



Leading the way in
**Sustainable
Home Heating**

Enviroair UNDERFLOOR HEATING

For Your New Build
or Home Upgrade



Environment



Innovation



Technology

Free Home Heating Consultation - Call or Email Your Plans Today

e: newbuild@firebird.ie | newbuild@firebird.uk.com



www.firebird.ie | www.firebird.uk.com



Firebird IRL/NI



Firebird UK

Why Choose Firebird for Your Underfloor Heating

Established in Ireland in 1980, the Firebird name has become synonymous with performance, quality and innovative design. Firebird are 100% Irish and are proud to be based in the hearth of the Múscraí Gaeltacht. At the forefront of technology, Firebird are committed to providing cost-effective, energy efficient heating solutions that not only meet, but easily exceed today's legislative requirements.

Firebird's first rate technical support ensures that help is available every step of the way, from quotation, material schedules, drawing and full design, through to visits on site and installer product familiarisation.

Firebird Five Step Programme

Underfloor Heating Plan



Quotation



Technical and Site Support



Installation Support



Completion





Enviroair Underfloor Heating

Compared to traditional radiators, underfloor heating is far more efficient when heating a home as it provides a steady, even temperature throughout the house. Firebird **Enviroair** Underfloor Heating systems produce efficiency at low water temperatures resulting in reduced running costs.

Suitable for both new build and upgrade projects, “wet” underfloor heating is the most efficient way to provide space heating as it is up to 25% more efficient than traditional radiators.

Heat is supplied directly to the floor as radiant heat (distributed evenly), creating a more comfortable environment than the air provided by conventional radiators. Underfloor heating generally runs at around 45°C as opposed to 80°C used in radiator systems, thereby saving on energy and running costs, especially when used with a renewable heat source such as the Firebird **Enviroair** Air Source Heat Pump.

Enviroair Underfloor Heating systems are suitable for a wide range of ground and upper floor constructions. Using the full range of system components, it is simple to create individual heating systems to achieve required comfort levels. **Enviroair** Underfloor Heating systems can be easily combined with radiator systems for extensions and conservatories, or to create a mixed heating system offering radiators on upper floors if desired.

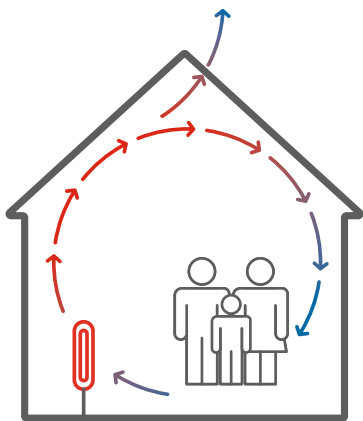
How does a water underfloor heating system work?

A “wet” underfloor heating system is like a giant radiator at floor level. A series of plastic pipes are connected to a heat source to circulate warm water throughout the floor to heat the space by producing radiant heat.

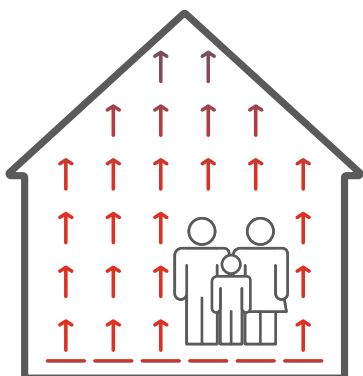
Since the floor (the radiator) is so large and the heat is more evenly distributed, it only needs to run at a low temperature to heat the room.

This means that the water flowing around the floor needs to be at a far lower temperature than a traditional radiator system.

The diagrams illustrate how the heat travels around the room in a radiator system (left) and in an underfloor heating system (right). The underfloor heating system heats the living area in the room, whilst the heat from the radiator system collects at the ceiling - a much less efficient heating method.

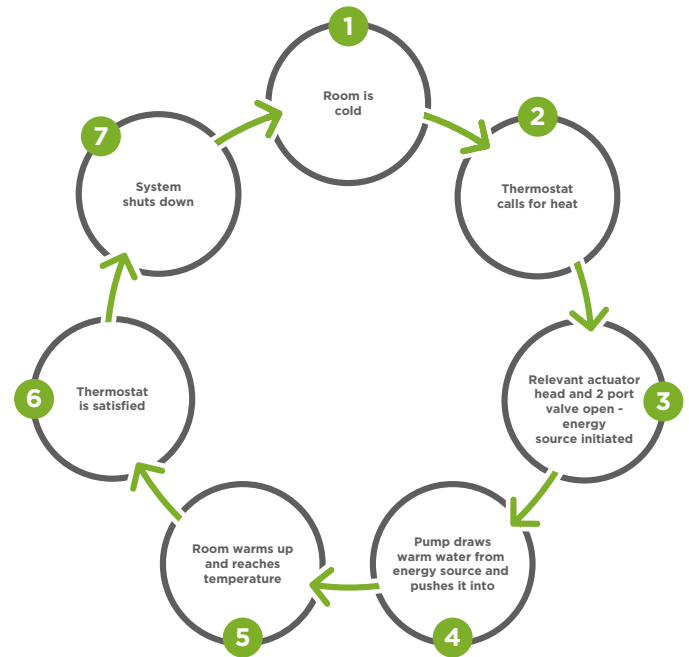


Typical Central Heating



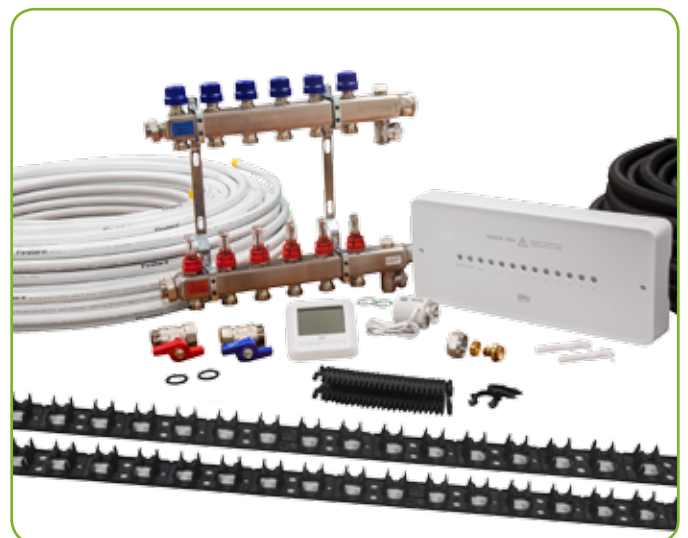
Radiant Central Heating

Following a basic sequence of operation, a typical controlled underfloor heating system will respond to the heat demand in the property as required.



How does an Envirofloor underfloor heating system link with a Firebird Enviroair Air Source Heat Pump?

The underfloor heating system works in the same way as a radiator system does when linked to a boiler in a traditional heating system. The water and air temperature are controlled through the **Enviroair** Air Source Heat Pump controller which operates the entire heating system.

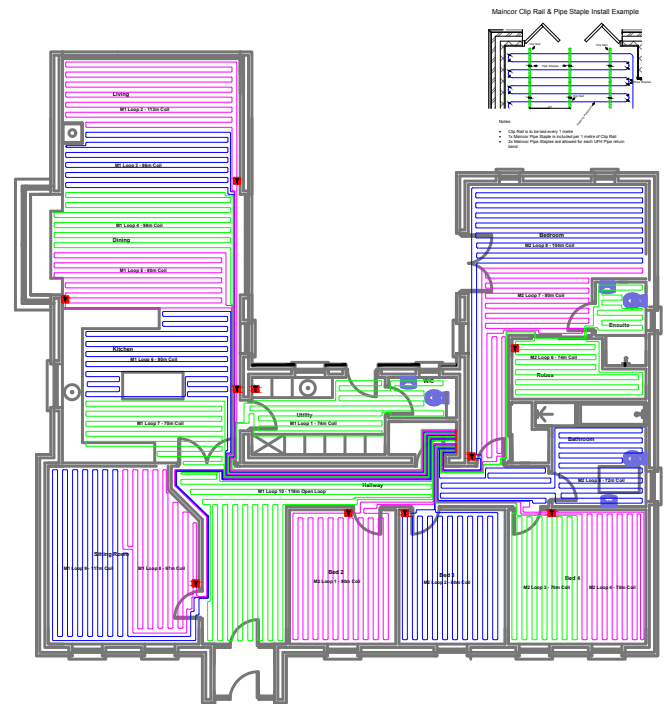


List of Materials

16x2 MLCP 100m Coils
16x2 MLCP 120m Coils
16x2 MLCP 200m Coils
16x2 MLCP 500m Coils
Pipe Staples
Clamptrack
2 Port Manifold
3 Port Manifold
4 Port Manifold
5 Port Manifold
6 Port Mainfold
7 Port Manifold
8 Port Manifold
9 Port Manifold
10 Port Manifold
11 Port Manifold
12 Port Mainfold
16x2mm Eurocone Pipe Adaptor
Ball Valve 1" FT x 1" MT (sold as a pair)
20mm Pipe Black 50m Coil
10 Zone Underfloor Heating Wiring Centre
Thermal Actuator, 230Vac for 2 Port Valves Only
Mains Operated Recessed Thermostat 230v
Mains Operated, On/Off and TPI Stat.

Typical Firebird Underfloor Plan

Once our experts have calculated your exact needs as to the underfloor heating requirements, we will supply you with a drawing and schedule similar to the below for your installer.



Pipework is to be laid at 150mm centres throughout

Loop Reference	Zone	CoilLength (m)	Cut From (m)
M1 Loop 1	Utility / WC	74	Coli 1 - 500
M1 Loop 2	Living	113	Coli 1 - 500
M1 Loop 3	Living	96	Coli 1 - 500
M1 Loop 4	Dining	98	Coli 1 - 500
M1 Loop 5	Dining	90	Coli 1 - 500
M1 Loop 6	Kitchen	90	Coli 2 - 500
M1 Loop 7	Kitchen	70	Coli 2 - 500
M1 Loop 8	Sitting Room	97	Coli 2 - 500
M1 Loop 9	Sitting Room	117	Coli 2 - 500
M1 Loop 10	Hallway - Open Loop	118	Coli 3 - 500
M2 Loop 1	Bed 2	90	Coli 3 - 500
M2 Loop 2	Bed 3	88	Coli 3 - 500
M2 Loop 3	Bed 4	70	Coli 3 - 500
M2 Loop 4	Bed 4	75	Coli 4 - 500
M2 Loop 5	Hall/Bath - Open Loop	72	Coli 5 - 100
M2 Loop 6	Robes/Ensuite	74	Coli 6 - 100
M2 Loop 7	Bed 1	80	Coli 2 - 500
M2 Loop 8	Bed 2	104	Coli 3 - 500



Enviroair Underfloor Heating Systems

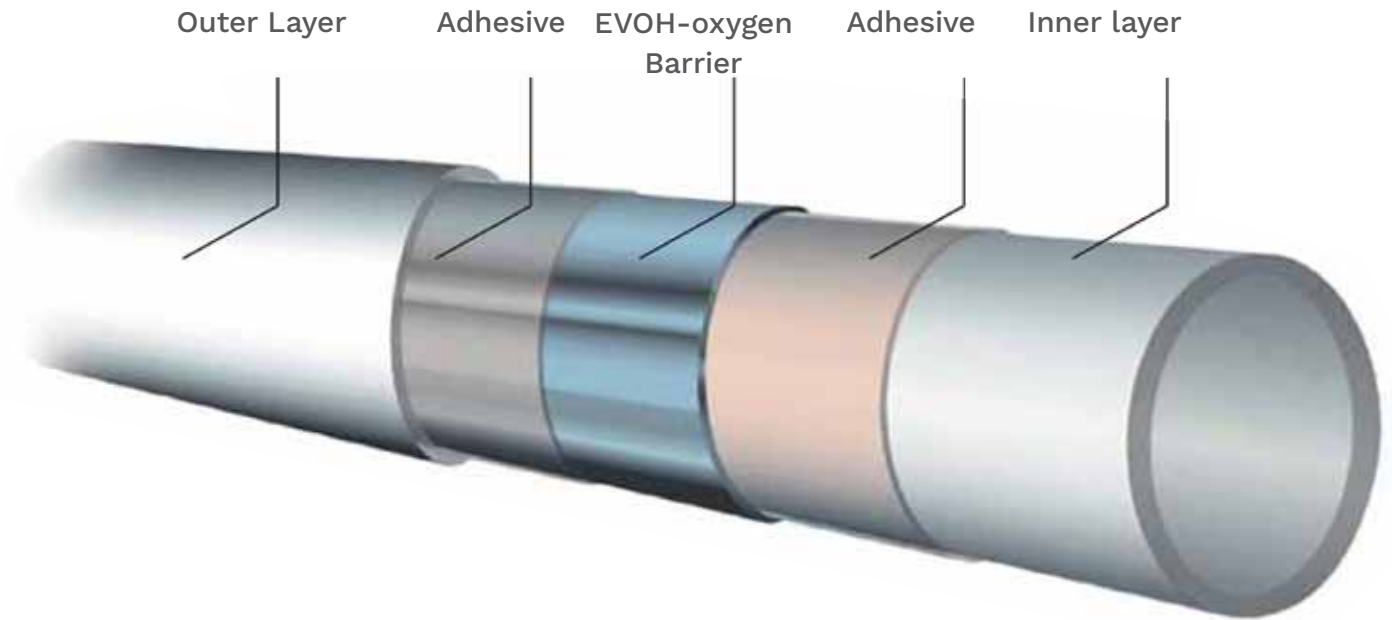
All Enviroair Underfloor Heating systems contain the components required for use with the Firebird Enviroair Heat Pumps.

There are two systems available for your underfloor heating:

- **Multilayer Railing Underfloor Heating System**
- **Overboard Underfloor Heating System**

Multilayer Railing Underfloor Heating System

Ideal for New Builds and Home Upgrades



Multilayer Pipes

The Multilayer Pipe with an embedded aluminium layer is oxygen tight. Despite being highly flexible, this multilayer pipe is characterised by high tenacity and fatigue strength. Polyethylene of raised temperature resistance: due to the unique molecular structure, a crosslinking is not necessary to achieve a long term temperature stability. Coextrusion: all layers being produced simultaneously: therefore a homogeneous and very stable material bonding is created. Due to the layer technology, the oxygen barrier is protected from mechanical damage.



The Multilayer Piping is available in 50m, 100m, 200m, 300m, 500m and 1000m.

Technical Properties

Working Temperature	70°C
Max. Temperature	95°C
Max. Operating Pressure (ISO 10508) at 70°C	6 Bar
Standard Colour Inside	Transparent
Standard Colour Outside	White
Other Colours	On Request
Pipe Printing	Customer-Specific
Packing	Carton, Foil or Stretch Wrapped

Ideal for New Builds and Home Upgrades

Manifold

Essentially the manifold allows for every loop of piping in a building to be connected to and from the manifold in a single continuous length with no fittings in between, completely removing the possibility of joint leaks. If there is a fault with an individual circuit or maintenance is required, that circuit can simply be turned “off”. The 1-12 port manifolds are supplied complete with flowmeters for ease of commissioning. Also included within the manifold are fill and drain ports, automatic air vents and fixing brackets.



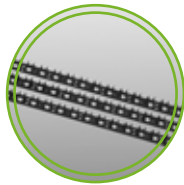
Air or Water Temperature Controls

Using a wide range of wired and radio controlled systems, including app enabled technology, room temperatures can be individually controlled, allowing the occupier maximum flexibility, whilst increasing the energy efficiency of the building.



Rail System

With the rail system, the fixing of the underfloor heating pipes takes place with the help of the self-adhesive fixing rails. A rail installation has the advantage that the heating circuits can be changed as desired without damaging the underlaying insulation. It provides a good acoustic as the impact noise insulation is not penetrated.



Water Temperature Controls (if required)

Water based underfloor systems work by turning the entire floor into one large low temperature radiator, which is heated via a network of pipes that are embedded within the floor. Since the floor is so large, it only needs to run at a low temperature to heat the room. This means that the water that flows around the floor needs to be at a far lower temperature than a traditional radiator system. A wide range of products are available to control the water flow and temperature including Control Packs, Thermostatic Mixing Valves and Weather Compensators.





Overboard Underfloor Heating System

Ideal for Home Upgrades and Timber Frame Constructions

The 12mm Multi-Layer Composite Pipes (MLCP) are laid within 18mm thick, pre-routed, high density dry screed panels at 150mm centres, offering a low profile solution which lends itself to situations where minimal

floor height adjustments are desired. Due to the physical properties of Overboard, the panels allow the heat to spread effectively across all of the heated floor area.

Features & Benefits

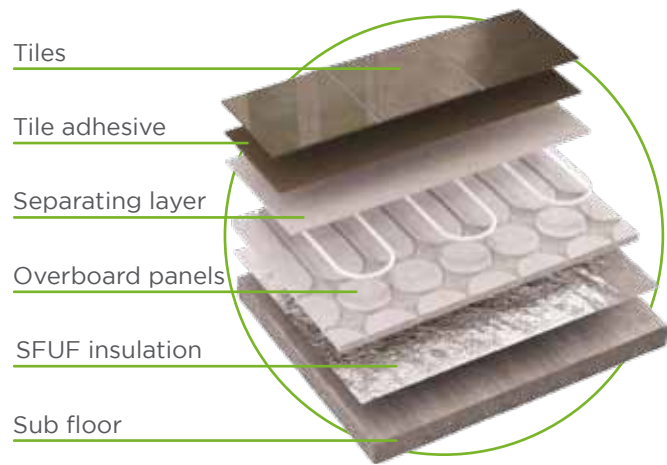
- **For retrofit or extensions** - Low floor height of system when installed, only 18mm high.
- **For new build timber frame developments** - Where the floor deck is an integral part of the timber frame, an Overboard type system is usually the only option for underfloor heating.
- **Solid finish** - The panels are fixed down which gives a solid feel underfoot and a stable platform for the flooring above.
- **Dry assembly** - Dry alternative to wet screed systems which reduces the time on site, benefitting the build programme.
- **Thermal comfort** - The dense panels conduct heat evenly, creating a uniform heat distribution.
- **Fast response time** - The Overboard system heats up from cold much faster than conventional screed and responds like radiator heating.



- **Full room coverage** - The entire floor area is acting as a heat emitter, which provides a higher output than an alternative plastic end-panel system.
- **Unobtrusive** - Minimum disruption when installing in existing buildings.
- **Quality material** - Precision engineered, tight tolerances and quality assured.
- **Fixing points** - The panels have 3 fixing points on each channel which makes it far quicker to install the pipes.
- **Easy planning** - The end returns are exactly half the size of the main panels which means less cutting is required and it's quicker to plan and install.
- **Ergonomic** - Overboard 'straight' panels weigh 14kg - suitable for one man lifts.
- **Cost effective solution** - Competitive pricing coupled with better technical performance making this the best solution on the market.

Installation Features

- **Quick to layout** - There's no need to lay in a brick formation, therefore less cutting of the panels. Also it's much easier to plan out on site. Less cutting of panels means less material wastage and dust generated.
- **Bubble design** - Due to the formation of the end returns, there are countless options on pipe placement and less need for routing on site, saving time, hassle, wastage, dust and breakages.
- **Easy to handle** - The panels are a handy size for carrying on site - easy for one person to manoeuvre, when carrying up stairs, and around corners. They are also less likely to break during handling.
- **Square edge panels** - Less cutting of panels and no need to worry about lapped edges during planning, makes the panels more robust for handling and stronger at the edges.
- **Fixing points** - The panels have 3 fixing points on each channel which makes it far quicker to install the pipes - they stay put and don't spring back



Overboard™ Technical Details

Overboard dry screed panels are used as carriers for pipes in underfloor heating systems. Due to the physical properties of Overboard, the panels allow the heat to spread effectively across the heated area, which means that the installation of heat emission plates are not required. Panels are available in two configurations, as straights and as end returns.

The majority of the heated floor area will usually be covered by the straight panels which are 1.2 x 0.6m and 18mm high. Where feed pipes are to be laid, the end returns are to be utilised and these are 0.6 x 0.6m (exactly half the size of the straight runs), making installation quicker, as the cutting of the panels is minimised.

Material	Gypsum and cellulose fibre
Dimensions - straights	1200mm x 600mm x 18mm
Dimensions - end returns	600mm x 600mm x 18mm
Weight - straights	14kg
Weight - end returns	<7kg
Density	1150kg/m ³
Thermal conductivity λ	0.32W/mK
Water vapour diffusion resistance μ	13
Swelling after 24hrs contact with water	<2%
Reaction to fire classification (EN 13501-1)	A2
Acoustic performance*	Impact sound insulation EN ISO 140-6 LN,w [dB]: 53 Airborne sound insulation EN ISO 140-3 Rw [dB]: 54

* Tested as part of an overall timber joist system with 100mm mineral wool in the cavity. 22mm chipboard. 10mm sound insulation board and 18mm Overboard

Floor Coverings

Overboard dry screed panels are suitable to accommodate a wide variety of floor coverings, including carpets, tiles, wooden and laminate flooring. Floor coverings should not be installed until 24 hours after the installation of the system.

A thin separating layer is recommended; typically either a 6mm plywood, floor leveller, a 6mm cement-based tile backer board, or a decoupling membrane where tiles are used. Consideration should be given to the amount of point loading expected on the floor.

For wet areas, fully tank the entire surface of the panels to protect against damage.

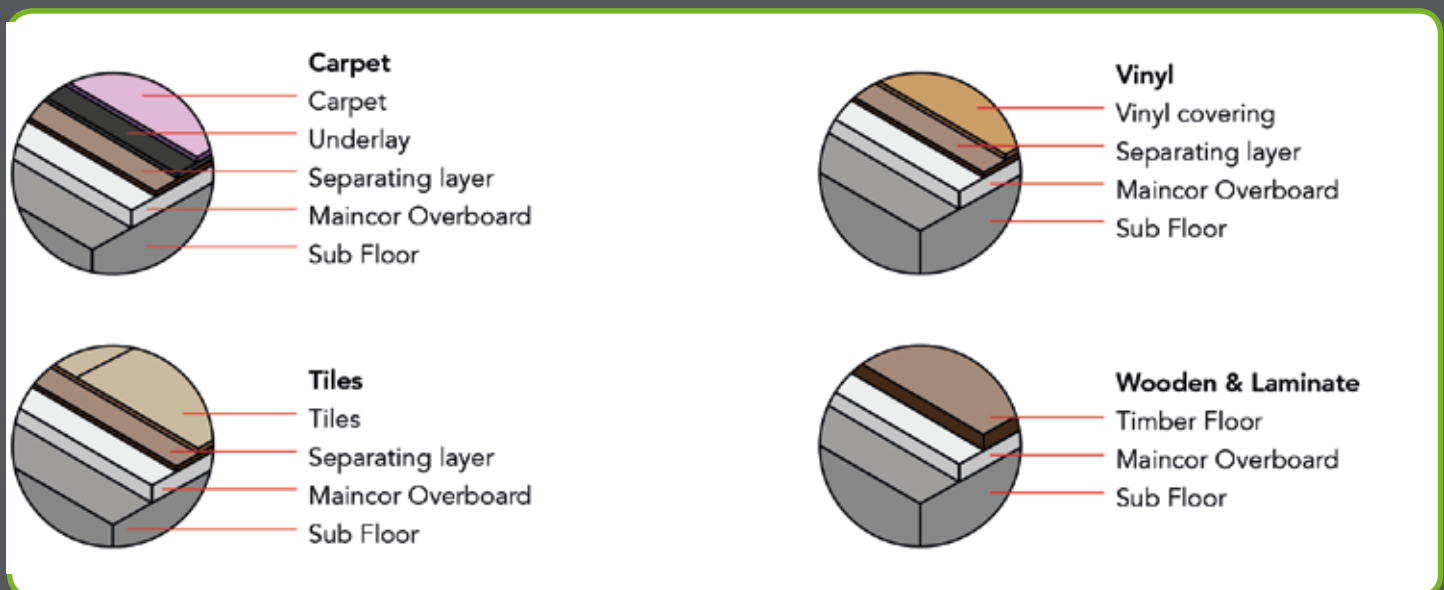
As with all underfloor heating systems, to achieve optimum performance it is recommended that if using carpet and an appropriate underlay, the combined resistance of the two should not exceed 0.15m² K/W which is equal to a TOG value of 1.5.

When selecting your floor finish, it is recommended that you check with the manufacturer to ensure that it is suitable for use with underfloor heating. Consideration should also be given to any adhesives that are to be used, as some will limit the floor surface temperature that can be achieved.

NB 1 Tog = Thermal resistance 0.1m² K/W.

Specific recommendations for floor coverings

Carpet	A thin separating layer will be required
Tiles	Depending on the tile thickness but generally a thin separating layer will be required
Vinyl	A thin separating layer will be required
Wooden and laminate floors	Generally lay directly on the Overboards





Customer Service

We, the Firebird team, offer you, our customer, top quality service. We monitor the level of service provided on a regular basis to ensure our customers' requirements are always met.



Technical Support

Our Technical team will provide you with a comprehensive technical support package which is designed to make the specification and installation process as simple as possible.

Please contact the Firebird Technical team on:

+353 (0)26 45253 /+44 (0) 1752 691177

or **service@firebird.ie / technical@firebird.uk.com.**



Quality

At Firebird, we produce our appliances to the highest standards and put them through rigorous testing procedures by external standards agencies. We design each product to meet specific requirements and we manufacture using premium quality materials to precise standards and tolerances.



Warranty

Comprehensive warranties on all parts. See Firebird website for full details: **www.firebird.ie** or **www.firebird.uk.com.**



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Ireland

Firebird
Údáras Industrial Estate
Baile Mhic Íre
Co. Cork
P12 HK51
Ireland

t: +353 (0)26 45253
f: +353 (0)26 45309
e: newbuild@firebird.ie

Northern Ireland

Firebird
Shean
Forkhill
Newry
BT35 9SY
Northern Ireland

t: +44 (0)28 3088 8330
f: +44 (0)28 3088 9096
e: newbuild@firebird.ie

United Kingdom

Firebird
Phoenix House
Eastern Wood Road
Language Industrial Estate
Plympton
Plymouth, PL7 5ET
United Kingdom

t: +44 (0)1752 691177
f: +44 (0)1752 691131
e: newbuild@firebird.uk.com

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