



Installation and Quick Start guide for PAROC Calculus





Installation -1

PAROC[®] Calculus

Home

User login

Username *

Password *

[Create new account](#)

[Request new password](#)

Log in

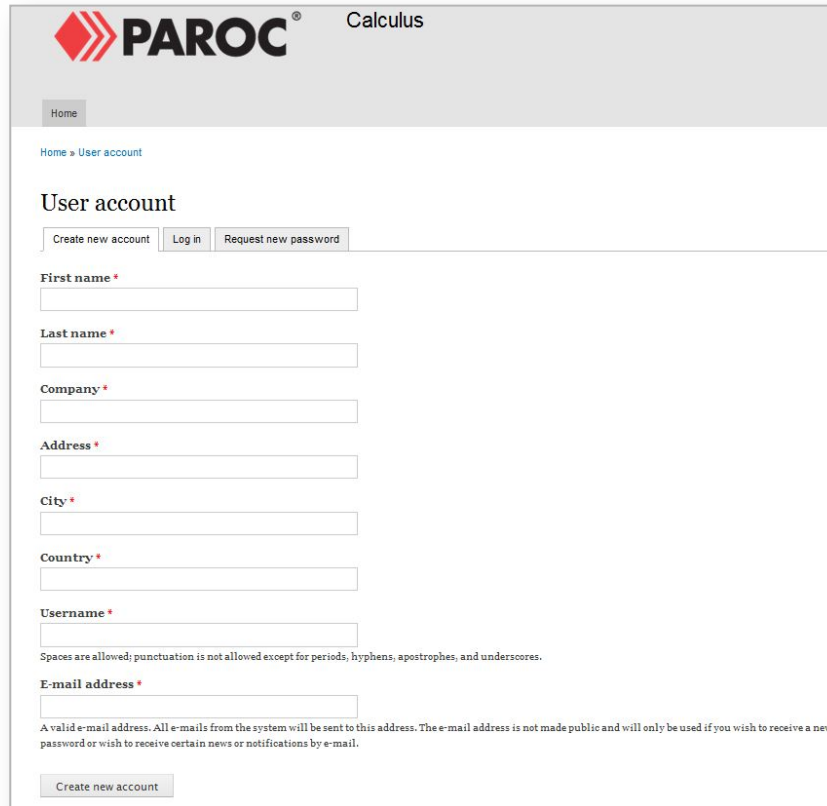
Welcome

Welcome to the Paroc Calculus!

1. Before installing Paroc Calculus you must download and install the Adobe AIR Framework to your computer. Download from [here](#).
2. After Adobe AIR Framework is installed you can continue to install Paroc Calculus.
3. Register by filling in the registration form following [this link](#). If successful you will receive an email with further information.

1. You need to have the runtime module Adobe AIR Framework installed
2. Follow the link to register

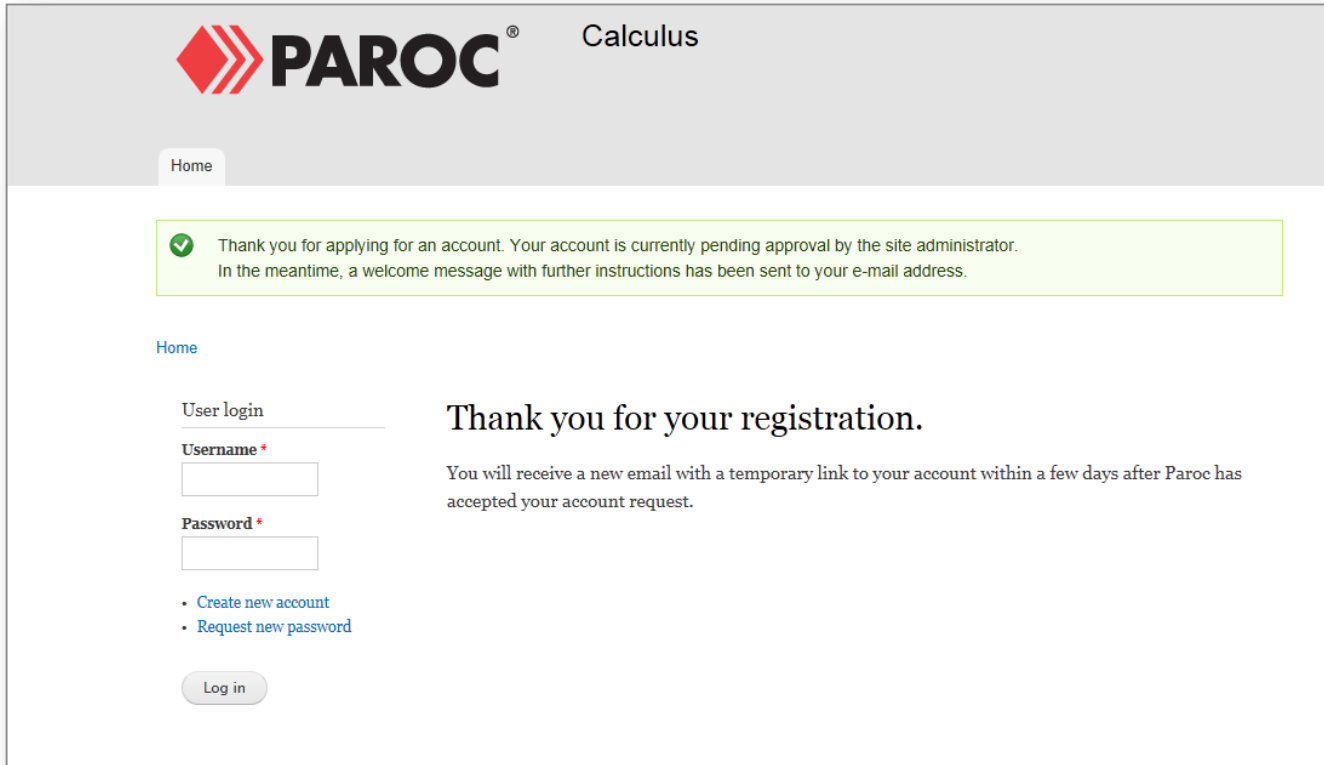
Installation-2



The screenshot shows the PAROC Calculus website's user account creation page. The header features the PAROC logo and the word 'Calculus'. Below the header is a navigation bar with a 'Home' button. The main content area is titled 'User account' and contains three buttons: 'Create new account', 'Log in', and 'Request new password'. The 'Create new account' button is highlighted. Below the buttons are several input fields for user details: 'First name', 'Last name', 'Company', 'Address', 'City', 'Country', 'Username', and 'E-mail address'. Each field is marked with a red asterisk. Below the 'Username' field, there is a note: 'Spaces are allowed; punctuation is not allowed except for periods, hyphens, apostrophes, and underscores.' Below the 'E-mail address' field, there is a note: 'A valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail.' At the bottom of the form is a 'Create new account' button.

Fill in your details and email address. The email address will be used in contact with you.

Installation-3



The screenshot shows the PAROC Calculus website interface. At the top, the PAROC logo is on the left and the word "Calculus" is on the right. Below the logo, there is a "Home" button. A green message box with a checkmark icon contains the text: "Thank you for applying for an account. Your account is currently pending approval by the site administrator. In the meantime, a welcome message with further instructions has been sent to your e-mail address." Below this message, there is a "Home" link. On the left side, there is a "User login" section with fields for "Username *" and "Password *", each with a corresponding input box. Below these fields are two links: "Create new account" and "Request new password". At the bottom of the login section is a "Log in" button. To the right of the login section, the text "Thank you for your registration." is displayed, followed by a paragraph: "You will receive a new email with a temporary link to your account within a few days after Paroc has accepted your account request."

PAROC[®] Calculus

Home

✓ Thank you for applying for an account. Your account is currently pending approval by the site administrator. In the meantime, a welcome message with further instructions has been sent to your e-mail address.

Home

User login

Username *

Password *

- [Create new account](#)
- [Request new password](#)

Log in

Thank you for your registration.

You will receive a new email with a temporary link to your account within a few days after Paroc has accepted your account request.

You are now registered and will receive an email with further instructions.



Installation-4

Log in by clicking the link below and follow these steps:

- 1) Change the temporary password and *Save it for later use*.
! Note this link can only be used once to log in. Do not forget to change and save your password when logged in.
- 2) At the bottom of the page there is a link to the latest version of PAROC Calculus.
- 3) Click the link, download and save the zip file.
- 4) Unzip and run the unpacked air file.
- 5) The first time you run PAROC Calculus you have to select country and fill in your username and password.
! Note, the country is connected to the product portfolio of the country and cannot be changed afterwards.
- 6) PAROC Calculus is now ready for use.

<http://85.76.241.40/?q=user/reset/>

! Note this link can only be used once to log in. Do not forget to change and save your password when logged in.

When you receive this mail follow the instructions to install PAROC Calculus



Installation-5



Password

Confirm password

To change the current user password, enter the new password in both fields.

Picture

Upload picture

Your virtual face or picture. Pictures larger than 1024x1024 pixels will be scaled down.

Locale settings

Time zone

Europe /Helsinki: Tuesday, March 12, 2013 - 23:09 +0200

Select the desired local time and time zone. Dates and times throughout this site will be displayed using this time zone.

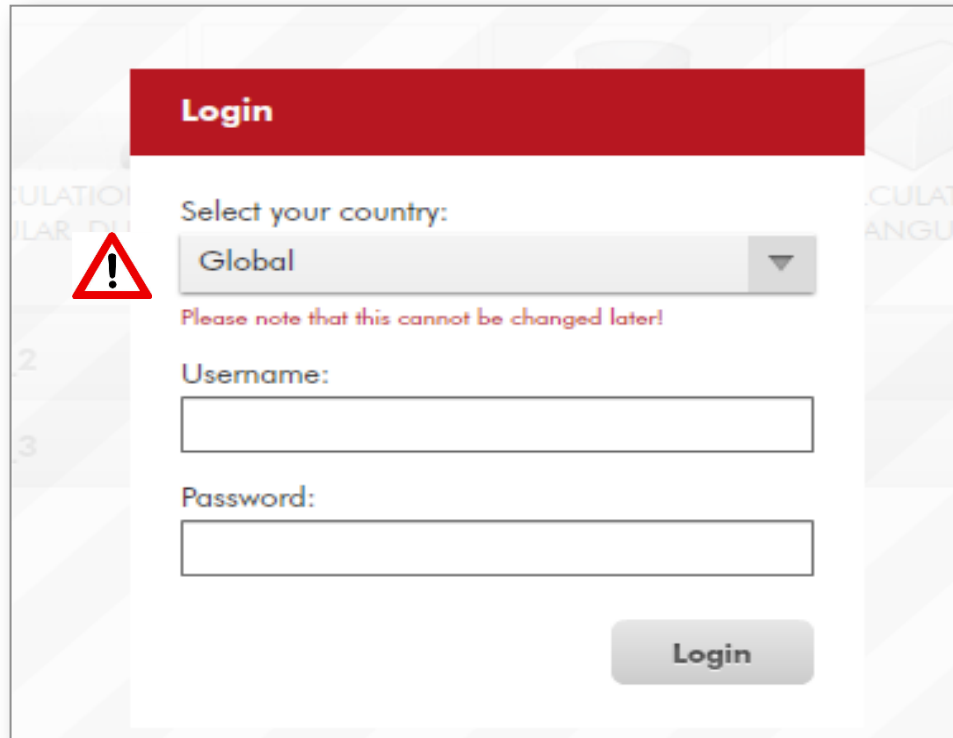
Releases

Title	Application version	Level of importance	Creation date	Releasedate	Desc	path
Paroc Calculus Stand Alone	1.0.8	Update optional	2013/03/12 - 15:23	2013/03/12 - 15:23	Corrected items: - Circular tank (horizontal) pdf print out, changed diameter and length places - Circular tank (vertical) and Rectangular tank pdf save corrected	 2013-03-12_PAROC_Calculus.zip

1. Enter your new password.
2. Save your password for future use.
3. Download the program.



Installation-6



When you open the program for the first time, select your country and fill in your username and password.



It is important to select the right country. It is linked to the product range of the country.

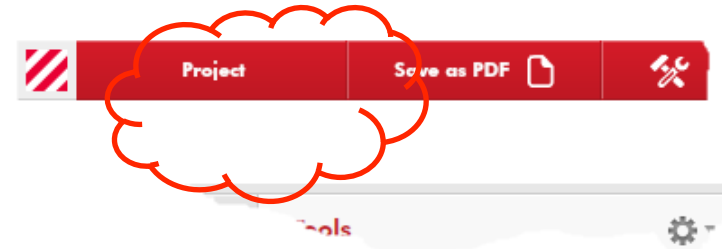


Quick Start





Project information



Your Projects

Project

New Project

Project name: Project

Customer: Customer

Address: Address

Reference: Reference

Notes:

Select

Here you can create new projects



Select calculation case

1

Object name

Calculation 1

Select object



Flat Surface



Pipe



Circular Duct



Rectangular Duct



Circular Tank



Rectangular Tank

2

Basic info

3

Insulation

Here you can give a name of the specific calculation.
Select the calculation case by double-click in the figure



Input data

PAROC Calculus

Calculation 1  

1 Pipe

2

☐ Calculate temperature change ☐ Calculate freezing ☐ Calculate energy consumption

 Outer diameter mm

Content

Temperature °C

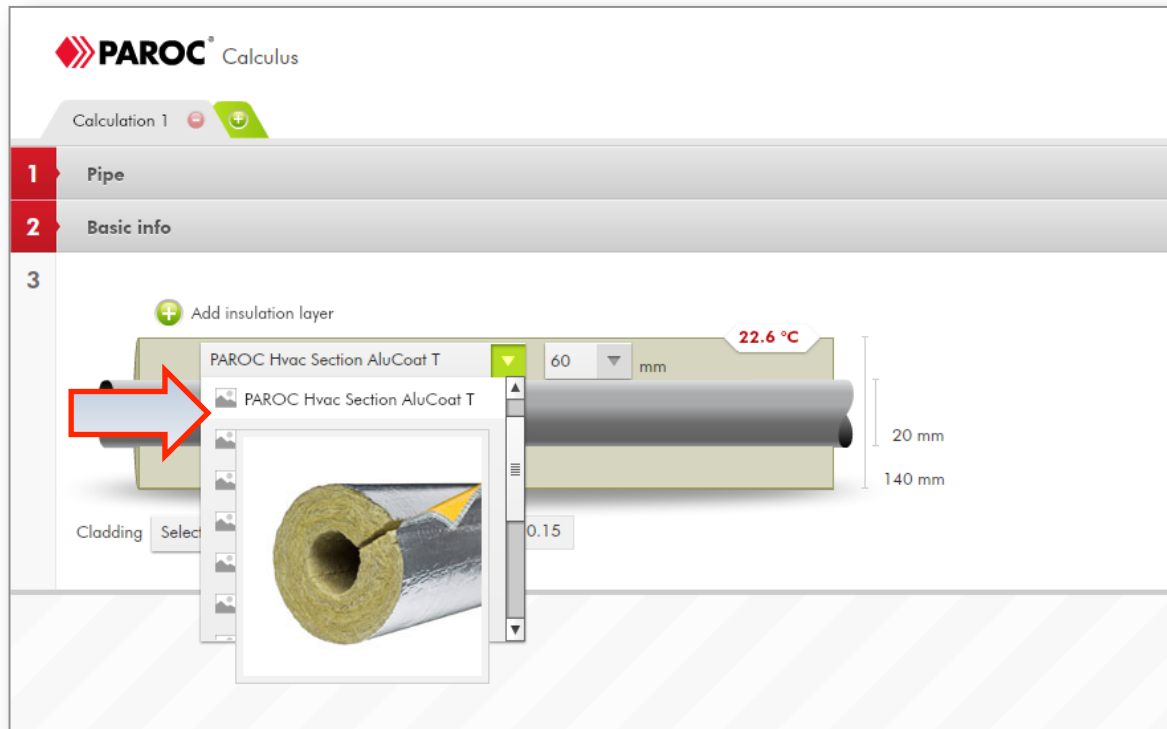
Environment

Ambient temperature °C Ambient air velocity m/s

Relative humidity %

3 Insulation

Select insulation



By holding the mouse over the gray box shows a picture of the product



Insulation layers

PAROC® Calculus

Calculation 1  

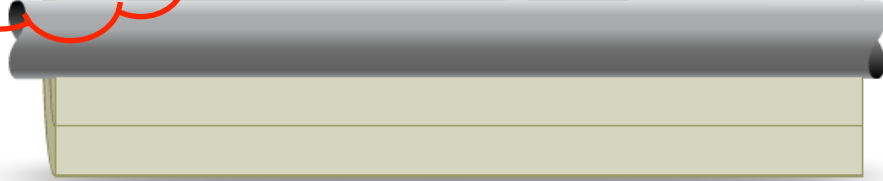
1 Pipe

2 Basic info

3

 Add insulation layer

	PAROC Hvac Section AluCoat T	20	mm	22 °C
	PAROC Hvac Section AluCoat T	60	mm	25.9 °C

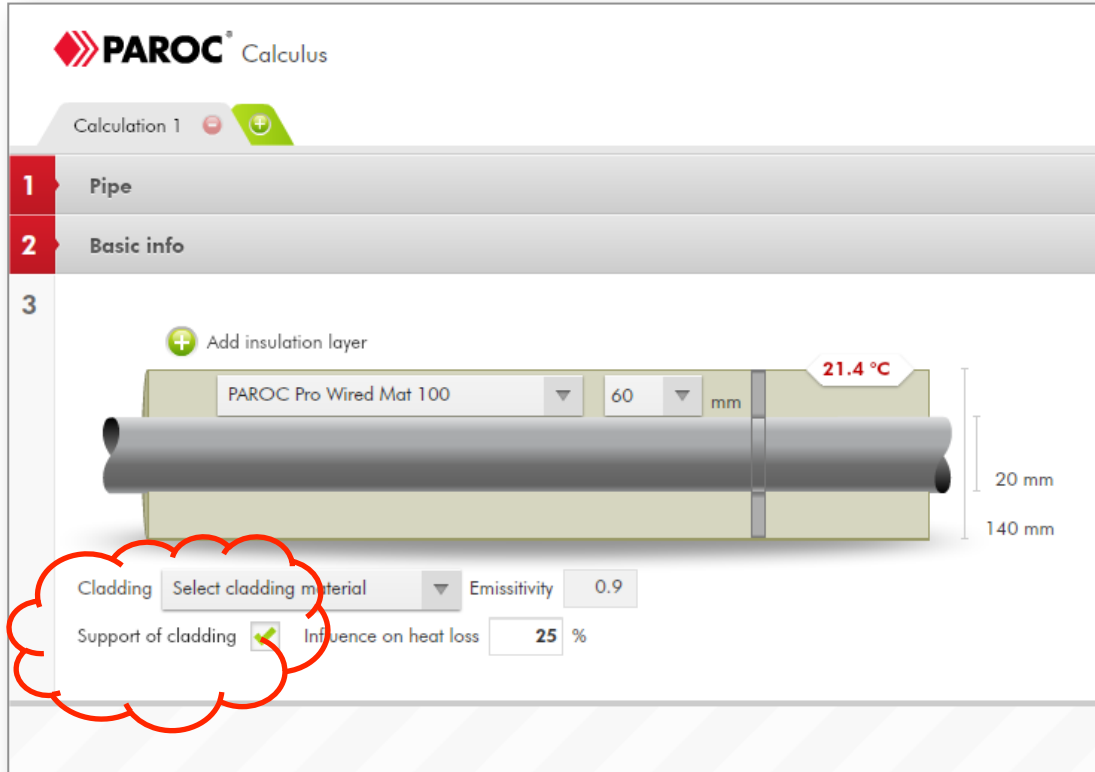


20 mm
140 mm
180 mm

Cladding Emissivity

You can add and remove insulation layers  

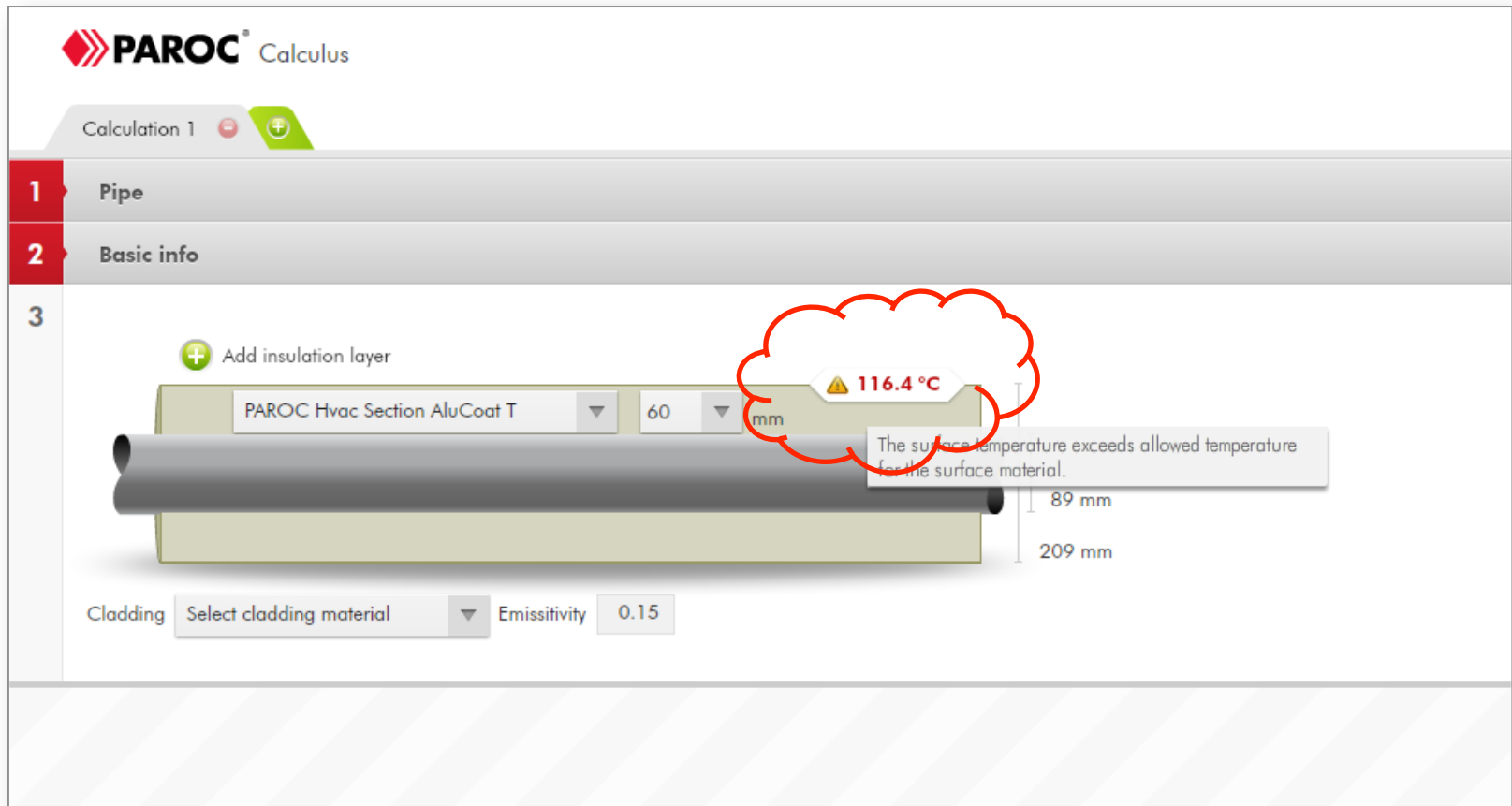
Thermal bridges



The screenshot shows the PAROC Calculus software interface. The top bar displays the PAROC logo and the word "Calculus". Below this, a tab labeled "Calculation 1" is active. The left sidebar has three numbered steps: 1. Pipe, 2. Basic info, and 3. The third step is currently selected. The main area shows a 3D model of a pipe with insulation. The pipe is labeled "PAROC Pro Wired Mat 100" and has a thickness of "60 mm". The insulation layer is labeled "21.4 °C". The pipe diameter is "20 mm" and the total insulation thickness is "140 mm". Below the 3D model, there are input fields for "Cladding" (a dropdown menu with "Select cladding material" selected), "Emissivity" (a text input field with "0.9"), "Support of cladding" (a checkbox with a green checkmark), and "Influence on heat loss" (a text input field with "25 %"). A red cloud-like shape highlights the "Support of cladding" and "Influence on heat loss" fields.

For products that require support for the external cladding, influence of the heat loss can be given here. Typically values, between 15 to 25%.

Warnings



In cases where the properties of the product are exceeded, a warning is shown



Add sections

PAROC® Calculus

Calculation 1

1 Pipe

2

☒ Calculate temperature change ☐ Calculate freezing ☐ Calculate energy consumption

Length of pipe m

Steel mm Thickness

Outer diameter mm

Content

Flow velocity (m/s) m/s

Environment

Indoor °C Ambient temperature

Ambient air velocity m/s

Relative humidity %

3 Insulation

Tools

Select object

Navigate between sections

2/2

Add or remove sections

Result for pipe 2

Heat loss	5.9 W/m
Uninsulated heat loss	27.6 W/m
Surface temperature	26.1 °C
Uninsulated surface temperature	55 °C
Dewpoint	9.3 °C
Temperature change of contents	0 °C

Result for pipeline

Total heat loss	10 W
Total uninsulated heat loss	55 W
Final temperature of contents	55 °C

When calculating temperature drop you can add pipe/duct sections.
The ambient temperature will be the same for all sections

Copy calculations



You can copy, paste and clone calculations



Energy consumption

PAROC Calculus

Project Save as PDF

Calculation 1

1 Pipe

2

☐ Calculate temperature change ☐ Calculate freezing ☒ Calculate energy consumption

 Outer diameter 20 mm

Content

Water Temperature 55 °C

Environment

Indoor Ambient temperature 20 °C Ambient air velocity 0 m/s

Relative humidity 50 %

Energy

Energy source Dry natural gas Annual operating time in year 8760 h Price of energy 5 c/kWh

3 Insulation

Tools

Result for pipe

Heat loss	3.7 W/m
Uninsulated heat loss	27.6 W/m
Surface temperature	22.6 °C
Uninsulated surface temperature	55 °C
Dewpoint	9.3 °C
Annual savings	10.5 €/year
CO2 emission reduction compared to uninsulated	0 kg/year



Cooling and Freezing

PAROC® Calculus

Project Save as PDF

Calculation 1 Calculation 2

1 Pipe

☐ Calculate temperature change ☒ Calculate freezing ☐ Calculate energy consumption

Steel

Thickness 3 mm

Outer diameter 20 mm

Content

Water

Temperature 10 °C

Freezing percentage 25 %

Environment

Custom

Ambient temperature -10 °C

Ambient air velocity 0 m/s

Relative humidity 50 %

3 Insulation

Tools

Result for pipe

Heat loss	3 W/m
Uninsulated heat loss	12.8 W/m
Surface temperature	-6.3 °C
Uninsulated surface temperature	10 °C
Dewpoint	-18.4 °C
Freezing of contents starts	3.3 h
Frozen at 25%	6.9 h
Heating cable wattage to avoid freezing	1.4 W/m



Add calculations in a project

The screenshot displays the PAROC Calculus software interface. At the top, the logo and title 'PAROC® Calculus' are visible. Below this, a tab bar shows 'Calculation 1' and 'Calculation 2'. A red circle highlights a green '+' icon next to 'Calculation 2'. The main area is divided into three sections: 1. 'Object name' with a text input field containing 'Calculation 2'. 2. 'Select object' with a grid of six options: Flat Surface, Pipe (highlighted with a red border), Circular Duct, Rectangular Duct, Circular Tank, and Rectangular Tank. 3. A bottom navigation bar with three tabs: '2 Basic info' and '3 Insulation'.

More calculations can be added to the same project by clicking on the green tab

Custom products

Temperature	°C	Lambda	W/mK
10	°C	0.034	W/mK
50	°C	0.037	W/mK
100	°C	0.042	W/mK
150	°C	0.049	W/mK

Area of usage:

- ☒ Flat Surface
- ☒ Circular Duct
- ☒ Circular Tank
- ☒ Pipe
- ☒ Rectangular Duct
- ☒ Rectangular Tank

Custom Products

Custom Product
Custom Product
Custom Product

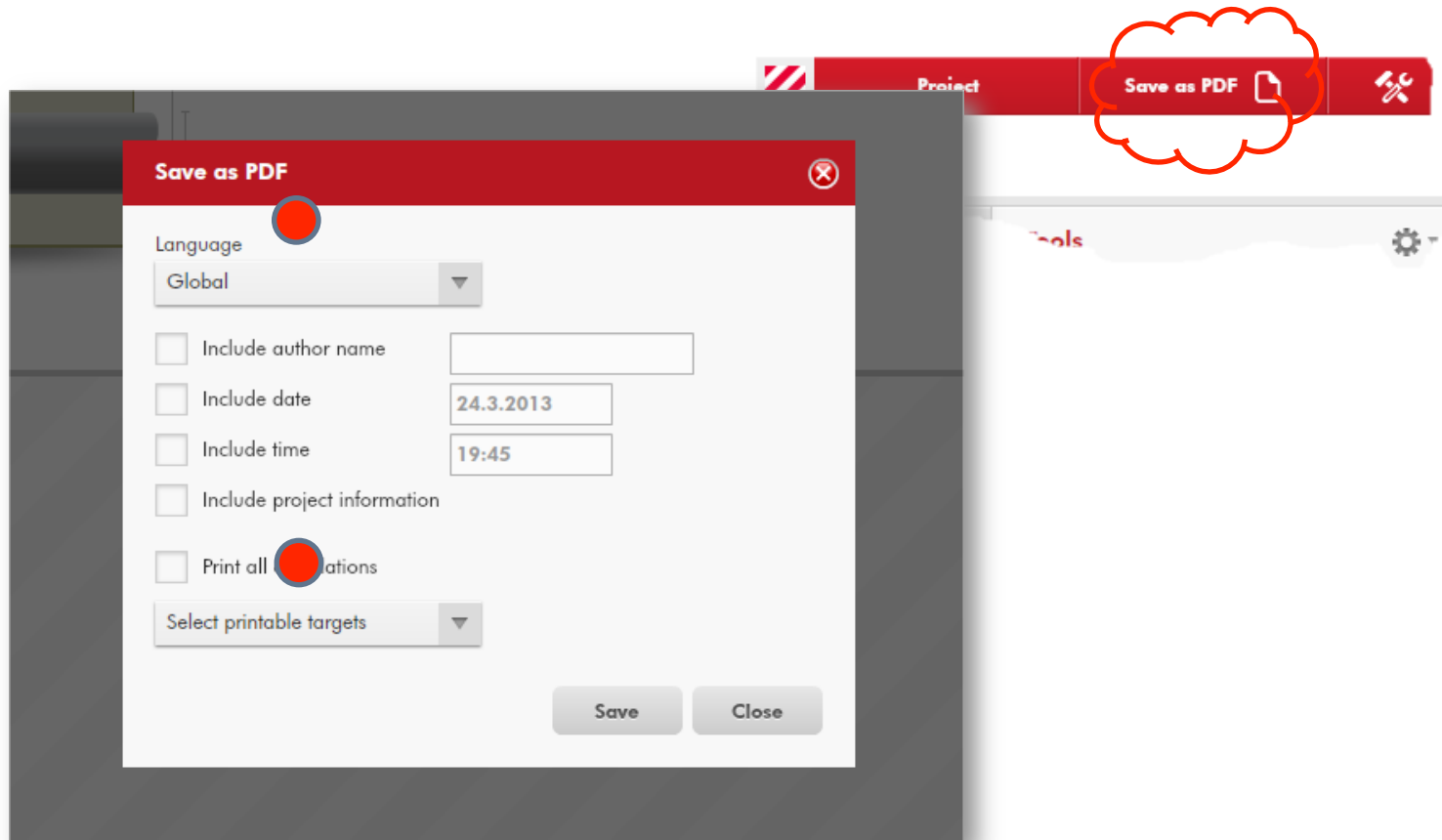
Under settings you find Custom Products. Here you can add other insulation products into the data base for inclusion in calculations.

You have to fill in thermal conductivity at four different temperatures and the emissivity of the surface. The program then calculates the Lambda – temperature curve.





Save as PDF



1. You can select print out language
2. You can select if all calculations in the project shall be printed or from the list



PDF example

PAROC Calculus
Technical Insulation Calculation Program



WC : Pipe

Object

Material	Steel
Thickness	1 mm
Length	1 m
Outer diameter	28 mm

Content

Type	Water
Temperature	55 °C

Environment

Ambient temperature	20 °C
Ambient air velocity	0 m/s
Relative humidity	50 %

Insulations

1 - PAROC Hvac Section AluCoat T	60 mm
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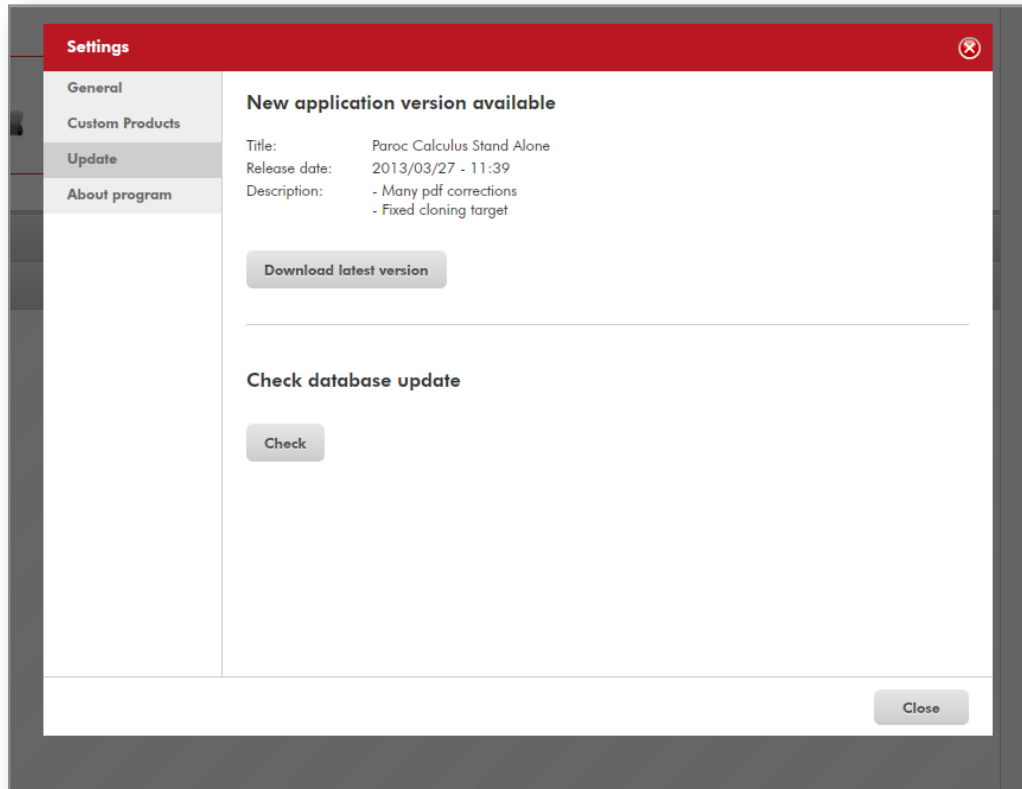
Cladding

Other Cladding	0.1
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Results



Check for updates



Under settings you can check for updates of the program and the product database