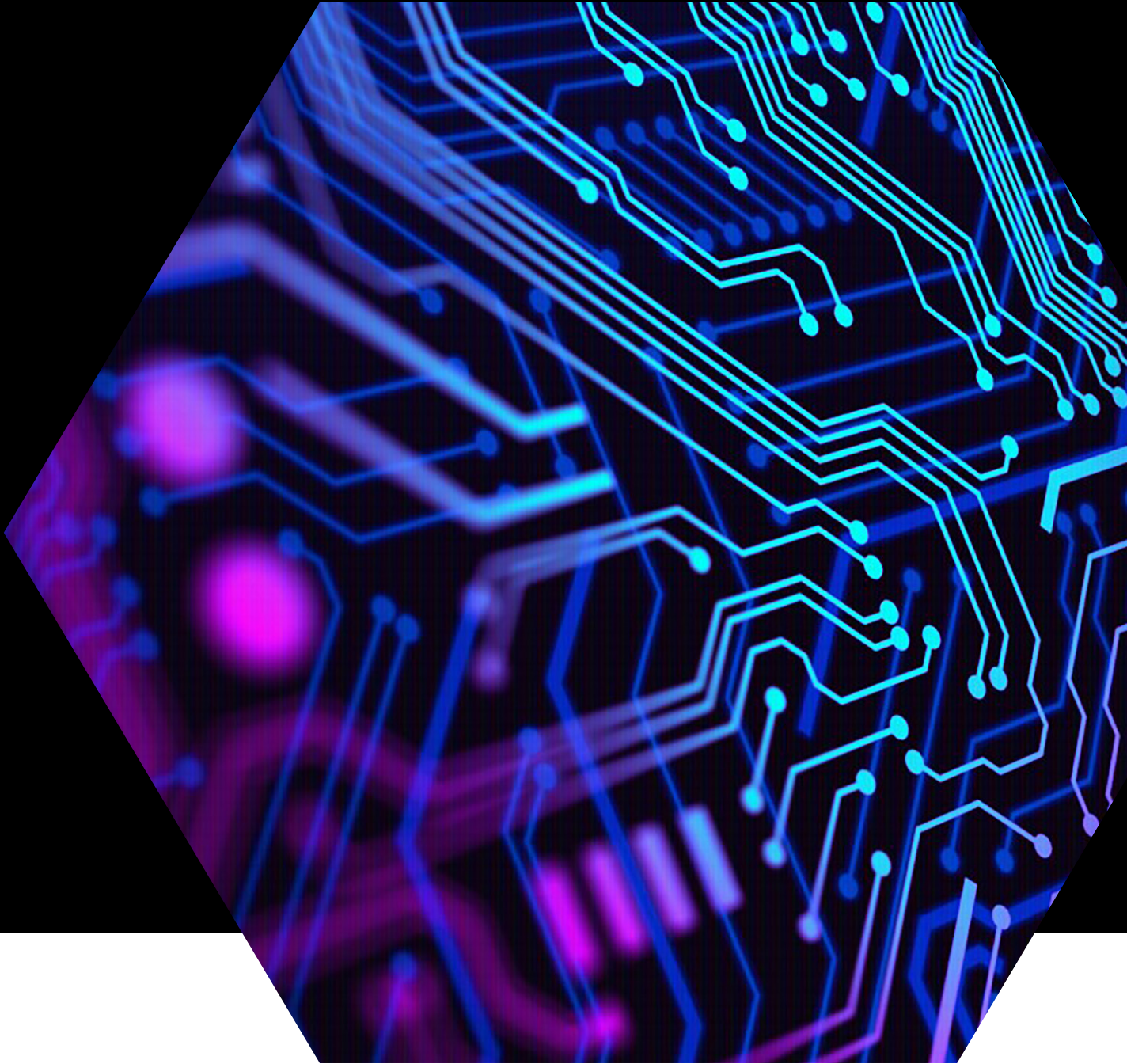




**Innovative | Reliable**  
**MEP Calculations**



## **DENDRIT**

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## About Us

We are committed to precision.  
So you can design with accuracy.

---

Dendrit is your reliable partner for high-precision and detailed building services design solutions. Our focus is on the plumbing, storm water, waste water and heating services, for which we have developed solutions that set new standards and make your work significantly easier.

### Intuitive software for complex calculations

With Dendrit CALHYDRA and Dendrit STUDIO, you can calculate and plan complex tasks with ease – quickly, intuitively and reliably. We place particular emphasis on maximum accuracy, compliance with all regulatory requirements, and validation that safeguards your results.

### Expert advice and excellent service

As well as technical excellence, we are committed to providing you with the best possible support – through expert advice from our design specialists and a service team that helps you use our software quickly and competently. Our aim is always to provide you with the best solution so that your projects can be carried out efficiently, safely and successfully.

### Discover innovative solutions

Discover our innovative, reliable and sustainable solutions for your building services designs in this brochure, on our website at [dendrit.com](https://dendrit.com), or in a personal consultation. We look forward to working with you.





## Net zero by 2035

for emissions and heating. That is a tough target – ambitious and with a clear deadline.

## We are embarking on a more sustainable future

---

We are actively committed to sustainability and have set ourselves ambitious climate targets: By 2035, we aim to be completely net zero in two areas. This includes our direct greenhouse gas emissions resulting from our own activities, such as heating systems in Dülmen or our company vehicles. And secondly, it covers all other indirect emissions, such as those caused by commuting, business travel or the materials used.

A significant milestone on this journey was the certification of our site in Dülmen as 'carbon neutral' in February 2025, which we achieved in accordance with international standards such as ISO 14064-1:2019 and ISO 14068-1. Through this, we are making a vital contribution to environmental protection, proving that innovation and sustainability go hand in hand at Dendrit.





## Strong partners

We bring together experts from industry, academia and the software sector. Giving you the benefit of this pooled expertise.

---

The best solutions are created when comprehensive technical theory is intelligently combined with solid practical experience. That is why we have worked closely for many years with handpicked partners from industry, universities and research organisations. This teamwork forms the basis for the performance of our software and makes us the leading provider of calculation solutions.

High-performing, internationally renowned companies in the field of plumbing and building services come together in an alliance to holistically, competently and reliably support design. Our collaboration with Münster University of Applied Sciences is a driving force for innovation, enabling us to continue offering you the best possible solutions in the future.

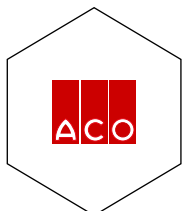


### Partnerships

This ongoing development is supported by Münster University of Applied Sciences and industry partners.

## Our industry partners

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### ACO Passavant GmbH

ACO Haustechnik specialises in commercial construction, with a core expertise in drainage systems for public and commercial buildings, as well as residential-style commercial premises. For more information, please visit [aco-haustechnik.de](http://aco-haustechnik.de)



### Geberit Vertriebs GmbH

The Geberit Group, which operates worldwide and employs around 11,000 people, is the European market leader in sanitary products, bringing over 150 years' experience to this sector. For more information, please visit [geberit.de](http://geberit.de)



### Gebr. Kemper GmbH + Co. KG

KEMPER is the world market leader in building technology, casting technology, and rolled products. They have strong regional roots with an international outlook. For more information, please visit [kemper-group.com](http://kemper-group.com)



### Resideo Home Ademco I GmbH

Resideo is the world's leading supplier of security, fire safety, and low-voltage products – with over 130 years of experience. For more information, please visit [resideo.com](http://resideo.com)



### TECE SE

TECE is a global manufacturer of sanitaryware and installation systems. For more information, please visit [tece.com](http://tece.com)



### Wilo SE

The Wilo Group is a multinational technology group and one of the world's leading premium suppliers of pumps and pump systems. For more information, please visit [wilo.com](http://wilo.com)




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### Our partners at a glance:

Find out more about our industrial, software, and scientific partners online.

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**We think in a networked way.  
So you receive comprehensive  
calculations.**

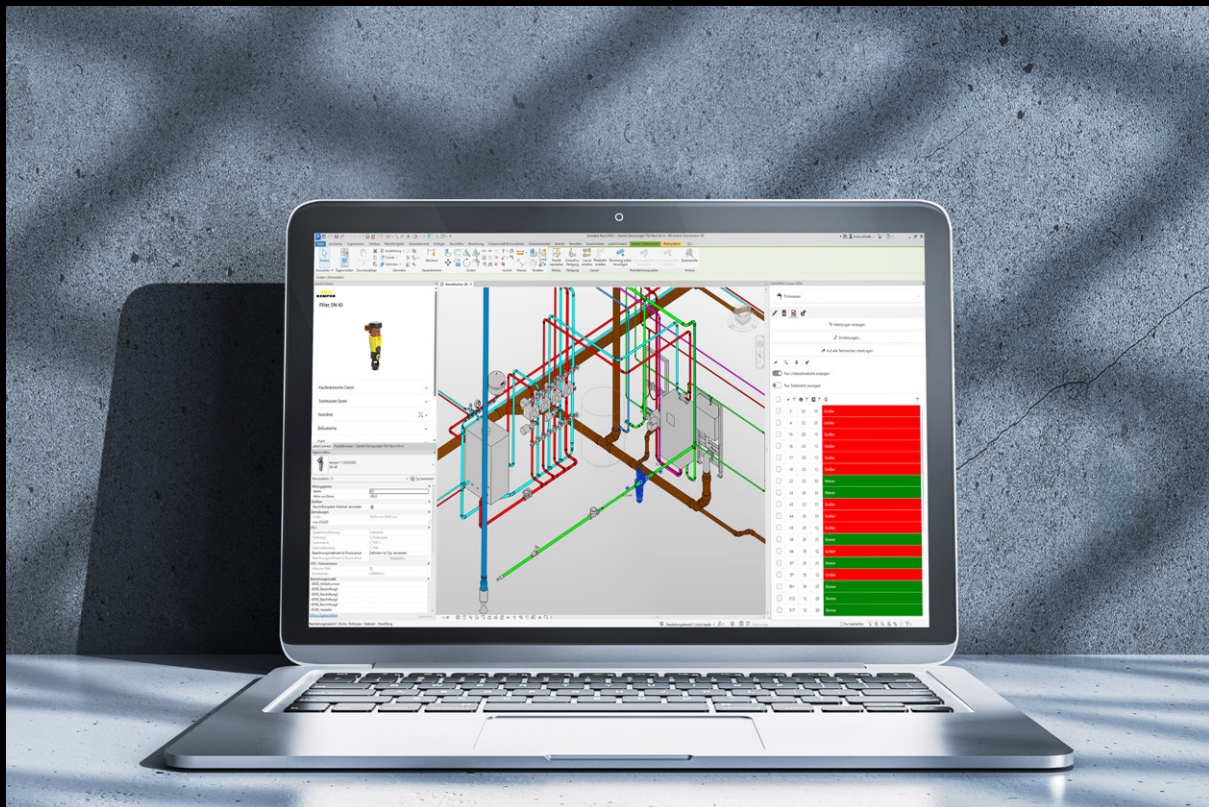
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Dendrit CALHYDRA is the graphical calculation and design software for plumbing and heating services. It integrates seamlessly into the workflow of your CAD system or your BIM authoring software. With Dendrit CALHYDRA, precise and networked calculations become an integral part of your established design process.



### The integrated solution

Dendrit CALHYDRA integrates seamlessly with supported CAD systems and BIM authoring software, enhancing existing models with detailed design, simulation and calculation functions for the plumbing, waste water and heating services. In the plumbing sector, you benefit from comprehensive calculations for drinking water and waste water networks, as well as integrated simulations for circulation and flushing systems. The heating pipe network module enables precise hydraulic balancing – even in complex pipe networks. A detailed, cross-trade list of materials provides all the quantities calculated and can be imported directly into standard tender management systems.



Dendrit CALHYDRA user interface: In addition to predefined views, the view display also offers options for floor plan splices.

# Seamlessly integrated into the BIM process

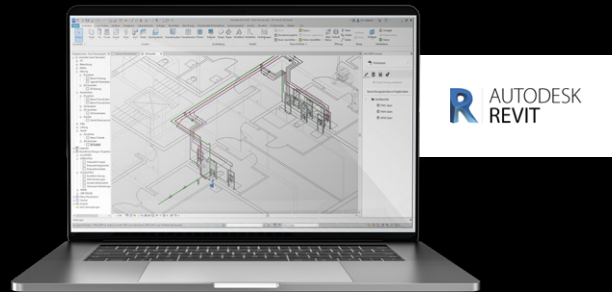
---

Whether you use Autodesk Revit, Graphisoft DDS or Bausoft Haistechnik CAD – CALHYDRA keeps you perfectly connected. Integration into these systems enables precise calculations and a smooth exchange of data across the entire BIM workflow.

## Autodesk Revit

### Integrated design with CALHYDRA Connect

Using the Dendrit CALHYDRA Connect plugin, Autodesk Revit can be fully synchronised with CALHYDRA. This module allows any family to be mapped onto the calculation model, enabling flexible content and placing no demands on the BIM model. Once the media to be transferred have been specified, drinking water installations, building drainage systems and heating and cooling networks can be exported to Dendrit CALHYDRA.



### Automatically apply calculation results back to the Revit model

Once the calculation is complete, you can enter the results into the attributes – ready for tagging or evaluating in scheduling tables. CALHYDRA Connect also allows for graphical customisation: dimensions, insulation, fittings and pipe materials calculated for the model can be automatically adjusted in the Revit model.



---

**Find out all the details in the video.**  
Simply scan the QR code and press play.

---

### Highlights of CALHYDRA Connect

- Supports the latest versions of Revit
- Maps any pipe system and component family for calculation
- Specific content and parameter attribution required
- Control panel display for calculation messages
- Model adjustments based on calculation results (adjustment of pipe dimensions, adjustment of pipe fittings, insulation, pipe family replacement, populating parameter attributes from the calculation)

## Graphisoft DDScad

### Drinking water design with CALHYDRA DE

CALHYDRA DE can be linked with DDScad if the SHIO module is licensed there. Drinking water installations can be transferred to CALHYDRA DE via the interface, and the results can then be displayed in the visualisation filter in DDScad.



**Find out all the details in the video.**  
Simply scan the QR code and press play.

## Bausoft Haustech CAD

### Drinking water design with CALHYDRA CH

CALHYDRA CH is available specifically for the Swiss market. The product details for the local range are listed here. In a data network with Bausoft Haustech and the 'Leitung 3D' module, complete models for drinking water installations created using the single-line method can be exported to CALHYDRA. Following the extensive calculations and simulations, the results can be tagged or visualised in 3D.



**Find out all the details in the video.**  
Simply scan the QR code and press play.



## **We combine CAD and calculation. So you can work independently.**

---

Dendrit STUDIO is a standalone, graphics-based design and calculation software package with an integrated CAD interface – developed specifically for the plumbing, waste water, and heating services. You benefit from the tried-and-tested precision and intelligent simulation quality for which Dendrit is renowned.

Depending on your requirements, Dendrit STUDIO is available in two setups: a cross-manufacturer version (Dendrit STUDIO DE) or a bespoke industry partner version (Dendrit STUDIO IP).





## Effortless design

---

With Dendrit STUDIO's integrated CAD interface, you can generate schematics quickly and efficiently, from simple schematics created with the schematic generator to more complex designs using the multi-storey generator and smart features. The user-friendly component library allows you to easily swap components and place valves parallel in pipes.

Floor plans can be quickly imported, scaled and, if desired, given a colour background using the wizard. Reference drawings can also be easily swapped out or updated at a later stage. Comprehensive editing functions help you meet specific project requirements – including adjusting spatial and thermal data, or dividing the pipe network into distinct construction phases for a clearer overview of costs. Tagging functions and a built-in plotting wizard reliably support you from drawing preparation right through to printing. The calculation results can be displayed in either a detailed or concise format, as required.



## Smart calculations

---

Dendrit STUDIO offers an integrated CAD interface that is specifically tailored to the requirements of building services design. This allows you to quickly and efficiently produce your own drawings to precisely calculate your trades. The software also features a project management tool and comprehensive analysis options, enabling you to deliver plumbing, waste water, and heating designs completely independently.

Dendrit STUDIO offers a comprehensive range of functions for the plumbing sector – from calculating the design of drinking water and drainage networks to integrated simulations for circulation and flushing systems. For heating design, the integrated data network enables a seamless workflow, from the heating load calculation through to sizing of heating surfaces and the pipework calculation. The list of materials provides a detailed breakdown of all quantities calculated across all trades – and, on request, in a format suitable for exporting to standard tender management systems.



## Layout generation with CAD and within BIM Environments

We ensure accurate calculations in CAD and BIM.  
So your building services designs fit perfectly.

---

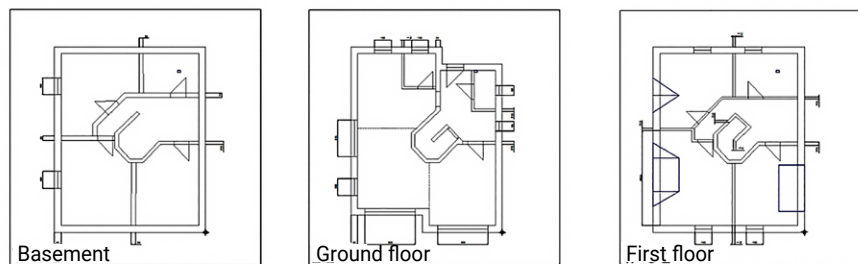
Dendrit offers you the right solution for every design environment – whether you're working with trade-specific 2D CAD or within an integrated BIM process. With powerful layout generation tools and highly accurate calculations, building services systems can be modeled realistically and consistently, from simple schematics to complex building structures. The direct link between the drawing and the calculation ensures consistent results.



### Layout generation in CAD

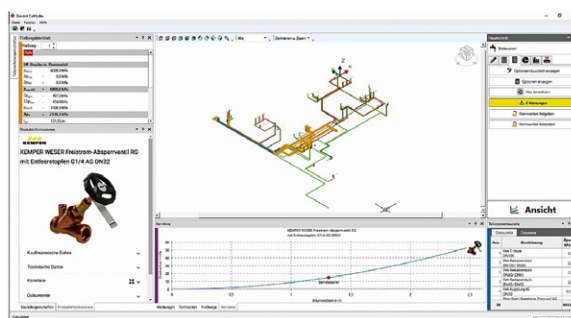
To enable you to create designs directly in CAD within Dendrit STUDIO, the software features a CAD interface specifically tailored to the requirements of building services.

With this tool, you can quickly generate simple schematics using the schematic generator, or efficiently build more complex systems using the multi-storey generator. Numerous smart features are at your disposal to calculate and display your designs directly. Available in Dendrit STUDIO.



### Layout generation within a BIM environment

With Dendrit CALHYDRA, precise calculations for building services become an integral part of CAD or Building Information Modelling (BIM) design processes. As a result, Dendrit CALHYDRA enhances traditional CAD systems – which are primarily designed for visualisation – by adding detailed calculation and simulation capabilities, without disrupting the workflow, and the results are fed directly back into the model. Available in Dendrit CALHYDRA.



## Design with certainty and smooth workflow

We ensure certainty in your designs.  
So you comply with all regulatory requirements.

---

When calculating technical data, you must observe numerous standards and guidelines. With Dendrit CALHYDRA and Dendrit STUDIO, you can 'design with certainty', ensuring full compliance with regulatory requirements whilst taking product-specific requirements into account. What's more, our solutions make the workflow not only clear, but also intuitive and straightforward.

### Module functions Design with certainty:

- Notification and information system
- Traceable calculation results
- Certainty through industry partner know-how

### Module functions Dendrit Workflow:

- Editing
- Calculating
- Analysing
- Simulating
- Documenting





# Project Management

We provide a central storage location for project information.

---

Thanks to Dendrit STUDIO, the tedious task of collecting and sharing your project data is now a thing of the past. With the centralised project management system, you can archive and send your entire project from a single location. The intuitive project wizard is there to help you, guiding you through the entire project creation process.





## Calculation functions

We think modularly.  
So you get exactly what you need.

---

Our software solutions, Dendrit CALHYDRA and Dendrit STUDIO, are designed to be modular, meaning that all relevant calculation functions are already included as standard. This allows you to choose exactly the function you need for the task at hand, depending on your requirements. This simplifies your work when designing and calculating building services, without having to compromise on the full range of features. On the following pages, you will find out which calculation function is suitable for which tasks. In addition, we place icons next to each calculation function to indicate whether the function is included in the relevant software solution:

## So you can design perfectly.

With the calculation functions 'Drinking water installation calculation', 'Drinking water installation simulation', 'Hot water heater', 'Building drainage', 'Heating pipe network', 'Heat emitter sizing' all key building services calculations are covered. The calculation outputs – list of materials, hydraulics report, and analyses – provide a useful complement to these. And the design tools 'Layout generation with CAD and within BIM environments', 'Design with certainty and a smooth workflow' and 'Project management' – which you have already read about on the preceding pages – round off our range of services, ensuring that your day-to-day work is as efficient and straightforward as possible.

The following pages provide an overview of the calculation functions and calculation outputs.



**Detailed information can be found on our website.**

Simply scan the QR code to find out more.

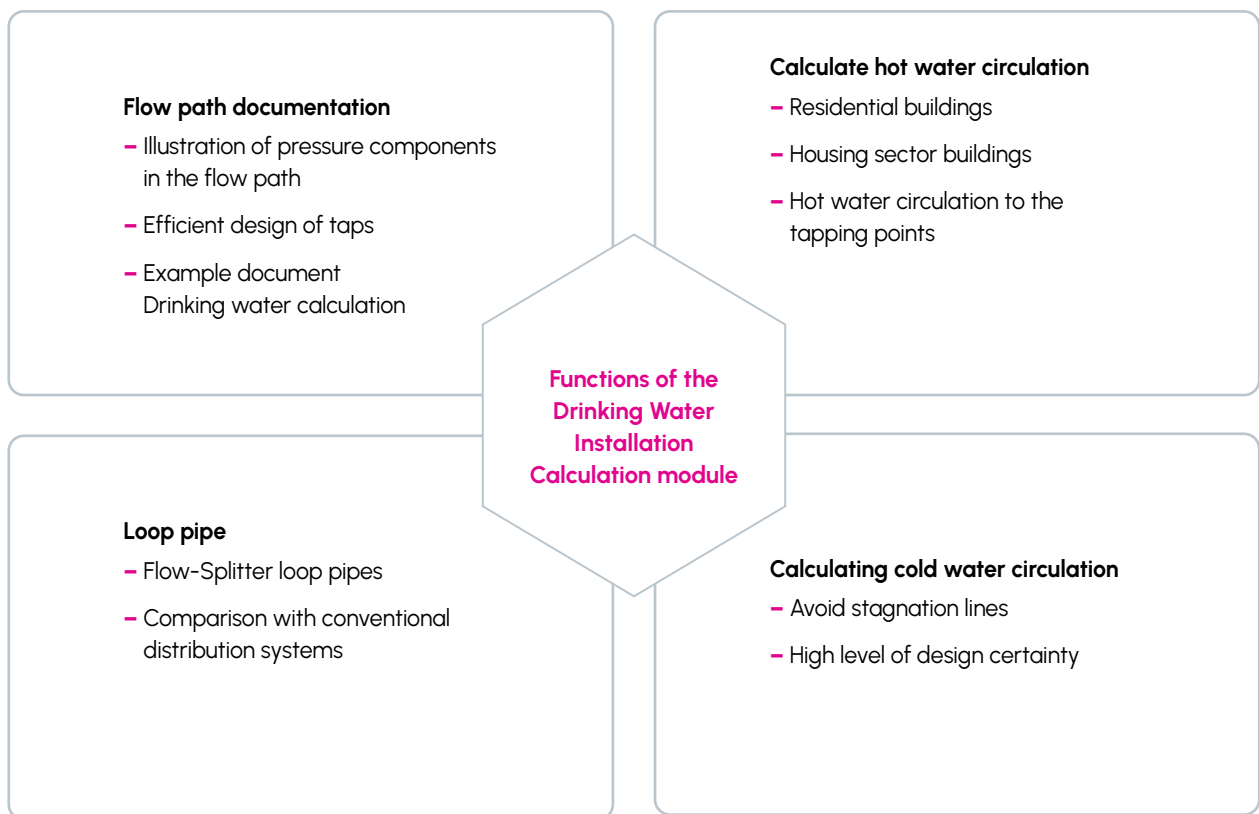


# Calculate the cost of a drinking water installation

We design drinking water installations with a long-term vision.  
So you, too, can always stay one step ahead.

---

Our calculation tools for drinking water installations enable you to ensure that the planning and sizing of your entire drinking water installation comply with generally accepted codes of practice even before construction and commissioning.





### Efficient design and proof of compliance

Our calculation tool for drinking water installations helps you to ensure, right from the design stage, that hygienically safe drinking water is available in the building at all times. It takes into account the system structure, pipe materials, workmanship, pipe sizing, and system operation.

Designing in compliance with regulations is essential, as proof of compliance with generally accepted codes of practice is required in the event of hygiene issues. With our Dendrit CALHYDRA and Dendrit STUDIO solutions, you can generate this proof of compliance without any problems. In addition, this function enables the calculation of the required pipe diameters for supply and circulation pipes in accordance with the technical regulations.



---

#### Steps involved in drinking water calculation:

Find out all the details in the video.

---



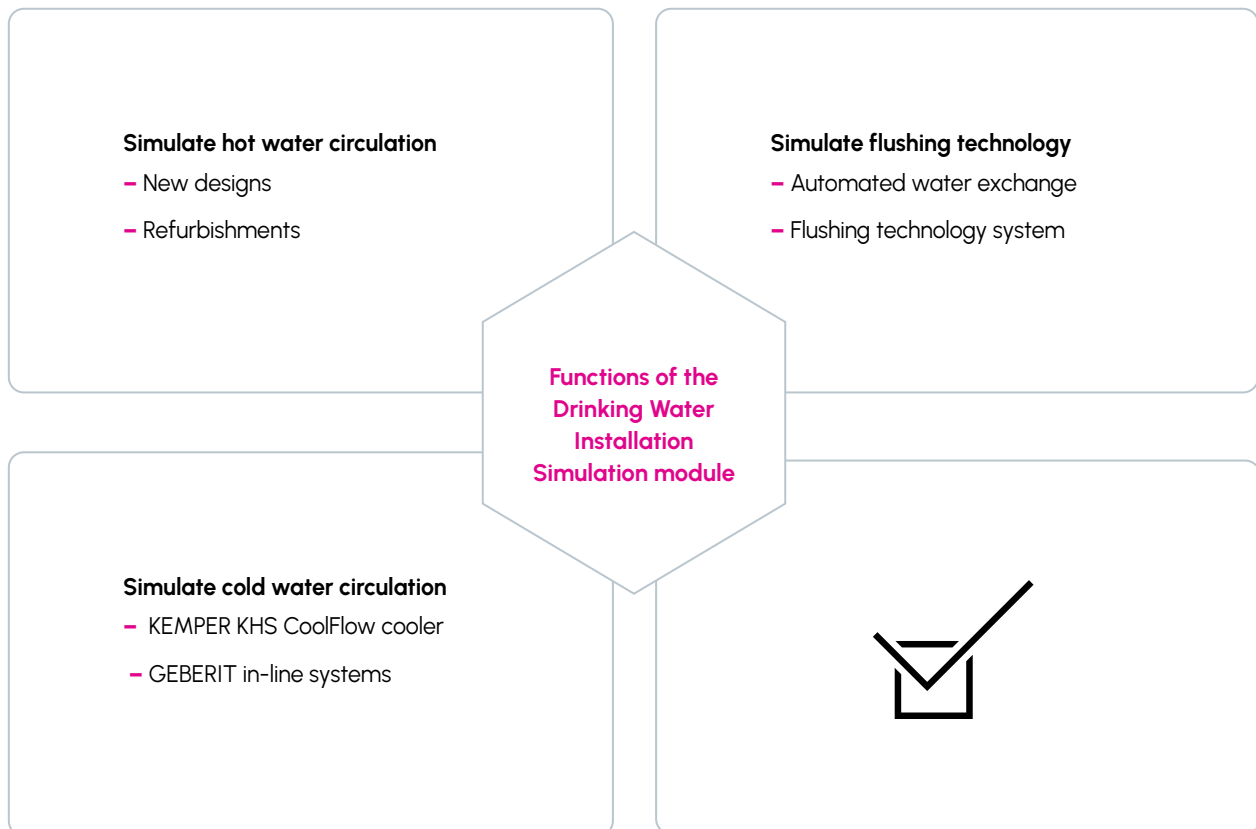
## Drinking water installation simulation

We simulate reality.

So you do not experience any surprises.

---

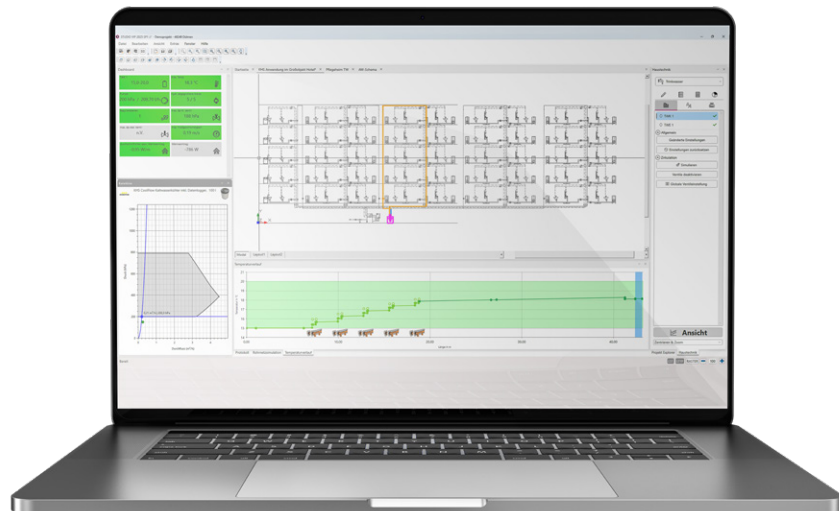
With our 'Drinking Water Installation Simulation' feature, you can test how your drinking water system will perform in actual operation even before it has been installed. For example, when simulating hot and cold water circulation, real-world hydraulic and thermal conditions are modelled. In addition, you can determine precise flushing times and flushing volumes through the flushing simulation.





### Simulate hot water:

Find out all the details in the video.



### Simulate cold water circulation:

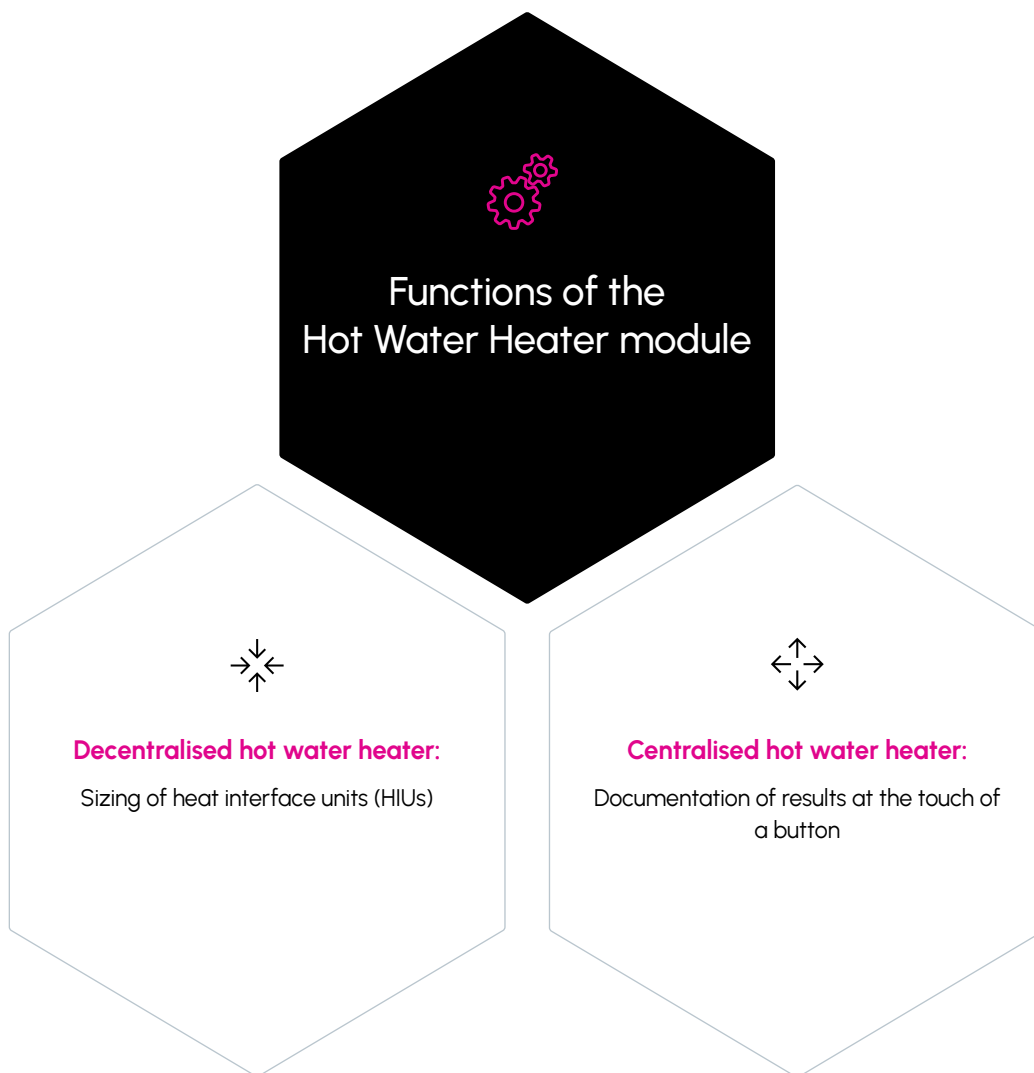
Find out all the details in the video.

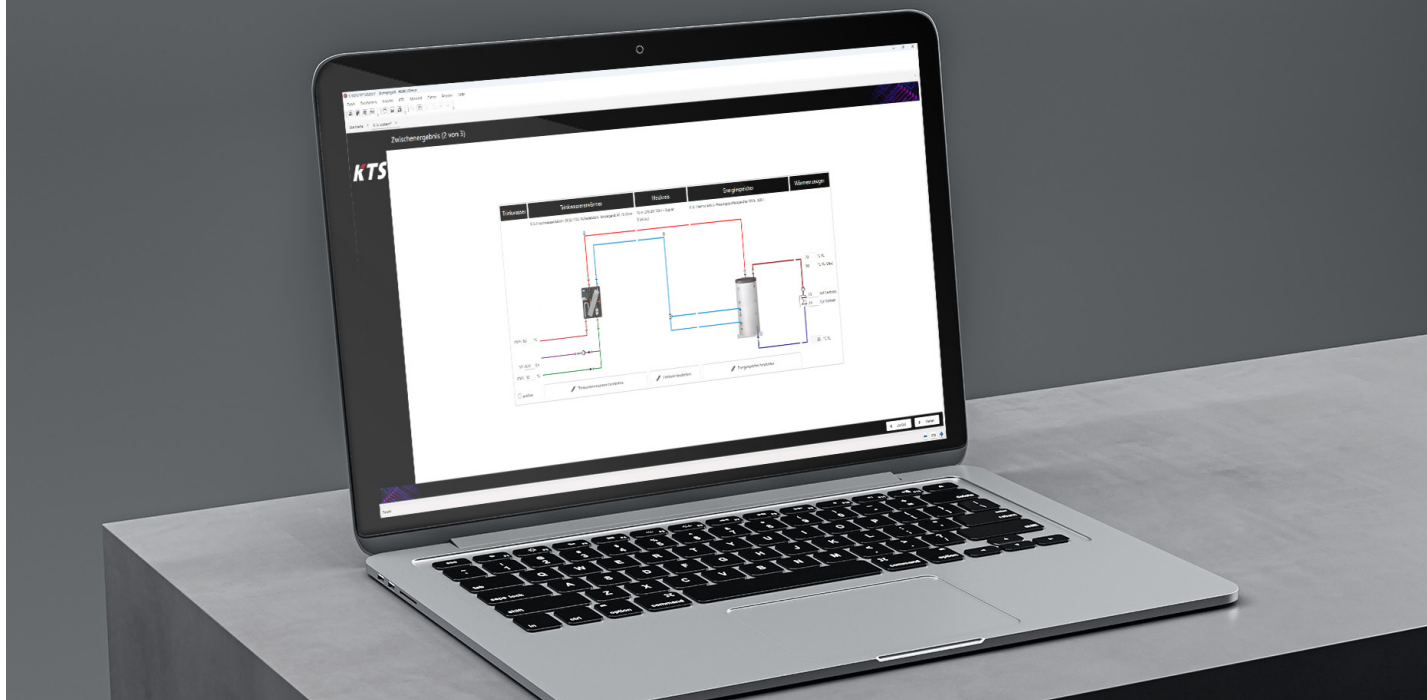
## Hot water heater

We take a realistic and personalised approach.  
So you can design according to demand.

---

Dendrit CALHYDRA and Dendrit STUDIO help you not only with pipe network calculations, but also with hot water heaters. They enable the calculation and sizing of both centralised and decentralised water heaters.





### Highlights of centralised hot water heater

- Demand calculation:
  - Via stored reference objects, via special profiles in accordance with DIN 4708, by adding withdrawal operations, by defining the circulation flow rate
  - Summation curve method in accordance with DIN EN 12831
  - Equipment combinations determined in just three steps
  - Comprehensive presentation of results

### Highlights of decentralised hot water heater

- Heat Interface Units (HIUs):
  - Low pressure loss on the domestic cold water side
  - Hydraulic balancing is carried out via an integrated differential pressure control
- Domestic cold water side calculation including heat exchanger calculation
- Heating-side calculation including simultaneity factors:
  - DIN 4708, TU Dresden, and VDI 2072
- The result of the heat exchanger calculation is carried over to the heating pipe network calculation



### Sizing of a hot water heater with Dendrit:

Find out all the details in the video.

## Building drainage

We set new standards.  
So you are always one step ahead.

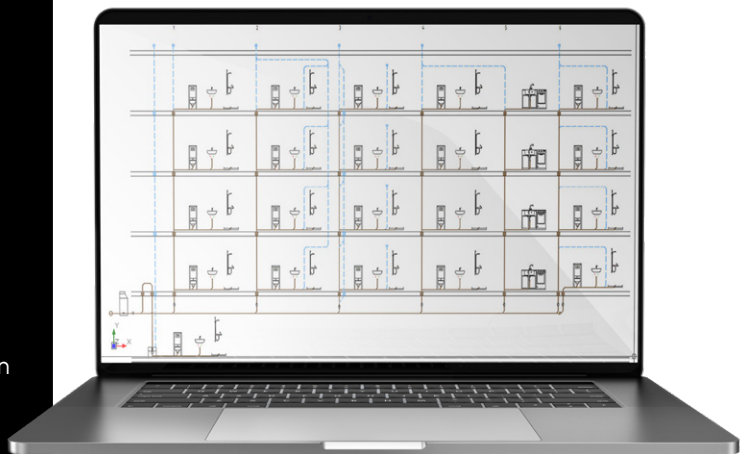
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Dendrit CALHYDRA and Dendrit STUDIO set new standards in the standard-compliant calculation of building drainage systems. They enable you to calculate waste water, rainwater, and ventilation pipework in buildings in accordance with the requirements of DIN EN 12056, DIN 1986-100 and the expertise of our industry partners. This allows you to create the graphic baseline for calculating in a very short space of time.



### Functions of the Building Drainage Calculation module

- Waste water and ventilation
  - Standard-compliant calculation of waste-water, rainwater, and ventilation pipes
  - Types of su sections
  - Integrated quick-action functions
  - Determining pipe dimensions
  - Example document: Results documentation
  - Material quantification from A to Z
- Pump stations
  - Product sizing
- Rainwater
  - Dimensioning of roof drains for rainwater
  - Back-up level of roof drains



DIN 1986-100

DIN EN 12056



## Site drainage

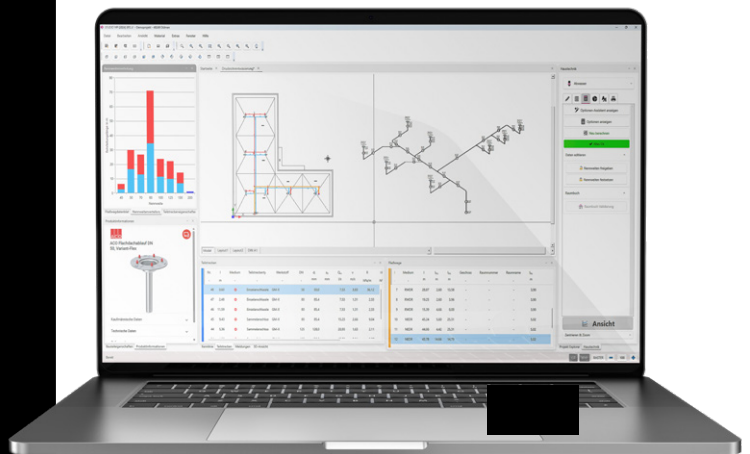
We create a reliable baseline.  
So you can calculate in compliance with standards.

With our software solutions Dendrit CALHYDRA and Dendrit STUDIO, we provide you with a reliable baseline for calculating site drainage – in accordance with the applicable standards DIN 1986-100, DIN EN 752, and DIN EN 12056. This enables you to use our solutions to calculate a comprehensive surface area balance that takes into account all areas of the site relevant to runoff. By taking into account the relevant runoff coefficients and rainfall amounts as set out in the KO-STRADA-DWD 2020 Atlas, the drainage of the entire site is determined in detail. These calculations serve as a key component of the evidence provided to the local authority to demonstrate that the site drainage system complies with the statutory requirements and is eligible for approval.



### Functions of the Site Drainage Calculation module

- Monitoring of areas contributing to runoff
- Dimensioning of underground pipes
- Calculation of the rainwater retention volume
- Support for attenuated discharge
- Consideration of storage volumes in pipes and chambers



DIN 1986-100

DIN EN 12056

DIN EN 752

# Heating pipework calculation

We ensure our calculations are reliable.  
So heating systems can be operated efficiently.

With the calculation function for the heating pipe network, you can always be sure that everything is in order from a hydraulic point of view – this applies to both new and existing systems. Calculating the heating pipe network using a schematic or floor plan enables you to carry out hydraulic balancing of the lines, which is essential for the energy-efficient operation of the heating system.



## Functions of the Heating Pipe Network Calculation module

- Pipe network dimensioning
- Hydraulic balancing
- Pump sizing
  - Automatic labelling
  - Quantification of accessories
  - Documentation of results
  - Material quantification from A to Z



## Highlights: Heating Pipe Network Calculation

- Design of a pipe network as a schematic diagram and/or floor plan layout
- Asymmetrical pipe routing (e.g. Tichelmann)
- Calculation of two-pipe heating systems
- Smart data transfer from the heat emitter sizing module
- Hydraulic balancing based on the intended valve authority and proportional band
- Verification for KfW and BAFA funding measures
- Determination of all setting values for the control valves
- Calculation of hydraulic circuits and their combinations, including mixing valve sizing
- Sizing of thermostatic valves with flow rate controller
- Automatic pump sizing
- Resideo, Geberit, TECE and Wilo: strong partners delivering practical results

# Heat load calculation and heat emitter sizing

We link data intelligently.  
So you can make comprehensive calculations.

---

Holistic design through the intelligent interlinking of data: with Dendrit STUDIO, you can execute comprehensive calculations and designs in the field of heating. This makes it possible, for example, to calculate the U-value, determine the heating load, design the heat emitter, and dimension the heating pipe network in a way that is intuitive and straightforward. You can also document the facts and figures from the calculations in the heating report – including a labelled layout printout and a detailed material breakdown.



## Functions of the Heat Load Calculation module

- Heat load calculation
  - Sensing of rooms
  - Sensing of roof structures
  - Review with 3D view
- Heat emitter sizing
  - Sizing parameters
  - Custom sizing
  - Quick sizing
  - Sizing according to heat load or comfort levels
  - Overview and documentation
- Heat load report



## Calculation outputs

We offer efficient calculation outputs.  
So you benefit from an optimal design.

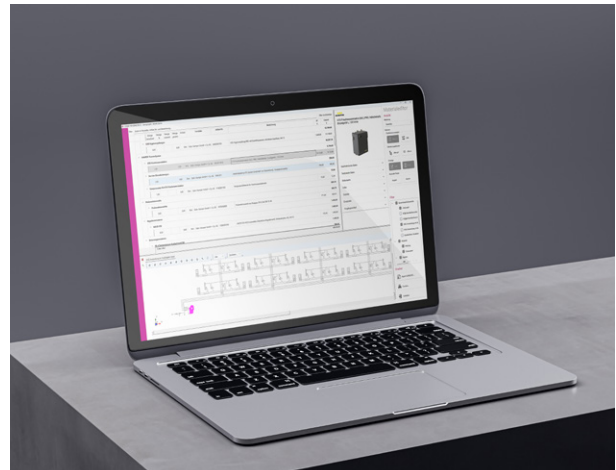
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The 'List of Materials', 'Hydraulic Report' and 'Analyses' calculation outputs help you to optimise the design and implementation of your heating and plumbing systems. The list of materials sets out the exact list of required materials, the hydraulics report analyses the water and heating flows, and the further analyses help to ensure the efficiency and functionality of the systems. These outputs are important to guarantee precise and reliable solutions for your customers.



### List of materials

Thanks to the list of materials, you can determine detailed material information, create an editable list of materials, and have access to gross prices. Our software solutions generate a detailed project bill of materials based on hydraulic calculations for the drinking water, waste water and heating systems. The calculation output in the Material Editor allows you to check and document the designed products through individually customisable structures. And thanks to various export formats, such as GAEB, the data can be seamlessly processed further in tender management systems.

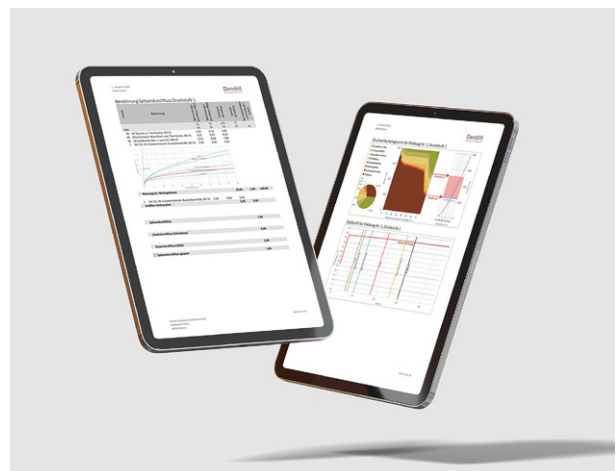


### Hydraulics Report

The Hydraulics Report enables you to present your calculation results for all trades individually, in detail, and clearly. An overview window with colour-coded flow paths ensures clear guidance even with extensive and complex designs, and facilitates the unambiguous allocation of flow path data. Supplementary information is clearly presented using illustrations and diagrams.

### Analyses

With the 'Analyses' tool, you can create comprehensive graphical representations and checks of your trades. This allows you to generate colour-coded results and informative control views with just a single mouse click. One particular highlight is that, as soon as you have successfully entered the data, you can already see which subsection types have been automatically assigned.





## Service & seminars

We are here for you.  
So you can enjoy the service you deserve.

---

When you choose a solution from Dendrit, you do not just get powerful software, but also a diverse range of services and comprehensive support. Whether you need help with the daily use of our software or want to take advantage of our numerous training courses and webinars to get to know all the functions of our products – we ensure you can always get the full range of performance out of our solutions.



### Live support

The Dendrit support team is happy to help you with the use of our calculation software – whether you need assistance with installation, day-to-day use or have project-specific queries regarding partner products. Using the pcvisit remote support tool, we can access your computer directly if need be, so we can resolve any issues together.



"With Dendrit, our technical design is finally structured and transparent. The modular structure in particular saves us a lot of time in our day-to-day work – and we've seen a significant reduction in the number of queries from the team."



"Not only is the software well thought out, but the support is also really helpful. If you have any queries, there's always someone on hand who knows what they're talking about – unfortunately, that's no longer a given these days."



#### Webinars & seminars

We want you to be familiar with all the features of our software solutions so you can get the very best out of them for yourself and your work. That is why we offer 90-minute online webinars as well as one-day seminars at various venues in Germany, Austria, and Switzerland – and they are completely free of charge. In our webinars and seminars, we cover specific topics such as drinking water installation, heat load, and waste water. We'll show you how the software works and how you can implement even more complex projects on your own.

# Contact

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You are not a customer or partner yet, but are interested in becoming one? Then please get in touch with us. We have detailed information about our software solutions and our company ready for you, and we'd be happy to answer any questions you may have.

**Dendrit GmbH**

Harkortstraße 5  
57462 Olpe

**info@dendrit.com**  
**dendrit.com**

**Tel:**           **+49 2594 9610**

**Mon–Thur:** 08:00am – 12:30pm and 1:00pm – 5:00pm

**Fri:**           08:00am–2:00pm

## Follow us



Connect with  
us on LinkedIn.



Videos, tutorials and  
practical expert knowledge

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## Find out more



**An overview of Dendrit solutions**  
Simply scan the QR code.



**Product Data on Demand**  
Discover product data – from design  
to operation.

