



# **Uponor MagiCAD for AutoCAD Plugin**

User guide

23/03/2020

## Content

<b>GENERAL .....</b>	<b>3</b>
About this document.....	3
Installing the software .....	3
Required third-party software .....	3
Installation.....	3
Important hints.....	4
Starting .....	4
Adding circuits .....	4
Uponor logo .....	4
Known issues and restrictions .....	4
<b>LIST OF FUNCTIONS.....</b>	<b>5</b>
Uponor toolbar .....	5
<b>PROGRAM DIALOGS .....</b>	<b>7</b>
Tap water manifold data.....	7
Manifold data .....	10
General.....	10
Manifold data dialog .....	10
Circuit dialog.....	13
Room thermostat.....	16
Drawing configuration.....	17
Settings.....	18
Add/Edit material .....	20
<b>APPENDIX A.....</b>	<b>21</b>
Known issues and restrictions in the current release .....	21
AutoCAD functions .....	21

## General

### About this document

This document contains instructions on using software *Uponor MagiCAD Plugin*. *Uponor MagiCAD Plugin* is a Windows-based extension to MagiCAD software.

## Installing the software

### Required third-party software

Uponor MagiCAD Plugin works with the following MagiCAD for AutoCAD versions

- MagiCAD 2020 and AutoCAD 2015-2020
- MagiCAD 2021 and AutoCAD 2017-2021

Microsoft Excel is used to preview the bill of materials.

### Installation

1. The installation package is available at MagiCAD download portal

<https://portal.magicad.com/Download/ProductSearch?searchStr=Uponor&categoryId=3>

2. Ensure that you have required MagiCAD version installed on your computer
3. Run the Uponor MagiCAD plug-in installer on your workstation

### Administrator privileges are recommended for installation.

Note if you have several AutoCAD versions on your workstation: Before you run the installation program, start MagiCAD to make sure that *Uponor MagiCAD Plugin* installs on the same AutoCAD platform as MagiCAD.

## **Important hints**

### **Starting**

Before you start using *Uponor MagiCAD Plugin*, start MagiCAD and open or create a new Ventilation & Piping project.

### **Adding circuits**

Please note that you cannot add circuits without a manifold.

### **Uponor logo**

Do not remove Uponor logo from the drawing, because the entire circuit would then be removed.

### **Known issues and restrictions**

The list of known issues and restrictions in the current release is in Appendix A.

## List of functions

### Uponor toolbar



See chapter *List of dialogs* for more information about the dialogs mentioned below.



#### Tap water manifold

This function is used to add tap water manifold into drawing. It opens the **Tap water manifold data** dialog.



#### Manifold

This function is used to add manifold into drawing. It opens the **Manifold data** dialog, where you can also modify other manifold and circuit data. Circuit data can be modified for only those circuits that are connected to manifold.



#### Circuit

With this function you can insert circuits into drawing. You must specify the area and place circuit symbol. *Note! Do not use the COPY function of AutoCAD to add circuits.*



#### Thermostat

This function is used to add thermostats into drawing. It opens the **Add thermostat** dialog.



#### Uponor part properties

This function opens the **Manifold data** dialog, where you can modify manifold and circuit data. Selected manifold/circuit appears active in dialog. Unconnected circuits cannot be selected. Also other manifold and circuit data can be modified for those circuits that are connected to manifold.



#### Automatic circuit pipes drawing

With this function you can draw pipes automatically for circuits. First select the circuit you want to draw pipes to. After this the **Drawing configuration** dialog will appear. There you must choose a configuration. After selecting the software will make pipes according to user input.



#### Assign circuits to manifold

With this function you can assign circuits to manifold. First select the manifold and then circuits to assign to it.



#### Calculate and check all manifolds

Use this function to calculate manifolds.



#### Manifold data table

Use this function paste manifold data table into drawing.



### **Bill of materials**

This function makes a bill of materials and copies it to the clipboard in CSV format so it can be pasted, for example, to Excel.



### **Settings**

Use this function to modify settings through the **Settings** dialog.



### **Underfloor heating help**

Use this function to access the help file.

## Program dialogs

### Tap water manifold data

The **Tap water manifold data** dialog appears when adding a new tap water manifold (**Tap water manifold**) or editing an existing one (**Uponor part properties**).

MagiCAD - Uponor - Tap water manifold data Ver. 2009.1.4

**General**

Manifold name: 1

MagiCAD system: Tap Water 1

Note:

**Properties**

Manifold type: Both Cold and Hot

Cabinet type: Cabinet 11

Cold water: Pipe series: Uponor Wirsbo PEX & COVE, Pipe dimension: 15 mm, Number of pipes: 4 Down, 0 Up, Valve type: No valve, straight, Pipe position: Left end

Hot water: Pipe series: Uponor Wirsbo PEX & COVE, Pipe dimension: 15 mm, Number of pipes: 4 Down, 0 Up, Valve type: Closing valve, straight, Pipe position: Left end

**Height level**

Cold water manifold level: 300 mm

Hot water manifold level: 150 mm

Cabinet bottom level: 50 mm

Cabinet top level: 400 mm

**Accessories**

Value	Units	Description
<input type="checkbox"/>	pcs	UPONOR MANIFOLD CABINET FRAME TYPE1 400 X 400 X 12 MM

**Results**

Description	Value	Units

OK Cancel

**General**

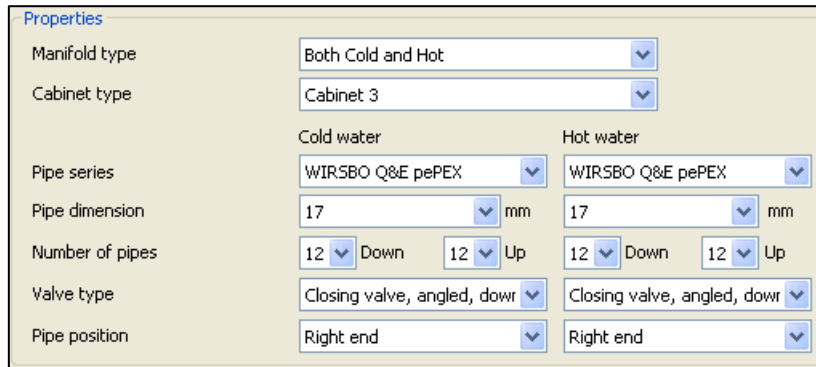
Manifold name: 1

MagiCAD system: Tap Water 1

Note:

In the **General** area of the dialog you can set

- **Manifold name**
- **MagiCAD system**
- **Note** – additional information



	Cold water	Hot water
Manifold type	Both Cold and Hot	
Cabinet type	Cabinet 3	
Pipe series	WIRSBO Q&E pePEX	WIRSBO Q&E pePEX
Pipe dimension	17 mm	17 mm
Number of pipes	12 Down	12 Up
Valve type	Closing valve, angled, down	Closing valve, angled, down
Pipe position	Right end	Right end

In the **Properties** area of the dialog you can set

- **Manifold type**
- **Cabinet type**  
For both hot and cold water, or one of them (depending on the manifold type)
- **Pipe series**
- **Pipe dimension**
- **Number of pipes**
- **Valve type**
- **Pipe position**



Attribute	Height (mm)
<input type="radio"/> Cold water manifold level	300
<input type="radio"/> Hot water manifold level	150
<input checked="" type="radio"/> Cabinet bottom level	50
<input type="radio"/> Cabinet top level	400

In the **Height level** area of the dialog you can set the height level of the manifold according to following parameters

- **Cold water manifold level**
- **Hot water manifold level**
- **Cabinet bottom level**
- **Cabinet top level**

First you must choose which attribute you want to use for giving the desired height level.



Accessories		
Value	Units	Description

In the **Accessories** area of the dialog you can select accessories for the selected tap water manifold. Only the optional accessories are displayed here. Accessories that must be included are not displayed. The selection varies depending on situation. Selecting some accessory may produce new options. For now there are no accessories available for tap water manifold.

Results		
Description	Value	Units

In the **Results** area of the dialog you can see the calculation results. The errors are show in red background color. The situation above has no results.

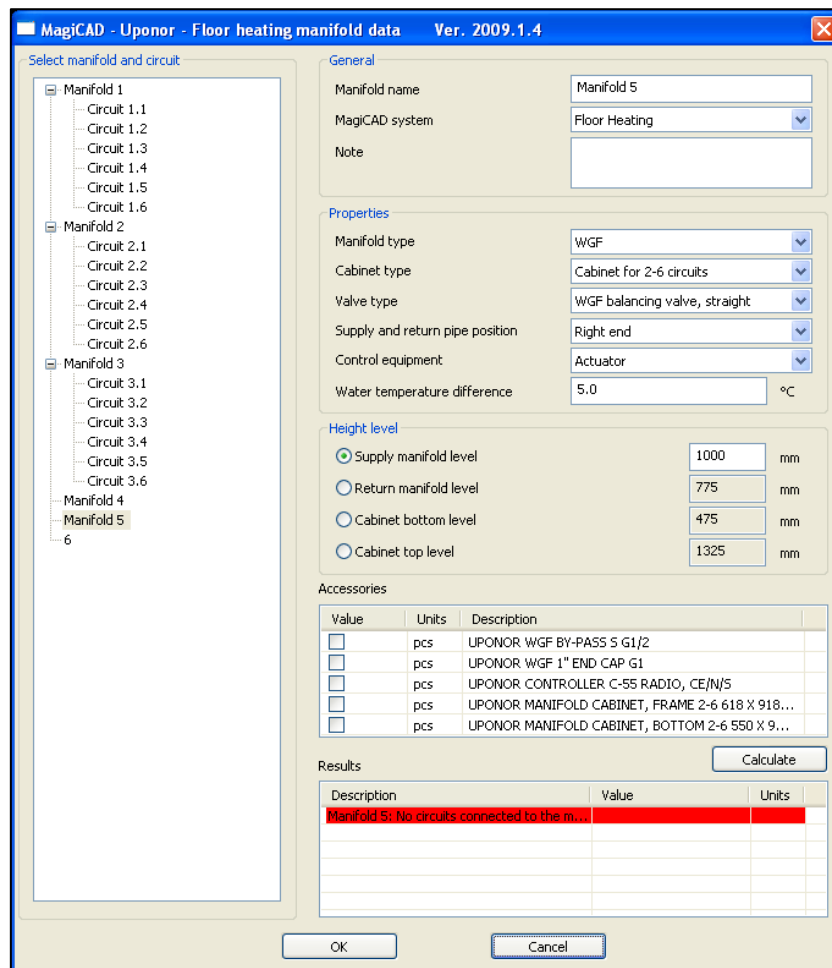
## Manifold data

### General

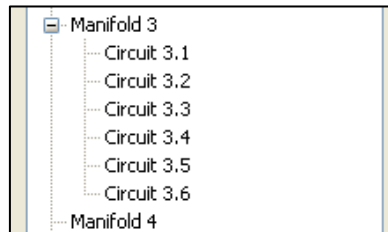
The **Manifold data** dialog contains actually two dialogs, depending whether a manifold or a circuit is active in dialog. This means that the appearance of the **Manifold data** dialog depends on your selection.

This dialog can be opened either by clicking the **Manifold** (for adding manifold) or **Uponor part properties** (for editing manifold/circuit) button in the toolbar.

### Manifold data dialog



The **Manifold data** dialogs manifold side appears when a manifold is selected in the **Select manifold and circuit** area of the dialog.



Above is selected manifold named Manifold 4, which has appeared after clicking the **Manifold** button in the toolbar. Now the dialog displays default information, which can be edited by the user. The information can be accepted with OK or discarded with Cancel. Here you can also select another manifold or circuit that you want to edit.

General	
Manifold name	Manifold 4
MagiCAD system	Floor Heating
Note	

In the **General** area of the dialog you can set

- **Manifold name**
- **MagiCAD system**
- **Note** – additional information

Properties	
Manifold type	Pro
Cabinet type	None
Valve type	Closing valve, straight
Supply and return pipe position	Left end
Control equipment	Actuator

In the Properties area of the dialog you can set

- Manifold type
- Cabinet type
- Valve type
- Supply and return pipe position
- Control equipment

Height level

Supply manifold level  mm

Return manifold level  mm

Cabinet bottom level  mm

Cabinet top level  mm

In the **Height** area of the dialog you can set the height level of the manifold according to the following parameters

- **Supply manifold level**
- **Return manifold level**
- **Cabinet bottom level**
- **Cabinet top level**

First you must choose which attribute you want to use for giving the desired height level. The situation above has two selections available: **Supply manifold level and Return manifold level**. The first one is chosen and the value 1000mm is given in the edit box. The value of the second option is then calculated using this value.

Accessories		
Value	Units	Description
<input type="checkbox"/>	pcs	UPONOR WGF BY-PASS 5 G1/2
<input type="checkbox"/>	pcs	UPONOR WGF 1" END CAP G1
<input type="checkbox"/>	pcs	UPONOR CONTROLLER C-55 RADIO, CE/N/S
<input type="checkbox"/>	pcs	UPONOR CONTROLLER 6 CHANNELS C-33 WIRED CE...
<input type="checkbox"/>	pcs	UPONOR PIPE INLET SEAL 14-20 MM

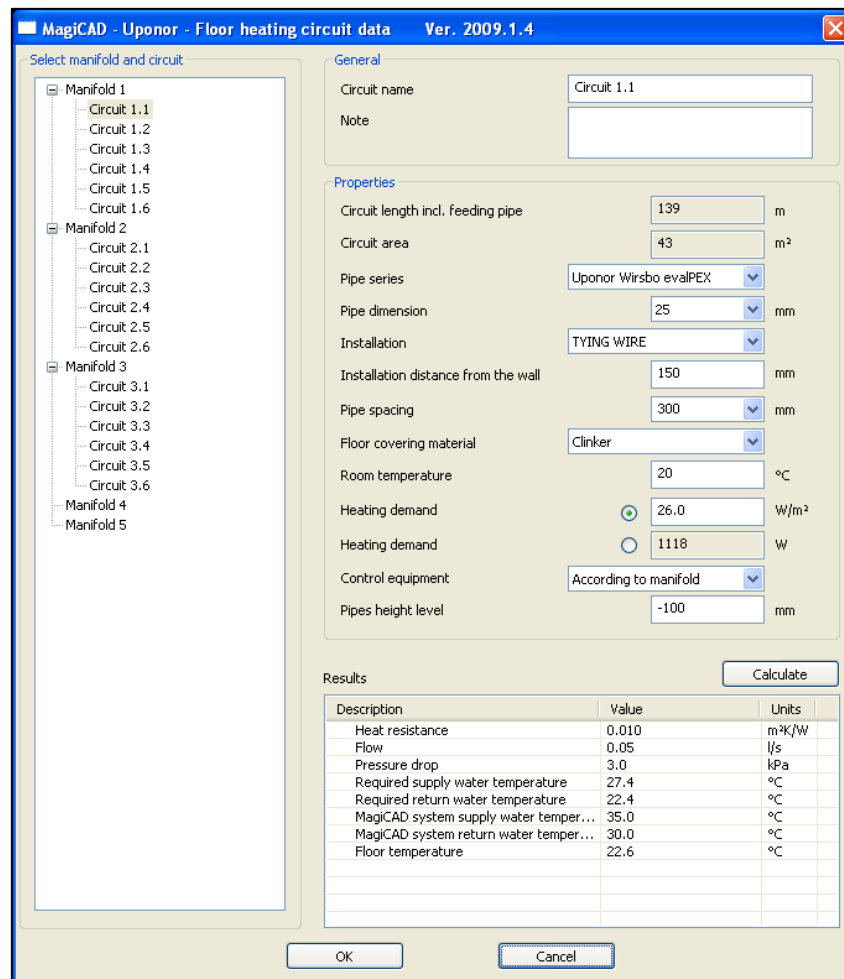
In the Accessories area of the dialog you can select accessories for the selected manifold. Only the optional accessories are displayed here. Accessories that must be included are not displayed. The selection varies depending on the situation. Also, selecting some accessory may produce new options.

Results			Calculate
Description	Value	Units	
4: No circuits connected to the manifold			

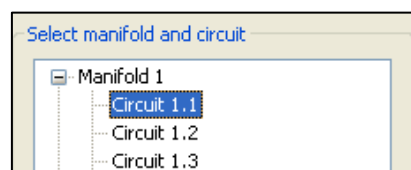
In the **Results** area of the dialog you can see the calculation results. The manifold is calculated by clicking the **Results** button.

The errors are shown in red background color as above. The situation above has occurred after clicking the **Manifold** button in the toolbar; we are adding the manifold so that there are no circuits connected to it yet, hence it cannot be calculated.

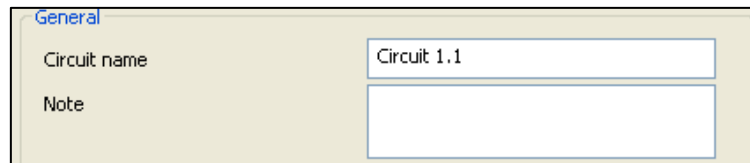
### Circuit dialog



The **Manifold data** dialog's circuit side appears when a circuit is selected in the **Select manifold and circuit** area of the dialog. Depending on the situation, some of the selections may be disabled.

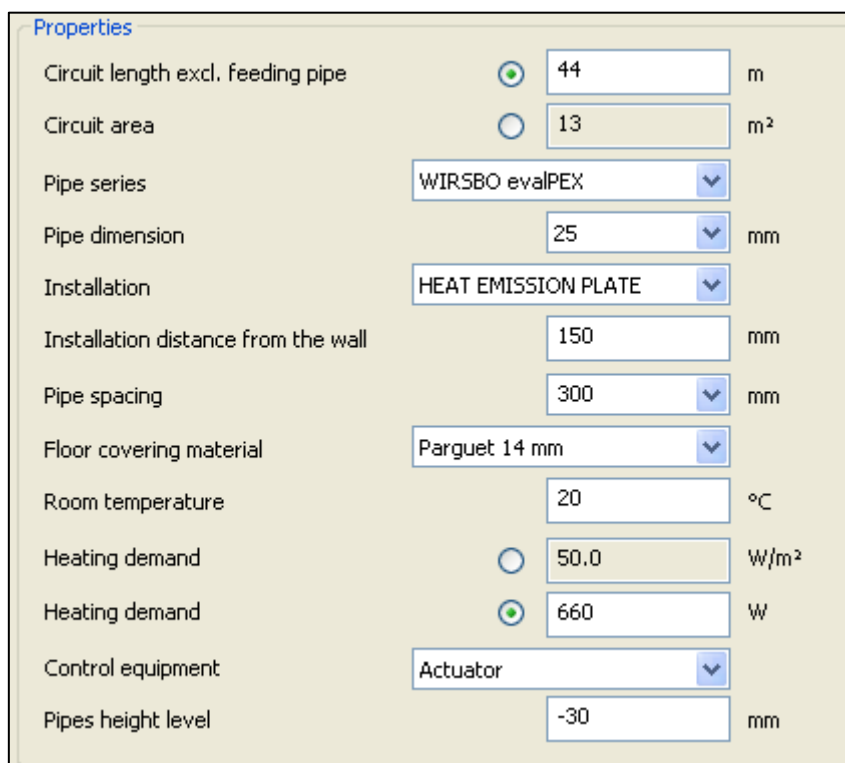


Circuit named *Circuit1.1* is selected in the example above. Now the dialog displays the circuit information, which can be edited by the user. The selections can be accepted with *OK* or discarded with *Cancel*. Here you can also select another manifold or circuit that you want to edit.



In the **General** area of the dialog you can set

- **Circuit name**
- **Note** – additional information



Property	Value	Unit
Circuit length excl. feeding pipe	44	m
Circuit area	13	m <sup>2</sup>
Pipe series	WIRSBO evalPEX	
Pipe dimension	25	mm
Installation	HEAT EMISSION PLATE	
Installation distance from the wall	150	mm
Pipe spacing	300	mm
Floor covering material	Parguet 14 mm	
Room temperature	20	°C
Heating demand	50.0	W/m <sup>2</sup>
Heating demand	660	W
Control equipment	Actuator	
Pipes height level	-30	mm

In the **Properties** area of the dialog you can set

- **Circuit length** or **Circuit area**
- **Pipe series**
- **Pipe dimension**
- **Installation**
- **Installation distance from wall**
- **Pipe spacing**
- **Floor covering material**
- **Room temperature**
- **Heating demand [W/m<sup>2</sup>] or [W]**
- **Control equipment**

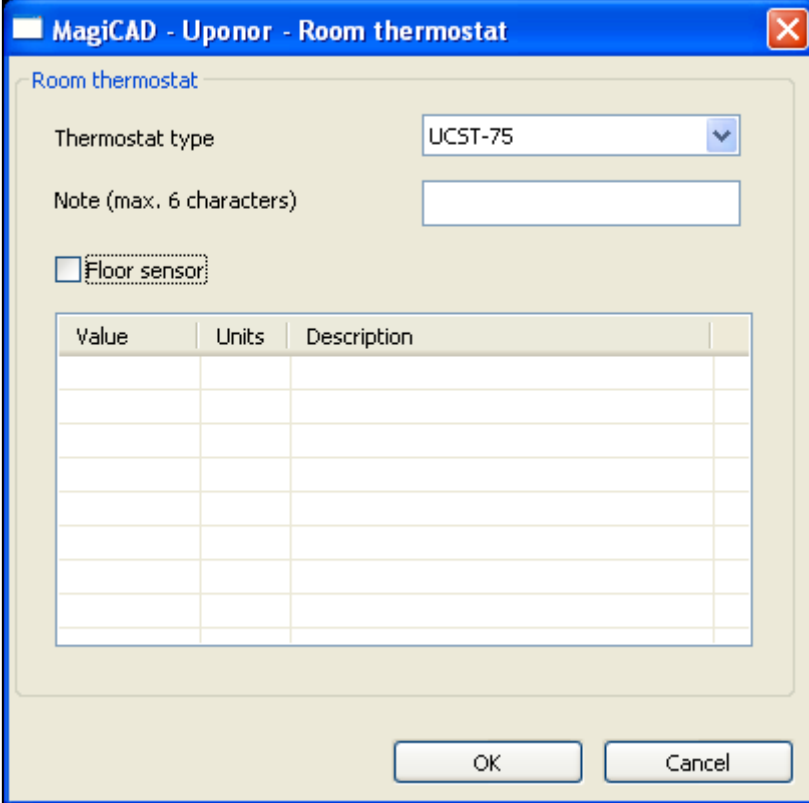
- **Pipe height level**

Results			Calculate
Description	Value	Units	
Heat resistance	0.010	m <sup>2</sup> K/W	
Flow	0.05	l/s	
Pressure drop	3.0	kPa	
Required supply water temperature	27.4	°C	
Required return water temperature	22.4	°C	
MagiCAD system supply water temper...	35.0	°C	
MagiCAD system return water temper...	30.0	°C	
Floor temperature	22.6	°C	

In the **Results** area of the dialog you can see the calculation results. The circuit is calculated by pressing the **Calculate** button. The errors are show in red background.

## Room thermostat

You can add a new thermostat with the **Add thermostat** function.



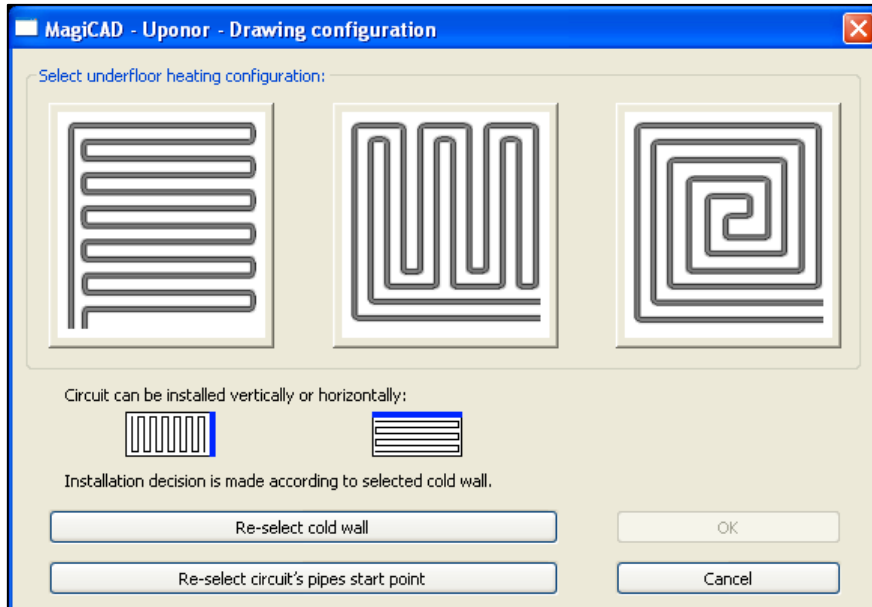
Value	Units	Description

In the **Room thermostat** dialog you can specify:

- **Thermostat type** – Select the desired type from the combo box.
- **Floor sensor** – Check this box if you want a floor sensor.
- **Note** – Add short note for the thermostat if you prefer.



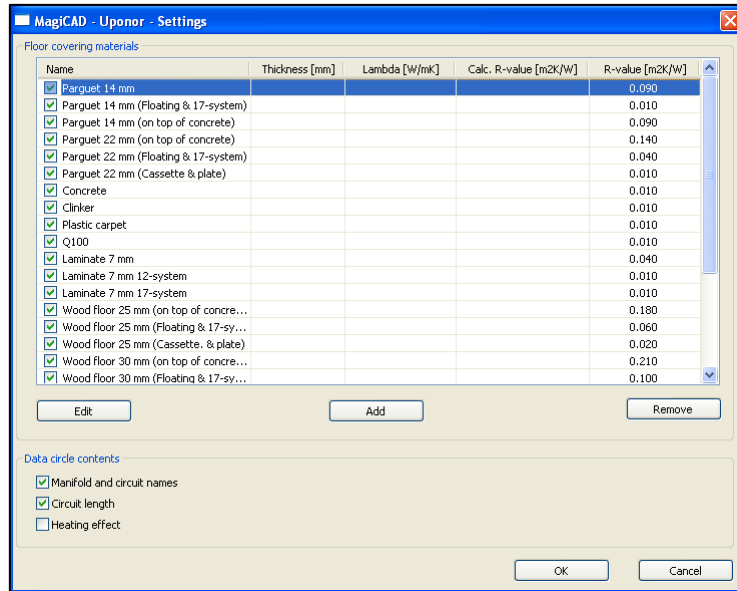
## Drawing configuration



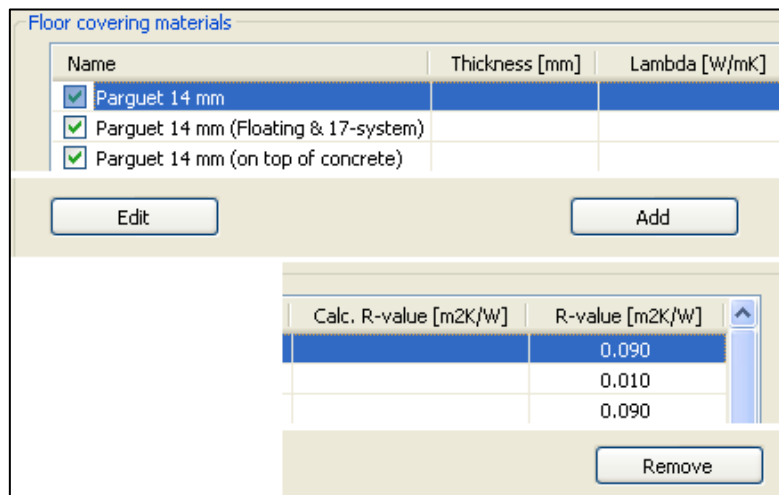
In the **Drawing configuration** dialog you can select the configuration by clicking the corresponding icon. You can also re-select the pipe's starting position and the cold wall.

The result is displayed in the window, and you can repeat selecting until you accept your choice by clicking **OK** or reject it by clicking **Cancel**.

## Settings



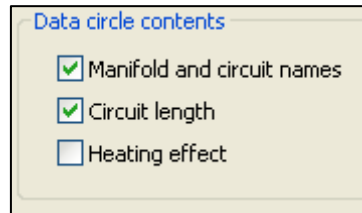
In the **Settings** dialog you select floor covering materials for your project and specify what you want to show in the data circle. **OK** button accepts changes and **Cancel** button rejects changes.



In the **Floor covering materials** area of the dialog you can select, edit, add and remove floor covering materials. The selected materials are checked. The active material is highlighted, as Parquet 14mm above. Main functions:

- **Checkbox in the column name** – Use this to select which floor covering materials you want to include in your project.
- **Edit button** – Press this to edit the currently active floor covering material. This button opens the **Edit material** dialog.
- **Add button** – Press this to add a new floor covering material. This button opens the **Add material** dialog.

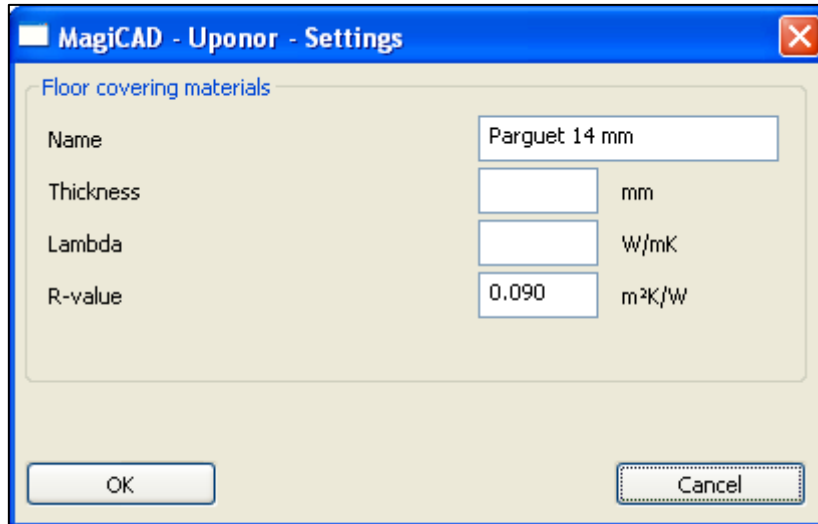
- **Remove button** – Use this to remove the currently active floor covering material.



In the **Data circle contents** area of the dialog you can select what appears in the data circle:

- **Manifold and circuit names** – Select this if you want the manifold and circuit names to be displayed in the data circle.
- **Circuit length** – Select this if you want the circuit length to be displayed in the data circle.
- **Heating effect** – Select this if you want the heating effect to be displayed in the data circle.

## Add/Edit material



**MagiCAD - Uponor - Settings**

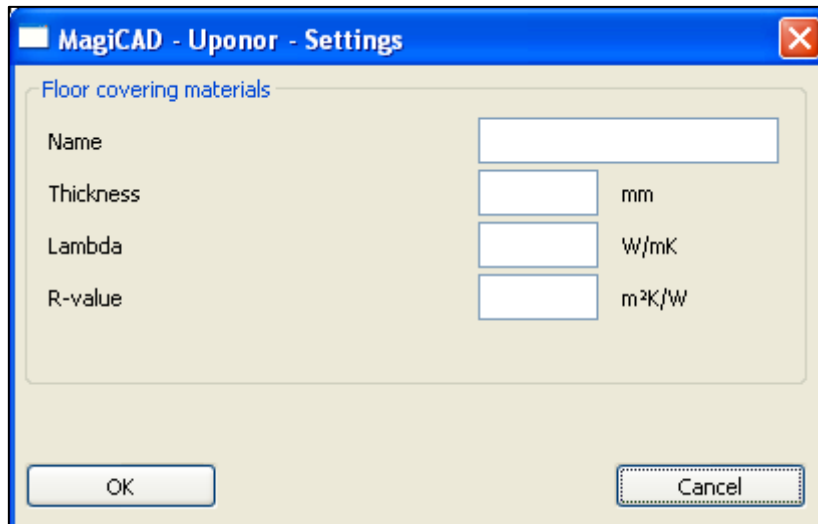
Floor covering materials

Name	Parguet 14 mm	
Thickness	<input type="text"/>	mm
Lambda	<input type="text"/>	W/mK
R-value	0.090	m <sup>2</sup> K/W

OK Cancel

In the **Edit material** dialog you can modify the currently active floor covering material. It opens with the currently active materials data. You can modify:

- **Name** – Name of the material
- **Thickness**
- **Lambda** – Thermal conductivity
- **RValue**



**MagiCAD - Uponor - Settings**

Floor covering materials

Name	<input type="text"/>	
Thickness	<input type="text"/>	mm
Lambda	<input type="text"/>	W/mK
R-value	<input type="text"/>	m <sup>2</sup> K/W

OK Cancel

The **Add material** dialog is the same dialog as the **Edit material** dialog, except that it is not possible to edit the properties of an existing floor covering material. The dialog opens with all its fields blank.

## Appendix A

### Known issues and restrictions in the current release

In MagiCAD version 2009.2 or older, the program may perform slowly if the project is stored in a network drive (it may take even 20 seconds to open a dialog).

Sometimes the manifold cannot be removed from the drawing. The workaround for this issue is to move the manifold e.g. to MAGI\_GARBAGE layer and then use the **Clear Garbage Layer** function of MagiCAD.

In MagiCAD version 2009.2 or older, manifold cabinet is not transferred to an IFC export file. The values in the manifold data table are not updated automatically (the old must be removed and a new must be added after changes).

### AutoCAD functions

Do not use the following AutoCAD command to handle the manifolds: MIRROR, WBLOCK. AutoCAD copy function can only be used inside the drawing.