain behind these raw materials. We assume that for each product, this information is filled out correctly by the supplier concerned. If so desired, the information supplied can be verified. To validate the passports and use these for internal reporting purposes, we request our suppliers to sign the passports. We also expect that, when requested, suppliers cooperate with checks of correctness and completeness of the information supplied. Internally, we have agreed that the material passport of a product is valid when this is signed by a supplier's CEO or other person with ultimate responsibility for this product. The material passport provides for this information.

6.4. Manually adding raw materials data

Via the web interface data can be added manually.



Image 10. Inline editing (left) and adding row (right)

Each row is filled by means of an inline editor. By clicking the tab key, one can easily jump from one field to the next. Data is directly updated and saved, there is no need to confirm each edit by clicking the "Save" button.

6.5. Importing raw material data

In addition to the above, it is possible to import data by means of using a CSV (comma-separated values) file. Since the passport contents could contain a comma, each field is framed by double quotes. So “XX”, “YY”. Optionally, the first row in a document can be skipped. It is also possible to import Excel files.

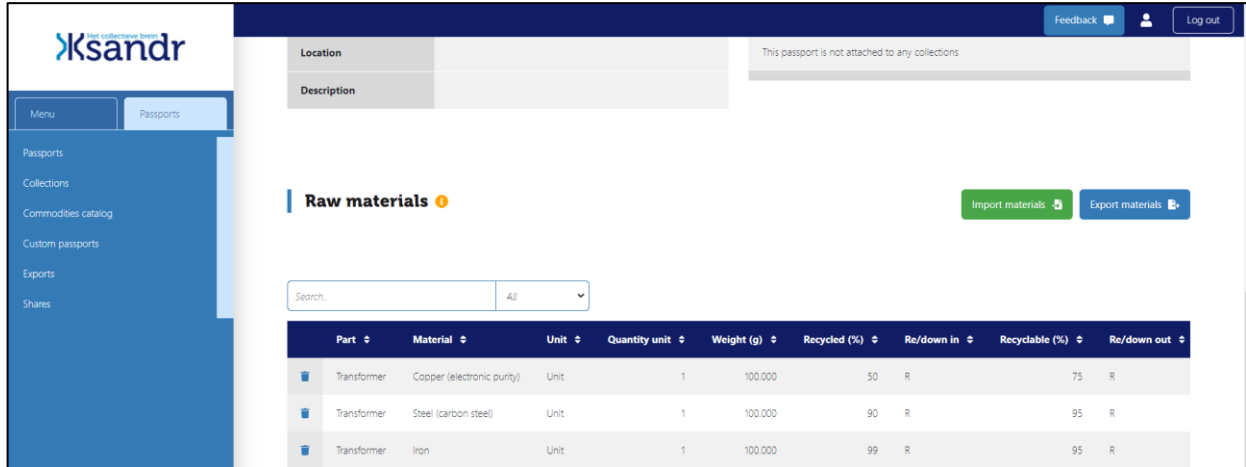


Image 11. Importing raw materials data.

After you have clicked on the green button 'Import materials' (see Image 11), the screen displayed in Image 12 opens. When importing data, please bear in mind that the file will only contain raw materials data. In the connected file these should be offered in the same order and format as the web interface columns.

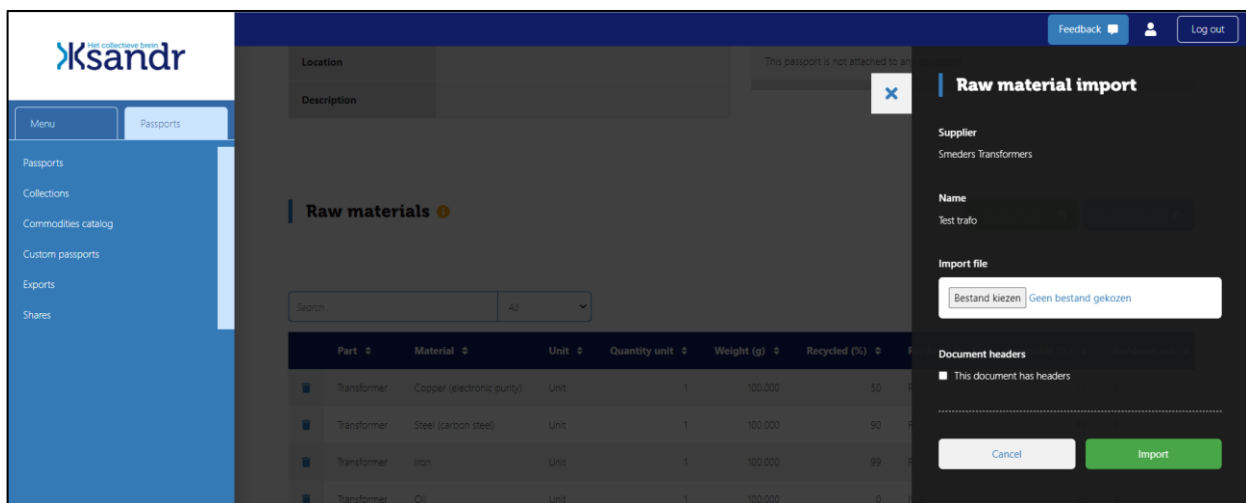


Image 12. Raw material data import screen.

6.5.1. Rolling back an import

If an import displays unexpected results, it is possible to roll back the import right after it has taken place. Data will be rolled back to the situation as it was before the import. This can be done as follows: after the import is finished, a yellow button is visible that says "Import rollback". By clicking this button, the last import is rolled back, and the situation is identical to what it was before the import took place. For instance, if 3 separate imports have taken place directly after one another, all 3 can be rolled back by clicking "Import rollback" 3 times after each other.

6.6. Making a passport available to a counterparty

There are always 2 parties involved when it comes to custom passports: the supplier and the grid operator. If the supplier creates a new passport, this is only visible to its own employees. To make the

passport visible to the counterparty (the grid operator) the passport status should be changed to “Staging”. Once this has been done, the grid operator can edit the passport as well. Moreover, the passport can be changed back into the status “Concept” for it to be only visible to the supplier again.

7. Signing a passport

If a passport is ready to be signed, its creator (or a colleague with the same rights) can send a “Request for signing”.

7.1. “Request for signing” steps

Everyone within the organization (grid operator and supplier) who has created the passport can send a “Request for signing”. See Image 9: at the bottom of the passport data a green button “Request signing” is displayed. After having clicked on this green button a Signing request form will appear (slide-in screen). This is similar to the request displayed in Image 13 and it consists of the topics described in Table 8.

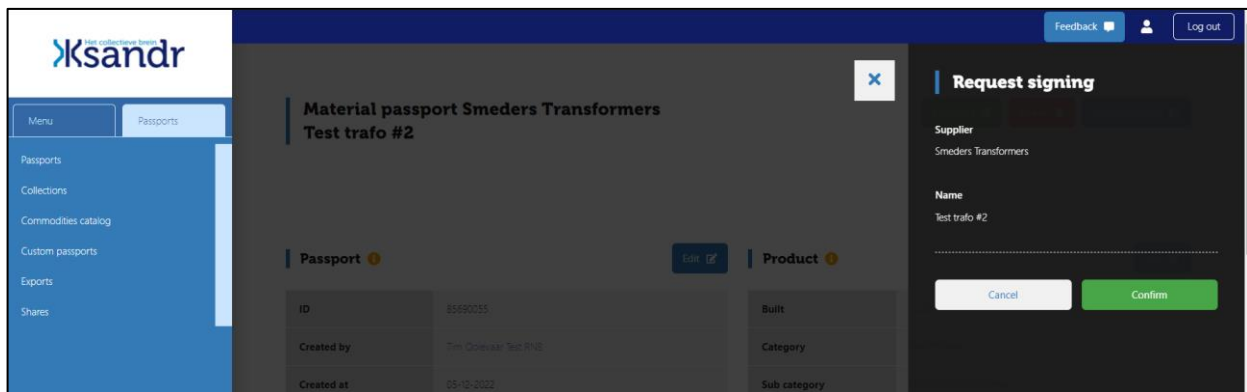


Image 13. Example of a “Request signing” form.

This form consists of the topics shown in Table 8.

| Field name | Description |
|------------|--|
| Supplier | Name of the passport supplier. |
| Name | Passport name. |
| Date/time | Central European Time (CET) i.e., time stamp of request sent (this is automatically logged). |

Table 8. Overview topics displayed in “Request for signing” form.

7.2. Passport check

The system checks the passport for missing fields. If not all obligatory fields have been filled out, the request cannot be sent. See Image 14 for an example of an error message displayed after the check.

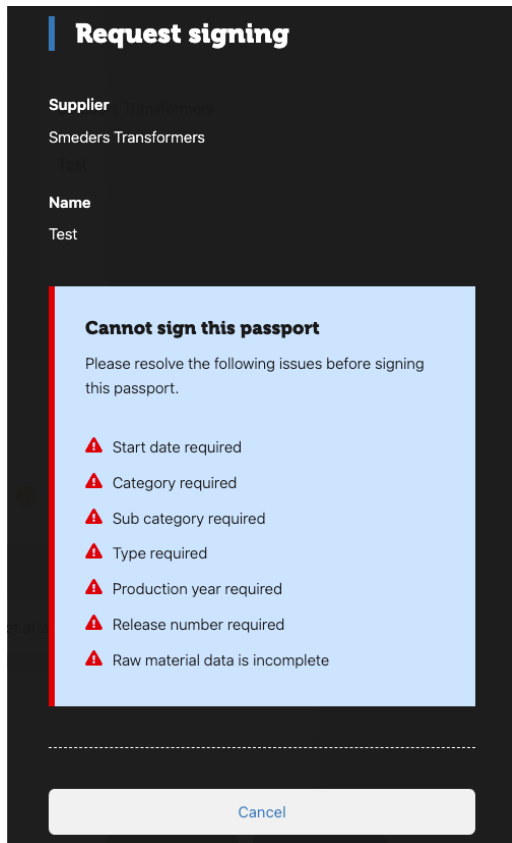


Image 14. Example of an error message after passport check.

The system marks those passport fields that have not or have been incorrectly filled out. See Image 15 for an example.

Material passport Smeders Transformers Test [Duplicate] [Delete]

Validation errors. Please check marked fields.

Passport [Edit] **Product** [Edit]

| | |
|---------------|---------------------------|
| ID | 27 |
| Created by | Frank Buschman |
| Created at | 16-04-2021 |
| Start date | |
| Grid operator | Coteq Netbeheer |
| Status | Concept |
| Actions | [Stage] [Request signing] |

| | |
|-----------------|----------------------|
| Built | Custom |
| Category | |
| Sub category | |
| Supplier | Smeders Transformers |
| Name | Test |
| Type | |
| Production year | |
| Release number | |

Meta [Edit] **Collections** [Edit]

| | |
|-------------|-----------------------|
| Reference | Dit is de referentie |
| Location | |
| Description | En dit de description |

In 0 collections
This passport is not attached to any collections

Raw materials [Import] [Export]

Search... [All]

| Part | Material | Unit | Measurement | Weight (g) | Recycled (%) | Re/down in |
|---------|-------------------------------|------|-------------|------------|--------------|------------|
| Housing | Brass | Unit | 12 | 11 | 2 | R |
| Wiring | Copper (electronic purity) | km | 200 | 222 | 22 | R |
| Core | Aluminium (electronic purity) | m | 100 | 1.200 | 22 | N.A. |

[Add row +]

Image 15. Example of indication of fields that have not or have been incorrectly been filled out.

7.3. First actions after having sent the request

Directly after the request has been sent the following actions are automatically executed:

- The passport status changes from “Concept” to “To be signed”.
- All supplier users will see this passport in their dashboards in the column “To be signed”. **Please note:** no (automated) notification messages are sent.
- Only users who are authorized to sign can execute the actual signing. All other users will see a notification that states they lack the rights to execute the signing.
- The notification includes the name of the person who sent the request, the accompanying date/time in CET and if applicable, the corresponding message.
- On the passport itself, a notification will appear that indicates that the passport requires signing.

7.4. Withdrawal of a signing request

If the actual signing has not yet been executed, only the passport creator (or a colleague within the organization who has the same rights) can withdraw the signing request by changing the passport's status to "Concept" or "Staging".

Directly after the status of the passport has been changed, the following will happen:

- The button "Request signing" will reappear on the passport.
- The Request for signing will disappear from the list on the supplier's dashboard.
- Data that is part of the signing request (see Table 7) will be erased.

7.5. Execution of a Signing request

If a passport's status is "To be signed", the signing request remains visible on the dashboard. A validator can execute the signing by filling out the Signing request agreement form. This form consists of the elements listed in Table 9.

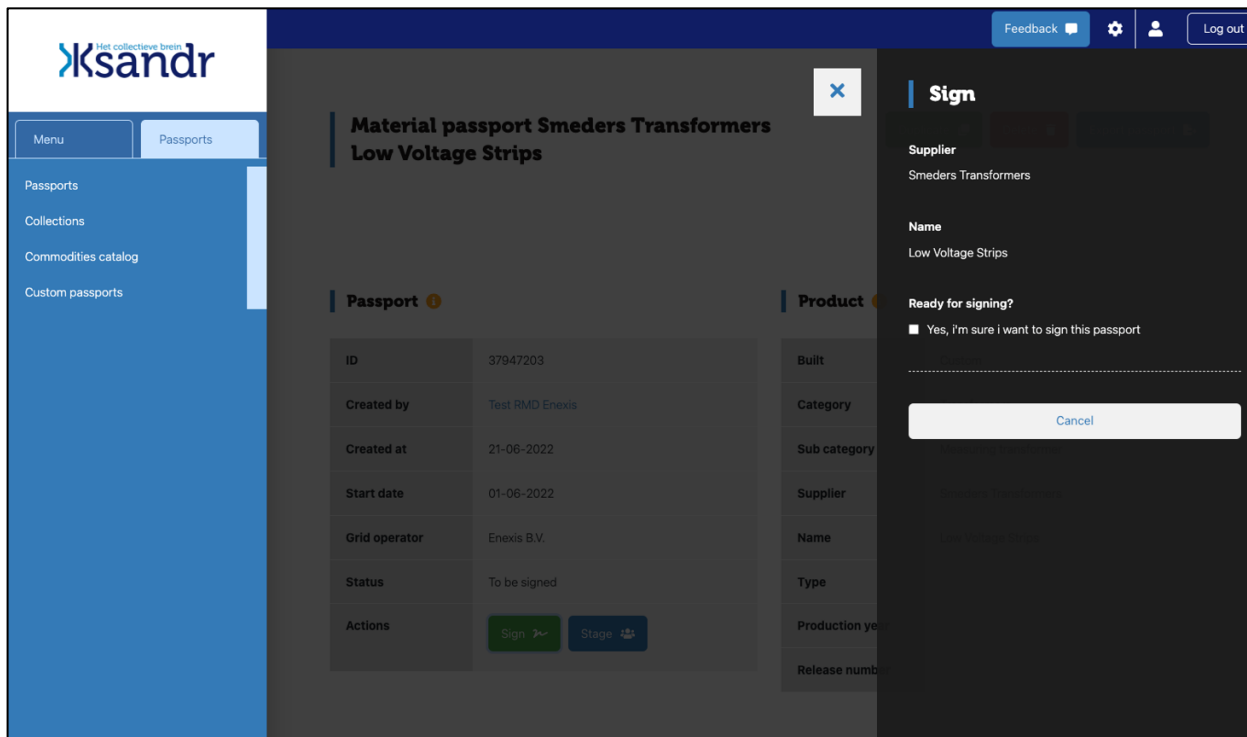


Image 16. Example of a Signing request agreement form.

| Field name | Comment |
|------------|--|
| Signed by | Name of the user who executes the signing is filled out. This information is stored as a copy. This ensures that if the account of the user concerned is removed in the future, the original Validator's name remains visible in the system. |
| Function | The function as stored in the user profile is automatically filled out. This data is also stored as a copy (see above). |
| Tick box | Confirmation of authorization to sign. This authorization is granted by the person who has Admin rights. |

| | |
|-------------|--|
| Date/time | CET time at which the form was sent. |
| Signed date | Date on which the passport was signed. |
| IP address | The user's IP address (hidden but logged). |
| Fingerprint | Information concerning the device on which the action is executed (hidden but logged). |

Table 9. Description elements Signing request agreement form.

Directly after the passport has been signed, the following takes place:

- The passport's status changes to "Signed".
- The data "Signed by", "Date" and "Function" are added to the passport.
- The passport can never be changed. However, it's status can be changed to "Obsolete" (see 5.3) and it can be duplicated (see 6.2).

As of now, the signed passport can be consulted in its current status via the system menu.

8. Removal of custom passports

Custom passports can always be removed; by whom depends on their status:

- **Concept:** Only its creator can remove the passport.
- **To be signed:** Only its creator can remove the passport.
- **Signed:** Only the grid operator can remove the passport.
- **Obsolete:** Only the grid operator can remove the passport.

If a custom passport is removed, it is moved to Trash. When removing a passport, the user can remove this directly from other collections.

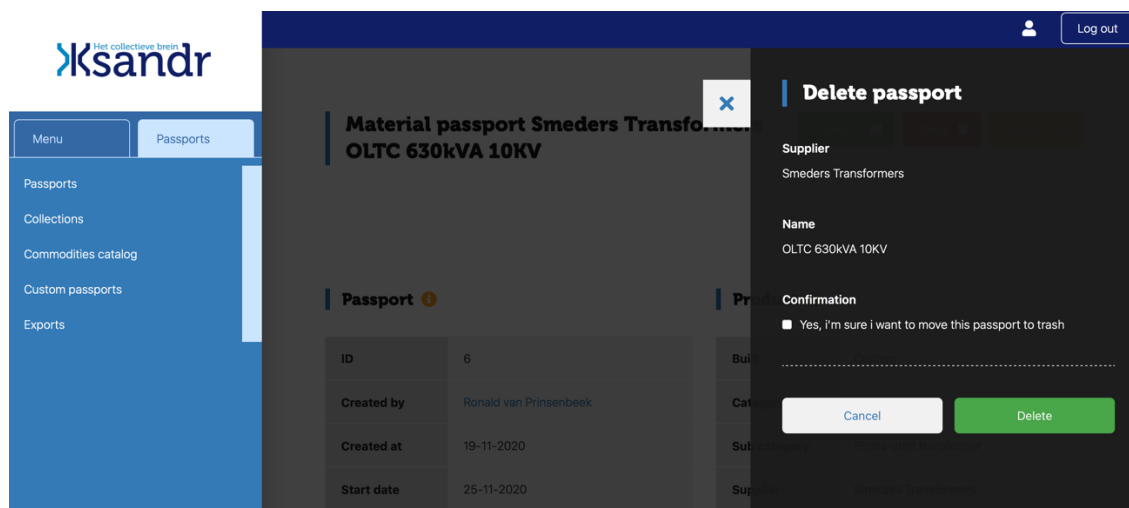


Image 17. Removing a passport.

8.1. Restoring a Custom passport from Trash

If a custom passport is removed, it disappears from all collections which it previously was part of. The passport can only be found in the Trash. All metadata is saved. It is possible to restore a passport from Trash. When restoring the passport, the user can choose the collections in which the passport should be restored. The original metadata will be shown as well.

9. Exporting data from the system

Users can export data from the Raw Material Database in several ways. Data from a single passport can be exported as well as data from multiple passports.

9.1. Exporting data from a single passport

Data from a single passport can be export by using one of the following two methods:

- Export passport: product and material data from a single passport are exported as Excel or CSV files. The position of the button with which this export is started, is shown in Image 18.
- Export materials: the material table from the passport is exported. This export includes the following columns: Part, Material, Unit, Quantity unit, Weight (g), Recycled (%), Re/Down in, Recyclable (%) and Re/Down out. Please refer to Image 19 for the position of the button with which this export can be started.

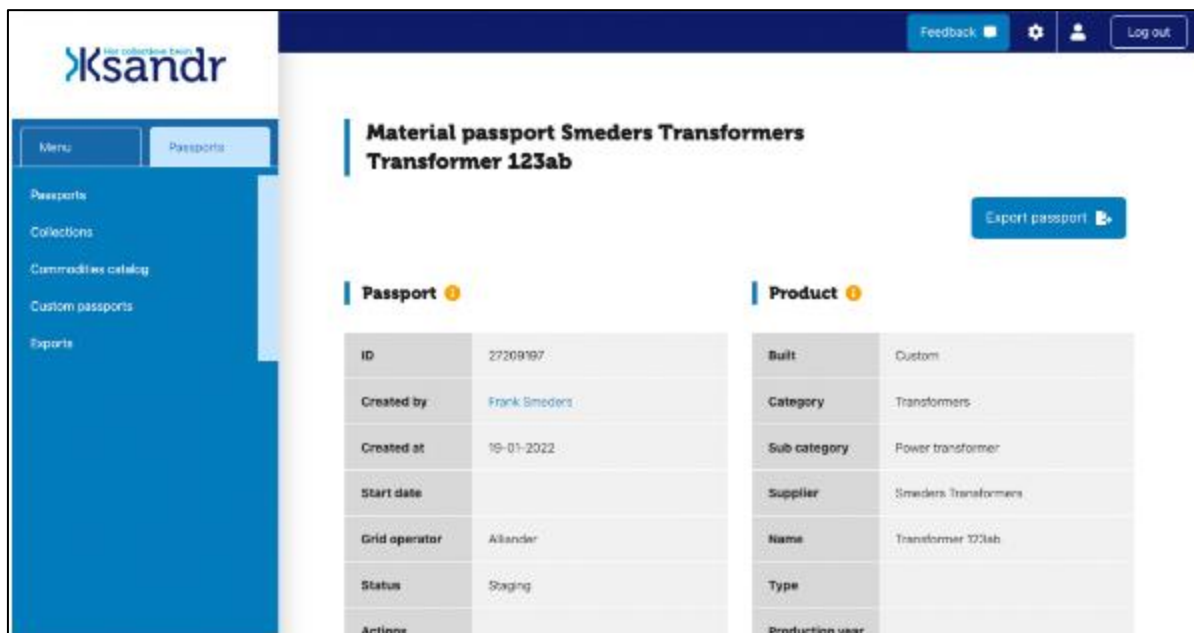


Image 18. Position button 'Export materials' within a passport.

The following columns are included in the export created with 'Export materials':

1. Passport ID
2. Name
3. Circularity Score
4. Start date
5. Category
6. Subcategory
7. Supplier
8. Part
9. Material
10. Unit
11. Quantity Unit
12. Weight (g)
13. Recycled (%)
14. Re/Down in
15. Recyclable (%)
16. Re/Down out
17. Circularity %

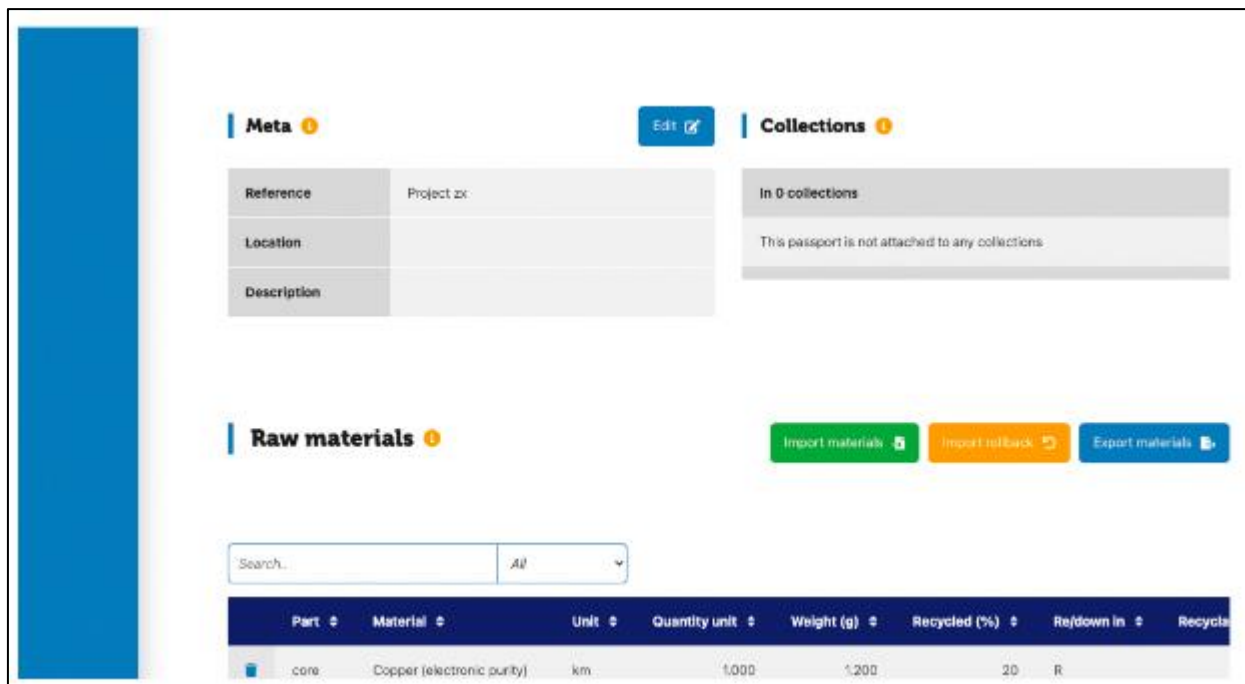


Image 19. Position button 'Export materials' within a passport.

9.2. Exporting data from multiple passports

All types of users can create raw data exports for external analyses purposes. See Image 20 for the page that is shown when "Exports" is selected in the left-hand menu. By clicking the green button "Export +" an export can be created.

When exporting multiple passports at the same time, the following data exports can be created:

- Export raw materials: an export of all materials in the selected passports. This is an export of the material tables in the passports and it contains the following columns: Passport ID, Supplier, Name, Part, Material, Unit, Quantity unit, Weight (g), Recycled (%), Re/Down in, Recyclable (%) and Re/Down out.
- Export circularity scores: this is an export of the selected passports' circularity scores. Please refer to section 9.5 for further information on circularity score.

Please note: passports in the Commodity catalog that have not yet been added to a collection, are excluded from the exports.

The export created with 'Export raw materials' includes the following columns:

1. Passport ID
2. Supplier
3. Name
4. Part
5. Material
6. Unit
7. Quantity Unit
8. Weight (g)
9. Recycled (%)
10. Re/Down in
11. Recyclable (%)
12. Re/Down out

The export created with 'Export circularity scores' includes the following columns:

1. Passport ID
2. Name
3. Created at
4. Circularity score
5. Supplier

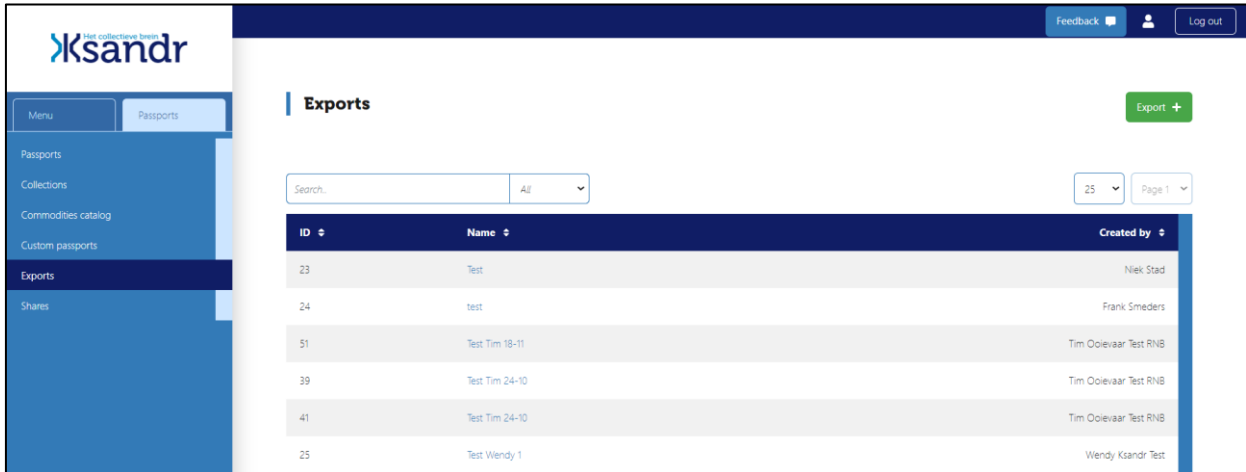


Image 20. Page on which exports can be created.

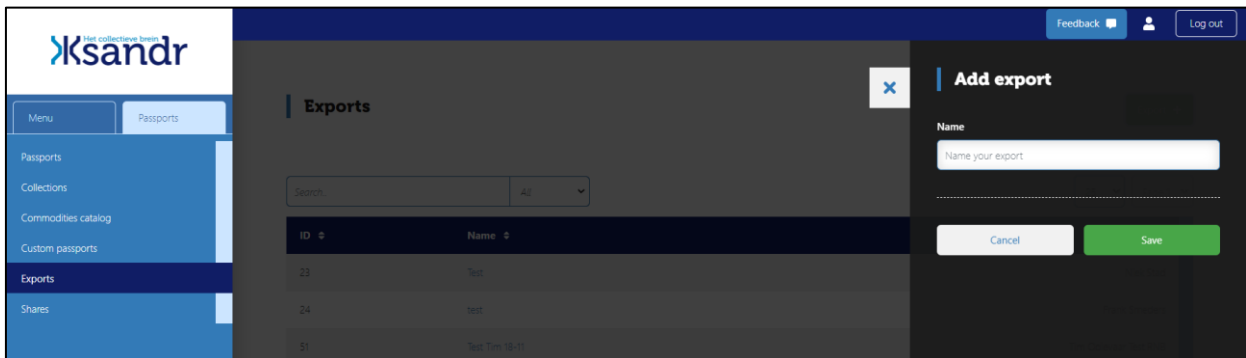


Image 21. Naming an export.

9.3. Filter options

Users can filter passports by selecting the following properties when creating exports:

- Status
- Creation date
- Signing date
- Start date
- Supplier
- Category
- Subcategory
- Collection

After having selected the desired filters, these can be saved for reuse at a later point in time. See Image 24. Next, the type of export can be selected by using the two blue buttons at the top of the screen. Users can choose between 'Export raw materials' and 'Export circularity scores'

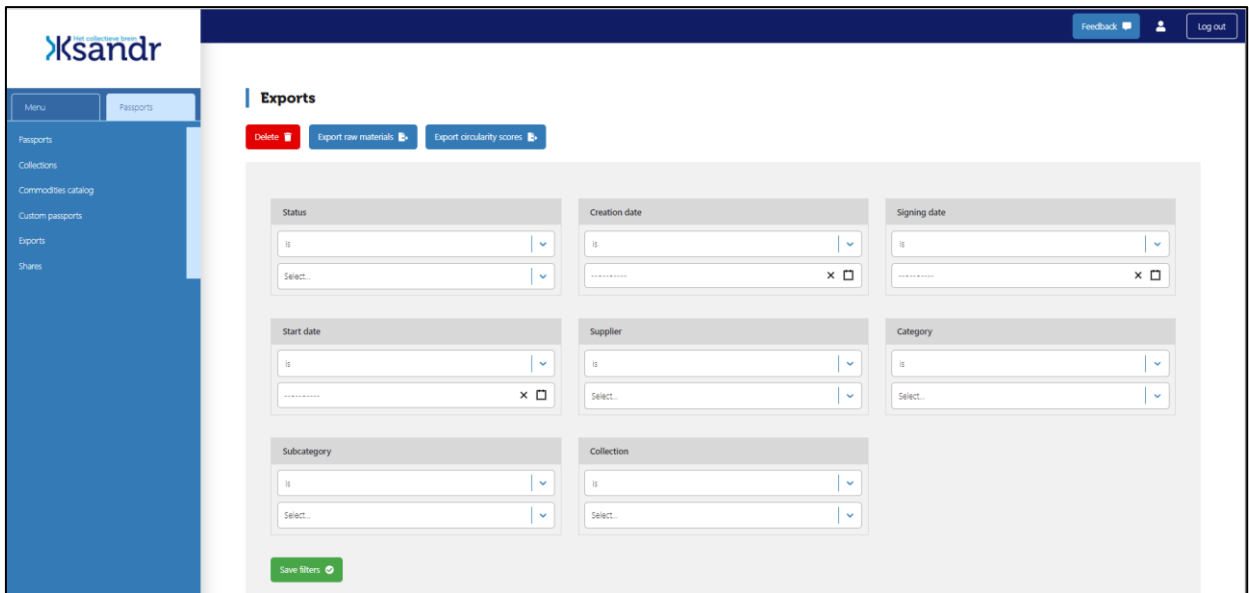


Image 22. Properties that can be selected when creating an export.

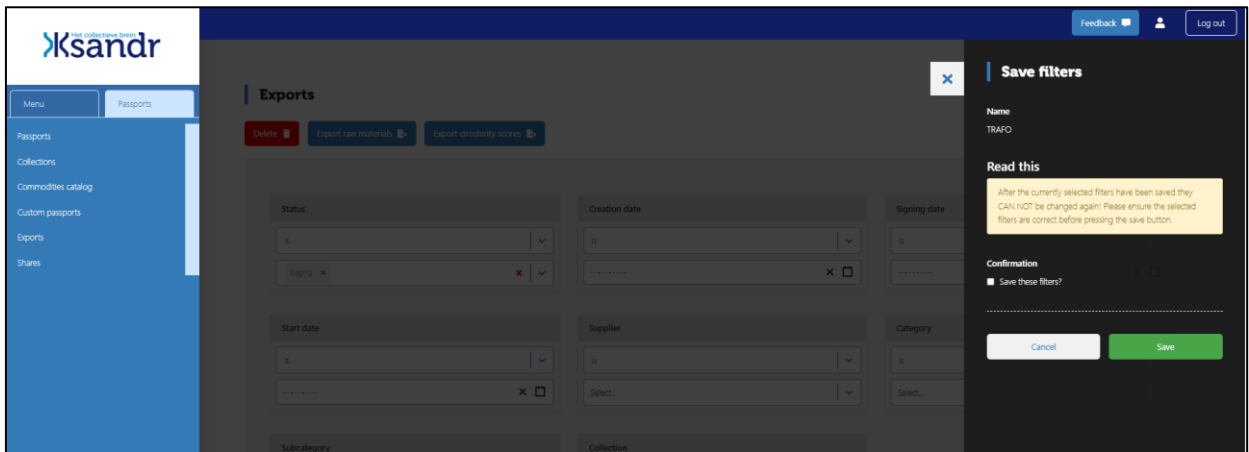


Image 23. Saving selected filters.

9.4. History

The user can see a history of all exports created within the own organization, as is shown in Image 24.

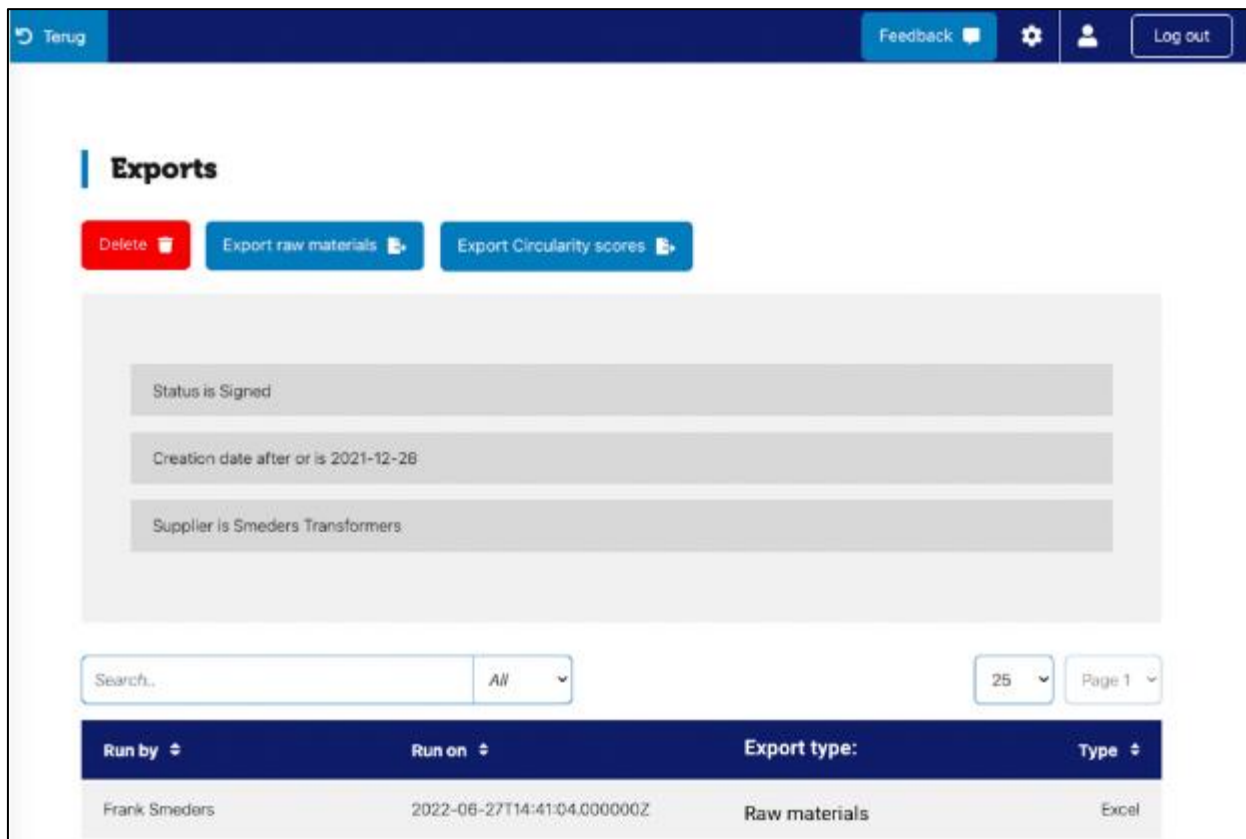


Image 24. Overview of exports created.

Exports created by colleagues are visible here as well, including the information displayed in Table 10. The grey area above the list of exports created shows the selection criteria that are applicable to the export concerned.

| Field Name | Comment |
|-------------|--|
| Run by | Name of user who created the export |
| Run on | CET-date/time stamp that shows when the export was created |
| Export type | Type of export created |
| Type | Type of export file; Excel of CSV |

Table10. Export field names.

The export can be restarted from this page. The outcome of this export will be based on the information that is stored in the database at the moment of creation. Should new passports have been added in the meantime, the export outcome will deviate from the previous export outcome.

9.5. Circularity score

The circularity score is calculated for an entire passport based on the calculation shown. A circularity percentage is also calculated per material. This percentage is not only used in the overall score, but also in the exports.

$$\text{"Circularity Score"} = \frac{\text{Som van "circulair(g)"}{\text{"Total weight"}}$$

Waarbij:

$$\text{"Circularair(g)"} = \text{"Weight(g)"} * \text{"Circularity \%"}$$

$$\text{"Circularity \%"} = \frac{\text{"Recycled \%"} * \frac{\text{Re}}{\text{down}} \text{In} + \text{"Recyclable \%"} * \frac{\text{Re}}{\text{down}} \text{Out}}{2}$$

Met:

$$\frac{\text{Re}}{\text{down}} \text{In} = 0.5 \text{ als "D" en } 1.0 \text{ als "R" of "N.A."}$$

$$\frac{\text{Re}}{\text{down}} \text{Out} = 0.5 \text{ als "D" en } 1.0 \text{ als "R" of "N.A."}$$

$$\text{"Total weight"} = \text{som van "weight"}$$

Image 25. Calculation circularity score.