

The screenshot displays the BEKO software interface for managing companies. The top navigation bar shows the BEKO logo, the user name 'Mustermann Max', and the language 'EN'. The sidebar on the left contains the following menu items: Companies (selected), Data Import, Project Import, Fault Description DB, Database, and Recycle Bin. The main content area is titled 'Dashboard / Companies' and features a search bar. Below the search bar is a table with the following data:

<input type="checkbox"/>	Companies	Buildings	Projects		
<input type="checkbox"/>	BEKO TECHNOLOGIES	1	2		
<input type="checkbox"/>	Kromer WKA	1	1		

At the bottom right of the table area, there are two buttons: 'DELETE' and '+ NEW'.

Operation manual

Software Leak Management V2



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1. Preface

Dear customer,

if you have a **METPOINT® CID** leak detector (hereinafter abbreviated in the text as **METPOINT® CID**), you can export the leakages from the **METPOINT® CID** and import and evaluate them with the **Leak Management V2** software.

Data transfer via USB stick makes report generation very easy. You can transfer the saved leakages to a report and easily manage and add to the data at the same time.

In addition, you can import your existing data from an older version of the **Leak Management V2** software if you have already used this software. Otherwise, these points are irrelevant for you.

Main functions:

- Managing companies / buildings / projects / measurements
 - Completing company data
 - Managing projects
 - Managing measurements
- Documentation / reporting
 - Image of the leak location
 - Date / time
 - Size of the leak in l/min (units adjustable)
 - Cost of leakage per annum in € (currency freely definable)
 - Description of the leak item specifying company / department or hall/machine
 - Information about the leak repair (defective element, measure, spare part)
 - Totals, priority, CO2 emissions per annum, etc.

2. Notes

2.1 About this document

- Carefully read this documentation.
- Keep this documentation within reach so that you will be able to consult it if necessary.
- Pass on this documentation to later users of the product.

3. General function description

The **Leak Management V2** software is used to manage and evaluate leakage data recorded with a **METPOINT® CID** leak detector.

The data can be imported using a USB stick, and the images of the leakages from the device are automatically transferred. These can then be supplemented with your own images if required. The measurements can be described in more detail in the software and also initially specified for the project.

In the report, the desired measuring points can be evaluated and transferred to a report. There, the sum values, the leakage costs and the imputed quantities for the CO2 emissions / year are also shown.

4. System requirements

Hardware PC	Win 7 x64 / Mac and higher
Main memory requirement	Min. 4 GB RAM
Hard disk space	Min. 10 GB

5. Installation / application

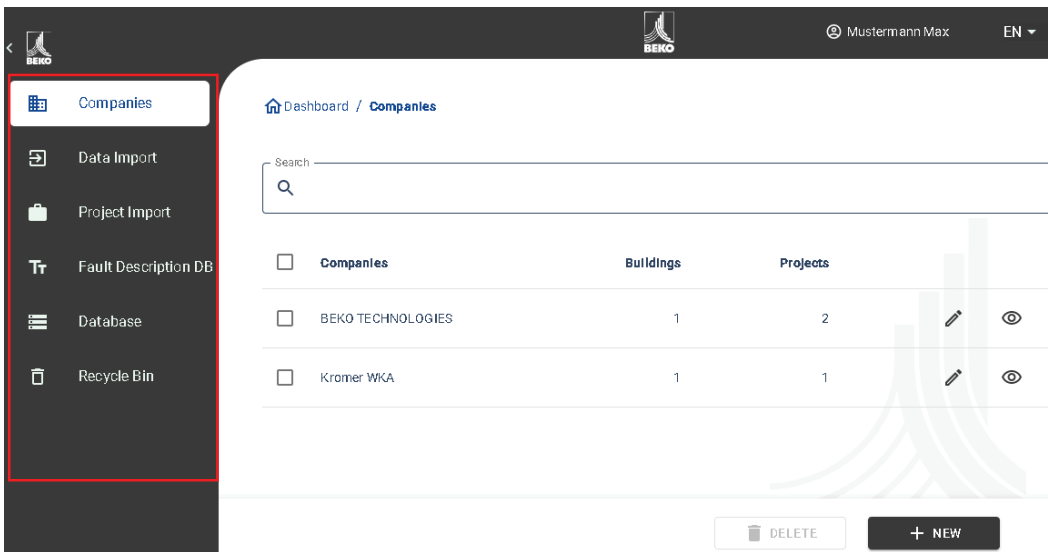
Start the 'Setup.exe' to install the software and follow the installation instructions. The software is installed automatically.

6. Operation

Operation is largely self-explanatory and the software shows appropriate descriptions during the sequences and explains how the software should be operated.

You can enter information into or make changes to all fields with a white background.

Use the main menu bar to navigate:



6.1 Application start

The application is started with the installed shortcut (desktop).



Use the following button to select the language.

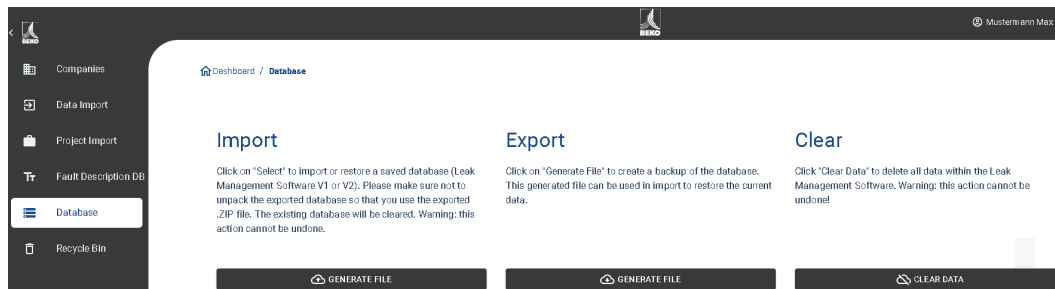


6.2 Importing the database

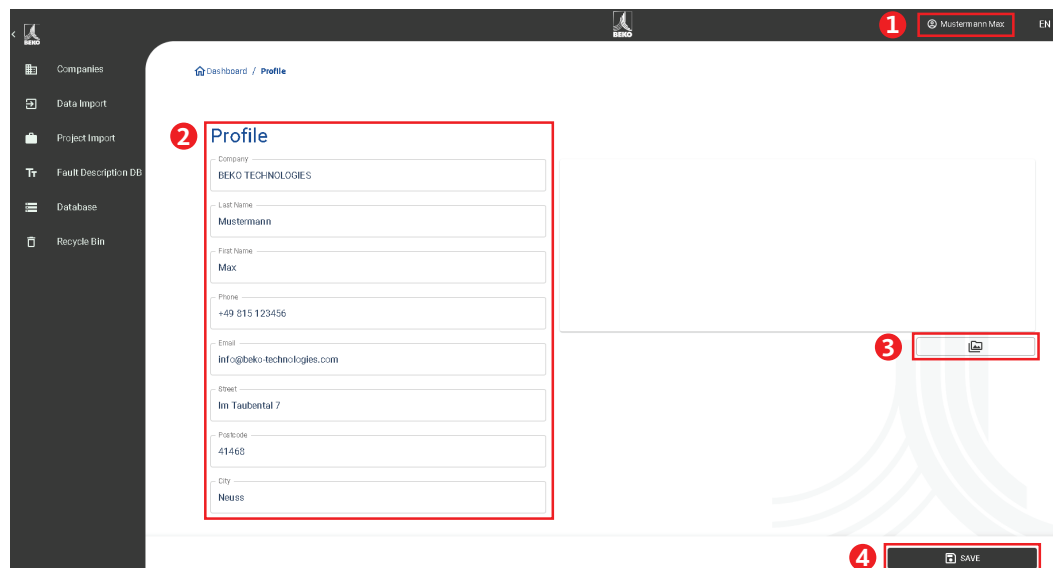
If you have been using an older version of the **Leak Management V2** software until now, you can import the existing database into the **Leak Management V2** software.

Please make sure that you do not unpack the database of the older software version and import the ZIP file directly.

1. Export database to old software version
2. Import database to **Leak Management V2**



6.3 Editing the user profile



Your own company master data must be entered into the profile.

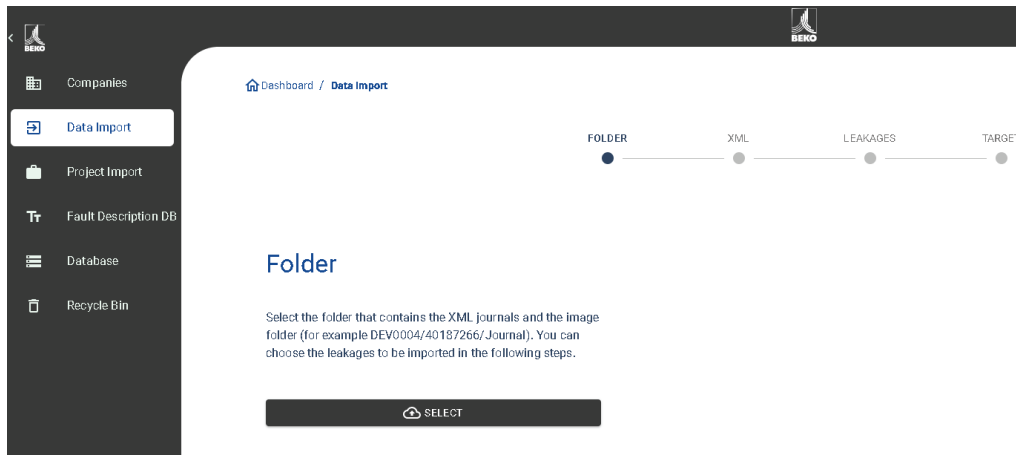
1. You can access this interface by clicking on the contact
2. You can customise the company master data
3. You can enter a company logo
4. Save the data with the 'SAVE' button

The company name and logo are then printed on the reports accordingly.

6.4 Leakages data import

The data import takes place as a sequence:

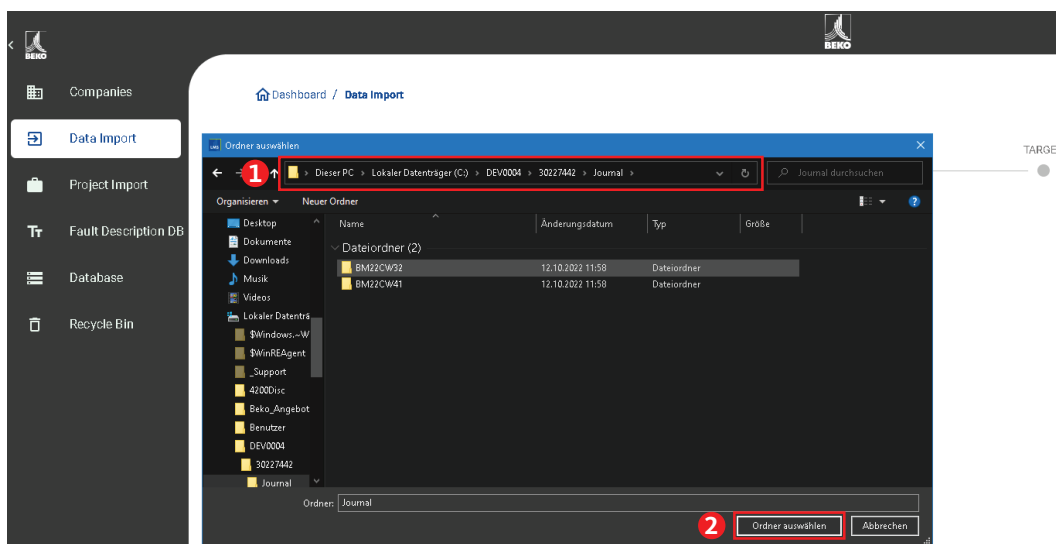
1. Folder selection
2. XML-file selection
3. Selection of leakages to be imported
4. Target of imported leakages



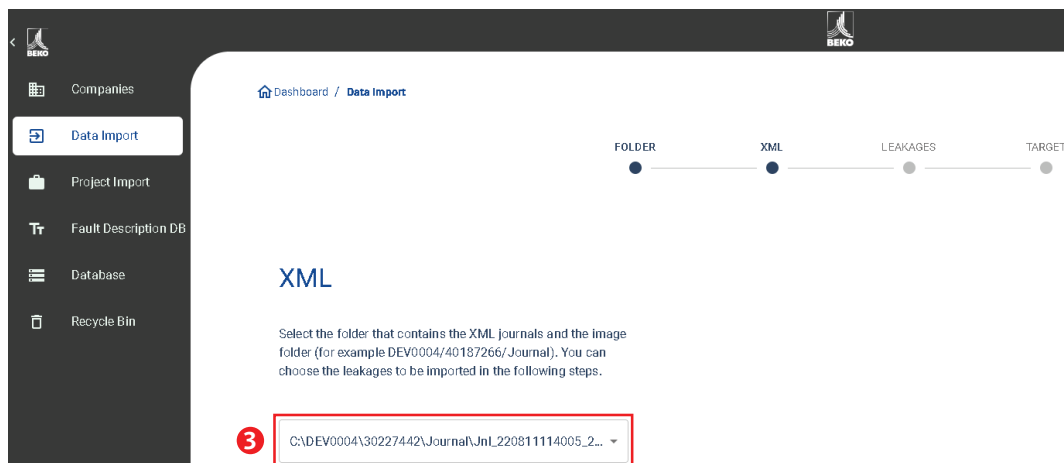
To export data from the **METPOINT® CID**, use the Data Import menu item. Transfer the data there using a USB stick / USB data carrier.

Use the 'SELECT' button to start selection of the journal file.

1. Open the 'Journal' folder that corresponds to the path shown on the USB stick
2. Select folder

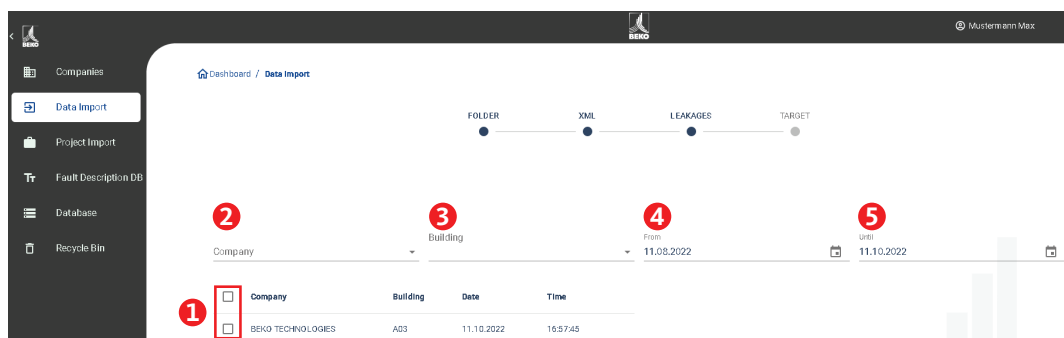


3. Select the desired XML data file that was exported by the leak detector



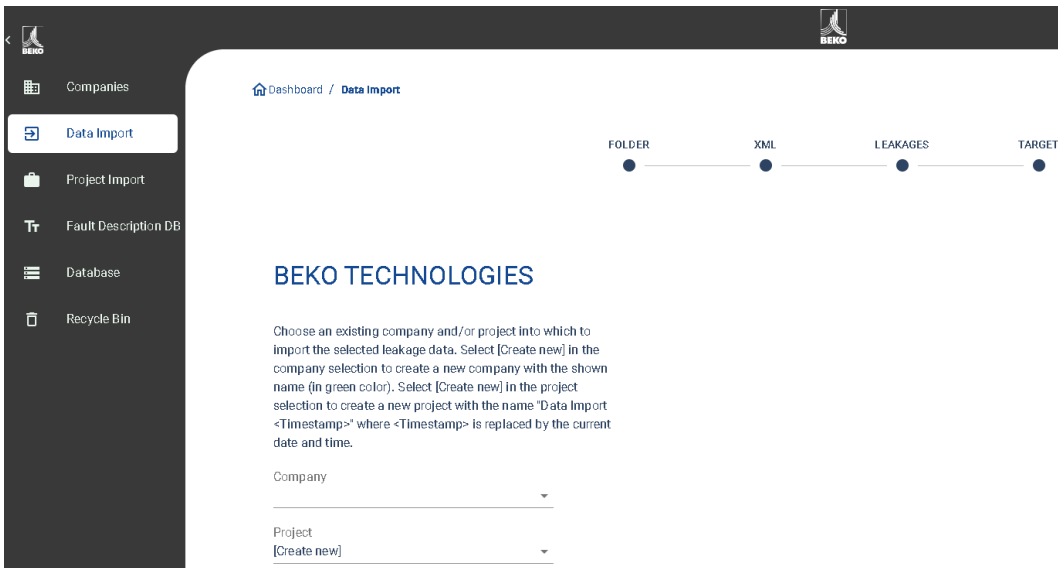
After selecting the XML data file, you can filter the leakages according to their 'Company' and 'Building' or a time period that can be selected as required:

1. Select individual leakages
2. Filter by one or more companies
3. Filter by one or more buildings
4. Define start time (first leakage)
5. Define end time (last leakage)



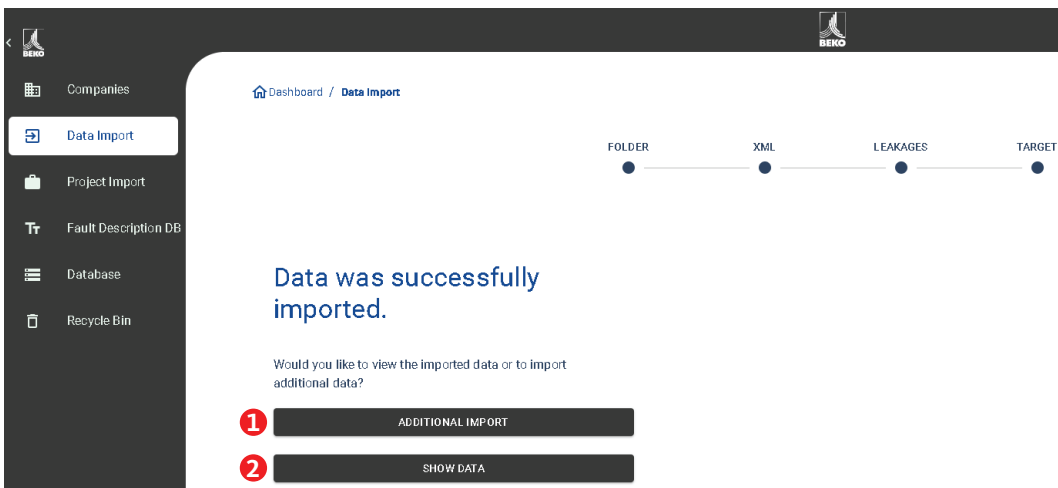
Options

1. For the leakages of each company to be imported (e.g. **BEKO TECHNOLOGIES**), an already existing company and/or project can be selected as a target. The buildings corresponding to the leakages are then created in the selected company at the same time.
2. If the company already exists, a new project is attached to it or an existing project can be selected. The buildings corresponding to the leakages are then created in the selected company at the same time.
3. If the company corresponding to the data import does not yet exist, a new company with the corresponding name is created, as well as a first project. The buildings corresponding to the leakages are then created in the selected company at the same time (as shown in the screenshot).



Once you have imported all the leakages, you have the following options:

1. Carry out a new data import in the same way
2. View the project within the most recently imported data



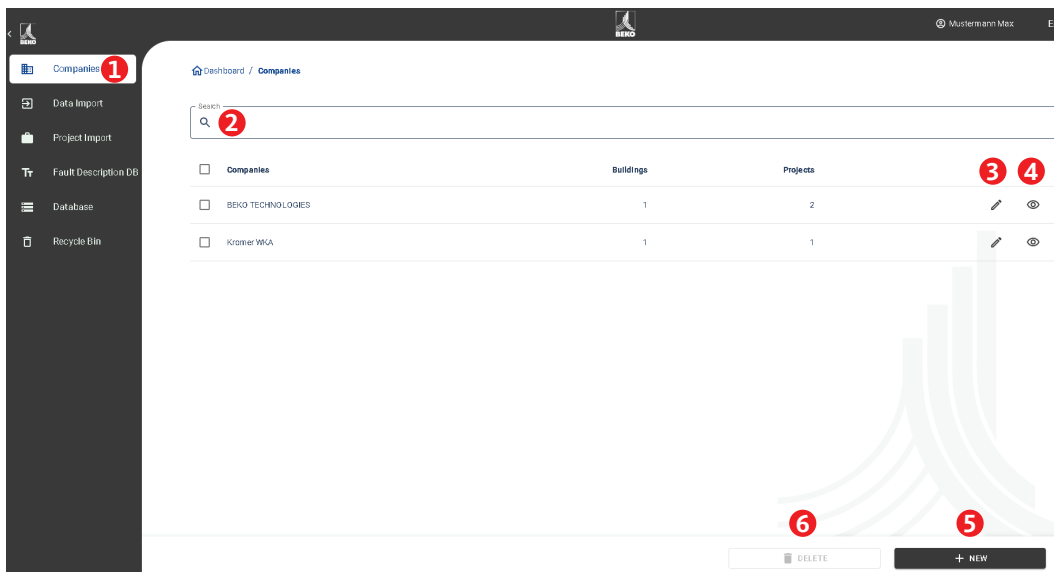
If the firmware used for the **METPOINT® CID** is out of date at the time of the export, an error message is displayed. The current firmware can be downloaded from the **BEKO TECHNOLOGIES** homepage.

7. Company management

The data of the imported companies can be found in the main menu under 'Companies'.

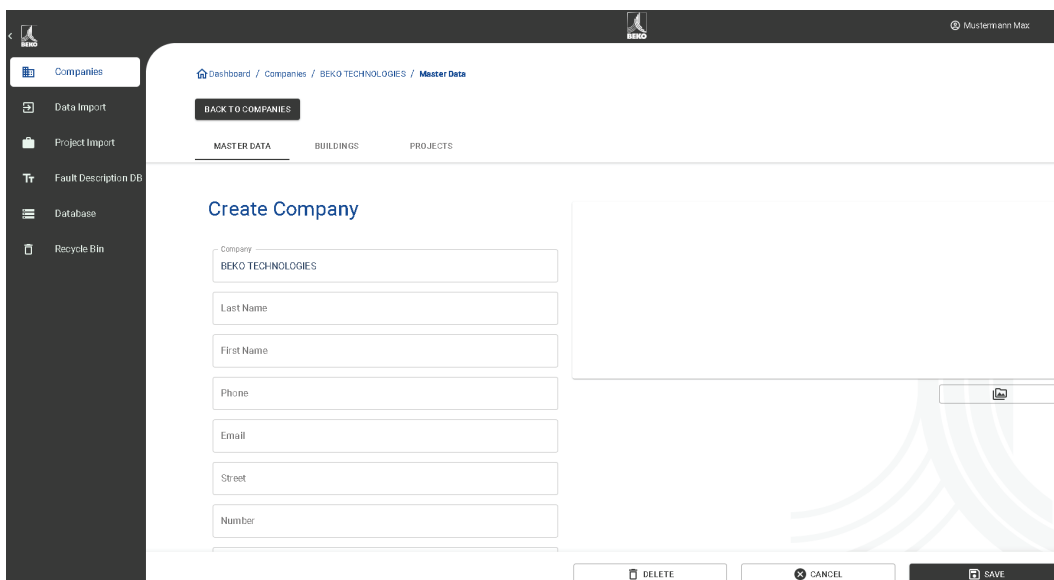
7.1 Displaying the company

1. Select 'Companies' in the main menu
2. Search for a specific company
3. Edit the master data of the selected data file
4. View the projects of the selected company
5. Create a new company
6. Delete the selected companies



7.2 Company master data

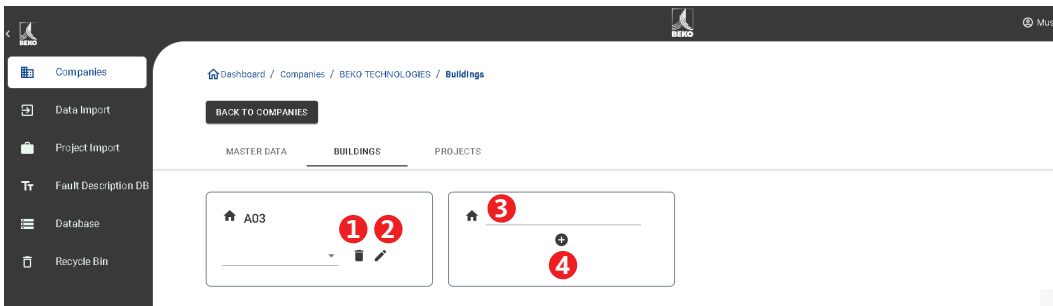
You can enter contact information and a company logo in the company Master Data. The information entered here is printed on the cover page of the report.



7.3 Buildings

Buildings can be added or deleted under the 'BUILDINGS' tab.

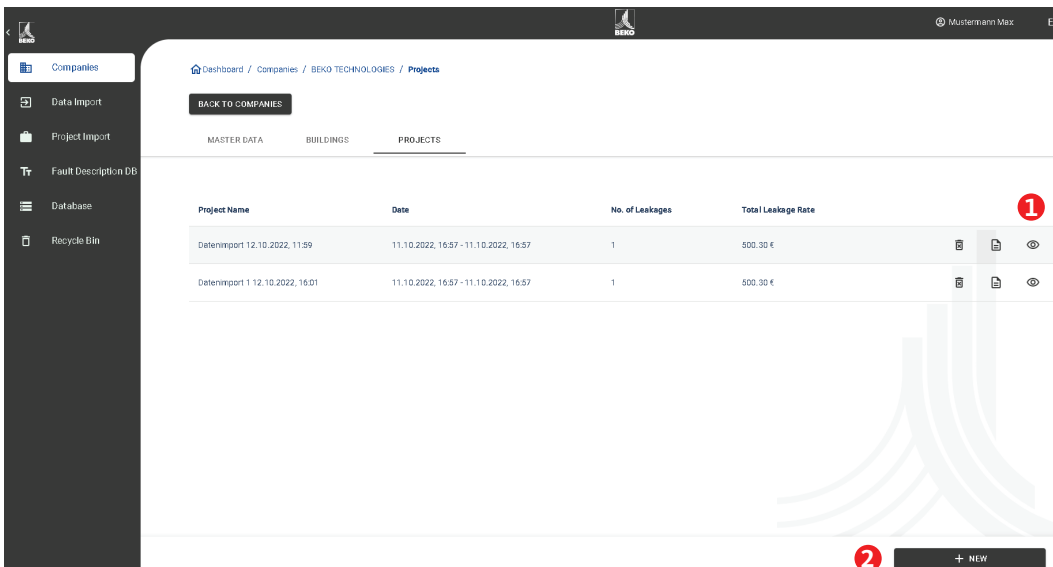
1. To delete a building, click on the corresponding Recycle Bin
2. To edit a building, click on the corresponding pencil
3. To create a new building, enter the name accordingly
4. To add the building, click on the Plus sign



7.4 Companies - projects

The data already created / imported are displayed under the 'PROJECTS' tab. Each data import creates a new project here, unless an existing project was selected as the target during a data import.

1. By clicking the 'View' button, you call up the leakages corresponding to the project. The measurements and project master data entered are then displayed there.
2. You can create an empty project manually by clicking the "NEW" button.



7.4.1 Editing project master data

The parameters set in the **METPOINT® CID** are initially used for each project. If these need to be changed, this can be done globally for the entire project in project master data.

The project data are defined as follows:

- Name - project name (is also printed on the report)
- Description - project description

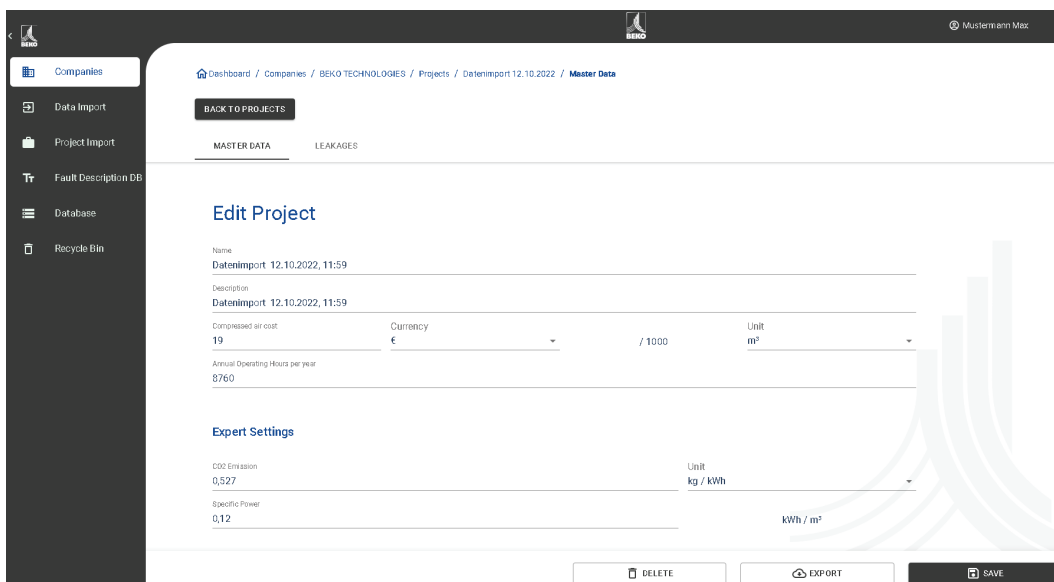
Currency	National currency
Unit	Unit of volume (m³ or cf)
Operating hours	Operating hours of the plant per year (e.g. 8760 for 24/7 operation)
Costs	Cost for 1000 m³ or CF air in the currency to the right (calculated automatically if the 'Electricity Rate' and the 'Specific Power' have been entered in Expert Settings)
CO2 Emission	The default value of 0.527 kg/kWh is used here
Electricity Rate	Unit: Currency / kWh
Specific Power	Power Compressor efficiency variable in (kWh / m³ or kWh / CF)
Compressed air cost	A distinction can be made here between pure energy costs [70 %] and full costs [100 %]

Calculation basis:

If the fields 'Electricity Rate' and 'Specific Power' have been filled in the expert menu, the software automatically calculates the energy costs of the compressed air system.

Typically, these correspond to 70 % of the total costs, which consist of energy costs [70 %], investment costs [21 %] and maintenance costs [9 %].

The user has the option to choose between both types of costs. The selected cost type is then adopted globally for the whole project.

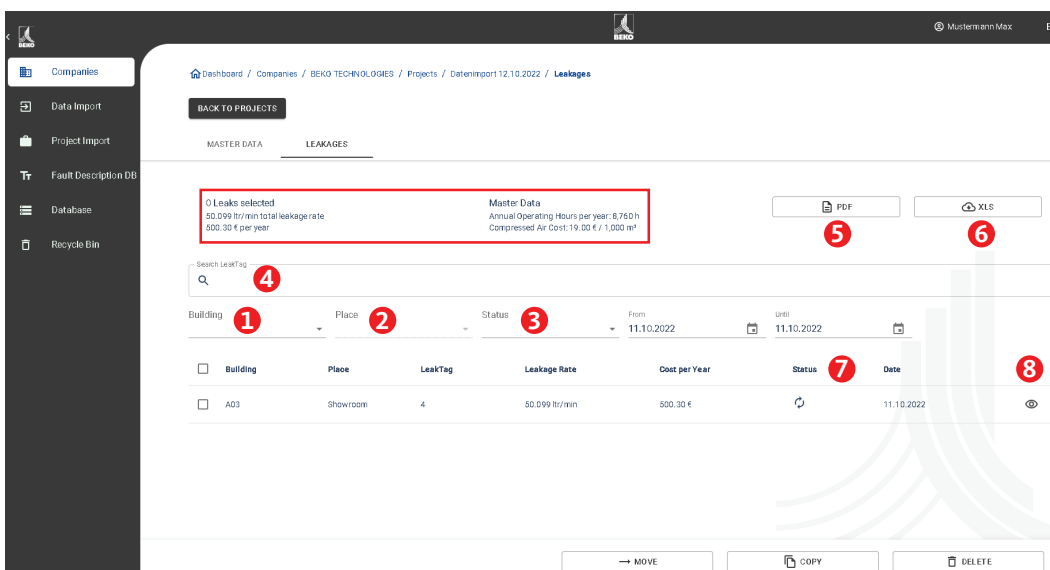


7.4.2 Leakages overview

The 'LEAKAGES' tab shows the measurements for the selected project including the project master data, shown in the red box.

Functions of the interface:

1. Filter for building
2. Filter for leakage place
3. Filter for leakage status (fixed / open)
4. Leak tag search
5. Generate PDF report
6. Generate Excel report
7. Leakage status (fixed / open)
8. View leakage details



The columns contain, from left to right, information for each leakage with regard to its:

- Buildings
- Place
- Leak Tag
- Leakage Rate
- Cost per Year
- Status (open, fixed)

The formula for the leakage costs is as follows:

Leakage costs per annum = loss in l/min * 60min / 1000l * operating hours of the plant * costs of compressed air production for 1000 m³ in euros

$$= 5.95 \text{ l/min} * 60 \text{ min} * (1 \text{ m}^3/1000 \text{ l}) * 8760 \text{ h/year} * 25 \text{ €/1000 m}^3$$

$$= 78.18 \text{ € leakage costs per annum.}$$

The 'View' button next to the respective measurement displays the measurement detail data.

The measurements can be changed in this screen. Measures in addition to comments, priority, status and who has eliminated this leak and at what time can be entered.

1. Delete the image
2. Add a saved image
3. Information about the location of the leak
4. Information about the costs of the leakage data
5. Information about leak repair
6. View previous leak
7. View next leak
8. Back to leakage overview
9. Move leak to another company, building or project
10. Copy leak to another company, building or project
11. Delete leak
12. Save changes

The screenshot displays the 'Leak Management V2' application interface. The main screen shows a leak record form with the following fields and sections:

- Navigation:**
 - 8. BACK (up arrow)
 - 6. PREVIOUS LEAK (left arrow)
 - 7. NEXT LEAK (right arrow)
- Image Section:**
 - 1. Delete image (trash icon)
 - 2. Add saved image (image icon)
- Leak Details:**
 - 3. Date: 11.10.2022
 - Company: BEKO TECHNOLOGIES
 - Building: A03
 - Project: Datenimport 12.10.2022
 - Place: Showroom
 - LeakTag: 4
- Project Master Data:**
 - 4. Level (dB): 95
 - Pressure: 7 Unit: bar
 - Distance: 1 Unit: m
 - Cost: 19,000 Currency: EURO / 1000 Unit: m²
 - Annual Operating Hours per year: 8,760 h
 - Leakage Rate: 50,099 Unit: ltr/min
 - Cost per Year: 500,308
 - Comment: (empty field)
 - Priority: (dropdown menu)
- Repair Information:**
 - 5. Repair under Pressure (dropdown menu)
 - Leaking Element: (empty field)
 - Measure: (empty field)
 - Spare Part: (empty field)
 - Note: (empty field)
 - Status: In Progress (dropdown menu)
 - Solved on ... (calendar icon)
 - Solved by ... (empty field)
- Bottom Navigation:**
 - 9. Move leak to another company, building or project (right arrow)
 - 10. Copy leak to another company, building or project (copy icon)
 - 11. Delete leak (trash icon)
 - 12. Save changes (SAVE button)

Project master data completed:

This illustration shows the parameters that the system uses to calculate.

When setting project master data, these are used to calculate the costs for each leak within the project.

The red marked field shows the parameters used for the leak detector. If project master data are set, these fields are greyed out and locked for editing.

If the unit of measurement is changed from [l/min] to [cfm], an automatic conversion takes place and vice versa.

Project Master Data

Annual Operating Hours per year: 8,760 h
Compressed Air Cost: 19.00 € / 1,000 m³

Cost	Currency	Unit	
19,000	EURO ▼	/ 1000	m³ ▼
Annual Operating Hours per year			
8760			
Leakage Rate		Unit	
50.099		ltr/min ▼	
Cost per Year			
500.308			

Project master data are empty:

Cost	Currency	Unit	
19,000	EURO ▼	/ 1000	m³ ▼
Annual Operating Hours per year			
8760			
Leakage Rate		Unit	
46.022		ltr/min ▼	
Cost per Year			
459,594			

If no project data are recorded, the data can be changed in the measurement. The calculation in the formula above is done with the data from the measurement.

The buttons can be used to move, copy, delete or save a measurement.



When copying leakages, the following screen is displayed:

Copy to ...

1 Company
BEKO TECHNOLOGIES

2 Building
[Keep current building]

3 Project
[Keep current project]

4 Do you want to switch to this project?

CANCEL OK

1. Company to which the leakage(s) are to be copied
2. [Keep current building] → Building with the name is created if it does not already exist
3. [Keep current project] → New project is created in the company with the same name if it does not already exist
4. Target project is displayed after the copying process

After copying, leakages selected are located in both projects accordingly.

When moving leakages, the following screen is displayed:

The fields can be filled in in the same way as for copying.

Move to ...

Company
BEKO TECHNOLOGIES

Building
[Keep current building]

Project
[Keep current project]

Do you want to switch to this project?

CANCEL OK

Before a measurement is finally deleted, this message is displayed:

Are you sure?

This action can not be undone.

CANCEL OK

Note:

If a leakage has been accidentally deleted, it can be restored from the recycle bin.

7.4.3 Create report

1. A report can then be created in the measured value list for the project.
2. The marked or filtered leakages or all measurements are then transferred to the report.
3. Sorting of the leakages is taken into consideration in the report.

Set up of the report:

1. Cover page (page 1):
The PDF report consists of a cover page with information about
 - Customer, auditor
 - Project master data
 - Results of the measurement
2. Leakage overview (following pages)
For each leak, the following is displayed:
 - Place
 - Saving potential
 - Including troubleshooting
 - Status and priority
3. Overview page (final page):
 - Results of the measurement

Excel report:

This report shows essentially the same information as the PDF report.

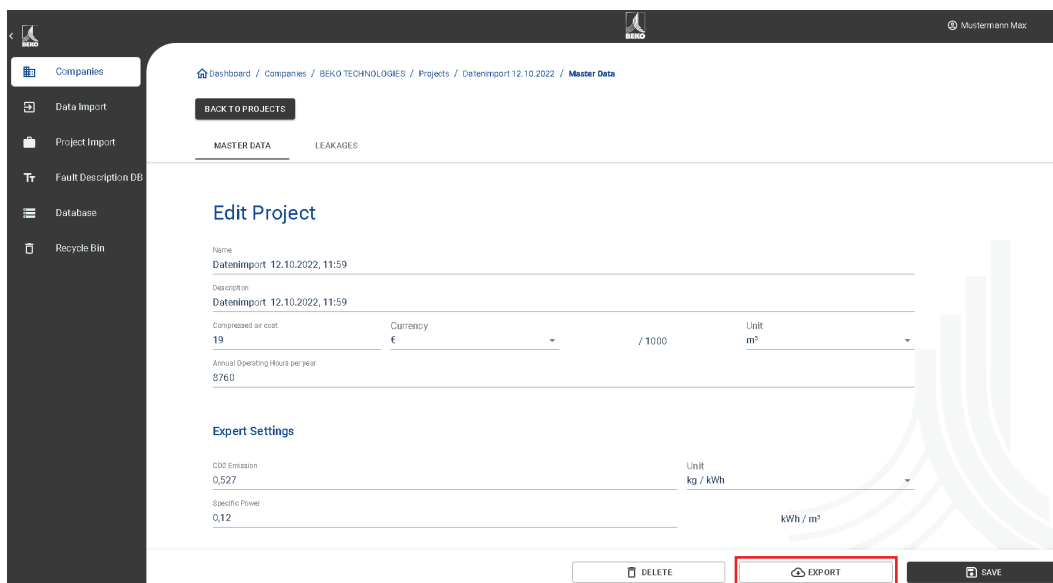
8. Project import

In order to save or exchange data, the **Leak Management V2** has a 'Project Import' function which can be accessed via the homepage menu.

This function imports a project including all buildings and leakages saved in it. If there is already a company with the same name, an additional project is added to it.

If there is not yet a company with the same name, the corresponding company is created with the project.

8.1 Project report



The screenshot shows the 'Edit Project' form in the software interface. The form is titled 'Edit Project' and is located in the 'MASTER DATA' tab. The form contains the following fields:

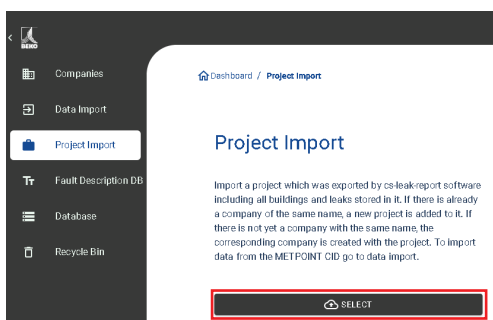
- Name: Datenimport 12.10.2022, 11:59
- Description: Datenimport 12.10.2022, 11:59
- Compressed air cost: 19 (Currency: €, Unit: m³ / 1000)
- Annual Operating Hours per year: 5760
- Expert Settings:
 - CO2 Emission: 0,527 (Unit: kg / kWh)
 - Specific Power: 0,12 (Unit: kWh / m³)

At the bottom of the form, there are three buttons: 'DELETE', 'EXPORT' (highlighted with a red box), and 'SAVE'.

You can save the project using the 'EXPORT' button. This way, data can be conveniently copied back and forth between different users.

8.2 Project import

Use the following menu to import the project.



The screenshot shows the 'Project Import' menu in the software interface. The menu is titled 'Project Import' and is located in the 'Project Import' tab. The menu contains the following text:

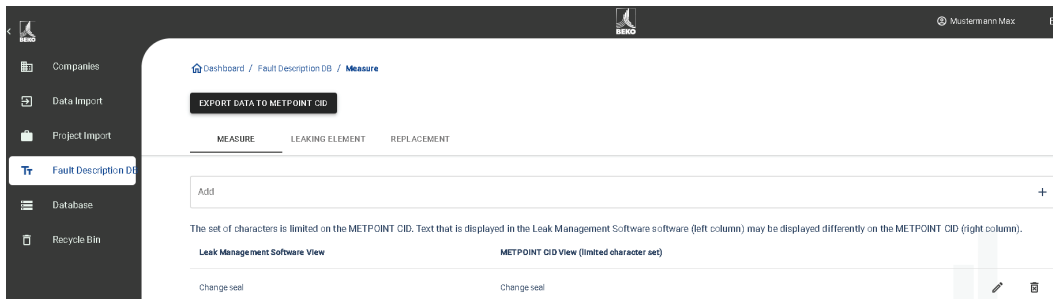
Import a project which was exported by cs-leak-report software including all buildings and leaks stored in it. If there is already a company of the same name, a new project is added to it. If there is not yet a company with the same name, the corresponding company is created with the project. To import data from the METPOINT CID go to data import.

At the bottom of the menu, there is a button labeled 'SELECT' (highlighted with a red box).

9. CID data transfer

With the **Leak Management V2** you can generate the troubleshooting database for the **METPOINT® CID**.

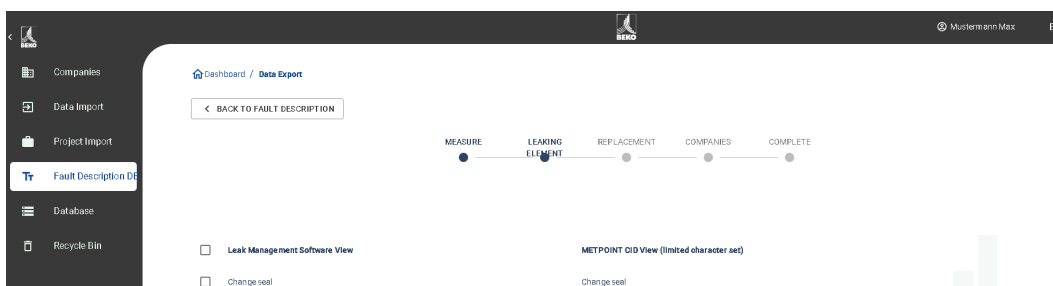
With each import, the **Leak Management V2** updates the database with the entries in the XML file for the leakage. In addition, you can add manual entries.



Important:

The **METPOINT® CID** can only display strings of a certain length and a limited character set. If the input is too long, the **Leak Management V2** truncates it so that it can be imported into the **METPOINT® CID**.

In the export process, you can select which data the XML file to be exported should contain:



The exported database has a maximum length of 1000 elements. If this size is exceeded, there is a maximum of 1000 elements in the XML file.

To import the data into the **METPOINT® CID**, save the ZIP file on the USB stick supplied and unpack it there.

Once you have inserted the USB stick into the **METPOINT® CID**, you can update the database of the **METPOINT® CID**:

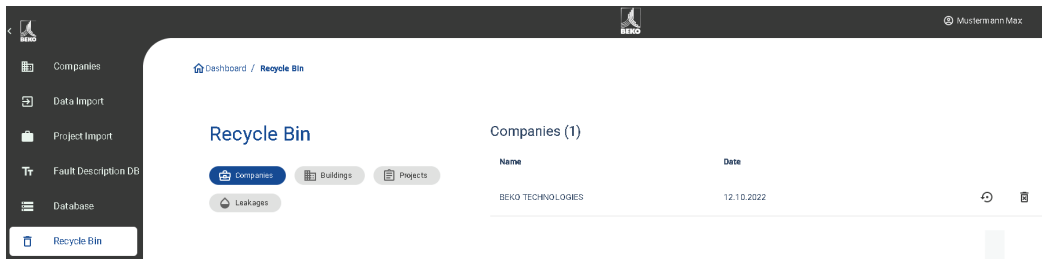
1. **METPOINT® CID** Export/Import
2. Import: Database
3. Select XML-file in the Customers folder
4. Define areas

10. Recycle bin

Deleted objects are temporarily stored in the recycle bin. This applies to:

- Companies
- Buildings
- Projects
- Leakage

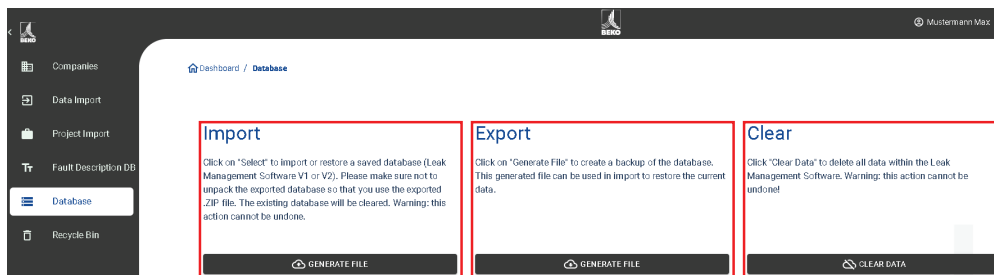
If an object has been deleted by mistake, it can be restored by clicking on the 'Restore' button. A random number combination is appended to the original file name in the recycle bin so that there can be no collision with existing data when restoring. This name can be adapted afterwards as required.



If 'Empty Recycle Bin' is clicked, the entire recycle bin is deleted, but individual items in the categories (companies, buildings, projects and leakages) can also be deleted.

11. Database

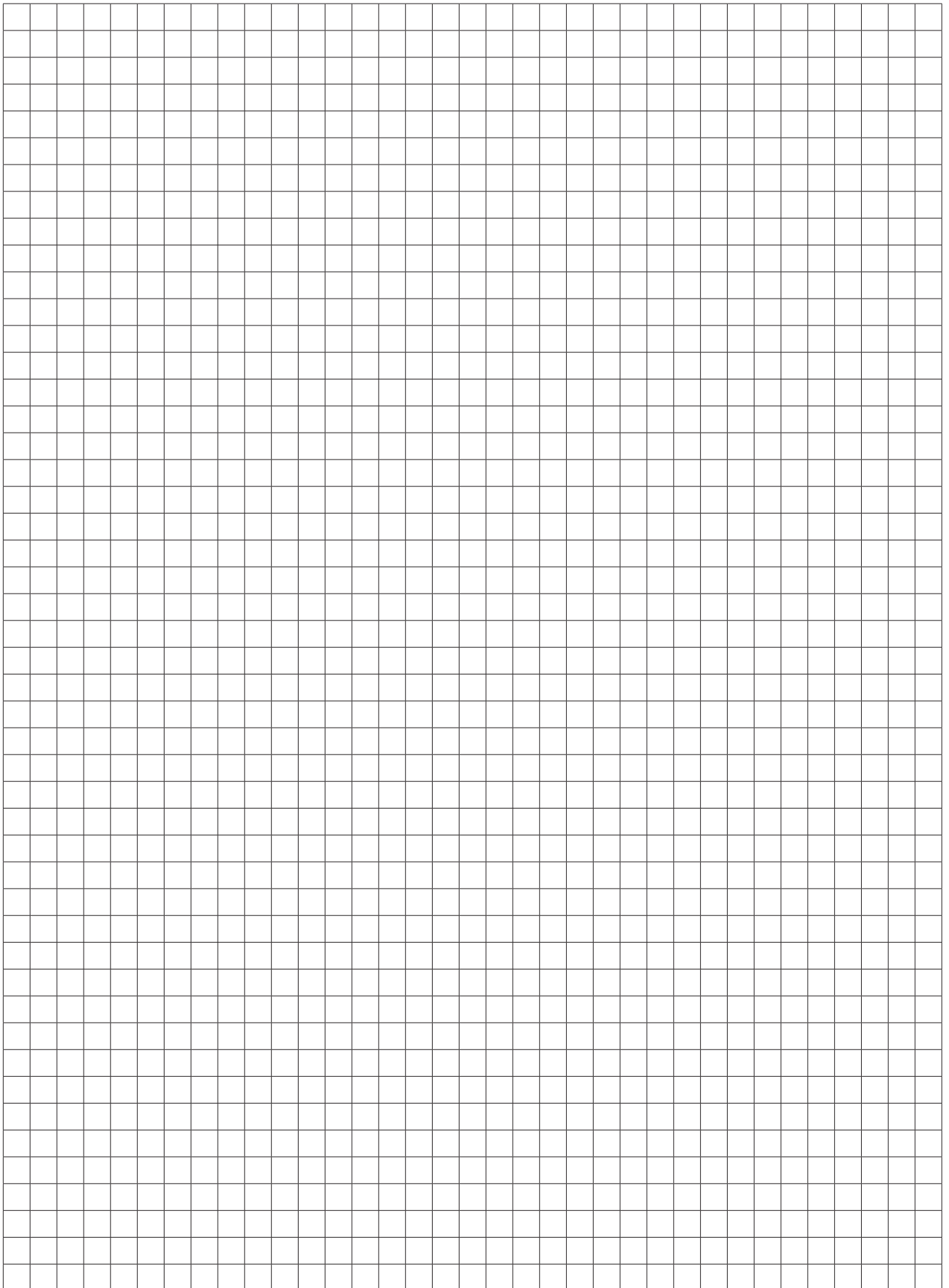
It is recommended to perform regular backups and to save them on different storage media.



1. You can use 'Import' to restore the previously exported data status of the **Leak Management** software. To do this, import the database (ZIP file) that has not yet been unpacked.
2. You can use 'Export' to create a backup file that saves the current information status of the **Leak Management V2** software.
3. You can delete all data within the **Leak Management V2** software using 'Clear'.

Important:

Please make sure that you do not unpack the database of the older version of the **Leak Management V2** software and import the ZIP file directly into the **Leak Management V2**.



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