



floorflex®
"Heat Under Your Feet"

Long Lifespan



Thermal Conductivity



Energy Efficiency




floorflex

NEW GENERATION STAINLESS STEEL UNDERFLOOR HEATING

We Re-invented Underfloor Heating!

www.floorflex.com.tr

 [gfs.floorflex](https://www.instagram.com/gfs.floorflex)



WHO ARE WE?

Founded in 1996, BES Yapı is one of Turkey's leading manufacturers of stainless steel pipe. The company initially began its journey with the production of aluminum flexible air ducts under the "Best" brand. In 2004, it launched the "GFS" (Gas Flex Systems) brand to produce flexible natural gas pipe. Recognized as a symbol of quality and trust in the countries it exports to, BES Yapı continues to take firm steps toward becoming a global brand. Built on the principles of integrity and honesty, the company integrates innovative technologies to produce in accordance with international standards.

BES Yapı stands out as a pioneering company in the industry with its strong emphasis on R&D and innovation-focused production. In 2013, it became the first company in Turkey to introduce indoor natural gas installations using stainless steel pipe and connection fittings, significantly enhancing safety in gas systems. In 2021, the company launched the "FloorFlex" brand, initiating the production of underfloor heating systems using stainless steel flexible hoses. BES Yapı continues to lead innovation in the flexible stainless steel pipe industry, prioritizing customer satisfaction and maintaining high-quality service both before and after sales.



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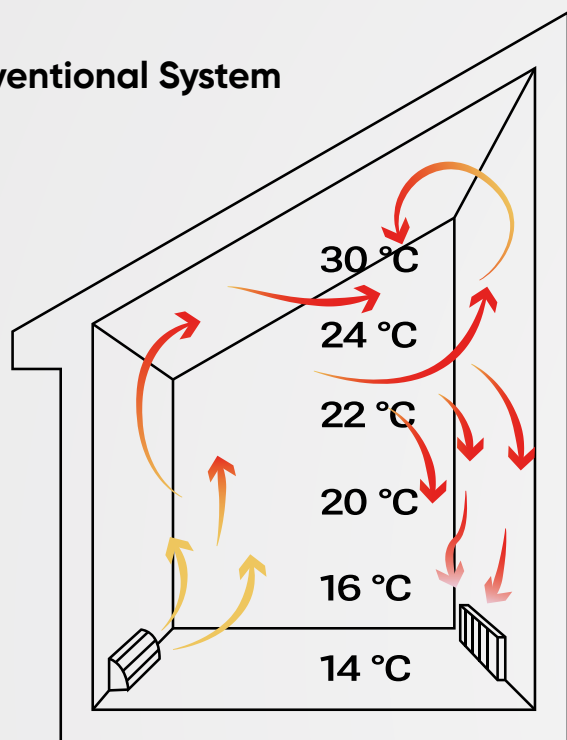
What is Underfloor Heating?

The underfloor heating system is an alternative heating method that uses the floor as a heat-emitting surface, **replacing traditional radiators**. It distributes hot water, supplied by a heating unit, through pipes embedded beneath the floor, warming the entire surface evenly. More than 50% of the heat is transferred through radiant energy (electromagnetic waves), directly warming people and objects. This method consumes less energy to heat the air and provides high comfort levels even at lower thermostat settings.

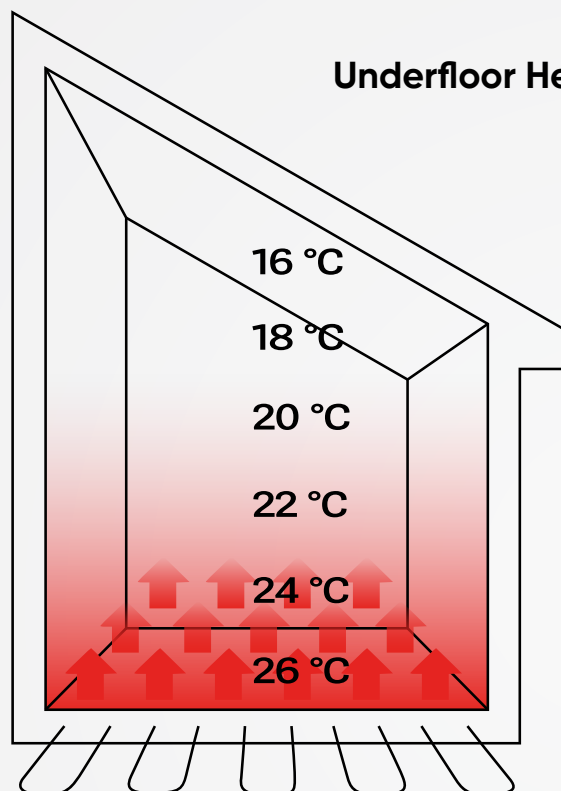
Underfloor heating provides a more ideal temperature profile for thermal comfort by delivering a homogeneous heat distribution across the floor. It prevents the hot air stratification caused by radiators and reduces heat loss. Additionally, it eliminates the need to arrange furniture around radiators, offering greater flexibility in interior layout.

Thanks to its lower surface temperature, underfloor heating minimizes the risk of contact-related injuries, enhancing safety especially for children and the elderly. Unlike radiators, which circulate dust and allergens through convection currents, underfloor heating significantly reduces airborne particles, creating a healthier environment for allergy sufferers. With all these advantages, underfloor heating offers a comfortable and efficient heating solution.

Conventional System

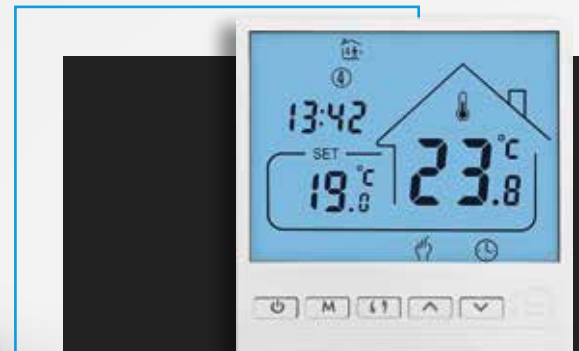


Underfloor Heating



floorflex

MEET **floorflex**: NEW HORIZONS IN HEATING!



The Unmatched Innovations of FloorFlex: Where Design Meets Excellence.



Reduces the Risk of Damage

The carrier pipes used in underfloor heating systems are made of stainless steel in the FloorFlex system, providing exceptional durability. As a result, there is no flow disruption, cross-section narrowing, micro-cracking, or mechanical stress during bending. Its **maximum flexibility** allows for the installation of complex piping geometries that are not achievable with other types of pipes. It has zero oxygen permeability and offers extremely high corrosion resistance.

The Unmatched Innovations of FloorFlex: Where Design Meets Excellence.

Enables Fast Energy Transfer

The stainless steel pipe used in the FloorFlex System offer excellent heat transfer performance, allowing the system to reach operating temperature very quickly.

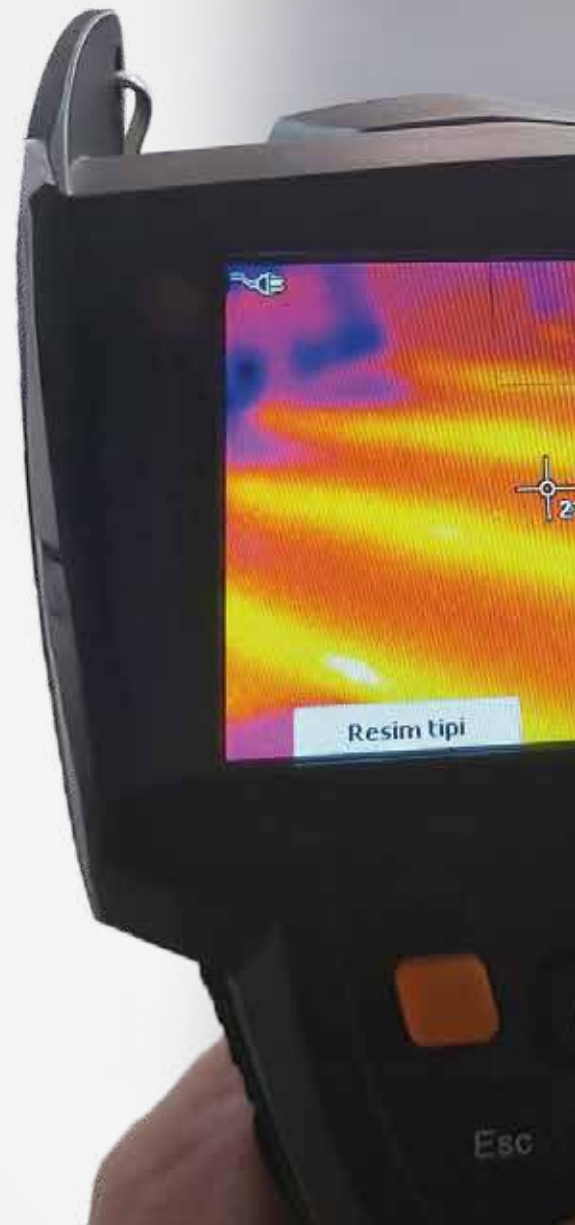
The FloorFlex Stainless Steel Underfloor Heating Pipe heats the environment at least 4 times faster than plastic alternatives.

Maintenance-Friendly Design

The FloorFlex Underfloor Heating Pipe is user-friendly with low maintenance requirements. As a result, it reduces operating costs and simplifies the maintenance process for underfloor heating systems.

Long-Lasting Performance

Stainless steel material offers high durability even under harsh conditions, making it ideal for long-term use. Therefore, FloorFlex Stainless Steel Pipes are an excellent choice for those seeking a long-lasting solution in underfloor heating systems.

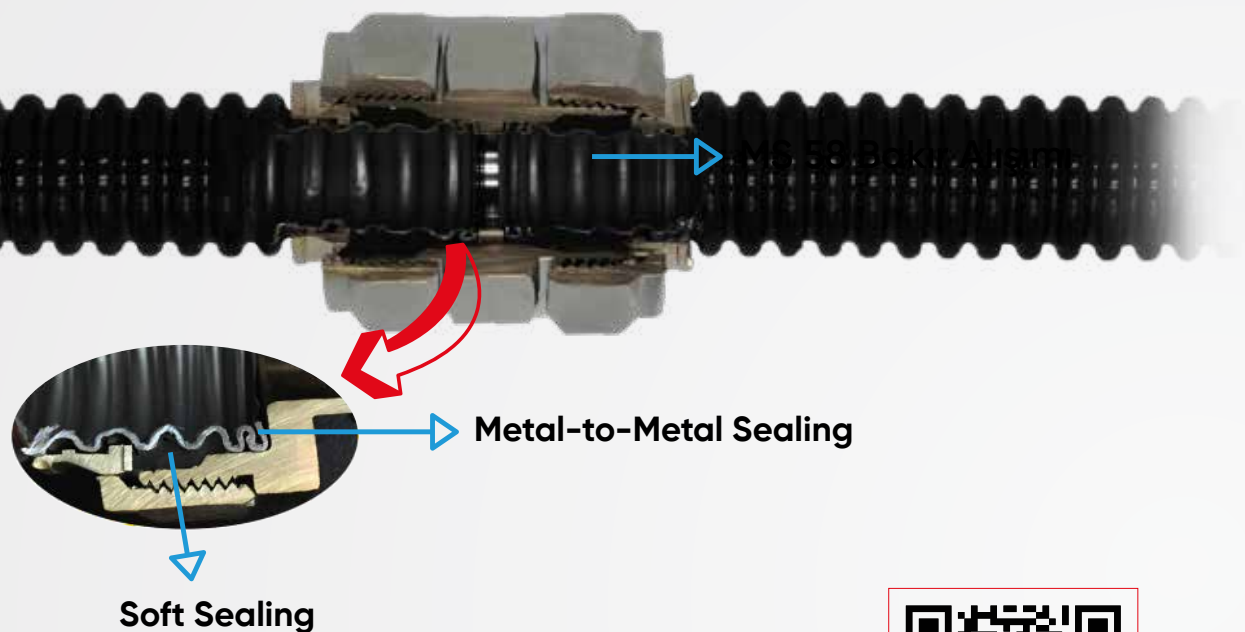


The Unmatched Innovations of FloorFlex: Where Design Meets Excellence.

The manifolds and fittings used in the FloorFlex Underfloor Heating System are made with Patented GFS Connection Technology.

Extra-Safe GFS Connection

FloorFlex fittings are extra-safe thanks to the use of Patented GFS Connection Technology.



Distinctive Features That Set FloorFlex Apart



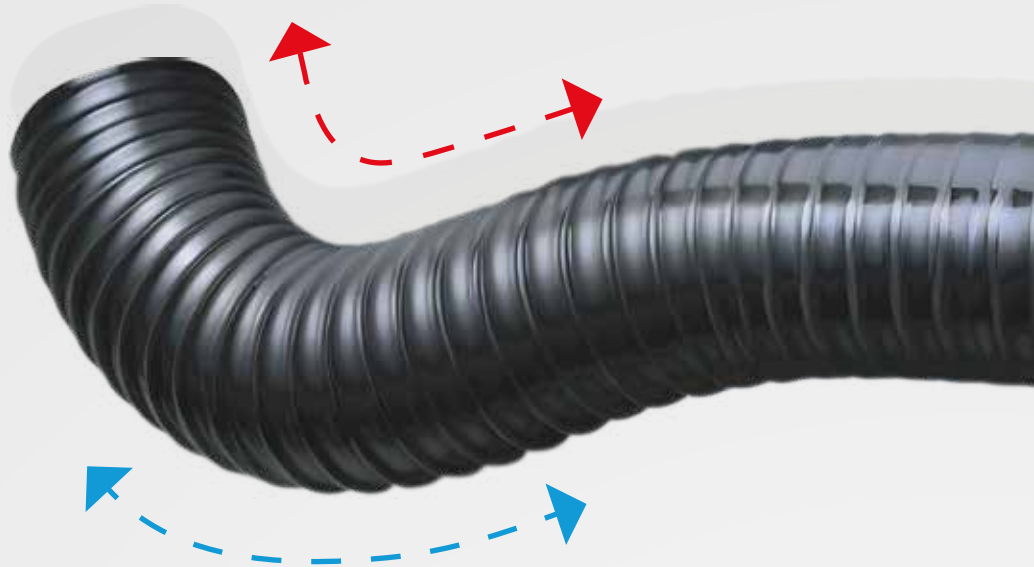
Crafted from stainless steel, FloorFlex functions as a robust oxygen barrier—effectively preventing corrosion, eliminating pipe clogging, and guaranteeing absolute hygiene.

Save on yearly maintenance with FloorFlex's corrosion-free design.

Strong Chemical Resistance

Why Choose FloorFlex

Design Flexibility



FloorFlex Stainless Steel Pipe undergoes a special normalization process during production. This process is designed to enhance the structural strength of the pipe, maximize flexibility, and ensure long-term safe usage. During normalization, the pipe is heat-treated to relieve internal stresses in the material and to achieve a homogeneous structure. As a result, the hose becomes more resistant to external factors and harsh environmental conditions. It performs exceptionally well against temperature fluctuations, pressure differences, and mechanical stress.

This process also increases the pipe's resistance to deformation, ensuring reliable use for many years. Thanks to these superior features, the FloorFlex Stainless Steel Pipe offers a dependable solution for installation systems and can be used seamlessly throughout the lifetime of the building. The normalization process not only enhances the durability of the pipe but also plays a critical role in ensuring user safety. As a result, users benefit from a product that meets high safety standards, has a long lifespan, and requires minimal maintenance. With these features, FloorFlex Stainless Steel Pipe becomes an ideal choice for modern piping systems.

Why Choose FloorFlex

User-Friendly Features

1 The main component of underfloor heating systems, the pipe, is made of stainless steel in the FloorFlex Underfloor Heating System. The thermal conductivity of stainless steel is **40 times higher than that of plastic**. This ensures rapid achievement of the desired room temperature, eliminating long waiting times.

The FloorFlex Stainless Steel Underfloor Heating Pipe has a built-in oxygen barrier and requires **no annual maintenance**. As a result, customers using the FloorFlex Underfloor Heating System save on yearly maintenance costs and avoid potential damages that may occur during maintenance.

2

3 The FloorFlex Underfloor Heating System features smart technology, enabling precise temperature control for each zone as per your preference. These **smart system products** offer the ability to independently adjust the temperature of each room, providing energy savings.

The products used in the FloorFlex Underfloor Heating System are made of stainless steel and copper alloys. Therefore, the lifespan of these products is **as long as the building's lifespan**. Plastic installations, depending on material quality, degrade over time due to temperature fluctuations and eventually reach the end of their lifespan after a certain period.

4

Why Choose FloorFlex

Installer-Friendly Features



To see the flexibility

1

FloorFlex Underfloor Heating System redefines efficiency with its superior heat transfer capabilities. Its innovative design allows for wider spacing during installation compared to traditional plastic systems, reducing the use of underfloor heating pipes and streamlining the process. Crafted from highly flexible stainless steel, the FloorFlex pipe is **effortless to shape to fit your needs—regardless of air temperature**—offering greater adaptability than plastic pipes.

2

Due to its high efficiency, easier-to-install alternative insulation materials can be used instead of the insulation foams typically used in traditional underfloor heating systems.

3

FloorFlex Underfloor Heating products offer **simplified transportation and storage** due to their compact design, making them far more convenient than traditional alternatives.

4

In traditional plastic underfloor heating systems, the total floor thickness typically ranges between 10-12 cm. This is due to the layers required: a heat insulation board, the pipe installation, and the poured screed. In contrast, the FloorFlex Stainless Steel Pipe system significantly reduces this **thickness to just 4-5 cm, including the screed**. This streamlined design can save approximately 7m³ of screed material in a 100m² house, offering both cost efficiency and labor ship optimization.

5

In the FloorFlex Underfloor Heating System, the internal diameter of the hose is 15 mm. This allows for easier circulation, reducing the load on the system. Since less underfloor heating hose is used, **a smaller amount of water is circulated**, resulting in more efficient heating with less water. It reaches the operating mode **at least 4 times faster** than standard plastic pipes.



Why Choose FloorFlex

Installer-Friendly Features

6 The exterior of the FloorFlex Stainless Steel Pipe is **coated with Nano Technological Polymer**. This maximizes corrosion resistance and prevents the hose from kinking.

Thanks to its high efficiency, the system allows for the **use of lower-capacity heating devices**, reducing both energy consumption and operational costs.

8 In traditional plastic systems, extensive heating areas and long pipe installations typically demand an additional pump for proper operation. However, the FloorFlex Underfloor Heating System eliminates this requirement, ensuring efficient performance without the need for extra equipment.

FloorFlex Underfloor Heating System is the **ideal choice for areas requiring screed cutting**. With reduced pipe usage, it minimizes the need for extensive screed cuts, preserving the screed's composition during applications. Its exceptional heat efficiency ensures optimal comfort, making it a highly reliable and efficient solution.

7

9

System Equipment



Manifolds



Manifold Components



Smart System Devices





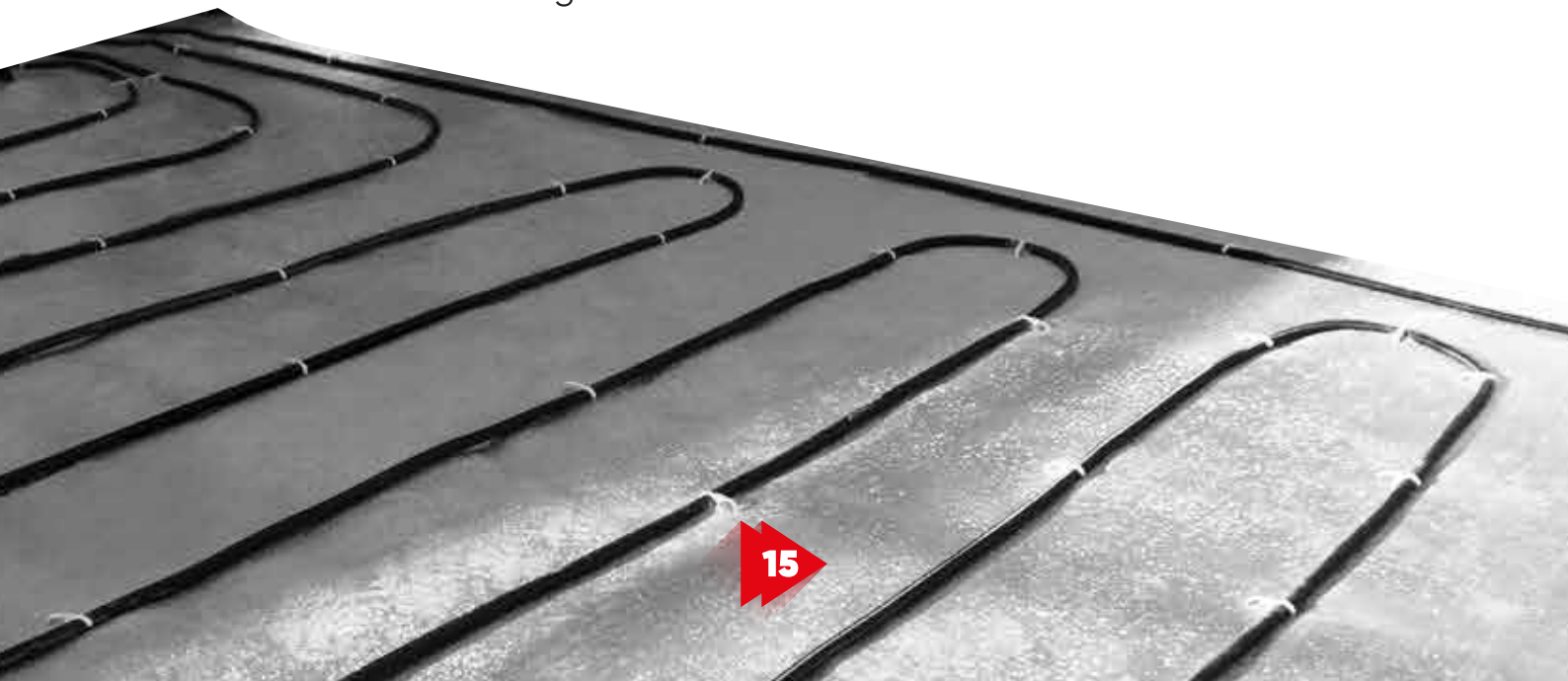
FloorFlex Underfloor Heating Pipe

Product Code = FLR-FLX-15

Inner Diameter = 15.1mm
Materials = Stainless Steel Hose
Outer Coating = FloorFlex Nano Technological Polymer

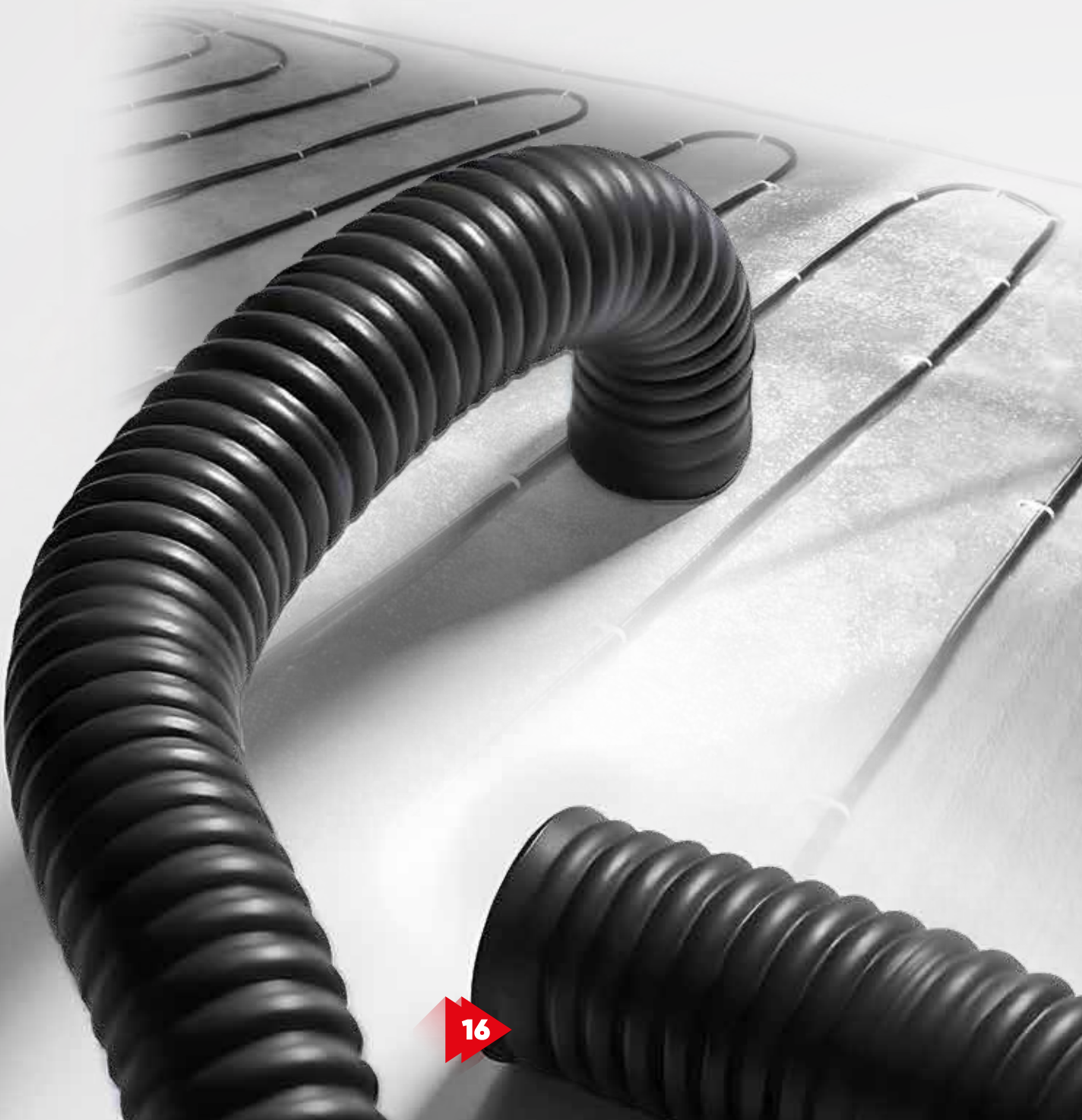
Subjected to a normalization process to enhance both durability and flexibility.

Enhanced corrosion resistance and arc insulation ensured with special FloorFlex coating.



FloorFlex Underfloor Heating Pipe

Floorflex Stainless Steel Pipe offers a long-lasting and reliable solution for plumbing systems with its flexible structure and high durability. Made from **corrosion-resistant stainless steel**, Floorflex pipes deliver excellent performance under high temperature and pressure. Its flexible design ensures easy installation and **seamless use even** in challenging applications. Compared to plastic pipes, it conducts heat 40 times faster and allows the environment to reach operating temperature at least 4 times quicker. Delivered in coils, it offers practical transportation and convenient storage. It is developed to ensure **maximum safety and efficiency** for underfloor heating systems.



What is Nano Technological Polymer Coating?

It is a type of coating produced with **advanced technology** that contains nano-scale particles and is applied to enhance the physical or chemical properties of surfaces. These coatings are applied to materials expected to deliver **high performance** and offer various advantages.

Advantages of Nano Technological Polymer Coating

- Superior protection against corrosion.
- Prevents pipe kinking.
- Lightweight yet highly effective for extended use.
- Improper application noise is minimized.
- Offers long-lasting performance under challenging conditions.

FloorFlex Stainless Steel Pipe undergoes a normalization process.

It is a type of coating produced with advanced technology that contains nano-scale particles and is applied to enhance the physical or chemical properties of surfaces. These coatings are applied to materials expected to deliver high performance and offer various advantages.

FloorFlex Stainless Steel Pipe is the main component of the Underfloor Heating System. It is manufactured in a corrugated form as DN 15, in accordance with the EN 10380 standard. Made from high-quality and precision-engineered stainless steel sheets, FloorFlex pipes are tested under high pressure and then subjected to a normalization process.



Advantages of Nano Technological Polymer Coating

- To create a homogeneous internal structure.
- To improve the quality of the alloy.
- To improve the mechanical properties of steel.
- To enhance the quality of welded areas.



← **Ferrit** →

← **Sementit** →



Vacuum Application in FloorFlex Heating Systems

FloorFlex Underfloor Heating Pipes undergo rigorous **testing with around 6 bar of air pressure** to ensure reliability. After testing, all air inside is fully removed, and both ends are securely sealed, preparing the pipe for shipment in a vacuum-sealed condition. This innovative process allows inspection of the pipe even after at least two years, with vacuum pressure maintained at -750 ppm for optimal performance.

The vacuum state of the FloorFlex Underfloor Heating Pipe can be easily verified by removing the seals at its ends. Upon removal, the sound of air entering confirms the pipe is secure and leak-proof. For further details, simply scan the QR code provided.



Installation Components



PIPE CLAMP

Product Code = FLR-KLP-15

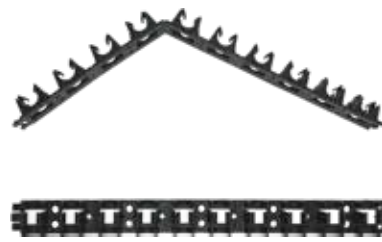
The pipe clamp is used to secure the FloorFlex stainless steel pipe to the floor with a nail gun or dowels.



SINGLE FISHBONE CLAMP

Product Code = FLR-KLP-16

It is used to fix the FloorFlex Stainless Steel Pipe to the floor.



REFERENCE CLAMP

Product Code = FLR-KLP-17

The FloorFlex Reference Clamp is 50 cm long and contains a slot every 5 cm. It ensures a neat installation by adjusting the hose distances. It can be used in all installations or section by section.

FloorFlex Manifolds

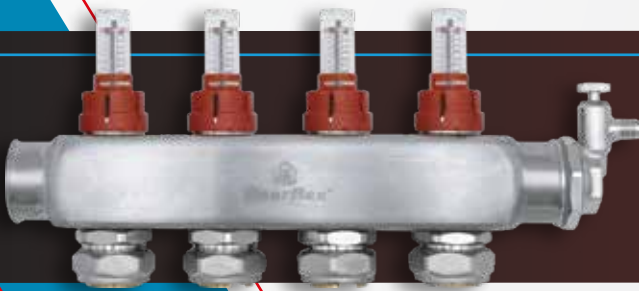
FloorFlex Manifolds are manufactured to the highest quality standards, standing out from their counterparts with superior durability and reliability. Developed by BES Yapı's R&D and product development engineers, these manifolds feature a specially designed **GFS connection**, offering exceptional performance and long-lasting use. Engineered with precision and without compromising on material quality, FloorFlex manifolds ensure high pressure and temperature resistance, delivering seamless operation. With their durable and sturdy design, they are engineered to deliver maximum efficiency and ensure maximum safety in underfloor heating systems



Patent No: 2015/05940
2015/03708

Manifolds

Stainless Steel Manifolds



FLOORFLEX 1" MANIFOLD (2-6 OUTLETS) – STAINLESS STEEL WITH FLOW CONTROL

Product Code = FLR-KPD-(12-16)

It is used for the distribution of underfloor heating lines.

It has flow control.

Thanks to the patented **GFS Connection Technology** used in FloorFlex fittings, it offers extra safety.

Patent No: 2015/05940
2015/03708

Collector 2 Way	Flow-Controlled Stainless Steel	(FLR-KPD-12)
Collector 3 Way	Flow-Controlled Stainless Steel	(FLR-KPD-13)
Collector 4 Way	Flow-Controlled Stainless Steel	(FLR-KPD-14)
Collector 5 Way	Flow-Controlled Stainless Steel	(FLR-KPD-15)
Collector 6 Way	Flow-Controlled Stainless Steel	(FLR-KPD-16)

As the pipe length used in the FloorFlex system is roughly one-third of that in plastic piping systems, the manifold is designed with fewer outlets. However, additional outlets can be added if necessary, offering flexibility in installation.

Manifolds

Stainless Steel Manifolds

FLOORFLEX 1" MANIFOLD (2-6 OUTLETS) – STAINLESS STEEL WITH FLOW CONTROL

Product Code = FLR-KPT-(12-16)



Used for the distribution of underfloor heating lines.

It is a **spring-loaded system** and compatible with a thermostatic valve.

Thanks to the patented **GFS Connection Technology** used in FloorFlex fittings, it offers extra safety.

Patent No: 2015/05940
2015/03708

- Collector 2 Way** - Thermostatically Controlled Stainless Steel (FLR-KPT-12)
- Collector 3 Way** - Thermostatically Controlled Stainless Steel (FLR-KPT-13)
- Collector 4 Way** - Thermostatically Controlled Stainless Steel (FLR-KPT-14)
- Collector 5 Way** - Thermostatically Controlled Stainless Steel (FLR-KPT-15)
- Collector 6 Way** - Thermostatically Controlled Stainless Steel (FLR-KPT-16)

As the pipe length used in the FloorFlex system is roughly one-third of that in plastic piping systems, the manifold is designed with fewer outlets. However, additional outlets can be added if necessary, offering flexibility in installation.

Manifolds

Brass Manifolds



FLOORFLEX 1" COLLECTOR (2-6) - FLOW CONTROLLED BRASS

Product Code = FLR-KSD-(12-16)

Used for the distribution of underfloor heating lines.

It is flow-controlled.

Thanks to the patented **GFS Connection Technology** used in FloorFlex fittings, it offers extra safety.

Patent No: 2015/05940
2015/03708

- Collector 2 Way** - Flow Controlled Brass **(FLR-KSD-12)**
- Collector 3 Way** - Flow Controlled Brass **(FLR-KSD-13)**
- Collector 4 Way** - Flow Controlled Brass **(FLR-KSD-14)**
- Collector 5 Way** - Flow Controlled Brass **(FLR-KSD-15)**
- Collector 6 Way** - Flow Controlled Brass **(FLR-KPT-16)**

As the pipe length used in the FloorFlex system is roughly one-third of that in plastic piping systems, the manifold is designed with fewer outlets. However, additional outlets can be added if necessary, offering flexibility in installation.

Manifolds

Brass Manifolds

FLOORFLEX 1" MANIFOLD (2-6 OUTLETS) - THERMOSTATICALLY CONTROLLED BRASS

Product Code = FLR-KST-(12-16)



Used for the distribution of underfloor heating lines.

It is a spring-loaded system and compatible with a thermostatic valve.

Thanks to the patented **GFS Connection Technology** used in FloorFlex fittings, it offers extra safety.

Patent No: 2015/05940
2015/03708

- Collector 2 Way** - Thermostatically Controlled Brass **(FLR-KST-12)**
- Collector 3 Way** - Thermostatically Controlled Brass **(FLR-KST-13)**
- Collector 4 Way** - Thermostatically Controlled Brass **(FLR-KST-14)**
- Collector 5 Way** - Thermostatically Controlled Brass **(FLR-KST-15)**
- Collector 6 Way** - Thermostatically Controlled Brass **(FLR-KST-16)**

As the pipe length used in the FloorFlex system is roughly one-third of that in plastic piping systems, the manifold is designed with fewer outlets. However, additional outlets can be added if necessary, offering flexibility in installation.

Manifolds

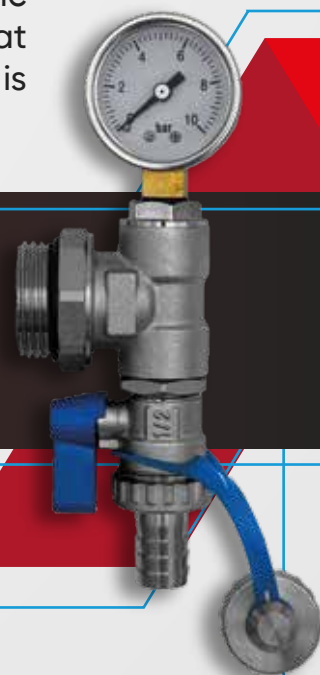
Manifold Components



FLOORFLEX AUTOMATIC AIR VENT & DRAIN VALVE

Product Code = FLR-TAH-01

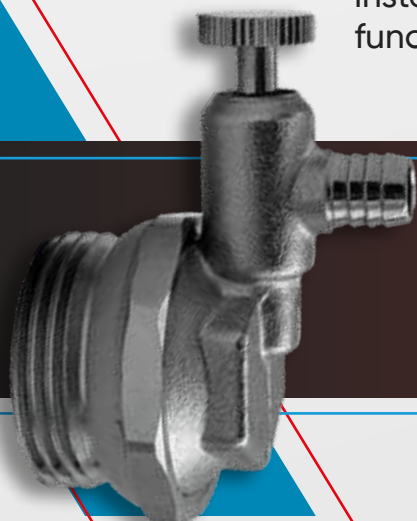
It is integrated into the system by mounting it on the FloorFlex manifold instead of the end cap. One side functions as a drain valve, while the other side is an automatic air vent. It continuously expels any air that may form in the system and is recommended for use in all installations.



FLOW METER AND DRAIN VALVE

Product Code = FLR-TAH-02

It is integrated into the system by mounting it on the FloorFlex manifold instead of the end cap. One side functions as a drain valve, while the other side is a pressure gauge.



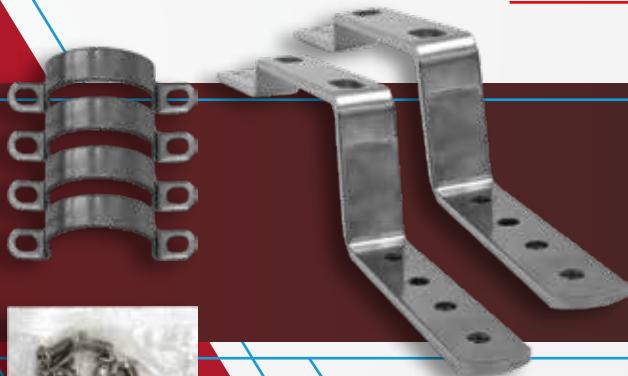
FLOORFLEX MANIFOLD CAP WITH MANUEL AIR VENT

Product Code = FLR-TAH-03

It is integrated into the system by mounting it on the FloorFlex manifold instead of the end cap. It is used to manually release the air from the system.

Manifolds

Manifold Components



FLOORFLEX MANIFOLD CLAMP

Product Code = FLR-KLP-KL

The FloorFlex manifold clamp is used to secure stainless steel and brass manifolds to the wall. Unlike thinner and less sturdy manifold clamps, it is designed with a thicker and more robust structure, providing greater durability and strength. This ensures a secure and reliable installation for your floor heating system.

FLOORFLEX MANIFOLD CLAMP

Product Code = FLR-TAH-04



It is used to seal one side of the FloorFlex Manifold.

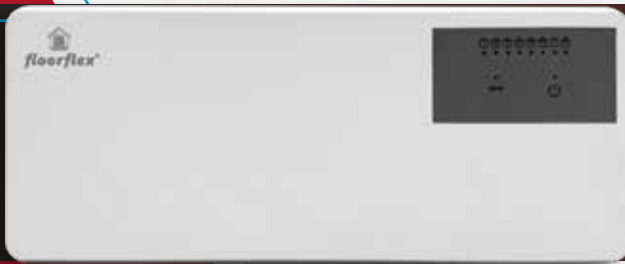


MANIFOLD CABINET (40CM-60CM)

Product Code = FLR-DOL-40 - FLR-DOL-60

It provides both an aesthetic appearance and increases the safety of the installation by ensuring that the manifolds are properly protected.

Smart System Devices



FLOORFLEX CONTROL PANEL

Product Code = FLR-UNI-01

FloorFlex Control panel is the system element used to transmit the signals from the thermostat to the actuated valve. It supports up to 8 lines.

FLOORFLEX SMART ROOM THERMOSTAT

Product Code = FLR-UNI-01



The FloorFlex room thermostat is installed in the desired indoor space for temperature control. It detects temperature changes and transmits them to the cable center to manage the activation and deactivation of the underfloor heating system. Connected to the cable center via wiring, it also offers remote control capabilities in internet-accessible environments through the Tuya Smart App.

Smart System Devices



FLOORFLEX ACTUATOR VALVE MOTOR

Product Code = FLR-AKT-01

Integrated into the FloorFlex thermostatically controlled manifold, it enables the connected heating line to operate by opening and closing in response to signals from the thermostat and central wiring unit, ensuring precise temperature regulation.

FLOORFLEX THERMOSTAT COVER

Product Code = FLR-TKA-01



Used for wall mounting the FloorFlex Room Thermostat.

Connection Fittings



FLOORFLEX MALE REDUCER

Product Code = FLR-ERD-02

It is a converter fitting used to connect the FloorFlex stainless steel pipe to any threaded connection.

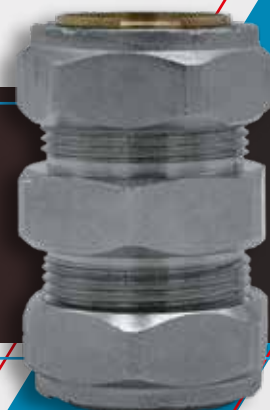
Thanks to the patented **GFS Connection Technology** used in FloorFlex fittings, it offers extra safety.

Patent No: 2015/05940
2015/03708

FLOORFLEX (COUPLING) REDUCTION

Product Code = FLR-MRD-01

It is the connecting component used to join two FloorFlex stainless steel hoses together.



TEST NIPPLE MALE REDUCER

Product Code = FLR-TNP-01



FloorFlex male reducer is used to connect the pipe to the boiler in systems where a collector is not required. It has a manual air vent for releasing the air from the system.

Thanks to the patented **GFS Connection Technology** used in FloorFlex fittings, it offers extra safety.

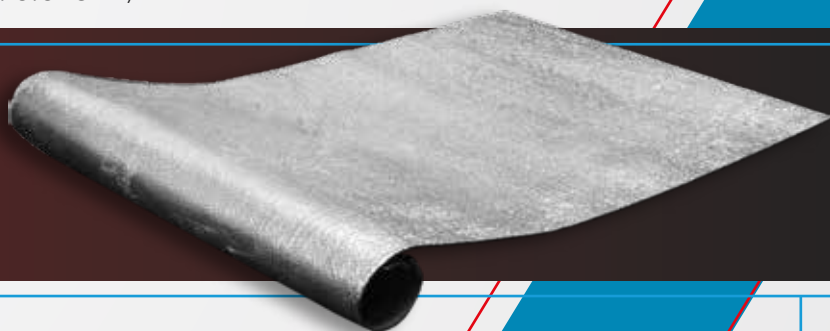
Patent No: 2015/05940
2015/03708

Insulation Materials

Thermal Insulation Products in compliance with **TS EN 14313** standard – Polyethylene Foam Sheet and Roll Thermal conductivity value: λ : 0.045 W/mK

METALIZED ROLL INSULATION MAT

Product Code = FLR-ŞİLT-05



With a 5mm thickness and a metallized surface coating, it provides insulation and prevents heat loss.

Size: 1x60 meters

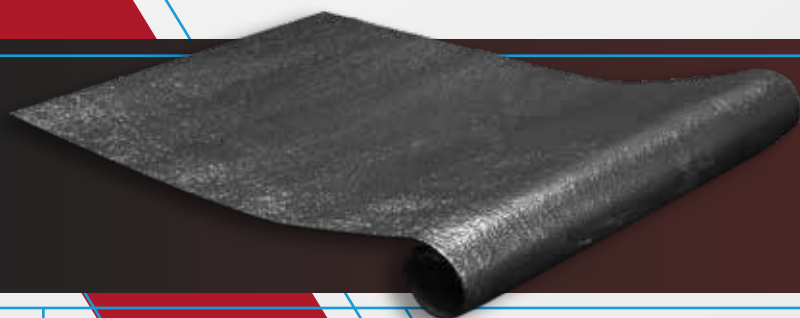
Thickness: 5mm

Thermal Conductivity: λ : 0.045 W/mK

Materials

Main Material: PE

Surface Coating: Metallized Polymer



ALUMINUM-COATED INSULATION MAT

Product Code = FLR-ALM-05

With a thickness of 5mm and an aluminum surface coating, it provides insulation, prevents heat loss, and enhances heat distribution.

Materials

Main Material: PE

Surface Coating: Aluminum

Size: 1x60 meters

Thickness: 5mm

Thermal Conductivity: λ : 0.045 W/mK

Installation Examples

Snapshots from projects brought to life across Turkey with FloorFlex Underfloor Heating Hoses! We continue to make our name known in every city with quality and reliability.



Cevizli / İstanbul | With Insulation
FloorFlex Installation Mat Applied



Yakutiye / Erzurum
FloorFlex Installation



Ağacık / Sakarya | With Screed Applied
FloorFlex Installation



Ağacık / Sakarya | With Screed Applied
FloorFlex Installation

Installations Examples

Erzurumspor Football Club

At the training field of Erzurumspor Football Club, FloorFlex Underfloor Heating Pipes were chosen to prevent the grass from freezing (Anti-Frost/ De-Frost application) and getting damaged during harsh winter conditions, and to maintain an optimal ground temperature. Applied across the entire field, this system ensures the grass remains healthy thanks to its durability and efficiency.

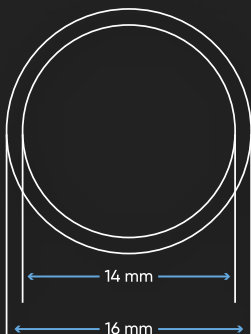


A bird's-eye view of the training field.

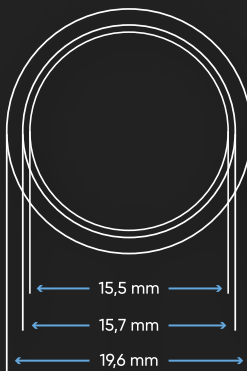
R&D Studies & Asnys Data

FloorFlex Flex Hose - PeX Pipe Heat Transfer Comparison Report

PeX Pipe



Stainless Steel Flex Hose



PeX Pipe

Outer Diameter: 16 mm

Inner Diameter: 12 mm

Thermal Conductivity Coefficient: 0.42 W/m(°C)

Outer Surface Area of the Pipe: 0.050265 m²
(for 1 meter of pipe)

Inner Surface Area of the Pipe: 0.037699 m²
(for 1 meter of pipe)

Stainless Steel Flex Hose

Outer Diameter: 19,6 mm

Inner Diameter: 15,5 mm

Thermal Conductivity Coefficient: 15,7 W/m(°C)

Outer Surface Area of the Pipe: 0.061575 m²
(for 1 meter of pipe)

Inner Surface Area of the Pipe: 0.0488695 m²
(for 1 meter of pipe)

Types of Flooring

Resistance Type Flooring

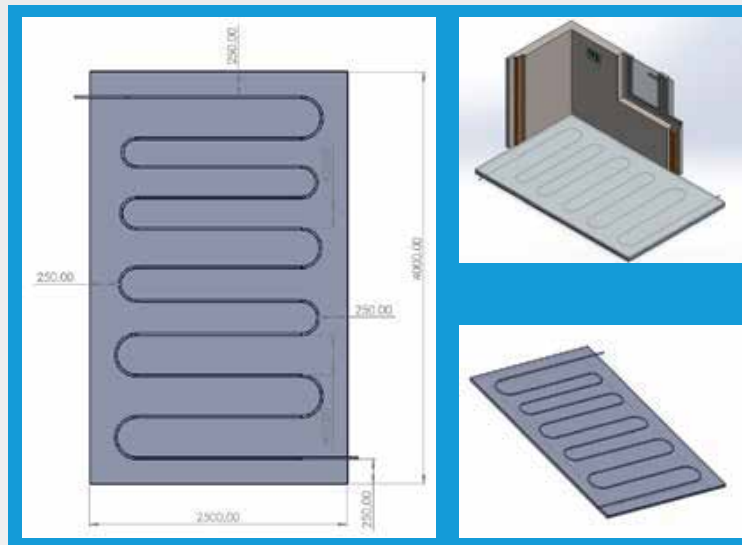
Version 1

Floor Area: 10m^2

Pipe Length: 24m

Distance Between Pipes: 400mm

Pipe Length per Square Meter: 2,4



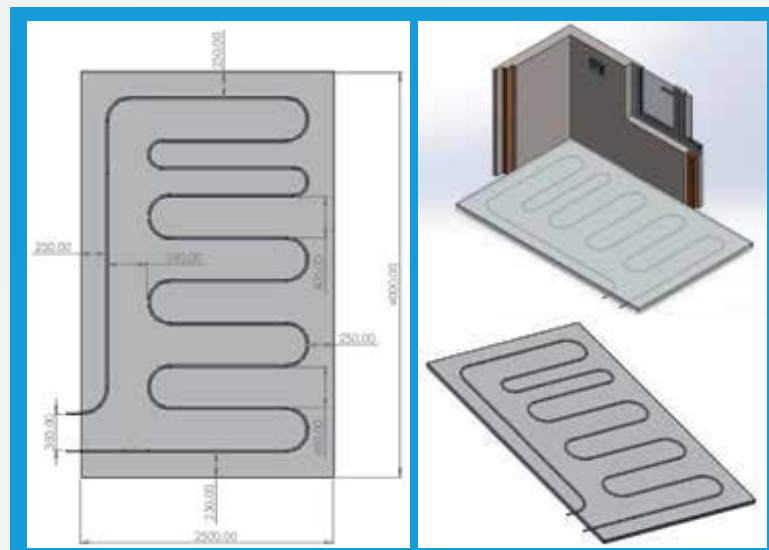
Version 2

Floor Area: 10m^2

Pipe Length: 22m

Distance Between Pipes: 400mm

Pipe Length per Square Meter: 2,2



Resistance Type Flooring

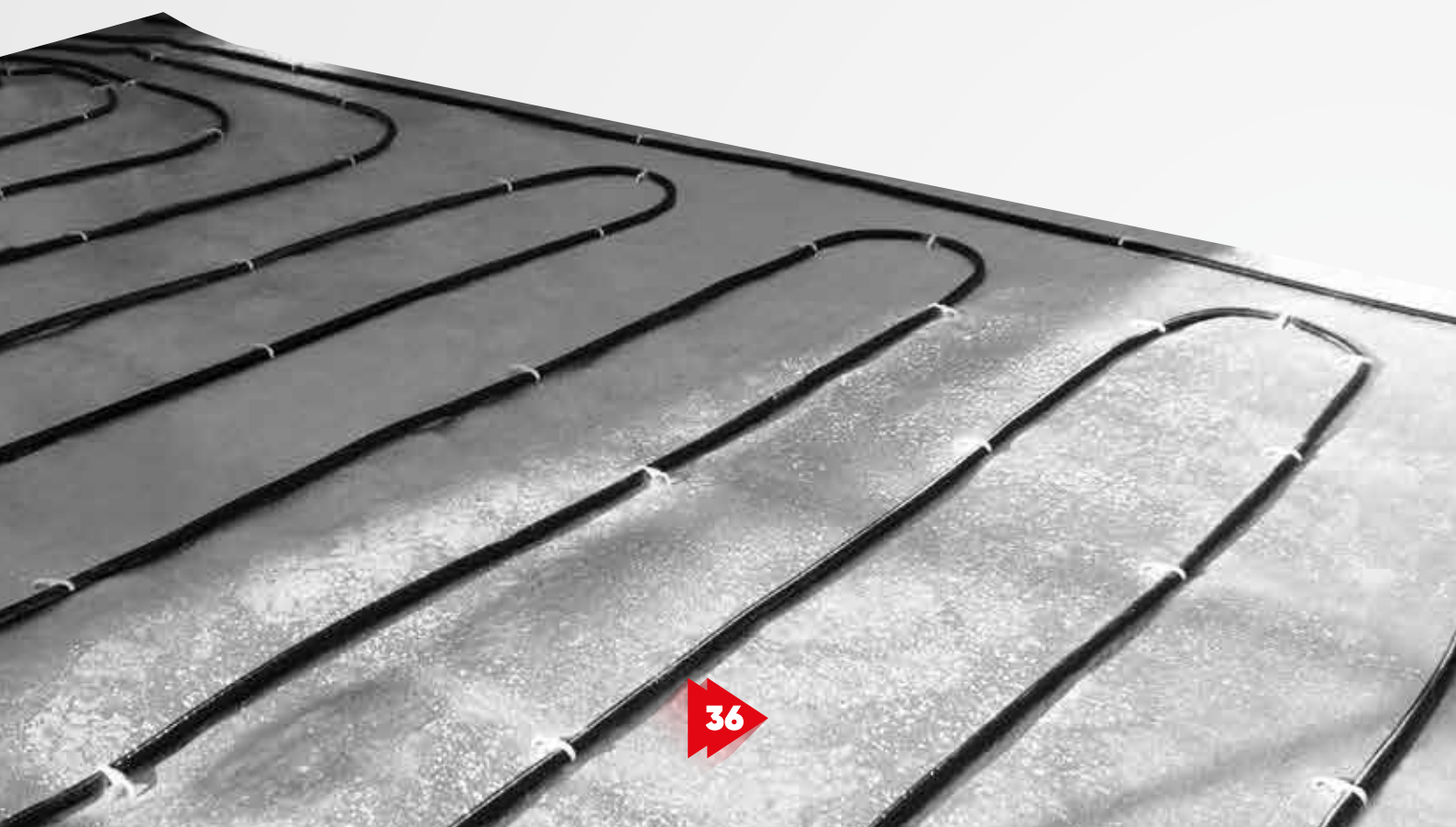
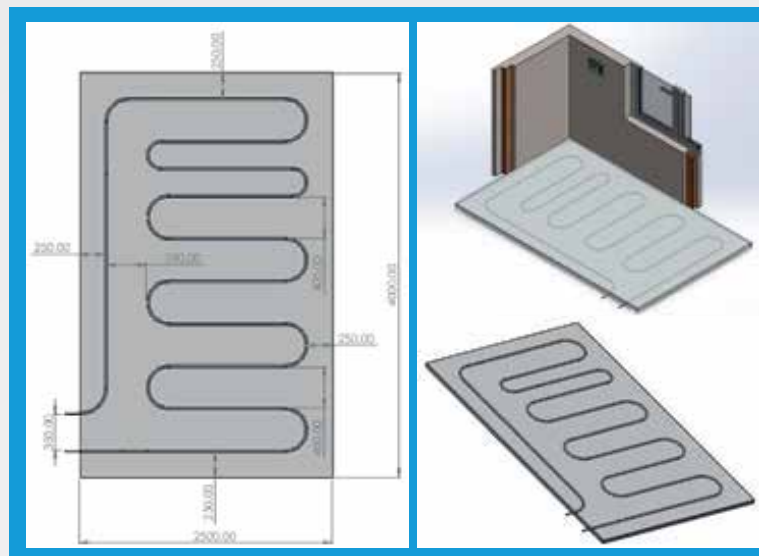
Version 3

Floor Area: 10m²

Pipe Length: 26m

Distance Between Pipes: 300mm

Pipe Length per Square Meter: 2,6



Snail Type Flooring

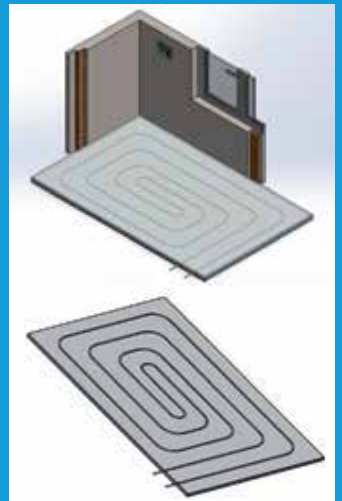
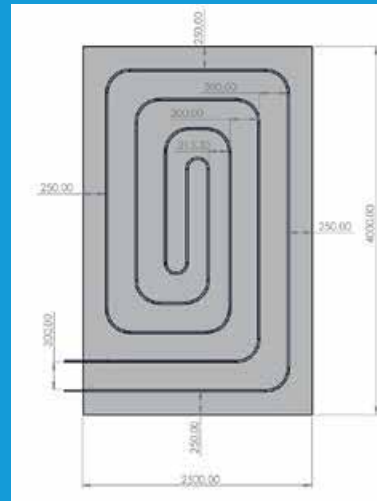
Version 4

Floor Area: 10m²

Pipe Length: 27m

Distance Between Pipes: 300mm

Pipe Length per Square Meter: 2,7



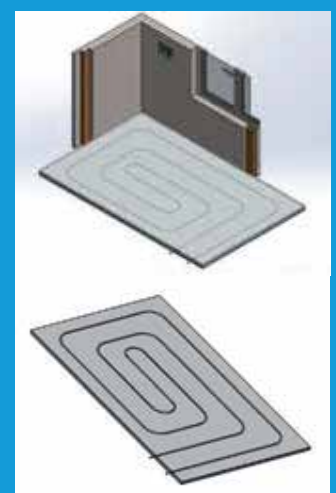
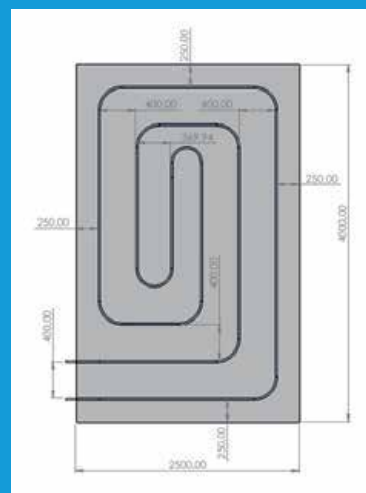
Version 5

Floor Area: 10m²

Pipe Length: 22m

Distance Between Pipes: 400mm

Pipe Length per Square Meter: 2,2



Application Recommendations

- 1** The hose should be stored in its original packaging. Ensure that the pipes does not become entangled when unrolling the spool.
- 2** In non-insulated apartments, pipes spacing should be designed using the manufacturer's calculation software.
- 3** If the heated area is an external balcony or a place with high heat loss, be sure to design it as a separate line.
- 4** Before installing low heat-conductive floorings like parquet, make sure to use perforated and ultra-thin insulation sheets. Otherwise, the thick, metalized sheets commonly used by flooring installers will act as thermal insulation and negatively affect the heating efficiency of the space.
- 5** After the installation is completed and before screed application, be sure to perform a Leak Test in accordance with the manufacturer's instructions. (perform the test with 3 bar hydraulic pressure)
- 6** After performing the leak test and activating the boiler, ensure that the air is properly vented from the system. If air remains in the system, hot water may not flow through certain parts of the pipe, which could cause problems.
- 7** It is recommended to drill through walls for room transitions near the manifold to ensure efficient installation.
- 8** Do not make sharp bends. Use a minimum bend radius of 75 mm.
- 9** You should have your installation done by certified professionals with a FloorFlex Master Certificate.
- 10** In new buildings, the underfloor heating system needs to run for a certain period to work efficiently. As the building warms up, the system's efficiency increases.
- 11** In installations made under cold weather conditions, in construction sites, and in unoccupied finished apartments, it is recommended to drain at least 10% of the water in the system after testing to prevent the risk of freezing.
- 12** It is recommended to use high thermal conductivity materials such as ceramic or marble (granite) for the floors.
- 13** Plan the installation so that the length of each zone does not exceed 60 meters.



Application Recommendations

14 **Screed Additive:** It is recommended to add 1 kg for every 5 square meters (standard 3.5–4.5 cm) to the plaster preparation water.

15 In apartments larger than 130 square meters, we recommend using a collector with an automatic purger.

16 While the system is running, periodically check the collector outlet pipes for air buildup, as same as other systems. If you feel any vibration, you can release the air from the system by gently turning the manual purger valve on the collector.

17 **Note:** If too much water is released, the boiler may enter error mode due to low pressure. To fix this, adjust the air valve at the bottom of the boiler and maintain the pressure between 1.5 and 2 bar.

18 Before installation, make sure to use the recommended thermal insulation materials such as insulation mat, foam, etc. For north-facing facades or areas with glass balconies, it is recommended to use insulation materials with a minimum thickness of 5 mm.

19 Do not use a pipe that has been crushed or damaged for any reason, which will reduce the flow rate through it. In such cases, make sure to contact the manufacturer's representatives.

20 When commissioning the system, make sure to complete the procedures according to the manufacturer's instructions.

21 The screed should be isolated from the exterior wall. Before applying the screed, complete the installation of the insulation mat used on the floor, ensuring it is placed approximately 10 cm above the edge of the floor, so you won't need to use an edge insulation band.

FLOORFLEX AREAS OF USE

FloorFlex Underfloor Heating System offer innovative solutions that adapt to various spaces, ensuring maximum comfort and efficiency. It contributes to energy savings by providing uniform heat distribution in residential homes, villas, and buildings with central heating systems. In commercial spaces such as offices, restaurants, and shopping malls, it creates an ideal heating environment for both staff and visitors while enhancing energy efficiency. When used in parking entrances, it serves as anti-icing systems, improving safety and preventing winter accidents. Additionally, in training fields such as football and tennis courts, it maintains optimal ground temperature, supporting athletes' performance and extending field usability. FloorFlex elevates comfort in both living and working environments with its effective heating solutions across all areas.

- 1- In individual residences**
- 2- In villas and similar housing units**
- 3- In buildings with central heating systems**
- 4- In offices and similar workplaces**
- 5- In restaurants and shopping malls**
- 6- At parking lot entrances to for de-frosting or anti-frosting**
- 7- In training fields and stadiums**
(In training areas such as football and tennis fields)



Heating Systems Compatible with FloorFlex

FloorFlex Underfloor Heating Systems offer adaptable solutions for every space thanks to their compatibility with various heat sources. Natural gas and electric boilers provide practical and comfortable heating for individual use, while heat pumps offer a highly energy-efficient alternative. Solid fuel heating systems, which use coal or pellet fuels, are ideal for systems relying on traditional energy sources. Central heating systems ensure balanced and efficient heat distribution in large-scale buildings. Thanks to its compatibility with different energy sources, FloorFlex delivers a reliable and effective heating experience in both residential and commercial spaces.

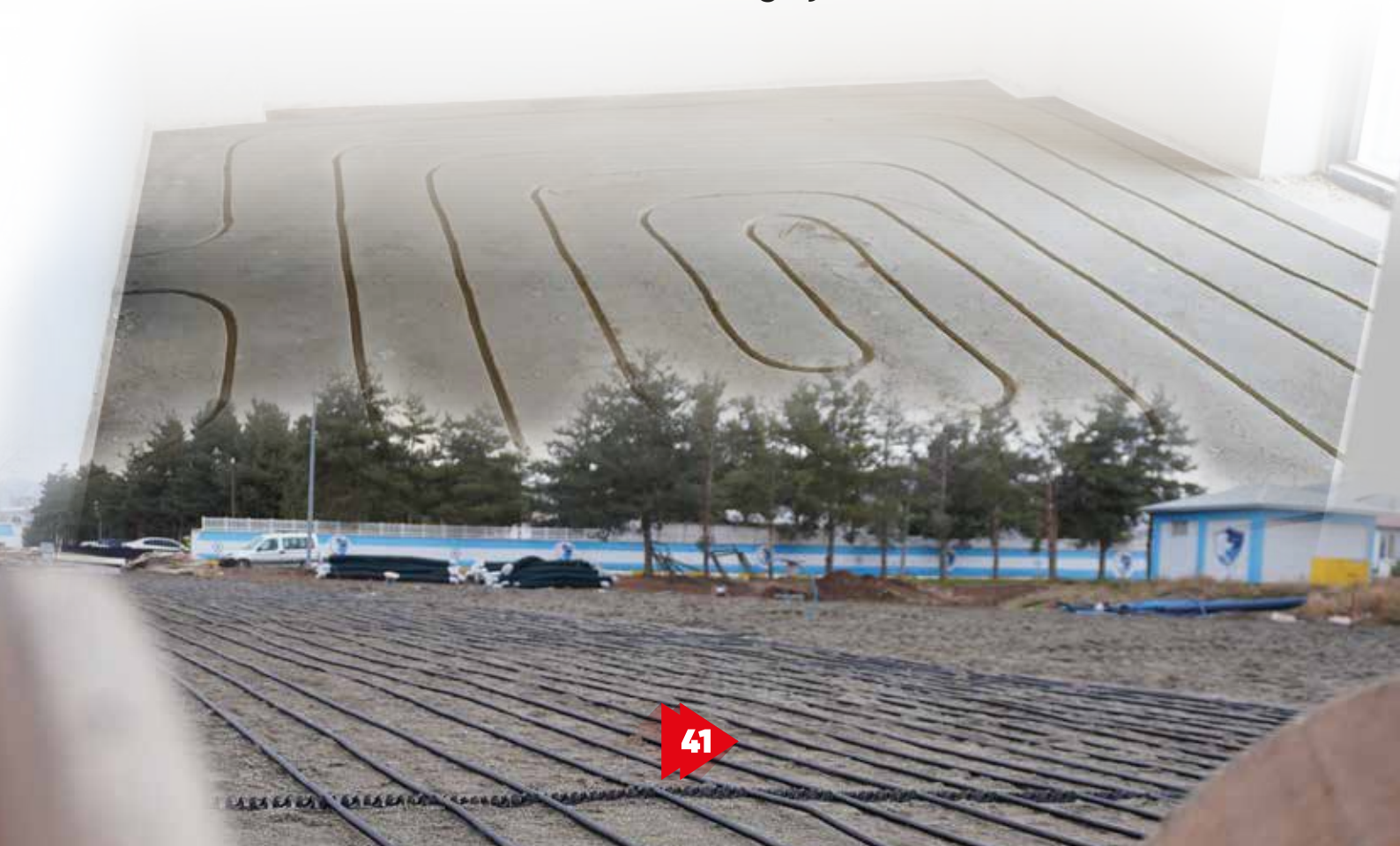
1- Natural Gas Boilers

2- Heat Pumps

3- Electric Boilers

4- Solid Fuel Heating Systems (pellets, Wood, Coal, etc.)

5- Central Heating Systems



You can take your notes.

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Carbon Emission Target 2027!



Carbon Neutral by 2027: Our Step-by-Step Plan

2025: IPO-1 Solar Power Investment, Electric Vehicle Conversion.

2026: IPO-2, All vehicles to be electric, All natural resource uses to be controlled.

2027: Completion of IPO processes, Carbon Neutral.



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"Heat Under Your Feet"

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