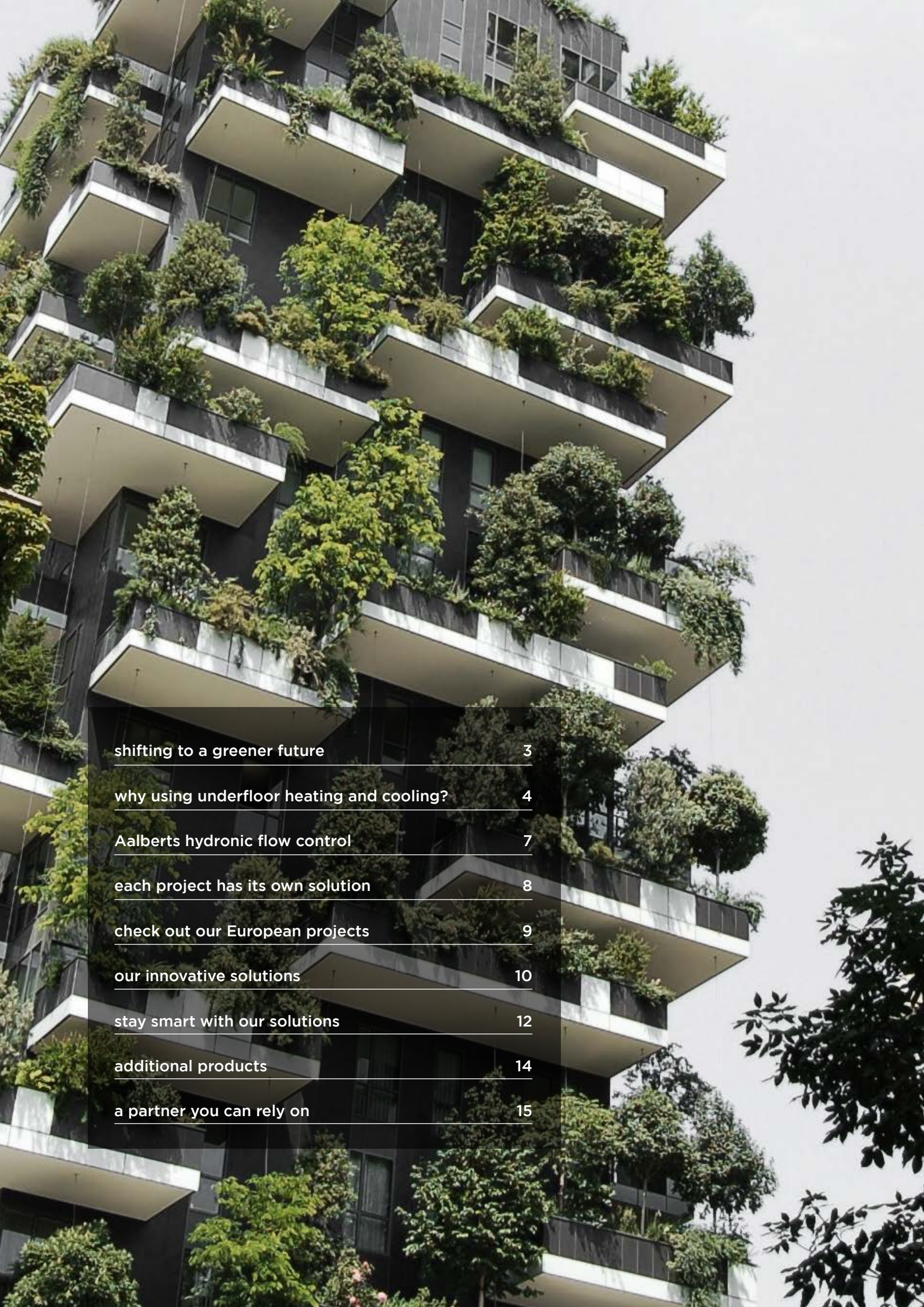
aalberts hydronic flow control

take control of your future with underfloor heating and cooling



shifting to a greener future

take control of your environmental impact

In 2020, Europe CO_2 emissions has reached 3,38 billion tones, representing a decrease of 31% since 1990. Following the European Green Deal, the EU growth strategy aiming at transforming Europe into a resource-efficient economy, EU should achieve:

1. **the reduction of CO_2 emissions by 55% by 2030 and**
2. **Europe to be the first climate neutral continent by 2050**

The Energy Performance of Buildings Directive (EPDB) proposal also sets an ambitious target, as of 2030, all new buildings must be zero-emission and, as of 2027, all new 'public' buildings must also be zero-emission. These new buildings should:

1. **consume little energy**
2. **be powered by renewables as much as possible and**
3. **emit no on-site carbon emissions from fossil fuels**
4. **be more connected to measure, monitor and control**

Besides new buildings, this proposal sets new EU-level minimum energy performance standards for renovation, while encouraging the use of electronic communications and smart technologies to ensure that buildings operate efficiently.

Buildings being one of the largest sources of energy consumption in Europe, boosting their energy efficiency is key in cutting CO_2 emissions. With the installation of underfloor heating systems you can drastically reduce the buildings energy consumption as they operate at low or very low temperature : energy savings are estimated at about 15% to 20% (source: Ademe).
Another major benefit of this kind of installation is its compatibility with all energy sources like heat pumps and other generators running on renewable energies such as solar, biomass, wind, etc.

As heat pumps emit upto 58% less carbon than gas boilers, coupling heat pumps with a low temperature emitter like underfloor heating, will maximise efficiency. The integrated cooling function is also key in reducing energy consumption, without using any refrigerant, which are regulated by the F-Gas 2020 regulation.

objectives

1. reduce CO_2 emissions by 55% by 2030 and make Europe the first climate neutral continent by 2050
2. all new buildings must be zero-emission as of 2030
3. new EU-level minimum energy performance standards for renovation

source: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

why using underfloor heating and cooling?

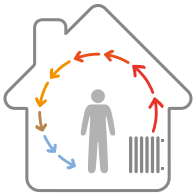
heat people, not the air !

Underfloor heating systems transfers its energy via radiation, unlike radiators which operate by convection. Radiation heat warms objects and people directly not the air.

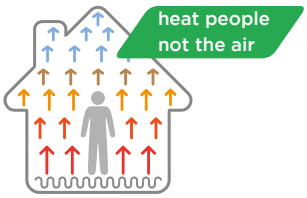
Radiation assures the uniformity of heat diffusion in the environment that provides a perceptible feeling of comfort at about 2°C compared to a high-temperature system : the same level of comfort is achieved at about 19°C for underfloor heating as opposed to 21°C for radiators.

Indeed, for underfloor heating systems, a water temperature of between 30°C and 40°C is sufficient while the water in traditional radiators can require temperatures between 45 and 70°C. In winter, thanks to the hot water that circulates inside the circuits, the system heats the environment according to the desired temperature.

This advantage is also evident in the case of cooling : in order to achieve comfortable temperatures, system water of 18-22°C is all that is required (depending of the region). In summer, the floor is cooled to a temperature cooler than the surrounding air, the floor then absorbs radiant energy. The entire surface is refreshed and the heat is not stored.



Convection



Radiation

and much more benefits...

energy savings

Thanks to their low operating temperatures, underfloor heating systems represent the most energy-efficient method of heat distribution in buildings. Moreover, with typical delivery temperatures of underfloor heating systems you can use energy sources within a higher efficiency range (solar panels, heat pumps, condensing boilers). The combination of an underfloor heating system with a heat pump can increase energy savings up to 15 - 20%.

projects adaptability

Underfloor heating systems have unlimited possibilities: from individual housing to big buildings, for new projects or renovation. It is also of high performance for big surfaces, high ceilings or high traffic areas.
The characteristics of underfloor heating systems also have a positive impact on management costs: compared to other types of systems, the annual savings rate is around 10-15% for residential buildings. In buildings with high ceilings, such as industrial sheds, churches and museums, these savings are significantly higher, reaching 50%.

space optimisation

Environments without radiators can be decorated freely, making full use of the available space: space savings can rise up to 7% with no cluttering or apparent structures. This is fundamental in buildings where the presence of heating elements and air conditioning units can compromise the design or the smooth flow of traffic.

comfort & well-being

Thanks to a constant temperature, underfloor heating systems guarantee a perceptible feeling of well-being. They also limit air movement and increase comfort evenly throughout the room, which improves the air quality and considerably reduces dust and other allergens.

free cooling

When combining a heat pump with underfloor heating, you can benefit from an integrated cooling system: the heating cycle can be reverse to get cooler for free. In summer, the heat is transferred from the air to the cold water that circulates in the pipes of the system. The overall temperature can decrease by 3-4°C without any refrigerant.

safety & reliability

As the system is hidden, the risk of accident (burns, bumps..) is limited. Even though, keeping the same climatic conditions and room comfort, the cost of an underfloor heating installation is on average higher than a traditional installation, considering the energy savings and the lower management costs, the difference is amortized over a short period of operation. This is an ideal system for nurseries or hospitals.

Low temperature emitter

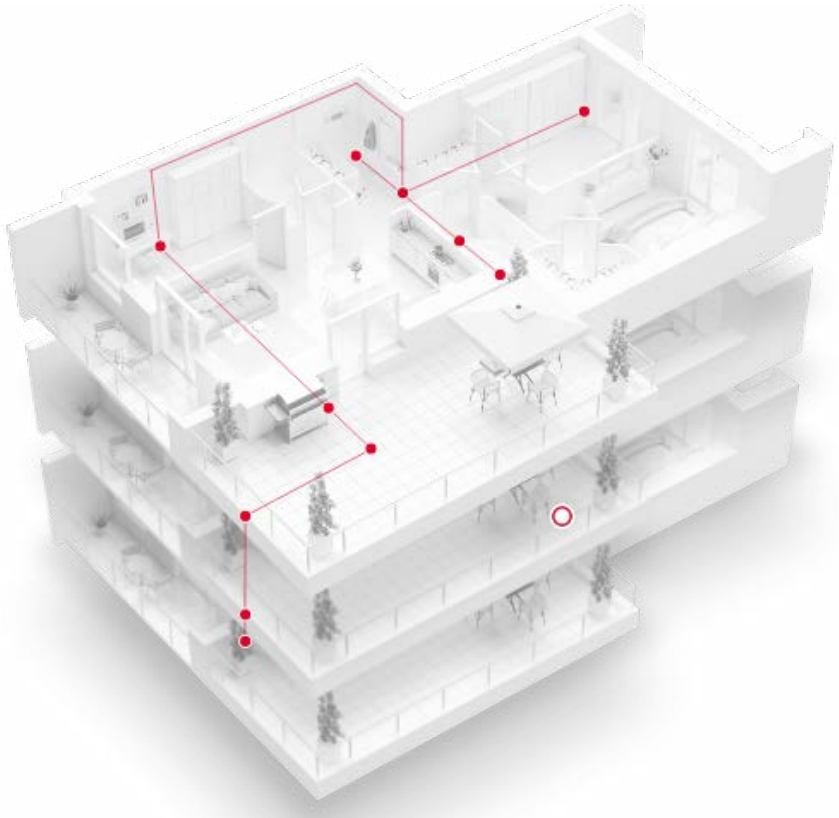
Heating and cooling too

Without synthetic refrigerants used in climatization

Aalberts hydronic flow control, sustainability starts with us!

Sustainability is just common sense. We are committed to achieve our goals sustainably, and to offer our customers quality solutions that are clean, green, and waste-free. That also applies to us, with our new headquarter complex in Almere (The Netherlands).
Nestled in a wonderfully biodiverse setting purposefully designed to help the environment thrive, the Aalberts hydronic flow office runs on 100% renewable energy – just one of the reasons it was nominated for the most sustainable building in the world! In 2021, it was awarded a BREEAM outstanding certificate for sustainability. Some of the key ways we lower the amount of energy we use in our Head Quarter :

- offices and warehouse are heated with residual heat from our factory that is stored in buffer tanks
- heat is reused all over the campus, reducing overall consumption and cutting down on cost
- heat pump is used to cool the building
- roof, windows, and outer walls of our head quarter have been insulated so as to retain as much heat as possible
- PV panels are used on the roof to provide part of the energy we use. Since November 2022, we have more than 6000 PV panels installed on the roof, meaning a significant chunk of our head quarter's energy needs will be met by clean, renewable energy.
- FlexTherm Eco, a PCM heat battery, is being used to store PV energy, preventing the grid from being overloaded and allowing us to make optimum use of our solar power generating capacity.
- smart thermostats and heating and cooling meters with remote monitoring give real-time data regarding our energy consumption, allowing us to see how and where we can improve.



Aalberts hydronic flow control

at the heart of every great buildings

hydronic flow control is Aalberts's one-stop hydronic engineering specialist, from source to emitter, for all building system challenges ; delivering innovative, tailor-made and fail-safe solutions that bring great visions to life with superior system performance and energy savings. Aalberts hydronic flow control is partnering with its customers to engineer seamless energy efficient hydronic systems for their building requirements. We are involved in every step of the building life cycle.

Since 1956, Flamco has been involved in the development, production and sale of high-quality components for use in HVAC systems. It is part of the stocklisted Aalberts NV, instituted in 1975. Along with Comap, which helps manage water and energy through its thermal and sanitary products that increase comfort in buildings, the Aalberts hydronic flow control business unit was constituted.

Since 1921, Comap has been driving intelligent management of water and energy through its thermal and sanitary products that increase comfort in buildings. It is part of the stocklisted company Aalberts NV, instituted in 1975. Along with Flamco, which produces high-quality components for use in HVAC systems, the Aalberts hydronic flow control business unit was formed.

Stronger together, Comap and Flamco will continue to build mission critical technologies to manage heating and cooling humanly with better financial and environmental efficacy.

each project has its own solution

Each project has its own requirements : one may need a reduced thickness system for renovation while another no heavy concrete screed on the structure.
Thanks to a long experience in the development of underfloor heating solutions through COMAP products, hydronic flow control is able to provide the best solution whatever your project : new buildings or renovation, from individual or collective housing to commercial buildings.

individual housing

ease of installation and optimum comfort

- heating energy consumption at lowest
- no need for a radiator allows design freedom and 7% more space
- you can control each rooms/ areas independently

collective housing

flexibility and competitiveness

- consumption locally on the thermostat and/or through BMS integration
- heating is hidden: contributes to reduced maintenance

commercial buildings

adaptability and efficiency

- steady and uniform heating in large areas thanks to radiation
- no cold spots or need to overheat
- control or energy consumption through BMS integration
- hidden : no risk of accident

check out our European projects

Have a look at our clients that achieved tangible impact with our underfloor heating solutions, acting for a smart and responsible future.

individual housing | renovation

Family house in Trebon (CZ)

building type: renovation farmhouse to single family house. 150m²² wall heating + 100m² floor heating

applied products: Rail system, BioPert pipe, stainless steel manifold

collective housing | renovation

Lee Towers in Rotterdam (NL)

building type: collective housing, transformation office to residential building, 17.500 m2

applied products: Tacker system, BioPex pipe, synthetic manifold

commercial buildings | renovation

St. Niklaas Church in Westkapelle (BE)

building type: commercial building, renovation, 853 m2

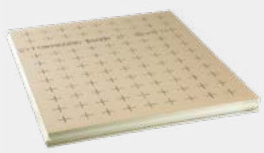
applied products: Grid system, BioPex pipe, stainless steel manifold

our innovative solutions

a complete range of solutions for all applications in new building and renovation

system components

To maximize underfloor heating benefits, selecting the appropriate components is key.
From the fixing system, to 5 layers pipes, the right distribution manifold and the use of smart control technologies, Comap ensures efficient underfloor heating of buildings.



fixing systems

- various solutions depending on building type and needs

manifolds

- monobloc in stainless steel, modular in synthetic and smart with Secos manifold

pipes

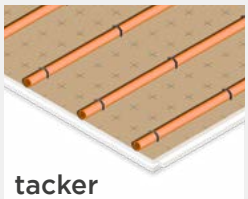
- 5 layers pipes specially designed for underfloor heating application: Biopert, Biopex and Multiskin

control systems

- wired and wireless options
- local or remotely
- analogue or digital thermostats also available

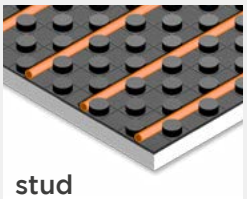
fixing systems

Panels represent the main support layer to install the synthetic pipes and drive the thermal energy towards the radiant screed, greatly reducing heat dispersions. We do offer a large range of fixing solution, adapted to your project.



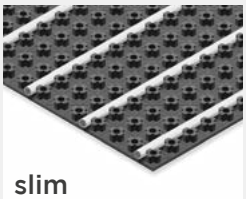
tacker

- standard solution, easy to use



stud

- fast, one-person installation

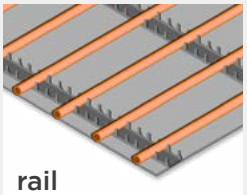


slim

- very thin, can be used with 12x2 mm pipes

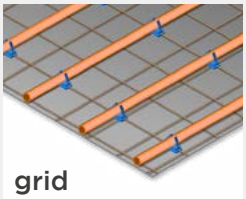
dry

- clean and fast solution (no screed needed). Ideal for renovation and light construction



rail

- adaptable solution, can be placed in all possible orientations



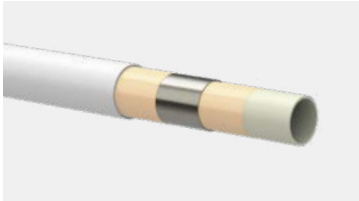
grid

- specially adapted to irregular floor and large areas

pipes

Pipes play an essential role in underfloor heating systems. Our pipes are highly reliable on the long term, corrosion-free, and have an excellent installation versatility.

- BioPex and BioPert pipes: 5 layers pipes with anti-oxygen barrier



- Multiskin pipes : 5 layers pipe for dry and slim systems

overview of control systems

Climate control system are able to manage the indoor comfort, both for winter and summer conditioning, with a corresponding air exchange and humidity control.

wired & local control

- basic wired and local control
- analog or digital thermostat

- programmable wired and local control
- adapt the temperature according to lifestyle habits

wireless & smart control

- allows local and remote control via Smartphone

- BMS integration through Modbus

manifolds

Distribution manifolds play a key role in underfloor heating systems : they provide every single circuit with the flow required for the best performance. We do have a specific manifold for each system need.

monobloc

modular

smart

stay smart with our solutions

Comap Smart Home

Control your installation directly from your smartphone or computer with our Comap Smart Home thermostat.

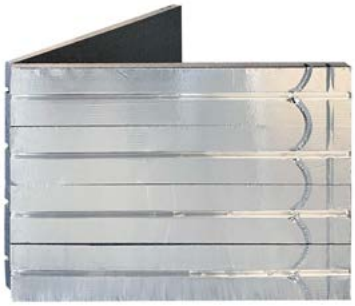
- instantly access the temperature of your home or building zone with zone heat control and programming functions.
- control heating remotely
- easy to change schedule in case of unforeseen situations.
- access to your energy consumption statistics.
- maintain heating in several homes from one account.

Secos smart manifold

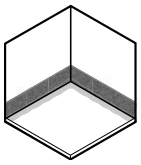
- energy efficiency
- optimum hydraulic balancing energy savings from 25% up to 50%
- supply and return temperature measured for every circuit
- multi sensors for precise volume flow and temperature
- permanent hydronic balancing
- heat power provided as required
- no calculation for balancing
- heating in several homes from one account.
- plug & play
- pre-assembled plug-in assemblies and cabling
- automatic flushing, filling and venting saves time
- primary network balancing: no additional valves are required
- easy to commission with Apps
- flexible & connected
- compatible with all commercially available 230V room thermostats (wired or wireless).
- all types of installation systems and floor structures
- BMS interface and smart home option included.

dry panel system

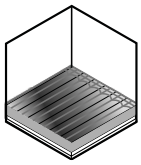
Dry system is mainly used for renovation projects, thanks to its thickness and no need for screed. With dry system, tiles can be laid directly on the existing floor.
The panel is composed of a metallic part which provides optimal heat circulation and an excellent load distribution. Dry system is also a fast and clean system, as no drying time is required. As soon as the assembly is completed, the floor is ready to bear loads.



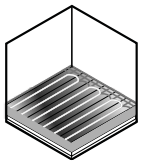
Installation procedure



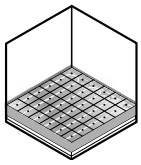
1. place the edge insulation around the perimeter of the room



2. position first panel in the square corner of the room



3. install the pipes



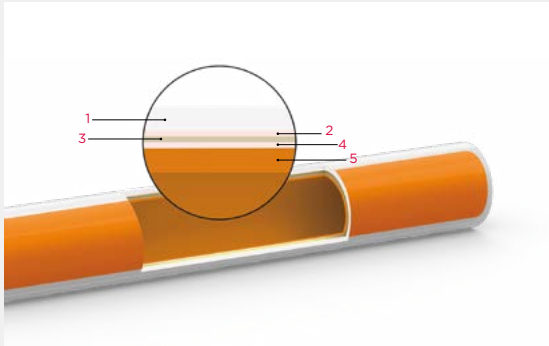
4. place the damp foil

5 layers pipes

BioPex and BioPert pipes

The 5-layers pipes offer improve resistance to corrosion and to external aggressions thanks to the outer layer that protect the oxygen barrier. Available in:

- BioPex : ø16 mm and 20 mm
- BioPert : ø16 mm



Composition

1. PE
2. Adhesive
3. Anti-oxygen barrier (EVOH)
4. Adhesive
5. PERT (BioPert) or PEX (BioPex)

additional products

to save more energy, and achieve tangible impact

Individuals or major corporations can save water and energy every day, whether building new or renovating. With our complete range of solutions, we are committed to offering our customers quality solutions that are clean, green, and waste-free.

individual housing

Flexcon Expansion Vessels

- expansion vessels keep the pressure of the installation stable by temporarily absorbing the extra water volume that is generated by heating or cooling installations
- the unique membrane, made with better recyclable material has a lower C02 footprint and a longer lifetime expectancy

MeiFlow Top S Pump Groups

- the MeiFlow Top S is a flexible, energy-efficient new generation of pump groups for sealed systems.

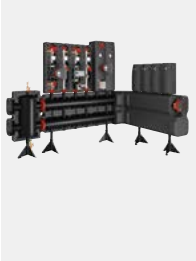
XStream Air & Dirt Separators

- ensures lower energy consumption, less wear and tear, fewer breakdowns, a longer lifespan and thus a higher efficiency of heating and cooling installations.
- cutting heating systems' energy usage by up to 15% and provides for up to 6% more efficient heating system

Sentinel Systems Cleaner & Inhibitor*

- non-acid treatment which restores circulation to radiators and pipework.

collective housing | commercial building



Meibes Large Manifold

- Meibes large manifold system is the ideal solution for underfloor heating installations in large commercial and residential projects.
- it consists of one or multiple manifold(s) with pump groups and the boiler guard. The modular system makes installation quick and simple.

LogoMatic G2 Heat Interface Units

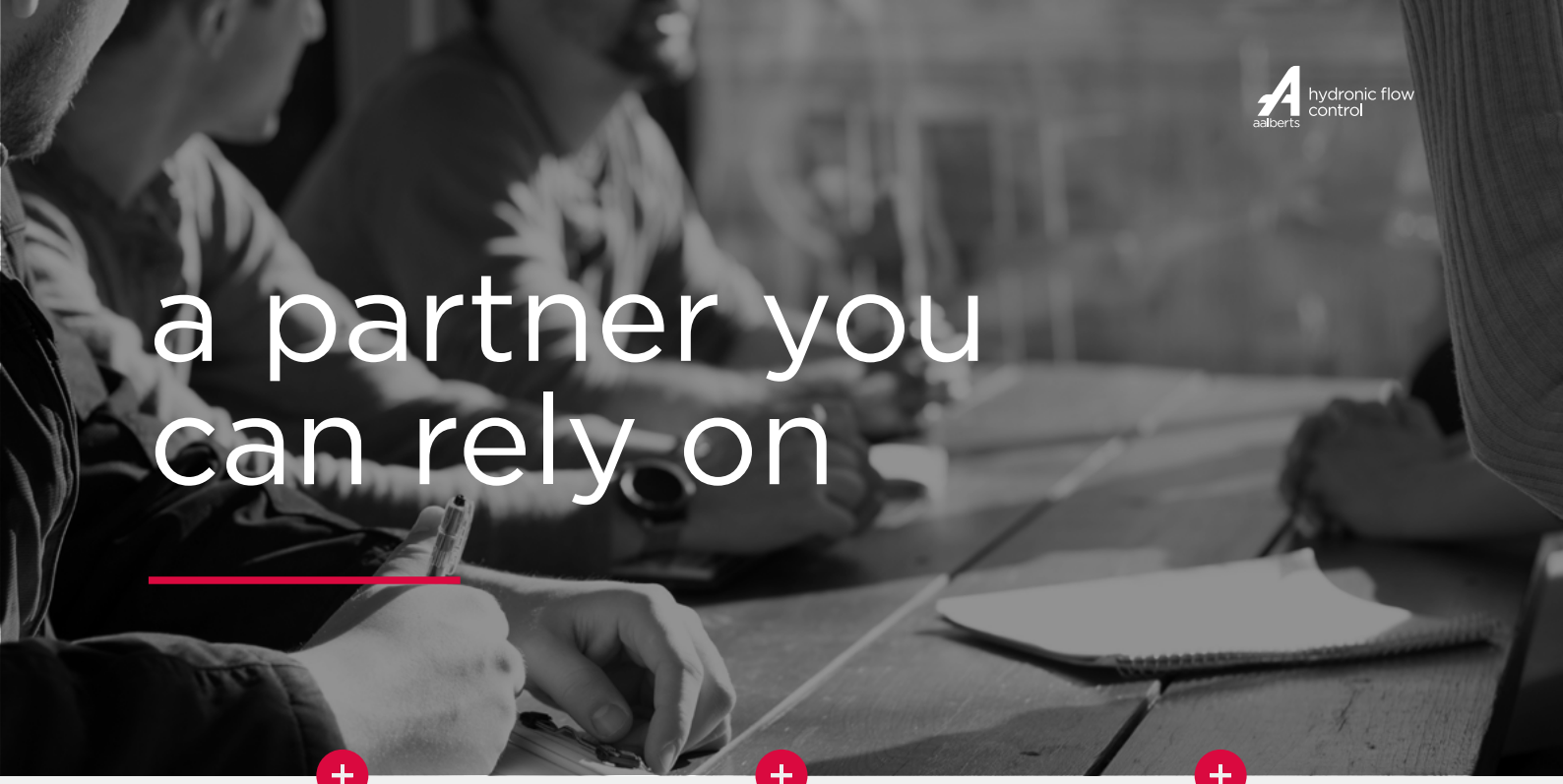
- provides a high level of customer climate control, ease of use and energy-efficient operation. The LogoTronic controller has functions that are very useful in combination with underfloor heating.

NexusValve Balancing Valves

- static balancing valves enable correct flows distribution in the circuit.
- dynamic balancing valves enable flows limitation in variable flow installation: no overflow = constant

Vacumat Eco Vacuum Degassers

- degasses at least 7x faster thanks to a much greater and fully continuous degassing capacity.
- removing gases avoids unnecessary faults and expensive repairs and extends the life of the system.



a partner you can rely on

integrated offering from source to emitter

With Flamco and Comap brands, Aalberts hydronic flow control has build a strong and qualitative product portfolio to provide global solutions for to the entire project life cycle. Benefits are :

- One point of contact
- One central logistic HUB in Europe for optimized deliveries accross Europe
- 10 years warranty for the entire system

benefit from our innovation speed

For nearly 50 years, Aalberts hydronic flow control has been on the cutting edge of engineering technology, working with our customers to create seamless solutions for every need :

- A real culture of innovation to ensure energy consumption is reduced to its lowest
- A total focus on new solutions with lower carbon footprint, with raw material, better diffusion of heating and smart control

engineering partner for contractors

Aalberts hydronic flow control also enhance efficiency through design and calculation. We model, test and tweak various designs for their application and maximum energy efficiency, while optimizing the installation process. We provide :

- Tailor-made calculations
- A dedicated support at every step of the project : advice, planning, design, detailed plans, calculations
- Online technical data (data sheet, dimensions, certifications)
- Online technical data access (etim, step files)

400
colleagues to support you as customer

15K
Our products are available via 15.000 point of sales across Europe

8,5/10
Customer satisfaction rate

#1
Aalberts' primary focus is on sustainability

20 years
experience with underfloor heating projects

10K
of reference projects all over Europe

aalberts hydronic flow control

competence & production centers

sales & service offices

stay in touch!

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