



# Anderson

FLOOR WARMING LIMITED

# Anderson Floor Warming

## the name you can trust

Anderson Floor Warming Ltd. are total system providers, specialising in the design, supply and installation of:

Fully integrated renewable systems (geothermal, solar, biomass and wind).

- BRE accredited Microgeneration approved installer (heat pump systems), enabling grants to be processed
- Underfloor heating
- Hot and cold manifold plumbing
- Radiator and towel rail manifold plumbing
- Floor insulation & self levelling screed

Anderson Floor Warming have been at the forefront of the UK underfloor heating and plumbing market developing state of the art systems for over 10 years. Our Glasgow warehouse carries a vast range of Pex pipe and fittings of underfloor heating and plumbing, enabling us to provide systems suitable for heating virtually any type of building:

- Extensions and conservatories
- Domestic – individual houses, flats and district systems
- Hospitals
- Education and further education
- Sports halls and swimming pools
- Shops and supermarkets
- Office, factories and warehouses
- Showrooms
- Museums, libraries and historic buildings

Using the latest technology, Anderson Floor Warming's in-house technicians and engineers work closely with clients, architects and service engineers to ensure the most appropriate specification and layout for each application. Project engineers manage the highly trained installation teams from site start to completion. A selection of projects, and more, can be seen on our web site at: [www.andersonfloorwarming.co.uk](http://www.andersonfloorwarming.co.uk)

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### Anderson Floor Warming Pipe

Anderson Floor Warming pipe is PE-Xa (molecular cross linked high density polyethylene), which has been used in heating and potable water systems since the beginning of the 1970s. Experience, combined with extensive accelerated ageing tests, show that Anderson Floor Warming PE-Xa pipe has a life expectancy of well over 50 years in heating systems with continuous temperatures of 70 degrees and an operating pressure class of 6 Bar. In practice, and in normal operation conditions, PE-Xa pipe life expectancy is far longer, as much lower temperatures and pressures are used. The pipe has qualified in tests as a PE-X 100 material, which is a stamp of quality not held by any other PE-X pipes of equivalent size to our current range. Pressure resistance is tested according to ISO 9080.

Anderson Floor Warming pipe is co-extruded complete with an oxygen diffusion barrier (ODB) of EVOH, which prevents oxygenation of water. Test results show that the density of the ODB on our PE-Xa is more than 10 times greater than the requirements of current DIN standards.



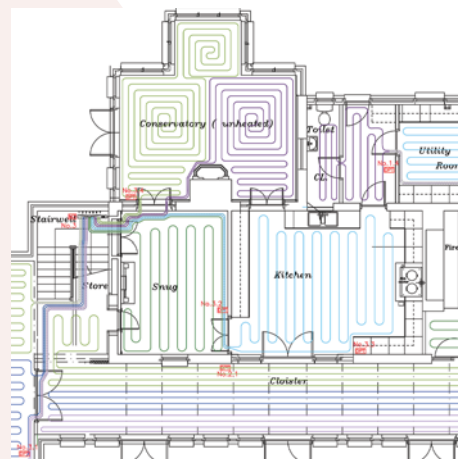
# what we do

## From Concept to Creation

Anderson Floor Warming offer a complete underfloor heating and advanced plumbing solution. This originates from our qualified and experienced in-house technical design team and concludes with installation by our qualified engineers, giving our customers a single point of communication and responsibility for all aspects of their project's heating and plumbing.

## Underfloor Heating Solutions

Anderson Floor Warming underfloor heating is a low temperature system using heated water circulating in PE-Xa pipes installed within the floor construction. We evaluate design concepts and provide floor construction details, system specifications and highly detailed CAD-generated layout drawings in accordance with BS EN 1264 and DIN 4725 criterion to match the project's requirements. Anderson Floor Warming offer a complete package of design, supply and install, of heat source, heating primaries, heat emitter (underfloor heating pipe, radiators where more appropriate, towel rails), hot water storage and controls.



## Renewable Energy Solutions

Anderson Floor Warming can design, supply and install a complete package of renewable energy source and heating / plumbing system, ensuring full co-ordination and a single point of responsibility – critical for the smooth running of your project and effective long term use. Our BRE Microgeneration Accreditation for heat pump installation gives greater consumer protection and enables us to process grant applications.

Anderson Floor Warming have developed a wealth of experience and are able to advise on design, supply and installation of:

- Ground Source Heat Pumps
- Air Source Heat Pumps
- Biomass boilers
- Solar Energy
- Hydro Energy
- Wind Energy

Systems using renewable energy, in particular heat pumps, should be designed to give a large volume of water at low temperature, and as such are ideal for use with Anderson Floor Warming's underfloor heating.



## Advanced Plumbing Solutions

Anderson Floor Warming's advanced primary and secondary plumbing systems use joint free Pex pipe, self ducted in conduit or insulation, supplied from forged brass manifolds, connecting hot and cold primary manifolds to hot and cold secondary manifolds, with built in isolation valves to each appliance.

## Automatic Control Solutions

We design customised automatic control systems making use of the latest technology to fulfil each project's requirements. We provide systems ranging from simple digital programmable thermostat control to fully optimised weather-compensated circuits integrated with commercial Building Management Systems.



## Flooring Solutions

In addition to our underfloor heating and plumbing systems, we also provide a complete package from simple advice to full installation of appropriate insulation, screed and underfloor heating compatible floor coverings.

## Health & Safety Solutions

We consider the safety of our staff and site personnel to be of paramount importance. All of our installation engineers receive health & safety training and hold the relevant CSCS Skills cards. All installations are carried out following completion of health & safety inductions, risk assessments and method statements.

# case studies

## Metro, Glasgow

The Metro is an elegant landmark building standing graciously on the corner of West Graham Street. The Metro comprises 46, studio, 2 and 3 bedroom apartments with secure allocated parking. Its cool international lines and chic metropolitan retro interiors provide an alternative to the plethora of apartments springing up all over the city. Anderson Floor Warming Limited designed, supplied and installed underfloor heating throughout all of the 46 apartments. A pipe in plate system was utilised on timber sprung battens with insulation between, to give both acoustic properties and provide a “soft” feel to the floor, to remove the hard feeling of a solid concrete floor. The floor finish is engineered hardwood throughout living areas with tiles in bathrooms.

## BAE Systems, Edinburgh

The recently completed BAE Systems building in Edinburgh cost £14M and has 60,000 sq m of floor space over four levels. The world-class facility is used for the design and development of lasers for weapons guidance. Underfloor heating was particularly well suited to heating the large atrium and entrance areas, as radiant heat is concentrated in the occupied zone thereby improving efficiency and comfort. Anderson Floor Warming worked closely with the architect to co-ordinate the extensive movement joints in the large atrium areas, which were finished in marble.

## Xscape, Braehead, Glasgow

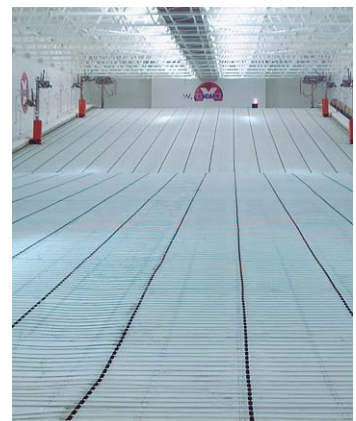
The new £60M 40,000 sq m Xscape leisure facility, situated on the banks of the River Clyde at Braehead, Glasgow, is the third state of the art development of its kind in the United Kingdom. With its unique, patented, real snow ski slopes Anderson Floor Warming are delighted to have been part of the design team on this challenging project. The ski slope concrete structural slab contains Pex underfloor heating to protect the slab from frost heave. The snow layer on the ski slopes contains a matrix of Pex pipe filled with chilled glycol to maintain the integrity of the snow layer.

## Glasgow Science Centre

The prestigious £75M Glasgow Science Centre was the largest Millennium project of its kind. This groundbreaking venue comprises a stunning Science mall complex and Scotland’s first Imax cinema. The underfloor heating to the foyer and café areas, installed by Anderson Floor Warming, provides comfort in the high ceiling glazed areas without excessive use of energy.

Further examples of Anderson Floor Warming projects are listed below:

- Glasgow University Medical School
- Kingsbarns Golf Link, St. Andrews
- 24 House Development - Housing Association, Isle of Islay
- Hutchesons’ Grammar School, Glasgow
- Linlithgow Academy
- East Renfrewshire Council Building
- Royal College of Surgeons, Edinburgh
- Johnstone High School, Johnstone, Renfrewshire
- BBC Scotland Headquarters, Pacific Quay, Glasgow
- Sheltered Housing & Day Care Facility, Isle of Jura





## Extensive range of Pipe Fixing Systems to suit all types of floor construction

Anderson Floor Warming has an extensive library of different floor construction details, including screed floors, concrete, battened, timber suspended and floating floors. We offer assistance on choosing the most suitable pipe fixing method to suit your floor construction and can provide CAD/PDF details on request. Technical advice on the most suitable floor screeds and coverings for your application are available on request.

- 1 **Pipe in Rail** The Pipe-in-Rail system can be used indoors and outdoors and laid in screed or concrete construction. The pipe clip rail eliminates the need for wire mesh and is suitable for 12mm to 22mm o.d. Pex pipes. Rails can be laid on any type and thickness of insulation.
- 2 **Pipe-in-Staple** The Pipe-in-Staple system provides a much greater degree of choice of pipe layout and spacing. Anderson Floor Warming's staples are available for Pex pipes 16mm to 20mm o.d and will fix in standard, medium and high density rigid board insulation, eliminating the need for expensive laminated boards. Automatic staple guns are available for self installers.
- 3 **Pipe-in-Board** Pre-formed plastic castellated boards retain the pipe at variable centres without the need for specialist tools.
- 4 **Pipe-in-Plate** This system is most suitable for timber joist and battened floors. The aluminium grooved plate retains the pipe and diffuses the heat into the floor. The plates are available in twin or triple grooves for 400 and 600mm joist centres. Plate systems are ideal for first floor timber joist construction and for renovation on timber floors.
- 5 **Pipe-in-Twist Clip** Twist clips screw into medium and high density rigid board insulation, fixing Pex 16mm o.d pipes. Twist clips, like staples, can be fixed into any position, which provides a much greater degree of choice of pipe layout and spacing, without the need for specialist tools. This makes twist clips a popular choice for budget conscious builders for smaller areas. Twist clips are often supplied with Pipe-in-Rail systems as additional fixing for pipe runs to and from the manifolds.
- 6 **Slotted Board EPS 16mm System** This system is for laying on load bearing floors only, giving exceptionally low construction height. The system is made up of grooved insulation panels, 16mm thick with an aluminium heat distribution plate, 0.5mm thick factory fixed. The heat distribution plate covers the entire surface of the insulation panel. The grooved panel, turn panel and feed pipe panel are made of high density EPS and provides extremely high resistance to short and long term compression.
- 7 **Slotted Wood 22mm System** This system comprises of an environmentally approved chipboard floor which is shaped to contain the pipes and distribution plate. This board is laid to span joists, actually forming the structural floor, giving cost, program and health and safety benefits, as well as better heat output than using plates below a standard timber structural floor.

## "Mixed Systems" Fully Integrated System Packages

Anderson Floor Warming supply a wide range of Pex pipe manifold connection packages.

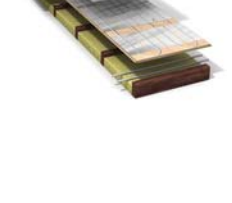
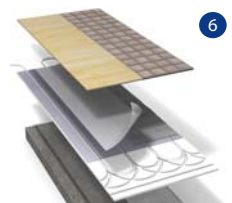
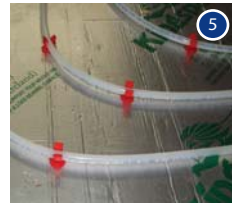
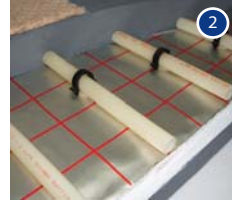
**Heating Primary Connection Systems** consist of joint free, large bore Pex pipe, equivalent to standard metal pipe sizes, self ducted in conduit or insulation, supplied from forged brass manifolds, connecting boiler to underfloor manifolds and radiator/towel rails manifolds.

**Radiator Connection Packages** consist of joint free Pex pipe, self ducted in conduit or insulation, supplied from forged brass manifolds, connecting manifold to radiators. The most popular domestic systems consist of underfloor heating on the ground floor and radiators on first floor. The connection packages allow easy integration of both systems.

**Hot & Cold Connection Systems** also consist of joint free Pex pipe, self ducted in conduit or insulation, supplied from forged brass manifolds, connecting hot & cold primary manifolds to hot & cold secondary manifolds, with built in isolation valves to each appliance.

**Pex pipe manifold connection systems** have the following advantages:

- Pre-designed complete packages speed up and simplify installation.
- Flexible pipe from reel uses fewer joints.
- Flexible pipe can be threaded through drilled joists, thus avoiding notching.
- Self ducted pipe in conduit can be laid in solid walls and floors without the need for purpose built ducts.
- Corrosion and scale free plumbing pipe.
- Low noise self ducted pipe, greater frost resistance.
- Flexible joint free pipe reduces maintenance costs and condensation.
- No need for soldering, bending or threading tools.
- Light and easy to transport & store.



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Certificate Number MCS 1171  
Heat Pumps



INVESTOR IN PEOPLE

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**Anderson**  
FLOOR WARMING LIMITED

creating a healthier environment