Works 2014

Rainwater Inlets

Version 1.0.0

USER GUIDE

TECHNO logismiki
Advanced Technical Software

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Rainwater Inlets

TechnoLogismiki

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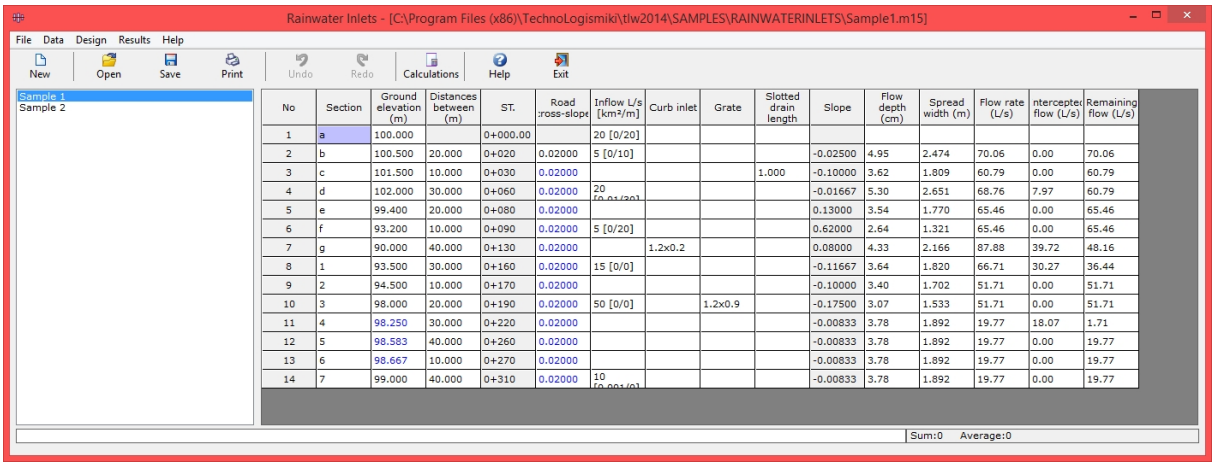
1 About the program

1.1 What does the program do?

This program calculates the flow in rainwater inlets. The inlets can be grates, curb inlets, slotted drains etc, separately or combined in a road section.

The flow can be input manually or be evaluated by runoff areas and IDF curves.

Grates can be one of 7 predefined forms: Parallel bars (30mm and 50mm spacing), Transverse curved vane, Transverse 30 deg tilted vane, Transverse 45 deg tilted vane, Parallel bars with transverse rods, Reticuline.



1.2 Minimum requirements

The minimum requirements for the usage of the programs are the following:

- Windows 2000/ XP/ 2003/ Vista/ 7 (for each case, the latest service packs, updates & patches must be installed)
- Pentium III 800 MHz
- 800x600 with 256 color palette
- 700 MB free disk space
- CD-Rom

If your system does not meet one or more of the above requirements, it is highly recommended that you upgrade it before installing the programs. The recommended system configuration is the following:

- Windows 2000/ XP/ 2003/ Vista/ 7 (for each case, the latest service packs, updates & patches must be installed)
- Pentium IV 2.0 GHz
- 1280x768 with 16-bit color palette
- 1.2 GB free disk space
- CD-Rom

- Internet connection

1.3 Technical support

Support through the Internet

TechnoLogismiki offers technical support 24 hours per day, 365 days per year, through the web site where you can get information on the latest programs and services.

Support by e-mail

Please use the dedicated e-mail addresses for better customer service:

- for questions regarding sales: sales@technologismiki.com
- for questions regarding the usage of programs: support@technologismiki.com
- for any other question or comment: info@technologismiki.com

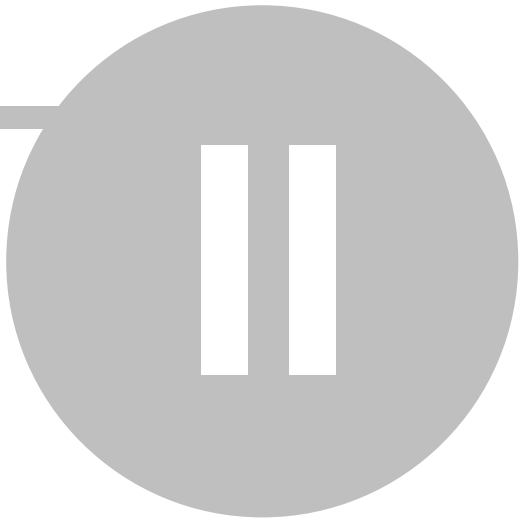
The normal response time is within two business days. If your inquiry cannot be answered by e-mail, a customer service representative will contact you by telephone.

Interactive Support

Business days, 09:00 - 17:00 Eastern European Time:

- Telephone [3 lines]: ++30-210-656-4147
- Fax: ++30-210-654-8461
- Address: 5, Imittou street, Cholargos, 15561, Athens, Greece.

Chapter



2 File

2.1 File menu

With this menu, you can perform file operations and print reports. In the **File** menu you can select one of the following options:

- New project
- Open project
- Save project
- Save project as
- Print Setup
- Print
- Print to
  - Print to File
  - Print to Word
  - Print to Word (Formatted)
  - Print to Excel
- Exit

2.2 New project

With this option, a new project is started. All data, results, graphs, titles etc. of the previous project are erased.

To create a new project:

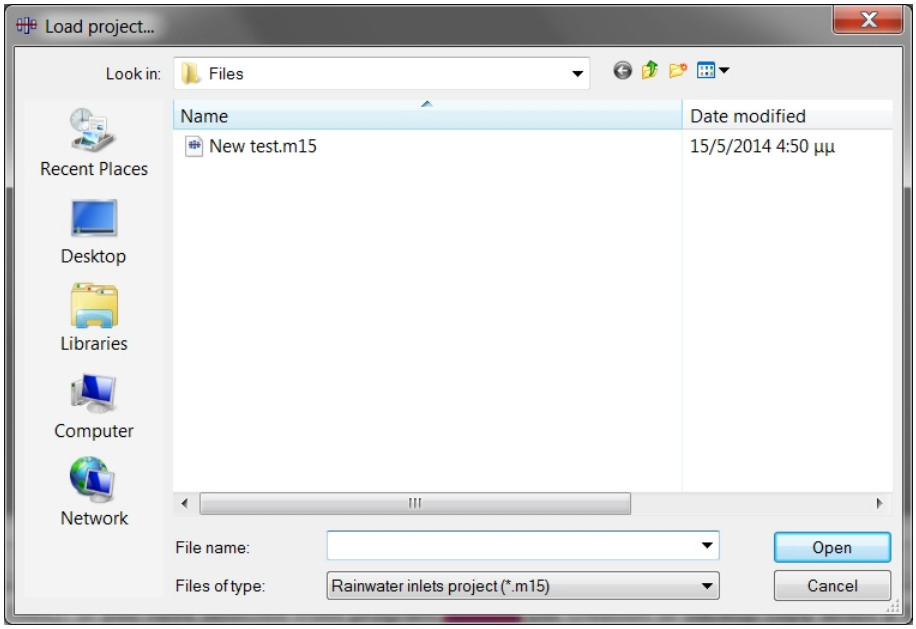
1. Select **New project** from the **File** menu.
2. If a project is already loaded and changes have been made, a warning message will appear that asks the user whether to save the changes or not.
3. The current project is erased and a new project is started.

2.3 Open project

With this option, an existing project is loaded. The project may be located locally, in a network or in an external media device such as a CD-Rom. If a project is already loaded and changes have been made, a warning message will appear that asks whether to save the changes or not. When a project is loaded, all data of the previous project are lost.

To open an existing project:

1. Select **Open project** from the **File** menu.
2. Select the path of the file.
3. Select the file type from the **Files of type** drop-down list. The default option is "Rainwater Inlets project" with the extension .m15.
4. Select the file by clicking on it.
5. Select **Open** to open the selected file. Select **Cancel** to cancel the operation.



NOTE: You can find sample projects in the installation folder of the program:
C:\Program Files\TechnoLogismiki\TLW2014\Samples\RainwaterInlets

Supported file types

- **M15** (Sewer networks project): Files created by version 2014 of Rainwater inlets.
- **BCK** (Backup files): If you have selected from program options the creation of backup copy when a file is loaded, then the file can be loaded by selecting Backup files (*.bck) from the Files of type drop-down list.
- ***.*** (All files): Displays all files in the current folder.

Backwards compatibility

This version implements full backwards compatibility; however, note that when a project is saved with the latest format, it cannot be used by previous versions.

NOTE: If a message "Could not load project. File may be corrupt or saved by an unknown or incompatible version of the program" then either you are trying to load a project that does not belong to this program or the file is used (and locked) by another process in your computer.

2.4 Save project

With this option, you can save all data of a project into a file. The file may be saved locally, in a network location or in an external media device such as a disk.

The filename and path will be asked only the first time you are saving a project. When the filename and path are set, all subsequent saves will be made to the same file.

When you want to rename a file or save it in a new location, use Save project as... from the **File** menu.

To save the current project:

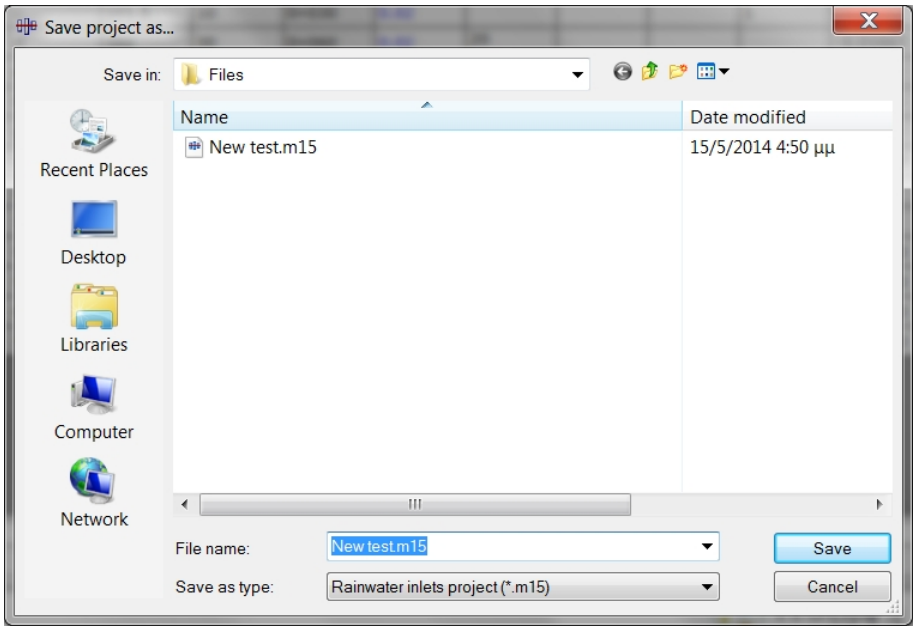
1. Select **Save project** from the **File** menu.
2. If the location of the file is already set, the project is saved to this file without any messages. If the filename is not set, a dialog box will appear that allows the selection of the filename and path.

2.5 Save project as

With this option, the current project is saved just as in the case of Save project, but with the difference that the name and/or location of the file can be changed. In this way, you can create backup files or move a project to another media device.

To save a project with another name and/or to another location:

1. Select **Save project as** from the **File** menu.
2. Select the path of the file.
3. Type the filename in the **File name** text box.
4. Select **Save** to save the project with the selected filename and path. Select **Cancel** to cancel the operation.



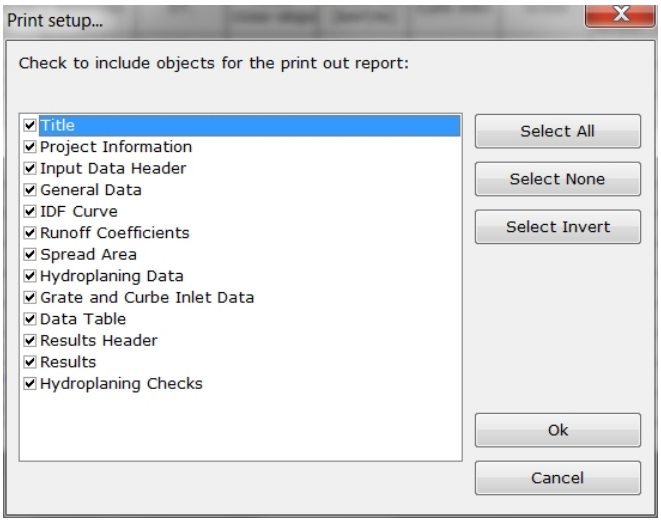
NOTE: If a file with the same name and in the same path already exists, a warning message will appear that asks whether to overwrite the file or not. If you answer Yes, then the existing file is erased and the new file takes its place. If you answer No, the existing file remains intact but NO changes of the current project are saved.

2.6 Print Setup

With this option, you can select which parts of the project will be included in the printouts. When a new project is created, a full report is selected by default.

To modify the print setup:

1. Select **Print setup** from the **File** menu.
2. Select the **sections** (Title, Project information etc) that will be included in the reports.
3. Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.



The quick keys (**Select all, Select None, Select Invert**) can be used to quickly select all objects, deselect all objects and invert the current selection of a list.

NOTE: The changes are saved with the project. The above preferences are used to all printouts, either to the printer or to other formats such as Word file, Excel file etc.

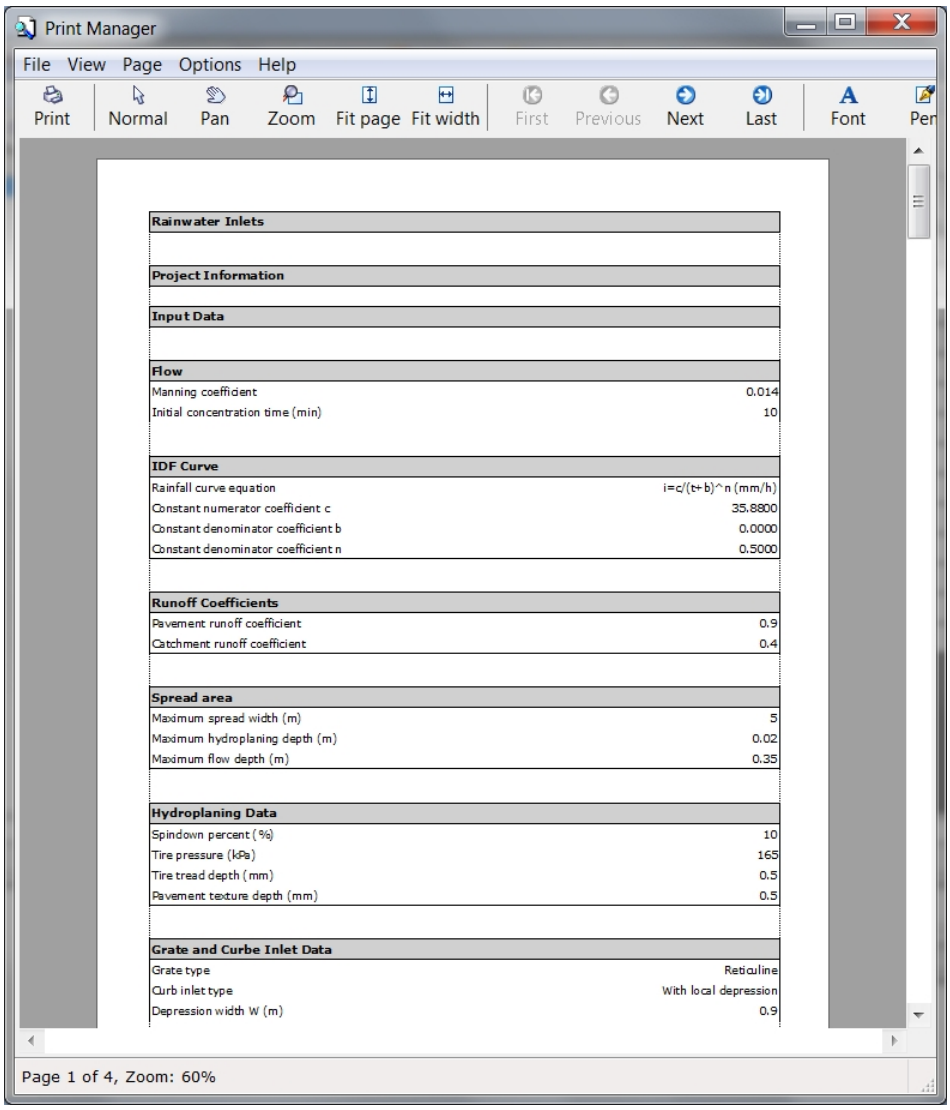
2.7 Print

With this option, you can prepare a report to be printed to a local, network or virtual printer such as Adobe PDF Writer. The parts of the project that will be included in the report are determined from print setup.

By selecting **Print**, the report is not printed directly; instead, a document is prepared and a preview of the printout is created by the **Print manager.** You can print the report by clicking the **Print** button of the toolbar of **Print manager.**

To create a report:

1. Select **Print** from the **File** menu.
2. A report is prepared and sent to **Print manager.** A preview of the document appears.
3. You can print the report by clicking the **Print** button of the toolbar.



Rainwater Inlets

Project Information

Input Data

Flow	
Manning coefficient	0.014
Initial concentration time (min)	10

IDF Curve	
Rainfall curve equation	i=c/(t+b)^n (mm/h)
Constant numerator coefficient c	35.8800
Constant denominator coefficient b	0.0000
Constant denominator coefficient n	0.5000

Runoff Coefficients	
Pavement runoff coefficient	0.9
Catchment runoff coefficient	0.4

Spread area	
Maximum spread width (m)	5
Maximum hydroplaning depth (m)	0.02
Maximum flow depth (m)	0.35

Hydroplaning Data	
Spindown percent (%)	10
Tire pressure (kPa)	165
Tire tread depth (mm)	0.5
Pavement texture depth (mm)	0.5

Grate and Curbe Inlet Data	
Grate type	Reticuline
Curb inlet type	With local depression
Depression width W (m)	0.9

NOTE: A complete user manual on the capabilities of **Print manager** can be found in the corresponding help file.

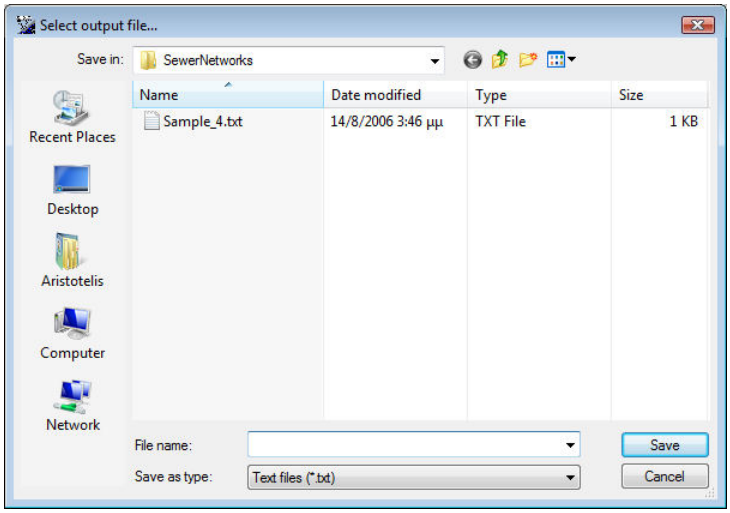
2.8 Print to

2.8.1 Print to File

With this option, you can create a simple text file containing a report of the project. This file is recognized and can be further modified by word processors such as Microsoft Word, OpenOffice Writer etc.

To print to a text file:

1. Select **Print to** from the **File** menu.
2. Select **Print to file** from the **Print to** menu.
3. Select the path of the file.
4. Type the filename in the **File name** text box.
5. Select **Save** to create the file.



The parts of the project that will be included in the report are determined from print setup.

NOTE: If a file with the same name and in the same path already exists, a warning message will appear that asks whether to overwrite the file or not. If you answer Yes, then the existing file is erased and the new file takes its place. If you answer No, the existing file remains intact but the report is NOT printed.

2.8.2 Print to Word

If Microsoft Word (version 97, 2000, XP, 2003 or later) has been installed in the system, then a Microsoft Word file containing the report can be created. Note that Microsoft Word is a separate program and it is not included in TechnoLogismiki's products. Moreover, no technical support is offered regarding the usage of Microsoft Word.

To print the report to a Microsoft Word file:

1. Select **Print to** from the **File** menu.
2. Select **Print to Word** from the **Print to** menu.

The parts of the project that will be included in the report are determined from print setup.

2.8.3 Print to Word (Formatted)

If Microsoft Word (version 97, 2000, XP, 2003 or later) has been installed in the system, then a Microsoft Word file containing the report can be created. Note that Microsoft Word is a separate program and it is not included in TechnoLogismiki's products. Moreover, no technical support is offered regarding the usage of Microsoft Word.

To print the report to a formatted Microsoft Word file:

1. Select **Print to** from the **File** menu.
2. Select **Print to Word (Formatted)** from the **Print to** menu.

The parts of the project that will be included in the report are determined from print

setup. This operation is much slower than the regular print to word function. However, the final output requires minimal user intervention as it comes fully formatted with tables, alignment, font styles, etc.

NOTE: Do not use Copy (CTRL+C) on any of the programs running during this operation. If you do so, it will most likely affect the communication between Microsoft Word and the clipboard and as a result the final document will be corrupt.

2.8.4 Print to Excel

If Microsoft Excel (version 97, 2000, XP, 2003 or later) has been installed in the system, then a Microsoft Excel file containing the report can be created. Note that Microsoft Excel is a separate program and it is not included in TechnoLogismiki's products. Moreover, no technical support is offered regarding the usage of Microsoft Excel.

To print the report to a Microsoft Excel file:

1. Select **Print to** from the **File** menu.
2. Select **Print to Excel** from the **Print to** menu.

The parts of the project that will be included in the report are determined from print setup.

2.9 Exit

With this option, you can exit the program. If there are changes in the current project that have not been saved then the program will:

- either ask the user to save the changes
- or save the changes
- or ignore the changes

depending on what you have selected in General preferences.

To exit the program:

1. Select **Exit** from **File** menu.
2. If you are asked whether to save the changes or not, you can save changes or ignore them.
3. The program is terminated.

Chapter

3 Data

3.1 Data menu

With this menu, you can add and modify data. In the **Data** menu you can select one of the following options:

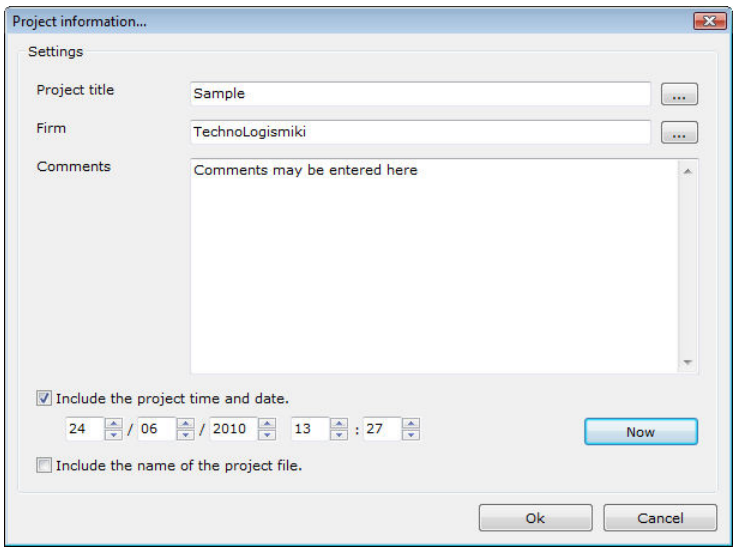
- Project info
- Undo
- Redo
- Copy
- Cut
- Paste
- Select all
- Clipboard delimiter
- Clipboard decimal separator
- Pieces
  - Add piece
  - Modify piece
  - Delete piece
  - Move up
  - Move down
- Nodes
- General data
- Options
  - General preferences
  - Grid editing
  - Customize toolbar

3.2 Project info

With this option, you can add project information that include title, firm title and comments. If you want, this information can be included in the reports. The empty fields are ignored.

To add or modify the project information:

1. Select **Project info** from the **Data** menu.
2. Type the **project title**, **firm** title and comments.
3. Check **Include project time and date** if you want to include the time and date in the project. In this case, type the day, month, year, hours and seconds in the corresponding text boxes. Alternatively, press **Today** to insert the current values automatically.
4. Check **Include the name of the project file** if you want the full path and filename of the project to be included in the report.
5. Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.



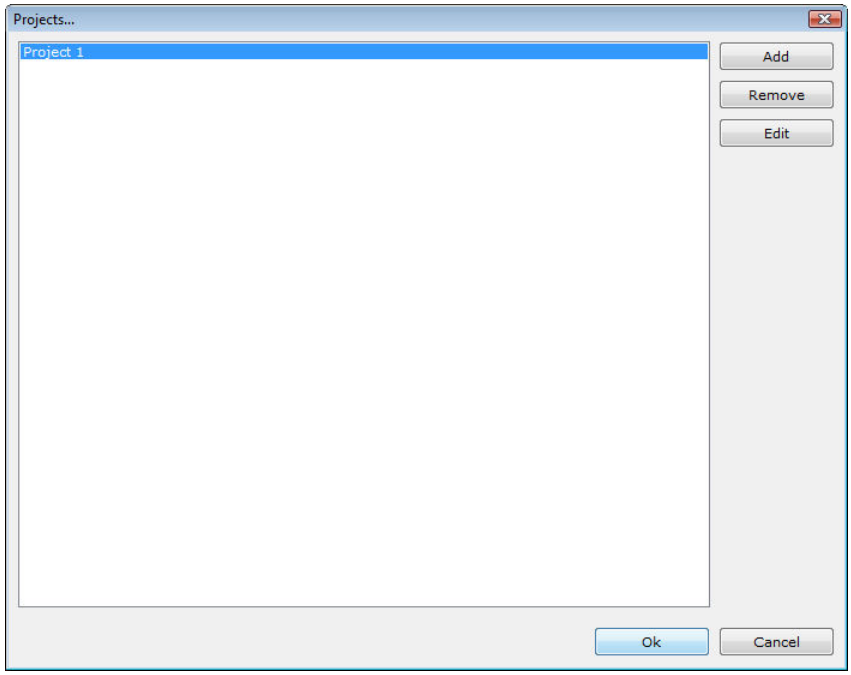
By selecting the buttons with the ellipses (...) next to the **project title** and **firm**, you can access the corresponding databases.

Project title database

For the completion of a project, more than one programs may be needed. For convenience, you can add the project title to the database and retrieve it from all programs.

To use the project title database:

1. Select the button with the ellipses (...) next to the project title text box. The project title database appears.
2. Select **Add** to add a new title to the database.
3. Select **Remove** to remove the selected entry from the database. You will be asked for confirmation only if you have selected to confirm deletions in the General preferences tab.
4. Select **Edit** to modify the selected entry.
5. Select **Ok** to use the currently selected project title and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

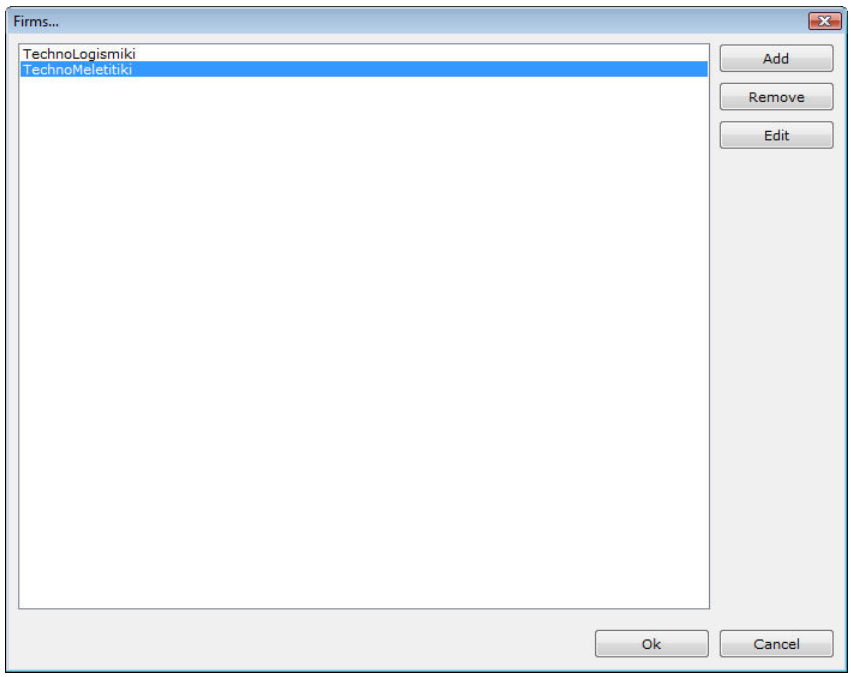


Firm database

An engineer or firm may be involved in multiple projects. For convenience, you can add the title to the database and retrieve it from all programs.

To use the firm database:

1. Select the button with the ellipses (...) next to the firm text box. The firm database appears.
2. Select **Add** to add a new firm/author to the database.
3. Select **Remove** to remove the selected entry from the database. You will be asked for confirmation only if you have selected to confirm deletions in the General preferences tab.
4. Select **Edit** to modify the selected entry.
5. Select **Ok** to use the currently selected firm and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.



3.3 Undo

Undo cancels the last committed change in the project.

To cancel the last committed change:

1. Select **Undo** from the **Data** menu.
2. The last committed change is canceled.

To cancel an undo command, you may use the redo function which is described below. Redo becomes available once undo is used.

It is possible to undo more than one recent changes and to redo them, by following the step described above. The number of actions that are kept in memory and may be undone or redone is 20 by default. This means that the program is able to keep track of up to 20 successive changes and undo them. This number may change for all programs, using the option in the main menu. For more information, please consult main menu user guide.

NOTE: Some changes cannot be undone like the new project or the save project functions.

3.4 Redo

Redo cancels the latest undo command.

To redo the latest change that was undone:

1. Select **Redo** from the **Data** menu.
2. The latest undone change is redone.

To undo a redo, you may use the undo command.

It is possible to redo more than one changes that were previously undone by following the steps described above. The number of actions that are kept in memory and may be undone or redone is 20 by default. This means that the program is able to keep track of up to 20 successive changes that are undone and redo them. This number may change for all programs, using the option in the main menu. For more information, please consult main menu user guide.

3.5 Copy

With this option, you can copy the contents of the selected cells to the clipboard.

To copy the contents of the selected cells to the clipboard:

1. Select the cells from the data table.
2. Select **Copy** from the **Data** menu. The contents of the selected cells are copied to the clipboard.

To copy data to be used with Microsoft Excel:

1. Select **TAB** as the delimiter.
2. Select **System** as the decimal separator.
3. Select the cells from the data table.
4. Select **Copy** from the **Edit** menu. The contents of the selected cells are copied to the clipboard.
5. Hit CTRL+V to paste the data when using Microsoft Excel.

3.6 Cut

With this option, you can copy the contents of the selected cells to the clipboard and clear the current selection.

To copy the contents of the selected cells to the clipboard and clear the current selection:

1. Select the cells from the data table.
2. Select **Cut** from the **Data** menu. The contents of the selected cells are copied to the clipboard and the selection is cleared.

To cut data to be used with Microsoft Excel:

1. Select **TAB** as the delimiter.
2. Select **System** as the decimal separator.
3. Select the cells from the data table.
4. Select **Cut** from the **Edit** menu. The contents of the selected cells are copied to the clipboard and the selection is cleared.
5. Hit CTRL+V to paste the data when using Microsoft Excel.

3.7 Paste

With this option, you can paste data from the clipboard to the data table.

To paste data from the clipboard to the data table:

1. Select the top left cell.

2. Select **Paste** from the **Data** menu. The data are copied from the clipboard to the data table.

To paste data from Microsoft Excel:

1. Select **TAB** as the delimiter.
2. Select **System** as the decimal separator.
3. Within Microsoft Excel, select all cells and hit CTRL+C to copy the data to the clipboard.
4. Within Sewer Networks, select the top left cell that corresponds to the data.
5. Select **Paste** from the **Edit** menu. The data are copied from the clipboard to the data table.

NOTE:
- You cannot paste data into the grayed cells.
- All data is transferred from consecutive columns, even if these are not visible.
- Other software may require other delimiter when using clipboard.

3.8 Select all

With this option, when in plan view mode all objects are selected. When in profiles mode, all cells of the data table are selected.

To select all:

1. Select **Select all** from the **Data** menu.

3.9 Clipboard delimiter

With this option, you can select the delimiter that will be used that will be used when transferring data to and from the clipboard.

To select the delimiter:

1. Select **Clipboard delimiter** from the **Data** menu.
2. Select one of **Tab**, **Comma**, **Space**.

NOTE: Although Sewer Networks can handle all three cases of delimiters, other software may have some restrictions. For example, to exchange data with Microsoft Excel, you should use **TAB** as delimiter.

3.10 Clipboard decimal separator

With this option, you can select the decimal separator that will be used when transferring data to and from the clipboard.

To select the decimal separator:

1. Select **Clipboard decimal separator** from the **Data** menu.
2. Select one of **System**, **Period**.

NOTE: To exchange data with Microsoft Excel, you should use the **System** decimal separator (by default). It is possible to modify the settings in Microsoft Excel to accept

period as decimal separator. Please refer to the manual of Microsoft Excel.

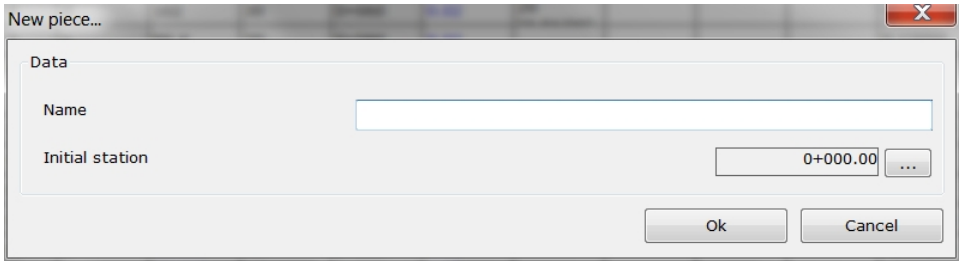
3.11 Pieces

3.11.1 Add piece

A new piece is added at the end of the list.

To add a new piece:

1. Select Pieces > Add from the data menu.
2. Input the name and the initial station, by pressing the button with the ellipses.
3. Select **Ok** to save the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

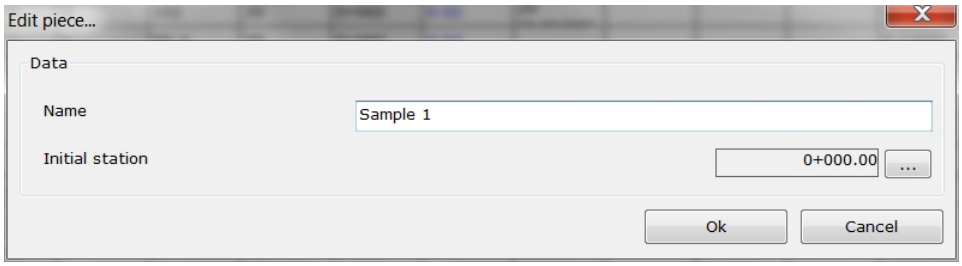


3.11.2 Modify piece

Use this option to modify the properties of an existing piece.

To modify the properties of an existing piece:

1. Select the piece.
2. Make the appropriate changes.
3. Select **Ok** to save the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.



3.11.3 Delete piece

With this option, you can delete a piece from the project.

To delete a piece:

1. Select the piece from the list on the left.
2. Select **Pieces > Delete** from the **Data** menu.
3. You will be notified to acknowledge the deletion only if the relevant option is selected

in the general options.
4. The piece is deleted.

3.11.4 Move up

With this option, you can move a piece upwards so that the project will be printed in the correct order.

To move a piece upwards by one position:

1. Select the piece from the list on the left.
2. Select **Pieces > Move up** under the **Data** menu.

3.11.5 Move down

With this option, you can move a piece downwards so that the project will be printed in the correct order.

To move a piece downwards by one position:

1. Select the piece from the list on the left.
2. Select **Pieces > Move down** under the **Data** menu.

3.12 Nodes

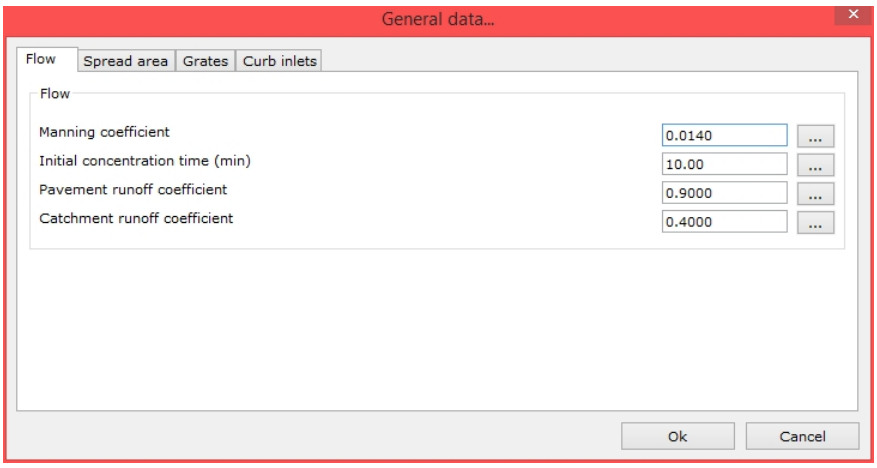
With the Nodes menu, you can add one or more nodes, delete nodes, or insert nodes in the currently selected piece. Each piece requires at least two nodes. There is no restriction in the number of nodes.

3.13 General data

With this option you can set the general preferences for the solver.

To set the general preferences:

1. Select **General Data** under the **Data** menu.
2. Select the **Flow** tab.

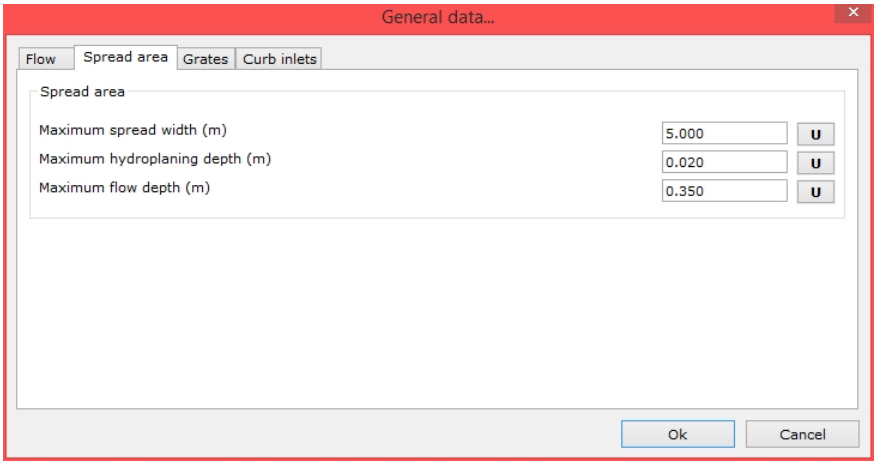


Manning coefficient: Enter the value for the Manning coefficient. This can be retrieved from the relevant database.

Initial concentration time: Enter the initial concentration time in minutes. This value can be retrieved from the relevant database.

Pavement runoff coefficient. Enter the pavement runoff coefficients. These can be retrieved from the relevant database. These coefficient are mandatory only if you have entered runoff areas for the evaluation of the flow.

3. Tab **Spread area**.



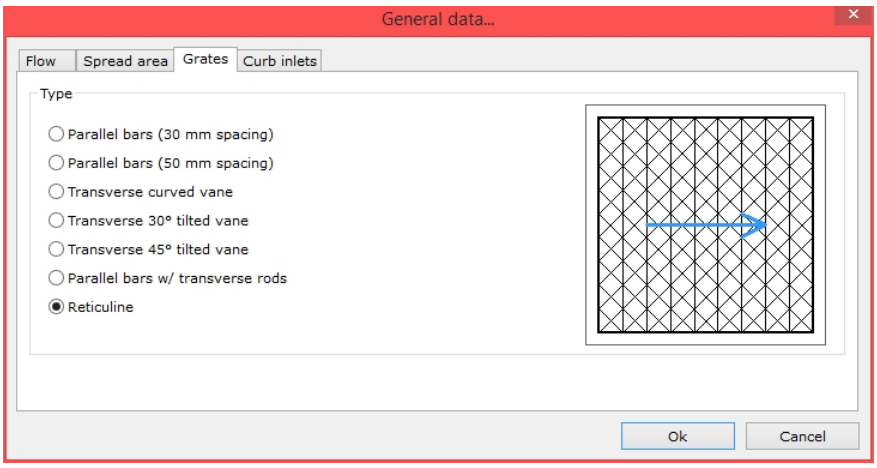
Maximum spread width (m): Enter the maximum spread width of a triangular channel. Based on this, the maximum depth can be determined.

Maximum hydroplanning depth (m): Enter the additional depth that can exist at the edge of the spread width so that there is no hydroplanning problem for the vehicles. This is usually taken equal to 1 to 3 cm.

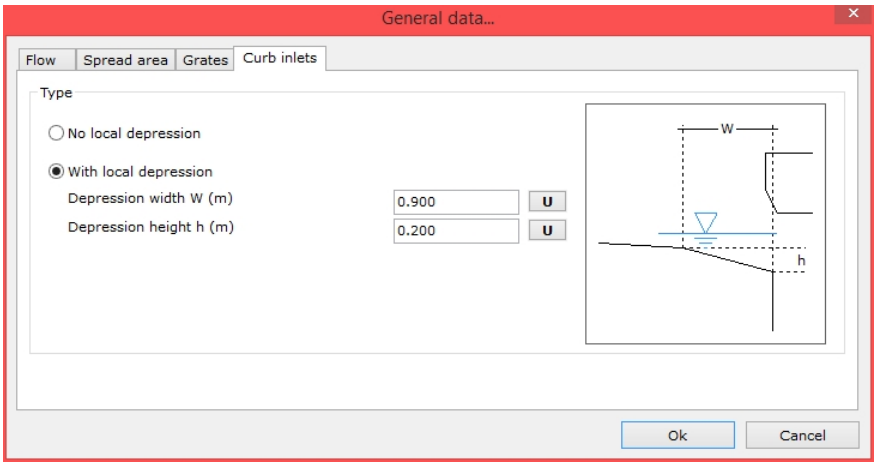
Maximum flow depth (m): Enter the maximum flow depth which can be smaller than the one that is evaluated from geometry. If it larger, it is ignored.

4. Tab **Grates**.

Select one of seven predefined forms.



5. Tab **Curb inlets**.



Select if the curb inlet has a local depression or not. If it has, then depression width and height are required.

6. Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

3.14 Hydroplanning data

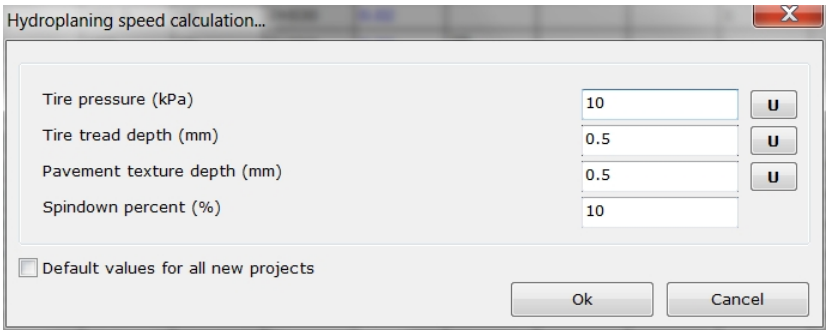
Hydroplanning data are used for the evaluation of the maximum speed of vehicles. If there are no specific data, you should use the default data, i.e.:

- Tire pressure 10 kPa
- Tire tread depth 0.5 mm
- Pavement texture depth 15 mm
- Spindown percent 10%

To set hydroplanning data:

1. From the Data menu select Hydroplanning data.
2. Make the appropriate changes.

3. Select **Ok** to save the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

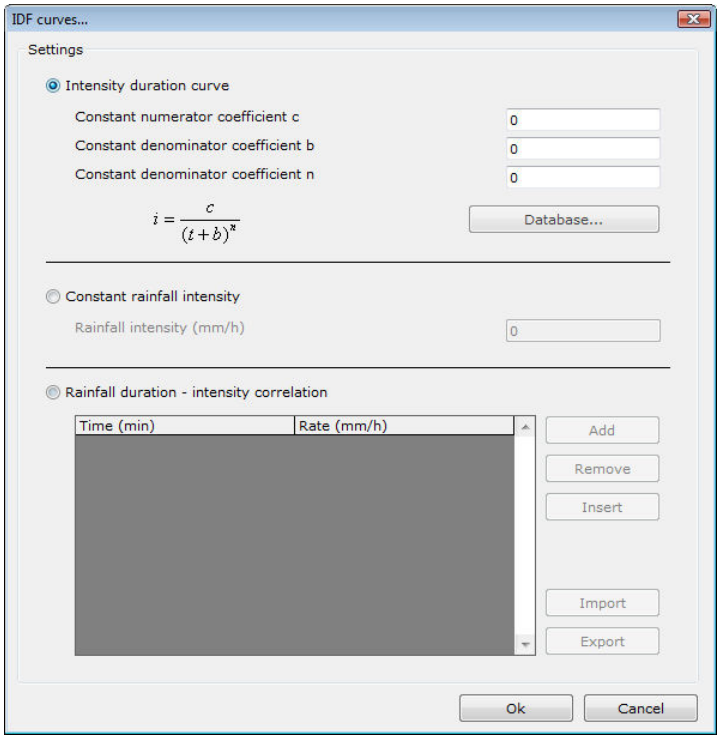


3.15 IDF Curve

With this option, you can select the IDF curve that will be used for the calculation of the design storm. The rain intensity can be either constant or calculated from an IDF curve or by using linear interpolation in a data matrix that correlates the rainfall duration and intensity.

To select the IDF curve:

1. Select **Data > IDF curve** from the **Data** menu. The following form appears:



2. Make the appropriate changes.
3. Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

To use an IDF curve:

1. Click the **Intensity duration curve** option button.
2. Enter the values of the coefficients **c**, **b** and **n**, in such a way that when time **t** is entered in hours, the intensity will be given in mm/h.
3. Optionally, select **Database...** to invoke the IDF database.

NOTE: The selection of IDF curve is not required in case the design flow rate is known or raingages are to be used. IDF curves are used in conjunction with runoff areas.

To select a constant rainfall intensity:

1. Click the **Constant rainfall intensity** option button.
2. Enter the **rainfall intensity** in mm/h. The design flow rate is calculated based on this value; it is not based on the initial concentration time.

To use linear interpolation in a data matrix that correlates the rainfall duration and intensity:

1. Click the **Rainfall duration - intensity correlation** option button.
2. Enter a curve that describes the correlation between rainfall duration (in min) and intensity (in mm/h). The program will use the exact values, if found, or will estimate a value using linear interpolation. The curve can be entered manually or imported from a RCV (TechnoLogismiki) file or a HYDRO IDF file.
3. Select **Import** to import a curve from a RCV (TechnoLogismiki) file or a HYDRO IDF file.
4. Select **Export** to export the current curve from a RCV (TechnoLogismiki) file or a HYDRO IDF file.
5. Select **Add, Remove** and **Insert** to add, remove and insert a record, respectively.

3.16 Options

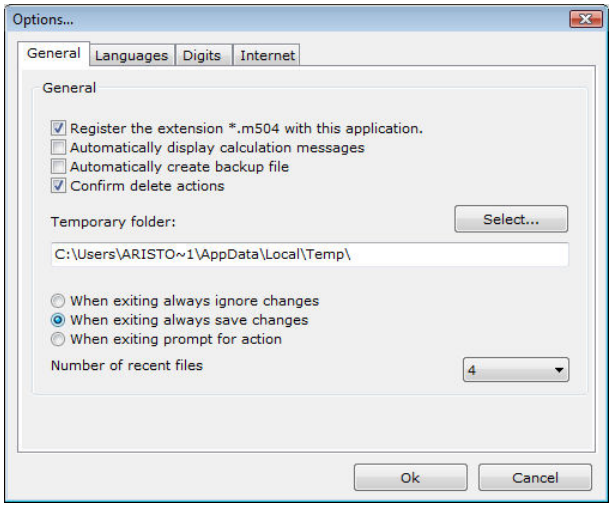
3.16.1 General preferences

With this option, you can modify the general preferences of the program.

To modify the general preferences:

1. Select **Options** from the **Data** menu.
2. Select **General preferences** from the **Options** menu.
3. The general preferences dialog box appears. The preferences are grouped into four tabs. You can select a tab by clicking on its name.

General Tab



This tab contains general preferences regarding the usage of the program.

Check **Register the extension *.m15 with this application** to associate the extension .m15 with this program. This extension is used by the program when saving a project. In this way, you will be able to run the program and load a project by double-clicking on the project filename in Windows Explorer.

Check **Automatically display calculation messages** if you want the report details to be automatically displayed when you calculate the results.

Check **Automatically create backup file** if you want a backup file (with the extension .bck) to be created every time a project is loaded. By default, this file is created in the temporary folder of Windows.

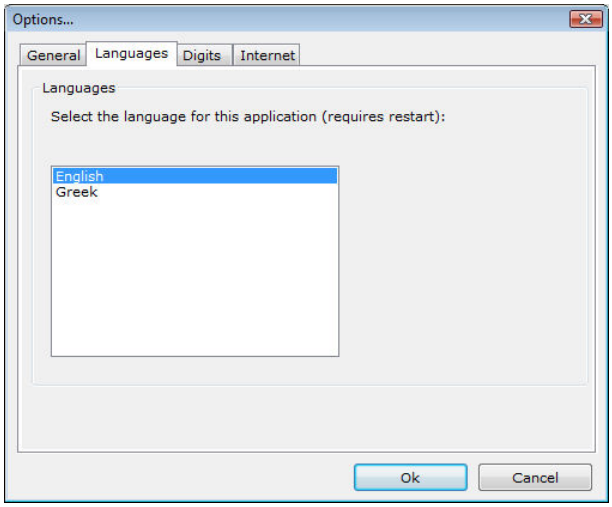
Check **Confirm delete actions** if you want to be asked for confirmation each time an object is about to be deleted. This setting affects the behaviour of all delete actions, for example the deletion of an object.

You can also modify the temporary folder that will be used for the creation of backup files. By default, this folder is the temporary folder of Windows.

Finally, there are three options regarding the termination of the program:

- **When exiting always ignore changes** - All changes since the last save of the project are ignored.
- **When exiting always save changes** - All changes in the current project are automatically saved. If the filename of the project is not set, a dialog box will appear that allows the selection of the filename, as when selecting Save project as from the **File** menu.
- **When exiting prompt for action** - If there are changes in the current project, then a dialog box will appear. You can choose to save or ignore the changes. If the filename of the project is not set, a dialog box will appear that allows the selection of the filename, as when selecting Save project as from the **File** menu.

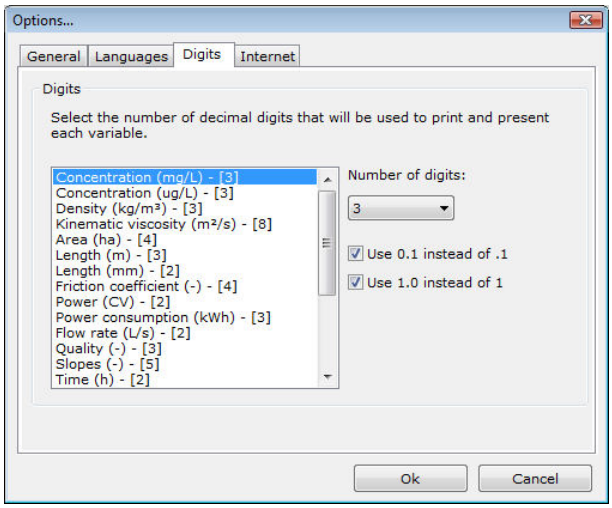
Languages Tab



If more than one language packs have been installed, then you can choose the language of the program. In the above case, there are two language packs; English (that are already selected) and Greek. If you change the language, all forms, menus, messages, help files will reflect the chosen language.

In order for the changes to take effect, you must restart the program.

Digits Tab



With this tab, you can modify the way the results are presented. All values used in the program are displayed in the list on the left.

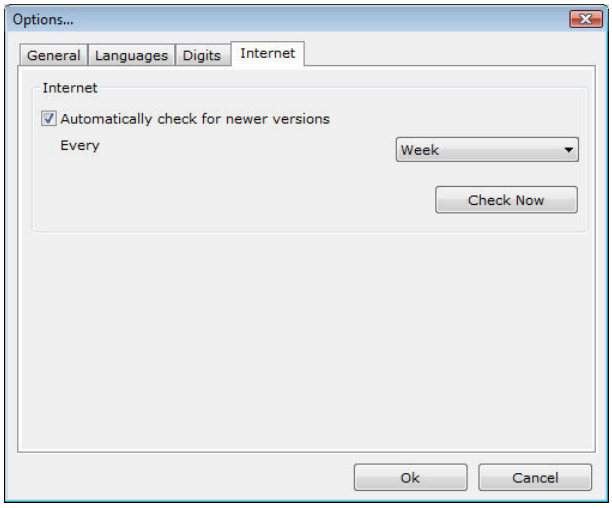
For each value, you can select the number of decimal digits using the **Number of digits** drop-down list.

Check **Use 0.1 instead of .1** to use a preceding zero when displaying numbers between -1 and 1, for example -0.08 instead of -.08 and 0.98 instead of .98.

Check **Use 1.0 instead of 1** to use trailing zeros (when necessary) in order to display a

number with the decimal digits selected in the **Number of digits** drop-down list, for example 1.1600 instead of 1.16 (when the number of digits is set to 4).

Internet Tab



The program can automatically check for newer versions over the Internet. Check **Automatically check for newer versions** to enable this feature. The check is automatically performed at an interval specified in the **Every** drop-down list. Select **Check now** to manually check for newer versions.

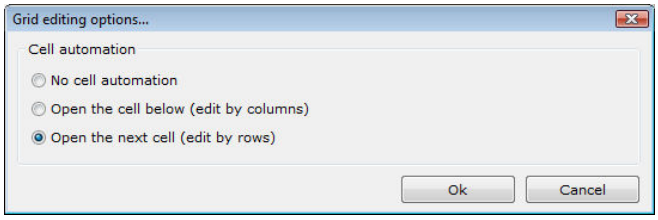
When a newer version is found, you will be prompted to download and install the latest version.

NOTE: TechnoLogismiki protects your privacy. During the check for newer versions, no data is transferred from your computer to the Internet.

Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

3.16.2 Grid editing

With this option, you can modify the behavior of grids.



The behaviour of all editable grids is controlled by the preferences in this dialog box.

Select **No cell automation** if you want the active cell to remain the same when hitting ENTER.

Select **Open the cell below (edit by columns)** if you want to activate the cell below

when hitting ENTER. This is particularly useful when editing tables by columns.

Select **Open the next cell (edit by rows)** if you want to activate the next cell on the right when hitting ENTER. This is particularly useful when editing tables by rows.

NOTE: These preferences affect all projects, both old and new.

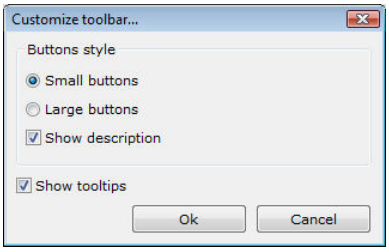
Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.

3.16.3 Customize toolbar

With this option, you can customize the toolbar of the main form.

To customize the toolbar of the main form:

1. Select **Options** from the **Data** menu.
2. Select **Customize toolbar** from the **Options** menu.
3. Make the appropriate changes.
4. Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.



The toolbar may contain small or large buttons.

Check **Show description** if you want a small description to be displayed under the buttons.

Check **Show tooltips** if you want tooltips to be displayed when the mouse pointer hovers over a button for 2-3 seconds.

NOTE: These preferences affect all projects, both old and new.

Chapter IV

4 Design

4.1 Design menu

With this menu, you can access tools which are useful in the design. In the **Design** menu you can select one of the following options:

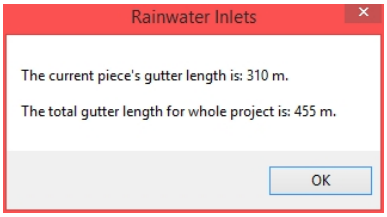
- Total gutter length
- Uniform inflow

4.2 Total gutter length

With this option, the total gutter length is evaluated and displayed.

To display the total gutter length:

1. Select the piece from the list on the left.
2. Select **Total gutter length** under the **Design** menu.

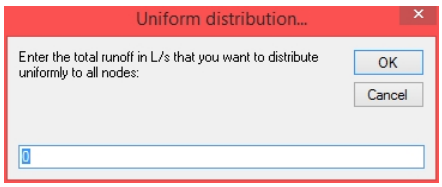


4.3 Uniform inflow

With this option, you can distribute a uniform flow along the whole length of the gutter. In each node, a fraction of the inflow is inserted, according to the ratio of its length to the total length:

To distribute a uniform flow along the whole length of the gutter:

1. Select the piece from the list on the left.
2. Select **Uniform inflow** under the **Design** menu.
3. Enter the uniform inflow.
4. Select **Ok** to apply the changes and close the dialog box. Select **Cancel** to close the dialog box without applying any changes.



Chapter

5 Results

5.1 Results menu

With this menu, you can perform calculations and view the results. In the **Results** menu you can select one of the following options:

- Perform calculations
- Results table

5.2 Perform calculations

The program automatically updates the results after every change in the data. Use this option if you want to manually repeat the calculations.

To manually repeat the calculations:

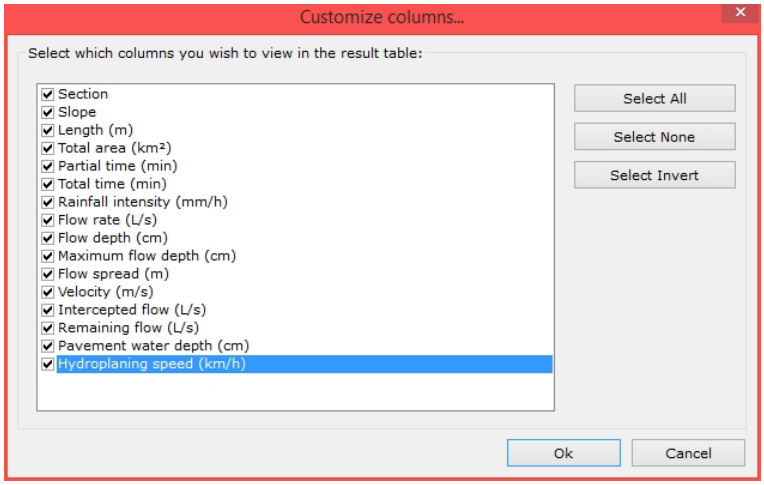
1. Select **Perform calculations** under the **Results** menu.

5.3 Results table

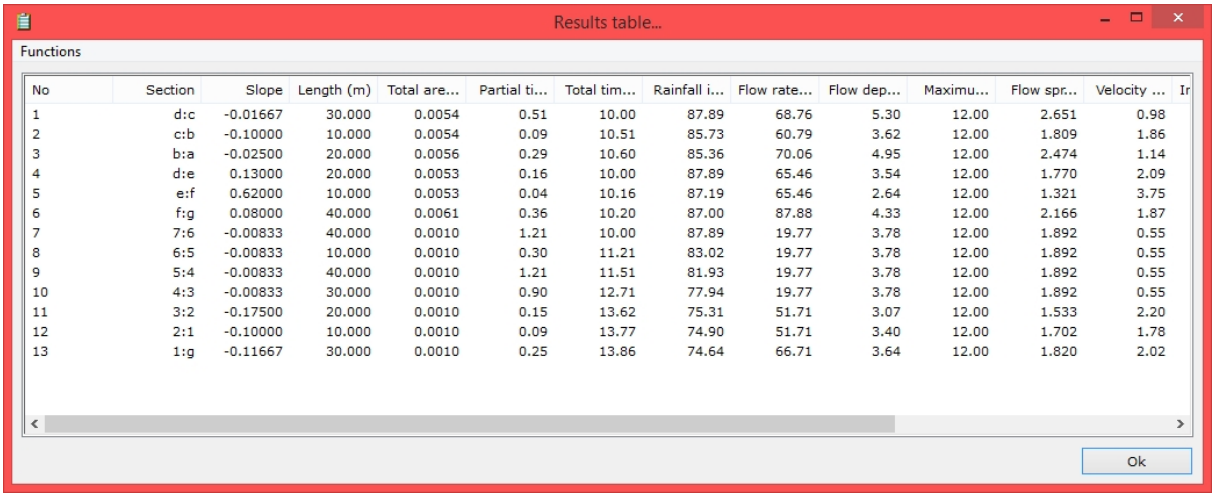
The results table provides a summary of all results for the currently selected piece.

To show the results table for the currently selected piece:

1. Select the piece from the list on the left.
2. Select **Results table** under the **Results** menu.
3. Select **Columns** under the **Function** menu in the form that appears.



4. You can print or export the results using the **Function** menu.
5. Press **Ok** to close the form.



No	Section	Slope	Length (m)	Total are...	Partial ti...	Total tim...	Rainfall i...	Flow rate...	Flow dep...	Maximu...	Flow spr...	Velocity ...	Ir
1	d:c	-0.01667	30.000	0.0054	0.51	10.00	87.89	68.76	5.30	12.00	2.651	0.98	
2	c:b	-0.10000	10.000	0.0054	0.09	10.51	85.73	60.79	3.62	12.00	1.809	1.86	
3	b:a	-0.02500	20.000	0.0056	0.29	10.60	85.36	70.06	4.95	12.00	2.474	1.14	
4	d:e	0.13000	20.000	0.0053	0.16	10.00	87.89	65.46	3.54	12.00	1.770	2.09	
5	e:f	0.62000	10.000	0.0053	0.04	10.16	87.19	65.46	2.64	12.00	1.321	3.75	
6	f:g	0.08000	40.000	0.0061	0.36	10.20	87.00	87.88	4.33	12.00	2.166	1.87	
7	7:6	-0.00833	40.000	0.0010	1.21	10.00	87.89	19.77	3.78	12.00	1.892	0.55	
8	6:5	-0.00833	10.000	0.0010	0.30	11.21	83.02	19.77	3.78	12.00	1.892	0.55	
9	5:4	-0.00833	40.000	0.0010	1.21	11.51	81.93	19.77	3.78	12.00	1.892	0.55	
10	4:3	-0.00833	30.000	0.0010	0.90	12.71	77.94	19.77	3.78	12.00	1.892	0.55	
11	3:2	-0.17500	20.000	0.0010	0.15	13.62	75.31	51.71	3.07	12.00	1.533	2.20	
12	2:1	-0.10000	10.000	0.0010	0.09	13.77	74.90	51.71	3.40	12.00	1.702	1.78	
13	1:g	-0.11667	30.000	0.0010	0.25	13.86	74.64	66.71	3.64	12.00	1.820	2.02	

Chapter VI

6 Help

6.1 Help menu

In the **Help** menu you can select one of the following options:

- Contents
- User guide
- Tutorials
- Tip of the day
- Unit conversion
- TechnoLogismiki website
- Buy products
- TechnoLogismiki NOMOS
- TechnoLogismiki Live!
- About the program

6.2 Contents

With this option, you can access the online help which contains detailed information regarding the usage of the program.

To view the online help:

1. Click **Contents** from the **Help** menu.
2. The online help appears.

NOTE: If an error message appears then the online help has not been installed. You can install the online help from the installation CD or the Internet.

6.3 User guide

With this option, you can access the user guide which contains detailed information regarding the usage of the program.

To view the user guide:

1. Click **User Guide** from the **Help** menu.
2. The user guide appears.

NOTE: If an error message appears then the online help has not been installed. You can install the online help from the installation CD or the Internet.

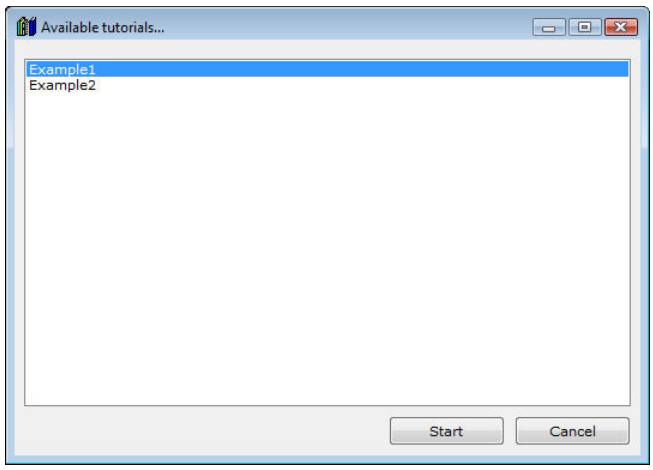
NOTE: Adobe Acrobat Reader or a similar program that can display pdf files is required in order to view or print the user guide.

6.4 Tutorials

With this option, you can access the tutorials of the program. The tutorials are step-by-step examples that allow you to decrease the learning cycle of the programs dramatically.

To access the tutorials:

1. Click **Tutorials** from the **Help** menu.
2. The tutorial selection dialog box appears.
2. Select the appropriate tutorial and click **Start** to proceed. Click **Cancel** to close the dialog box.



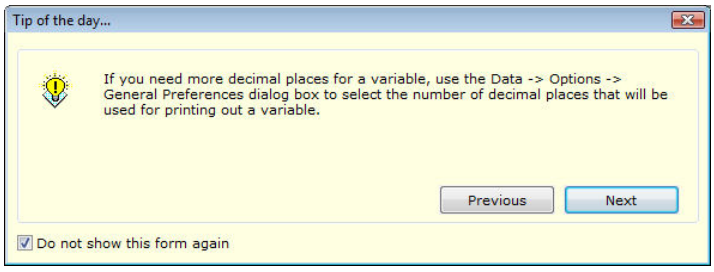
NOTE: The number and content of the tutorials is changed frequently. Use the live update system of TechnoLogismiki's products to download the latest tutorials.

6.5 Tip of the day

With this option, you can access the tip database of the program. The tips are short guidelines regarding the usage of the programs which may be of great help to the user.

To access the tips:

1. Click **Tip of the day** from the **Help** menu.
2. The tip of the day form appears.
3. Check **Do not show this form again** to prevent the program from showing the tip of the day when starting. Press the **Previous/Next** buttons to browse all available tips.
4. Press **Esc** to close the form.



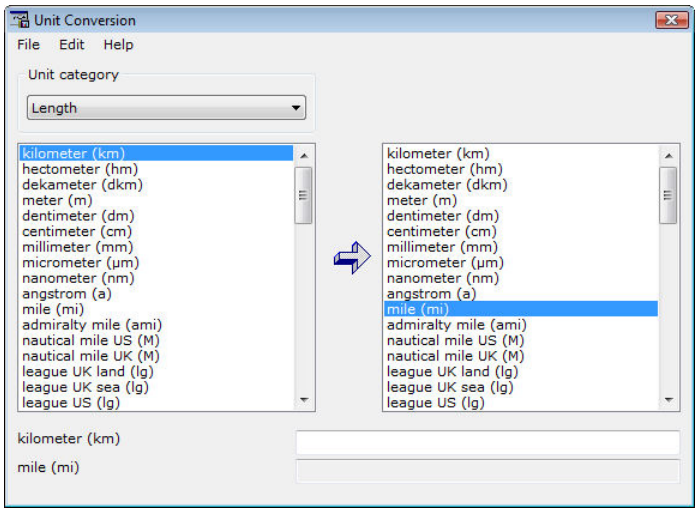
NOTE: The number and content of the tips is changed frequently. Use the live update system of TechnoLogismiki's products to download the latest tips.

6.6 Unit conversion

With this option, you can access the unit conversion tool. You can find more information about its usage in its help system.

To launch the unit conversion tool:

1. Click **Unit conversion** from the **Help** menu.
2. The unit conversion tool is launched.



NOTE: If an error message appears then the unit conversion tool has not been installed. You can install the unit conversion tool from the installation CD or the Internet.

6.7 TechnoLogismiki website

With this option, you can load on your Internet browser the website of TechnoLogismiki's.

6.8 Buy products

With this option, you can load on your Internet browser the main product page of TechnoLogismiki's website.

6.9 TechnoLogismiki NOMOS

With this option, you can load on your Internet browser the **NOMOS** service of Technologismiki.

6.10 TechnoLogismiki Live!

With this option, you can load on your Internet browser the **Live!** service of Technologismiki.

6.11 About the program

With this option, a form containing the name, version and licence information of the program appears.

To show this form:

1. From the **Help** menu, select **About the program**.
2. The form appears.
3. Click anywhere on the form or hit ESC to close the form.

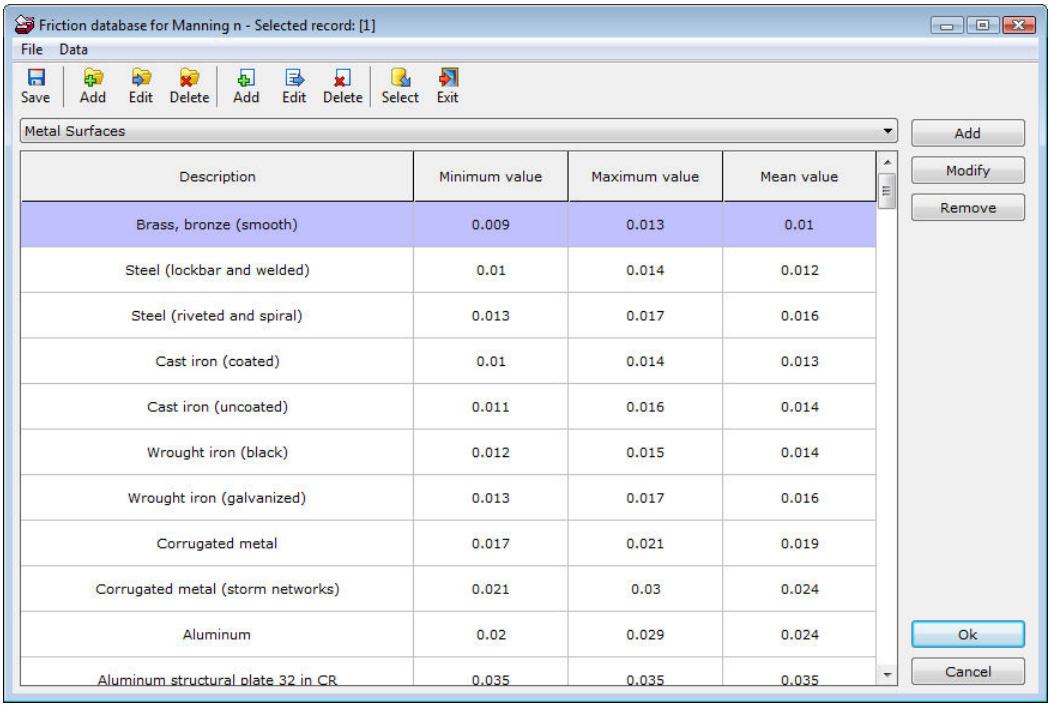
Chapter

7 Appendix

7.1 Friction database

For your convenience, a fully customizable friction database is embedded in the program. The friction database is invoked in various cases within the program. By selecting an appropriate friction record (which is depended on the selected friction formula) and clicking **Ok**, the data is transferred to the corresponding fields. Select **Cancel** to close the database without transferring any data.

You will be asked to confirm any changes you have made to the database when exiting. The changes will be instantly available to other programs using the same database.

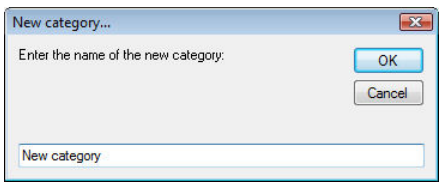


Description	Minimum value	Maximum value	Mean value
Brass, bronze (smooth)	0.009	0.013	0.01
Steel (lockbar and welded)	0.01	0.014	0.012
Steel (riveted and spiral)	0.013	0.017	0.016
Cast iron (coated)	0.01	0.014	0.013
Cast iron (uncoated)	0.011	0.016	0.014
Wrought iron (black)	0.012	0.015	0.014
Wrought iron (galvanized)	0.013	0.017	0.016
Corrugated metal	0.017	0.021	0.019
Corrugated metal (storm networks)	0.021	0.03	0.024
Aluminum	0.02	0.029	0.024
Aluminum structural plate 32 in CR	0.035	0.035	0.035

The database consists of several categories. Usually, the category defines the material of the surface (e.g. Metal surfaces).

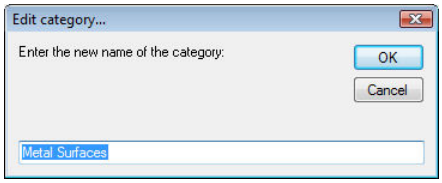
To add a new category:

1. Select **Add category** from the **Data** menu.
2. Type the name of the category in the text box. The name of the category must be unique.
3. Select **Ok** to add the category at the end of the list. Select **Cancel** to cancel the procedure.



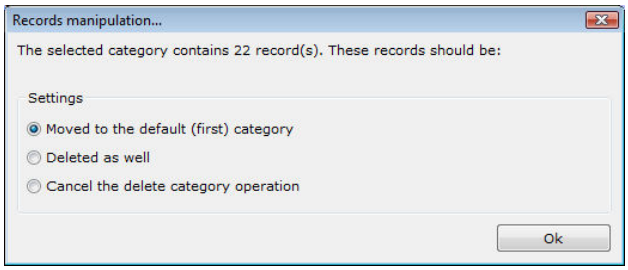
To modify the name of an existing category:

1. Click **Modify** to open the modify category dialog box.
2. Type the name of the category in the text box. The name of the category must be unique.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.



To remove an existing category:

1. Select the category you wish to remove from the drop-down list.
2. Click **Remove** to remove the category. You will be asked to confirm the deletion.
3. Select Yes to proceed with the deletion. Select No to cancel the deletion.
4. If the category contains records, then the following dialog box appears:

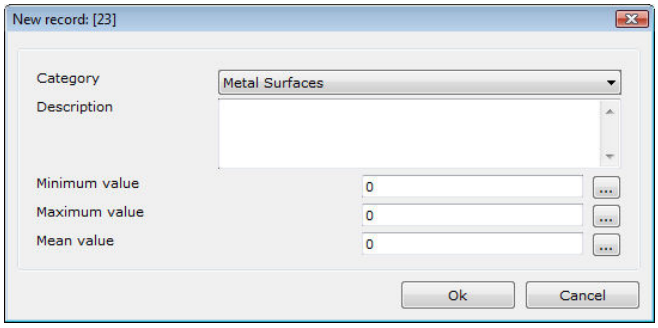


4.1. Select the first option to move the records of the category to the default (first category).
4.2. Select the second option to delete the records.
4.3. Select the third option to cancel the deletion.
5. Click **Ok** to proceed.

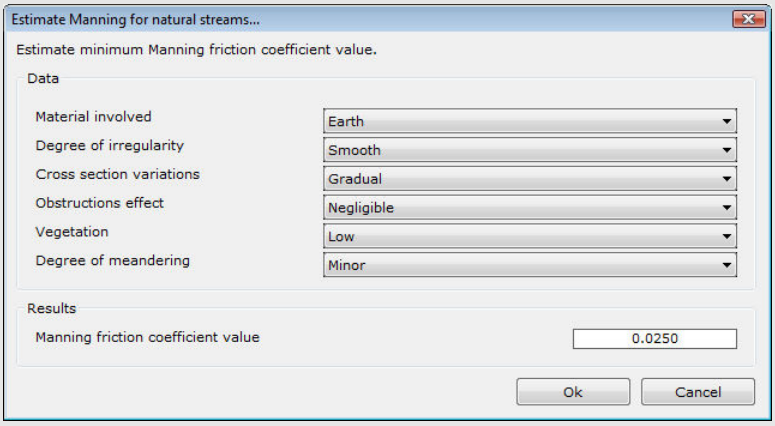
NOTE: The database must contain at least one category.

To add a new record:

1. Click **Add** to open the new record dialog box.
2. Select the category of the new record from the drop-down list.
3. Type the description of the record. This field is required.
4. Enter the minimum, maximum and mean value of the friction.
5. Click **Ok** to close the dialog box and add a new record at the end of the list. Click **Cancel** to close the dialog box without making any changes.



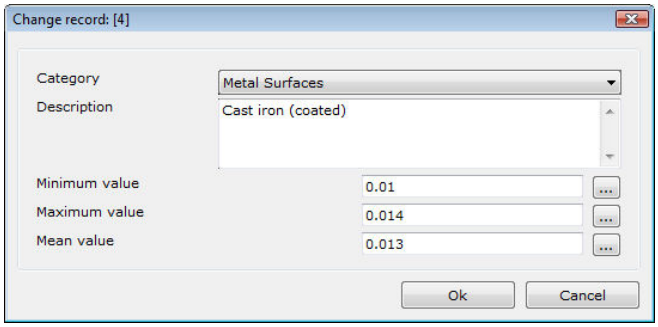
NOTE: In case of Manning friction coefficients in natural streams, you can estimate the values based on several characteristics of the stream. Click on the buttons with the ellipses (...) next to the text boxes to invoke the following dialog box:



Make the appropriate selections. Click **Ok** to close the dialog box and transfer the data to the corresponding text box. Click **Cancel** to close the dialog box without transferring any data.

To modify an existing record:

1. Click **Modify** to open the modify record dialog box.
2. Make the appropriate changes.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.



To remove an existing record:

1. Select the record you wish to remove.
2. Click **Remove** to remove the record. You will be asked to confirm the deletion.
3. Select Yes to proceed with the deletion. Select No to cancel the deletion.

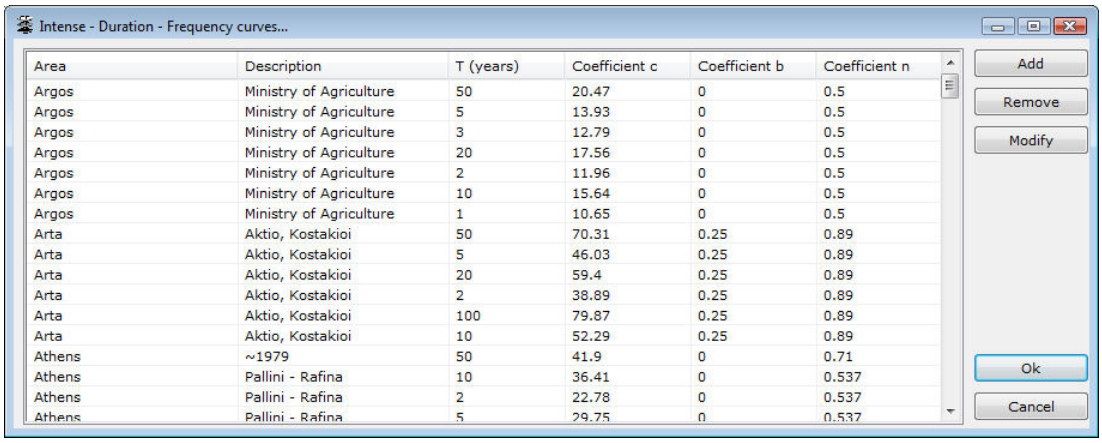
7.2 Manning friction coefficients

Surface / Material	Mean Value
Aluminum	0.024
Asbestos cement	0.013
Asphalt ditch	0.016
Asphalt pavement	0.016
Asphalt smooth	0.013
Asphalted cast iron	0.012
Natural ground	0.020
Best concrete	0.010
Brick in mortar	0.015
Brick sewer	0.015
Cast iron	0.012
CMP	0.024
Concrete	0.013
PVC	0.010
Centrifugal SPUN	0.013
Concrete (steel forms)	0.011
Concrete (wood forms)	0.015
Concrete gutter (broom finish)	0.016
Concrete gutter (troweled finish)	0.012
Copper	0.011
Fiber glass roving	0.011
Gravel riprap (D=25)	0.033
Gravel riprap (D=50)	0.041
Grouted riprap	0.030
Natural stream (clean)	0.030
Natural stream (stone)	0.050
Natural stream (weedy)	0.035

7.3 IDF database

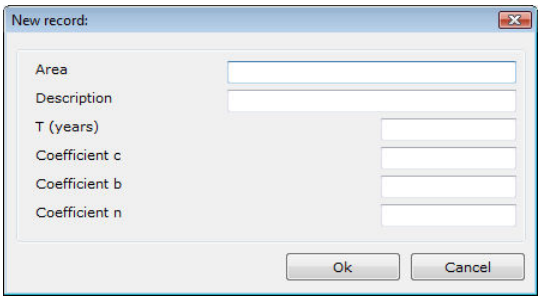
For your convenience, a fully customizable IDF (Intensity - Duration - Frequency) database is embedded in the program. The IDF database is invoked in various cases within the program. By selecting an appropriate record and clicking **Ok**, the data is transferred to the corresponding fields. Select **Cancel** to close the database without transferring any data.

You will be asked to confirm any changes you have made to the database when exiting. The changes will be instantly available to other programs using the same database. Note that the database was built using data from various resources in the literature; you need to be cautious when using a curve.



To add a new record:

1. Click **Add** to open the new record dialog box.
2. Enter the **area** and optionally the description of the record.
3. Enter the return period in years. This value was used for the calculation of the IDF curve and is for reference purposes only; it is not used in the calculations.
4. Enter the dimensionless coefficients c, b, n, in such a way that when time is entered in hours, the intensity is given in mm/hr.
5. Click **Ok** to close the dialog box and add a new record at the end of the list. Click **Cancel** to close the dialog box without making any changes.



To modify an existing record:

1. Click **Modify** to open the modify record dialog box.
2. Make the appropriate changes.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.

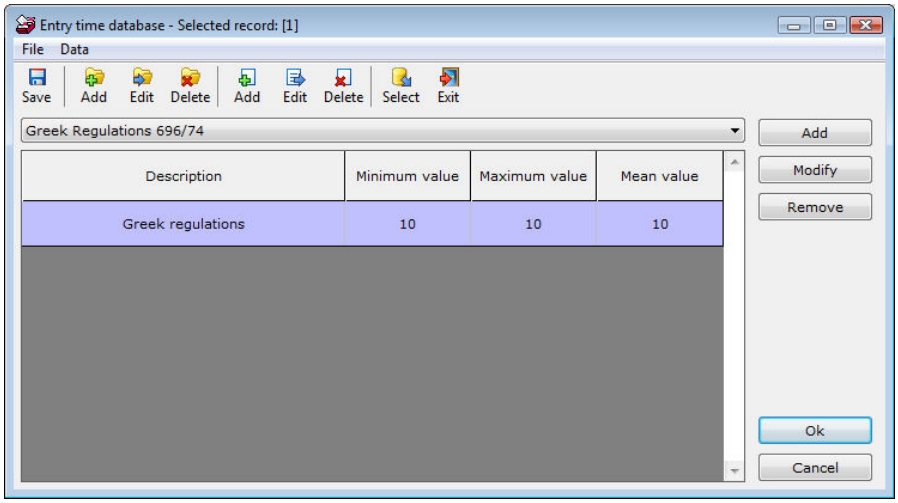
To remove an existing record:

1. Select the record you wish to remove.
2. Click **Remove** to remove the record. You will be asked for confirmation only if you have selected to confirm deletions in the General preferences tab.
3. Select Yes to proceed with the deletion. Select No to cancel the deletion.

7.4 Initial time

For your convenience, a fully customizable initial time database is embedded in the program. The database is invoked in various cases within the program. By selecting an appropriate record and clicking **Ok**, the data is transferred to the corresponding fields. Select **Cancel** to close the database without transferring any data.

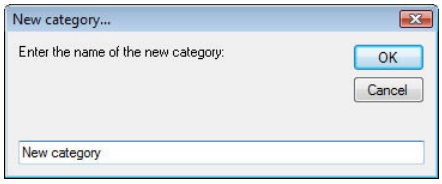
You will be asked to confirm any changes you have made to the database when exiting. The changes will be instantly available to other programs using the same database.



The database consists of several categories. Usually, the category defines the regulations e.g. Greek regulations 696/74.

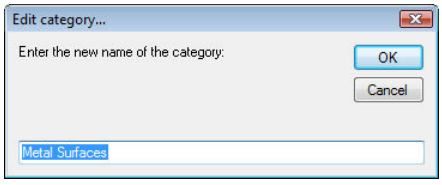
To add a new category:

1. Select **Add category** from the **Data** menu.
2. Type the name of the category in the text box. The name of the category must be unique.
3. Select **Ok** to add the category at the end of the list. Select **Cancel** to cancel the procedure.



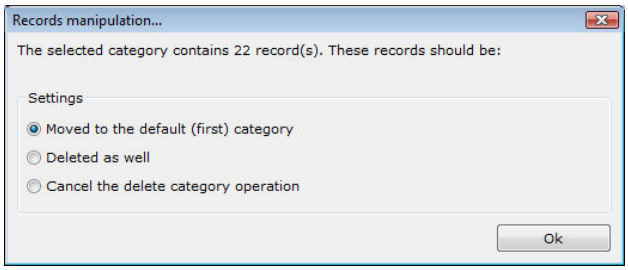
To modify the name of an existing category:

1. Click **Modify** to open the modify category dialog box.
2. Type the name of the category in the text box. The name of the category must be unique.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.



To remove an existing category:

1. Select the category you wish to remove from the drop-down list.
2. Click **Remove** to remove the category. You will be asked to confirm the deletion.
3. Select **Yes** to proceed with the deletion. Select **No** to cancel the deletion.
4. If the category contains records, then the following dialog box appears:

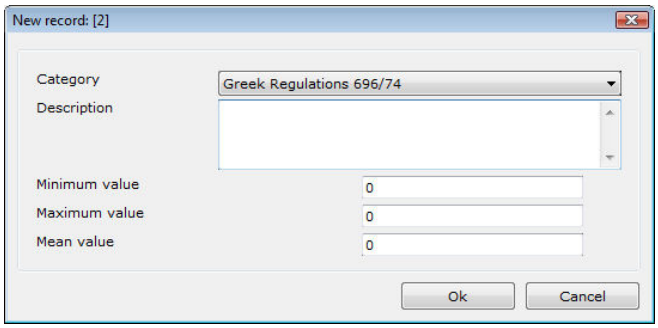


4.1. Select the first option to move the records of the category to the default (first category).
4.2. Select the second option to delete the records.
4.3. Select the third option to cancel the deletion.
5. Click **Ok** to proceed.

NOTE: The database must contain at least one category.

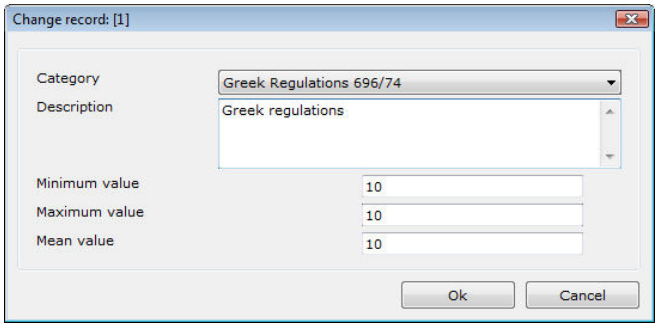
To add a new record:

1. Click **Add** to open the new record dialog box.
2. Select the category of the new record from the drop-down list.
3. Type the description of the record. This field is required.
4. Enter the minimum, maximum and mean value of the initial time in min.
5. Click **Ok** to close the dialog box and add a new record at the end of the list. Click **Cancel** to close the dialog box without making any changes.



To modify an existing record:

1. Click **Modify** to open the modify record dialog box.
2. Make the appropriate changes.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.



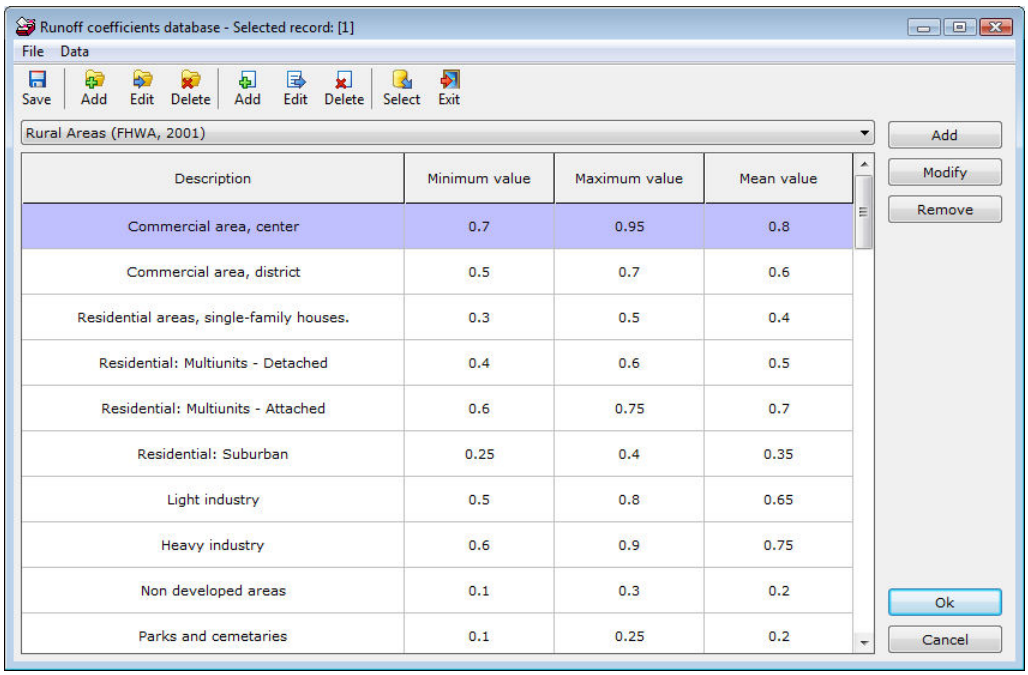
To remove an existing record:

1. Select the record you wish to remove.
2. Click **Remove** to remove the record. You will be asked for confirmation only if you have selected to confirm deletions in the General preferences tab.
3. Select Yes to proceed with the deletion. Select No to cancel the deletion.

7.5 Runoff coefficient database

For your convenience, a fully customizable runoff coefficient database is embedded in the program. The database is invoked in various cases within the program. By selecting an appropriate record and clicking **Ok**, the data is transferred to the corresponding fields. Select **Cancel** to close the database without transferring any data.

You will be asked to confirm any changes you have made to the database when exiting. The changes will be instantly available to other programs using the same database.

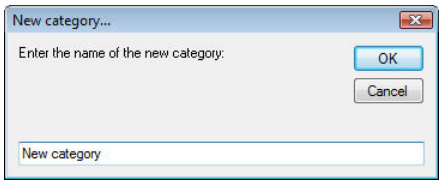


Description	Minimum value	Maximum value	Mean value
Commercial area, center	0.7	0.95	0.8
Commercial area, district	0.5	0.7	0.6
Residential areas, single-family houses.	0.3	0.5	0.4
Residential: Multiunits - Detached	0.4	0.6	0.5
Residential: Multiunits - Attached	0.6	0.75	0.7
Residential: Suburban	0.25	0.4	0.35
Light industry	0.5	0.8	0.65
Heavy industry	0.6	0.9	0.75
Non developed areas	0.1	0.3	0.2
Parks and cemetaries	0.1	0.25	0.2

The database consists of several categories. Usually, the category defines the regulations (e.g. FHWA, 2001).

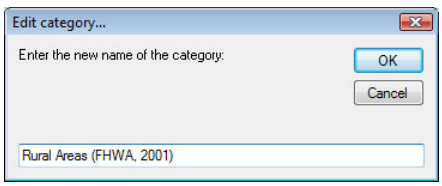
To add a new category:

1. Select **Add category** from the **Data** menu.
2. Type the name of the category in the text box. The name of the category must be unique.
3. Select **Ok** to add the category at the end of the list. Select **Cancel** to cancel the procedure.



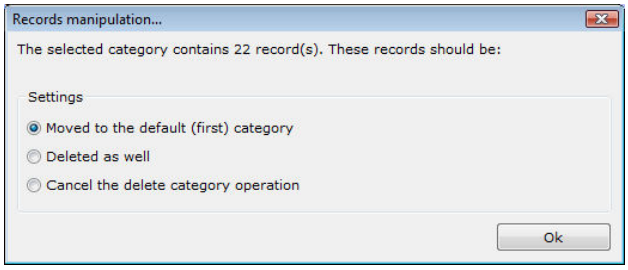
To modify the name of an existing category:

1. Click **Modify** to open the modify category dialog box.
2. Type the name of the category in the text box. The name of the category must be unique.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.



To remove an existing category:

1. Select the category you wish to remove from the drop-down list.
2. Click **Remove** to remove the category. You will be asked to confirm the deletion.
3. Select Yes to proceed with the deletion. Select No to cancel the deletion.
4. If the category contains records, then the following dialog box appears:

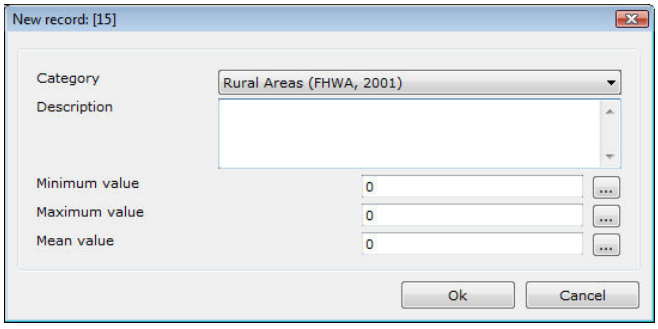


4.1. Select the first option to move the records of the category to the default (first category).
4.2. Select the second option to delete the records.
4.3. Select the third option to cancel the deletion.
5. Click **Ok** to proceed.

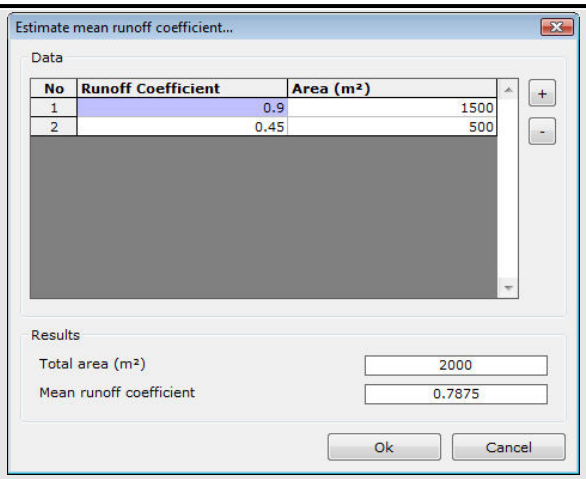
NOTE: The database must contain at least one category.

To add a new record:

1. Click **Add** to open the new record dialog box.
2. Select the category of the new record from the drop-down list.
3. Type the description of the record. This field is required.
4. Enter the minimum, maximum and mean value of the runoff coefficient.
5. Click **Ok** to close the dialog box and add a new record at the end of the list. Click **Cancel** to close the dialog box without making any changes.



NOTE: You can calculate the mean runoff coefficient for complex areas with known runoff coefficients. Click on the buttons with the ellipses (...) next to the text boxes to invoke the following dialog box:

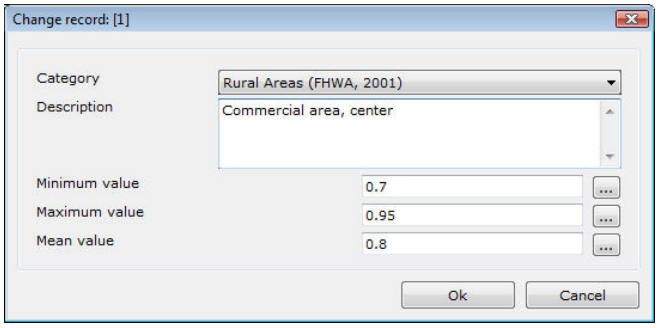


Click the plus sign **(+)** to add a new area. Type the runoff coefficient and the area in m^2. The total area and the mean runoff coefficient is displayed in the **Results** frame. Click the minus sign **(-)** to delete the selected area. The area is deleted with no confirmation.

Make the appropriate selections. Click **Ok** to close the dialog box and transfer the data to the corresponding text box. Click **Cancel** to close the dialog box without transferring any data.

To modify an existing record:

1. Click **Modify** to open the modify record dialog box.
2. Make the appropriate changes.
3. Click **Ok** to save the changes and close the dialog box. Click **Cancel** to close the dialog box without saving the changes.



To remove an existing record:

1. Select the record you wish to remove.
2. Click **Remove** to remove the record. You will be asked to confirm the deletion.
3. Select Yes to proceed with the deletion. Select No to cancel the deletion.

Keyword index

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