POLYPIPE AND ARDEX UK

INSTALLATION GUIDE

Your guide to using ARDEX products with Polypipe Underfloor Heating

ARDEX
Building tomorrow

Polypipe
Underfloor Heating

Polypipe
Underfloor Heating

Focused on delivering solutions to the residential sector, Polypipe Building Products work with national and local developers, plumbing and heating engineers, general builders and groundworkers to deliver above and below ground drainage systems and rainwater solutions, as well as hot and cold plastic plumbing products – including water-fed underfloor heating solutions.

ARDEX
Building tomorrow

ARDEX manufacture an extensive range of high-performance flooring and tiling products and is committed to matching the right product with the right installation method to minimise time, cost and risk.

ARDEX products are supported by unparalleled technical and field experts, who provide valuable product knowledge and job site consultation to architects, building engineers, construction managers, specialist contractors, and professional flooring installers and tile fixers.

Contents

In this section we will be covering:

- Creating a screed with ARDEX before installing a Polypipe Underfloor Heating System
- Preparing an existing screed for Polypipe Underfloor Heating
- Preparing a suspended timber floor for Polypipe Underfloor Heating
- Preparing a floating floor for Polypipe Underfloor Heating

A quality floor starts with a solid foundation.

Correct subfloor preparation is crucial for a long-lasting and trouble-free flooring installation, and ARDEX offers a range of subfloor preparation products designed to ensure your floor is:

- **Smooth and level:** A smooth, level surface prevents uneven tile placement and potential cracking
- **Clean:** Free of dirt, debris, and contaminants that can affect bonding
- **Dry:** ARDEX offer solutions for damp subfloors, helping to prevent issues with moisture to ensure optimal installation conditions

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Name	Description	Unit Size Available	Coverage	Technical Information
	A 18	Screed Bonding Cement with Colour Indicator	25kg	refer to datasheet	
	A 38	Ultra Rapid Drying Cement for Internal & External Screeds	25kg	refer to datasheet	
	P 51	Concentrated Water-Based Primer & Bonding Agent	1kg, 5kg, 25kg	refer to datasheet	
	ARDITEX NA®	Rapid Setting Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	
	K 40 HB	Rapid Drying, High Build, Fibre Reinforced Levelling and Smoothing Compound	22kg	refer to datasheet	
	DPM 1 C	One Coat Surface Damp Proof Membrane	6kg, 10kg, 25kg	refer to datasheet	
	DPM 1 C R	Rapid Drying One Coat Surface Damp Proof Membrane	3kg, 6kg, 10kg	refer to datasheet	

Creating a screed with ARDEX before installing a Polypipe Underfloor Heating System

- Mixing: Use a mixer to mix ARDEX A 38 according to the bag instructions.

- Application depth:
  Bonded screeds: 15-40mm
  Unbonded screeds: 50mm+
  Floating screeds: 75mm+ (or 65mm+ in lightly loaded domestic areas)

- Bonding: For bonded screeds, screed repairs, or day joints, apply ARDEX A 18 Bonding Cement and then ARDEX A 38 wet-on-wet.

Preparing an existing solid floor for Polypipe Underfloor Heating

Leveling requirements:

- Surface regularity: Ensure the floor is leveled to SR1 or better (no more than 3mm deviation over a 2 meter straight edge).

- Subfloor condition: The subfloor must be clean, structurally sound, and free of debris. Direct-to-earth subfloors need a reliable damp proof membrane.

Preparing pre-installed screeds:

- Dry cement/sand or anhydrite screeds with DPM: Prime with ARDEX P 51 Primer (diluted 1:3 with water) and level with any ARDEX Levelling and Smoothing Compound.

- Non-functioning DPM or damp solid floors: Consult the ARDEX DPM 1 C or ARDEX DPM 1 C R Technical Datasheet for guidance.

Important note: If you need to raise the floor height, this must be done before laying a DPM or panels, not afterwards.

Preparing a suspended timber floor for Polypipe Underfloor Heating

Structural integrity:

- Rigidity: Ensure the timber floor is rigid and free from deflection.

- Reinforcement: If the floor is not rigid, consider relaying it with additional supports, noggins, or an overlay board.

Fastening:

- Screwing: Secure the floor with screws at 300mm centers.

Preparing a floating floor for Polypipe Underfloor Heating

Building regulations compliance:

- Part L: Ensure the floor assembly complies with Part L of the Building Regulations.

- Load capacity: The assembly must withstand all anticipated static and dynamic loads.

Leveling:

- Surface regularity: Lay the insulation on a level floor that achieves SR1 surface regularity or better. Use an ARDEX Levelling and Smoothing Compound to achieve this.
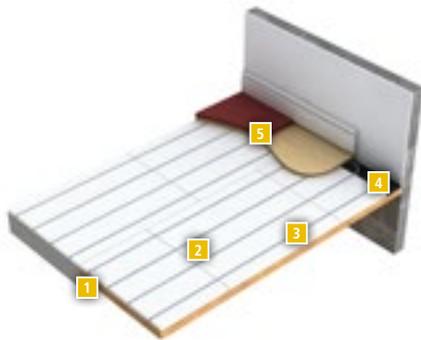
Deflection:

- Limits: The deflection of the entire assembly should not exceed L/360 or L/7204.

- Timber sheets: Install suitable timber sheets according to relevant industry guidelines.

In this section we will be covering:

- Installing Polypipe Underfloor Heating Overlay® Gypsum Panels

- Dry-laying method onto solid floors

- Bedding method onto dry solid floors

- Bedding method onto damp solid floors

- Installing the pipework

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

1	Fits over concrete or floorboards	**4**	End returns
2	Overlay®	**5**	Suitable for tiles and hard wood floors
3	Pipe		

Product Name		Description	Unit Size Available	Coverage	Technical Information
	CA 20 P	Multi-Purpose Construction Adhesive & Sealant	300ml	refer to datasheet	
	P 51	Concentrated Water-Based Primer & Bonding Agent	1kg, 5kg, 25kg	refer to datasheet	
	DPM 1 C	One Coat Surface Damp Proof Membrane	6kg, 10kg, 25kg	refer to datasheet	
	DPM 1 C R	Rapid Drying One Coat Surface Damp Proof Membrane	3kg, 6kg, 10kg	refer to datasheet	
	P 4	Ready Mixed Rapid Drying Primer	8kg, 2kg	refer to datasheet	
	X 7	Flexible Standard Set Tile Adhesive (Available in White and Grey)	20kg	refer to datasheet	
	X 7 R S1	Flexible Rapid Set Tile Adhesive (Available in White and Grey)	20kg	refer to datasheet	
	ARDITEX NA®	Rapid Setting Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	

Overlay® Gypsum Panel System

The Overlay® Gypsum Panel System is a slim, efficient flooring solution.

It installs directly over existing floors, minimising disruption. The system uses pre-grooved gypsum grooved boards for easy pipe placement and requires no extra insulation. Its strength makes it ideal for heavy floor finishes like tile or engineered timber.

Features and benefits of using the Overlay® system

- Low profile system (18 mm deep)
- No need to excavate existing floor
- Simple installation
- Suitable for multiple floor coverings
- Strong and durable gypsum fibre boards
- Ideal for both single room and whole house applications
- Fast response times

Product Name	Description	Unit Size Available
PB08571	Overlay® Floor Panel 800mm (L) x 600mm (W) x 18mm (D) Coverage approx. 14·4m²	30
PB08570	Overlay® Floor Panel 800mm (L) x 600mm (W) x 18mm (D) Coverage approx. 4.8m²	10
UFHOVTP10	Overlay® Transition Panel (600mm x 800mm x 18mm)	10
UFHOVERP30	Overlay® End Return Panel (600mm x 200mm x 18mm)	30
UFHOVCP10	Overlay® Corner Panel (600mm x 600mm x 18mm)	10
PB776	Polyurethane Expanding Foam Glue (Overlay®)	1
UFH5012B UFH8012B UFH10012B UFH30012B	12mm x 50m Coil UFH Pipe 12mm x 80m Coil UFH Pipe 12mm x 100m Coil UFH Pipe 12mm x 300m Coil UFH Pipe	1
PB05855	25m Edge Expansion Coil	1

Installing Polypipe Underfloor Heating Overlay® Gypsum Panels

Subfloor preparation:

- **Load-bearing capacity:** Ensure the floor is constructed to support the panels, with a deflection no greater than L/360.
- **Leveling:** Level the base before installation to prevent vertical movement.

Installation methods:

- **Dry-Laid:** Install the Overlay® panels directly onto the subfloor.
- **Tile Adhesive:** Lay the panels on a bedding layer of flexible ARDEX Tile Adhesive.

Edge expansion strips:

- **Purpose:** Install edge expansion strips around the room's perimeter to allow for free expansion of the Overlay® system when levelling compound or tiles are used.
- **Installation:** The strips have a self-adhesive backing for easy application. Place them around walls and fixed structures like columns, steps, and doors.
- **Protection:** The strips include a plastic apron that prevents leveling compound from seeping in and lifting the panels.
- **Additional insulation:** Install edge expansion strips in addition to perimeter insulation as required by building regulations, especially when using levelling compounds or tiles.
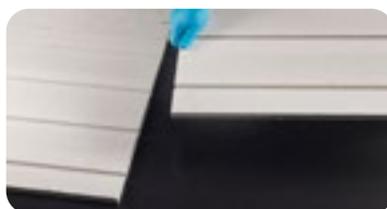
Movement or expansion joints:

- When laying the boards, existing expansion joints in the subfloor must be brought through to the surface finish.

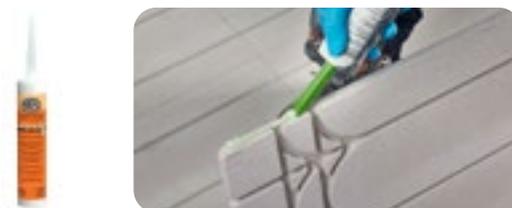## Dry-laying method onto solid floors

- **Surface preparation:** Ensure the floor is perfectly flat (SR1) and free from irregularities before installing the panels in a brick bond pattern.

- **Cutting:** Use a hand saw or circular saw to cut the panels to size.

- **Alignment:** Align panels using short cut-off pipework.

- **Adhesion:** Glue adjacent panels together with Polypipe Underfloor Heating's polyurethane expanding glue or ARDEX CA 20 P Construction Adhesive.

Next step: Proceed to the "Installing the pipework" section.

Bedding method onto dry solid floors

- **Minor deviations:** If the floor is not perfectly flat, address minor irregularities with a flexible ARDEX Tile Adhesive.
- **Cutting:** Use a hand saw or circular saw to cut the boards to size.

- **Priming:** Prime the backs of the boards with ARDEX P 51 Primer (diluted 1:3 with water).

Installation:

1. Apply a layer of flexible ARDEX Tile Adhesive.
2. Trowel out the adhesive with a 10mm notched trowel.
3. Lay the boards in a brick bond pattern, ensuring no cavities remain beneath the panels.
4. Align panels using short cut-off pipework.

Next step: Proceed to the "Installing the pipework" section.

Bedding method onto damp solid floors

- **Damp floors:** If a structural DPM is non-functioning, or the floor is damp (above 75% RH), consult the ARDEX DPM 1 C or ARDEX DPM 1 C R Technical Datasheet.

Surface preparation:

- **DPM 1 C application:** Before applying ARDEX DPM 1 C, pre-smooth the subfloor with moisture-tolerant ARDITEX NA® if required.

- **Priming:** Within 36 hours of applying ARDEX DPM 1 C, prime the surface with ARDEX P 4 Ready Mixed Primer.

- **Panel preparation:** Before installing the Overlay® system, prime the backs of the panels with ARDEX P 51 Primer (diluted 1:3 with water).

Installation:

1. Apply a layer of flexible ARDEX Tile Adhesive.
2. Trowel out the adhesive with a 10mm notched trowel.
3. Lay the boards in a brick bond pattern, ensuring no cavities remain beneath the panels.
4. Align panels using short cut-off pipework.

Installing the Pipework

1. **Board preparation:** Prime the board surfaces with ARDEX P 51 Primer (diluted 1:3 with water) using a broom, and allow to dry completely.

2. **Installing a floor sensor:** If installing resilient floor coverings, such as LVT, it is recommended to install a floor sensor for accurate management of the floor surface temperature.

3. **Pipework installation:** Lay the Polypipe 12mm ultra-flexible underfloor heating pipework in circuits and secure it in place using the pipe grooves.

4. **Manifold connection:** Connect the underfloor pipework to the manifold.

5. **Pressure testing:** Pressure test the system to 6 bar for no less than 1 hour and decrease pressure to 3 bar until the floor finish is completed.

6. **Antifreeze/inhibitor:** Add an appropriate percentage of antifreeze/inhibitor to the system after pressure testing.

7. **Levelling (resilient flooring only):** Apply ARDITEX NA® or ARDEX K 40 HB to a minimum depth of 6mm, up to 10mm.

8. **Heat Commissioning:** after the installation of the levelling compound, allow at least 48 hours to cure completely at a constant temperature. Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day.

Steps 7 and 8 are not always required for the installation of ceramic tiles, as these can be fixed directly to the board system.

In this section we will be covering:

- Installing Polypipe Underfloor Heating's Overlay® Plus system
- Bedding method onto dry solid floors
- Bedding method onto damp solid floors
- Installing onto timber subfloors
- Installing the pipework

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Name	Description	Unit Size Available	Coverage	Technical Information
	K 40 HB	Rapid Drying, High Build, Fibre Reinforced Levelling and Smoothing Compound	22kg	refer to datasheet	
	ARDITEX NA®	Rapid Setting Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	
	X 7	Flexible Standard Set Tile Adhesive (Available in White and Grey)	20kg	refer to datasheet	
	X 7 R S1	Flexible Rapid Set Tile Adhesive (Available in White and Grey)	20kg	refer to datasheet	
	DPM 1 C	One Coat Surface Damp Proof Membrane	6kg, 10kg, 25kg	refer to datasheet	
	DPM 1 C R	Rapid Drying One Coat Surface Damp Proof Membrane	3kg, 6kg, 10kg	refer to datasheet	
	P 4	Ready Mixed Rapid Drying Primer	8kg, 2kg	refer to datasheet	
	P 51	Concentrated Water-Based Primer & Bonding Agent	1kg, 5kg, 25kg	refer to datasheet	

Overlay® Plus Panel System

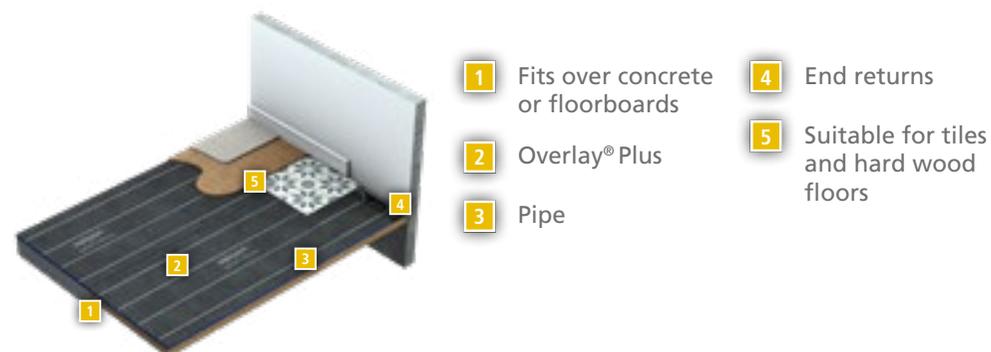| Product Name	Description	Unit Size Available
UFHOP10E	Overlay® Plus Enhanced Floor Panel (1200mm x 600mm x 18mm) Use code UFHOP50E for packs of 50.	10
UFHOPTPE	Overlay® Plus Enhanced Transition Panel (1200mm x 600mm x 18mm)	10
UFHOPA5E	Overlay® Plus Enhanced Acoustic Floor Panel (1200mm x 600mm x 18mm) Use code UFHOPA50E for packs of 50.	5
UFHOPATPE	Overlay® Plus Enhanced Acoustic Transition Panel (1200mm x 600mm x 18mm)	10
UFH5012B UFH8012B UFH10012B UFH30012B	12mm x 50m Coil UFH Pipe 12mm x 80m Coil UFH Pipe 12mm x 100m Coil UFH Pipe 12mm x 300m Coil UFH Pipe	1
UFHOPWASHER	Galvanised Washer	100
PB05855	25m Edge Expansion Coil	1

Overlay® Plus Panel System is an upgraded flooring solution.

It offers 15% more heat output and includes insulation for improved efficiency. The boards are lightweight, easy to install, and support heavy finishes like tile.

Features and benefits of using the Overlay® Plus system

- Best practice over the floor system
- 15% more efficiency
- Low profile system – only 18mm high
- Larger lightweight boards
- Easy to cut and shape so fits any size and shape room
- Can be tiled directly on to

1. Fits over concrete or floorboards
2. Overlay® Plus
3. Pipe
4. End returns
5. Suitable for tiles and hard wood floors

Installing Polypipe Underfloor Heating's Overlay® Plus system

Subfloor preparation:

- Load-bearing capacity: Ensure the floor is constructed to support the panels, with a deflection no greater than L/360.
- Levelling: Level the base before installation to prevent vertical movement.

Installation methods:

- Mechanical fixings (timber only): Install Overlay® Plus panels directly onto the timber subfloor using mechanical fixings.
- Tile adhesive (solid substrates): Lay the panels on a bedding layer of flexible ARDEX Tile Adhesive.
- Combined method (timber substrates): Use a combination of adhesives and mechanical fixings for installation on timber subfloors.

Edge expansion strips:

- Purpose: Install edge expansion strips around the room's perimeter to allow for free expansion of the Overlay® plus system when levelling compound or tiles are used.
- Installation: The strips have a self-adhesive backing for easy application. Place them around walls and fixed structures like columns, steps, and doors.
- Protection: The strips include a plastic apron that prevents levelling compound from seeping in and lifting the panels.
- Additional insulation: Install edge expansion strips in addition to perimeter insulation as required by building regulations, especially when using levelling compounds or tiles.

Movement or expansion joints:

- When laying the boards, existing expansion joints in the subfloor must be brought through to the surface finish.

Bedding method onto dry solid floors

- Levelling: If your floor is uneven, apply any ARDEX Smoothing Compound such as ARDEX K 40 HB or ARDITEX NA®.
- Priming: Prime the floor with ARDEX P 51 Primer (diluted 1:3 with water).
- Cutting and preparation: Cut the boards to size using a hand saw or circular saw. Remove any dust or debris from the back of the panels.

Installation:
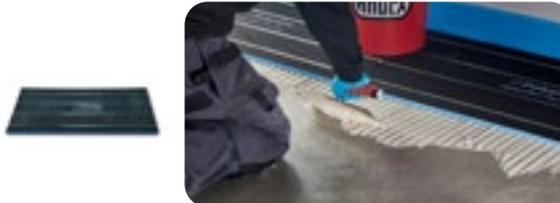
1. Apply a layer of flexible ARDEX Tile Adhesive.
2. Trowel out the adhesive with a 10mm notched trowel.
3. Lay the boards in a brick bond pattern, ensuring no cavities remain beneath the panels.
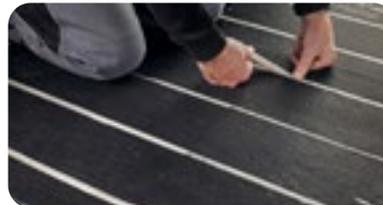
4. Align panels using short cut-off pipework.

Next step: Proceed to the "Installing the pipework" section.

Bedding method onto damp solid floors

- Damp floors: If a structural DPM is non-functioning, or the floor is damp (above 75% RH), consult the ARDEX DPM 1 C or ARDEX DPM 1 C R Technical Datasheet for guidance.

- Priming: Within 36 hours of applying ARDEX DPM 1 C, prime the surface with ARDEX P 4 Ready Mixed Primer.

Installation:

1. Apply a layer of flexible ARDEX Tile Adhesive.

2. Trowel out the adhesive with a 10mm notched trowel.
3. Lay the boards in a brick bond pattern, ensuring no cavities remain beneath the panels.
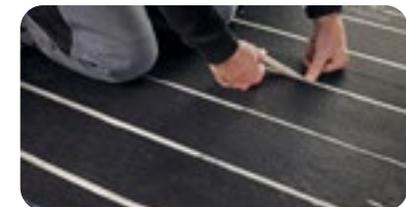
4. Align panels using short cut-off pipework.

*Next step: Proceed to the "Installing the pipework" section.*

Installing onto timber subfloors

- **Subfloor condition:** Ensure the timber is sound, solid, and free from deflection. The subfloor must also be able to withstand both dynamic and additional dead loads.


- **Priming:** Apply one coat of undiluted ARDEX P 51 Primer to the timber.
- **Leveling:** If the timber floor is not flat (SR1), use a suitable flexible ARDEX Tile Adhesive to fully support the panels.
- **Mechanical fixings:** Panels can be directly fixed to the timber using 12-15 mechanical fixings with rebated washers.
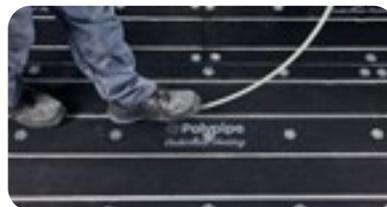
Installation:
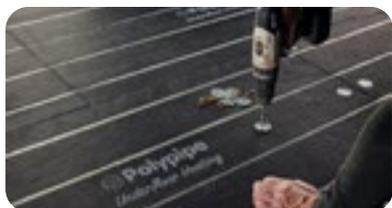
1. Once the primer is dry, install the boards onto a layer of flexible ARDEX Tile Adhesive.
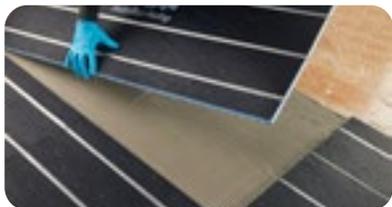
2. Use a 6-10mm notched trowel to spread the adhesive and eliminate voids beneath the panels.
3. Lay the boards in a brick bond pattern.
4. Align panels using short cut-off pipework.

Installing the pipework

1. **Pipework installation:** Lay the Polypipe 12mm ultra-flexible underfloor heating pipework in circuits and secure it in place using the pipe grooves.

2. **Manifold connection:** Connect the underfloor pipework to the manifold.
3. **Installing a floor sensor:** If installing resilient floor coverings, such as LVT, it is recommended to install a floor sensor for accurate management of the floor surface temperature.
4. **Pressure testing:** Pressure test the system to 6 bar for no less than 1 hour and decrease pressure to 3 bar until the floor finish is completed.
5. **Antifreeze/inhibitor:** Add an appropriate percentage of antifreeze/inhibitor to the system after pressure testing.

6. **Levelling (resilient flooring only):** Apply ARDITEX NA® or ARDEX K 40 HB to a minimum depth of 6mm, up to 10mm.
7. **Heat Commissioning:** after the installation of the levelling compound, allow at least 48 hours to cure completely at a constant temperature. Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day.

Steps 6 and 7 are not always required for the installation of ceramic tiles, as these can be fixed directly to the board system.

Tiling on Polypipe Underfloor Heating Overlay® systems

Tiling onto Polypipe Underfloor Heating Overlay® systems requires specific steps to ensure a perfect and long-lasting finish.

Following these procedures carefully will prevent issues like cracked grout and ensure optimal heat transfer.

In this section we will be covering:

- Installing Ceramic Tiles and Natural Stone on Polypipe Underfloor Heating Overlay® Gypsum Panels
- Installing Ceramic Tiles and Natural Stone on Polypipe Underfloor Heating Overlay® Plus Panels

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Code	Description	Unit Size Available	Coverage	Technical Information
	P 51	Concentrated Water-Based Primer & Bonding Agent	1kg, 5kg, 25kg	refer to datasheet	
	ARDITEX NA®	Rapid Setting Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	
	K 40 HB	Rapid Drying, High Build, Fibre Reinforced Levelling and Smoothing Compound	22kg	refer to datasheet	
	Flexbone VA	Bonded uncoupling membrane for problematic floors	20m	refer to datasheet	
	X 77	MICROTEC® Flexible Standard-Setting Tile Adhesive	20kg	refer to datasheet	
	X 78	MICROTEC® Flexible Semi-Pourable Tile Adhesive	20kg	refer to datasheet	
	S 27 W	MICROTEC® Flexible Rapid Set Tile & Stone Adhesive	20kg	refer to datasheet	
	S 28 W	MICROTEC® Flexible Rapid Set Semi-Pourable Floor Tile & Stone Adhesive	20kg	refer to datasheet	
	FLEX-FL	Flexible Rapid Set Tile Grout for Wide Joints	2.5kg, 5kg, 10kg	refer to datasheet	
	FLEX-FS	Flexible Standard Set Tile Grout for Narrow Joints	2.5kg, 5kg, 10kg	refer to datasheet	

Installing Ceramic Tiles and Natural Stone on Polypipe Underfloor Heating Overlay® Gypsum Panels

Pre-installation checks:

- **Subfloor stability:** Ensure the surface is rigid and free from deflection.

- **Board installation:** Verify that boards are properly installed.

- **System pressure:** Confirm that the system has been pressurised.

Panel preparation:

- **Priming:** Apply ARDEX P 51 Primer (diluted 1:3 with water) to the panels using a broom. Avoid pooling, and allow to dry completely.

Uncoupling membrane:

- **Recommended:** Before tiling, it is recommended to install ARDEX IndorTec Flexbone VA Uncoupling Membrane. Lay the mat onto a thin bed (4mm notched trowel) of ARDEX X 77 or X 78 Flexible Tile Adhesive. This is a requirement prior to the installation of natural stone.

Tile installation:

- **Direct fixing:** If installing tiles directly onto the boards, apply adhesive to the primed surface, ensuring no voids remain beneath the tiles.

- **Uncoupling membrane:** Use ARDEX X 77 or X 78 Flexible Tile Adhesive to tile onto the pre-laid ARDEX Flexbone VA Uncoupling Membrane.

- **Installation of Natural Stone:** For moisture-sensitive natural stone, use ARDEX S 27 or S 28 Flexible Tile Adhesives. (Refer to the Technical Datasheet for commissioning and grout selection).

Grouting:

- **Grout application:** Once the adhesive is dry, grout with ARDEX FLEX-FL Rapid-Setting Floor Grout or FLEX-FS Standard Setting Wall and Floor Grout.

Curing and temperature control:

- **Curing time:** If using ARDEX X 77 or ARDEX X 78, allow the tile installation 14 days to cure naturally. Rapid heating or exceeding recommended temperatures can cause system failure.

- **Faster commissioning:** ARDEX S 27 and S 28 Adhesives with Rapid-Dry technology allow commissioning after 48 hours. These can also be used for porcelain tiles if quicker commissioning is required.

Thermal cycling:

- **Temperature control:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day.

Installing Ceramic Tiles and Natural Stone on Polypipe Underfloor Heating Overlay® Plus Panels

Pre-installation checks:

- **Subfloor stability:** Ensure the surface is rigid and free from deflection.
- **Board installation:** Verify that boards are properly installed.
- **System pressure:** Confirm that the system has been pressurised.

Direct tile installation:

- **Suitable for:** This method applies if you're installing tiles directly onto the board surface.
- **Adhesive application:** Once commissioning is complete, apply the chosen adhesive onto the fleece surface of the boards, ensuring no voids remain under the tiles.

Small format tiles:

- **Size limitation:** For the installation of tiles less than 100 x 100mm, please contact ARDEX Technical Services for additional advice and guidance, as the use of ARDITEX NA® or ARDEX K 40 HB may be required.

Increased load considerations:

- **Heavy use:** If anticipating static/dynamic loading or high foot traffic, consult Polypipe Underfloor Heating about installing a suitable cement-based board above the system.

Uncoupling membrane (recommended):
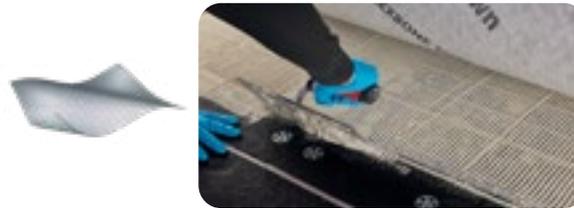
- **Application:** Before tiling, use ARDEX IndorTec Flexbone VA Uncoupling Membrane with a thin bed (4mm trowel) of ARDEX X 77 or X 78 Flexible Tile Adhesive. This is a requirement prior to the installation of natural stone.

Tile installation:

- **Adhesive and material options:** Use ARDEX X 77 or ARDEX X 78 Flexible Tile Adhesive to tile directly onto the boards or the pre-laid ARDEX Flexbone VA Uncoupling Membrane.
- **Installation of Natural Stone:** For moisture-sensitive natural stone, use ARDEX S 27 or S 28 Flexible Tile Adhesives. (Refer to the Technical Datasheet for commissioning and grout selection).

Grouting:

- **Products:** After the adhesive dries, grout with ARDEX FLEX-FL Rapid-Setting Floor Grout or ARDEX FLEX-FS Standard Setting Wall and Floor Grout.

Curing and temperature control:

- **Curing time:** If using ARDEX X 77 or ARDEX X 78, allow the tile installation 14 days to cure naturally. Rapid heating or exceeding recommended temperatures can cause system failure.
- **Faster commissioning:** ARDEX S 27 and S 28 Adhesives with Rapid-Dry technology allow commissioning after 48 hours. These can also be used for porcelain tiles if quicker commissioning is required.

Thermal cycling:

- **Temperature control:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day.

Achieving a flawless finish on your Polypipe Underfloor Heating Overlay® systems requires careful preparation and installation.

This section outlines the essential steps involved in installing soft floorcoverings, such as vinyl or laminate, onto these systems. By following these guidelines, you can ensure a durable and aesthetically pleasing floor that will complement your underfloor heating system.

In this section we will be covering:

- How to install soft floorcoverings onto Polypipe Underfloor Heating Overlay® Gypsum Panels

- How to install soft floorcoverings onto Polypipe Underfloor Heating Overlay® Plus Panels

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Code	Description	Unit Size Available	Coverage	Technical Information
	P 51	Concentrated Water-Based Primer & Bonding Agent	1kg, 5kg, 25kg	refer to datasheet	
	ARDITEX NA®	Rapid Setting Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	
	K 40 HB	Rapid Drying, High Build, Fibre Reinforced Levelling and Smoothing Compound	22kg	refer to datasheet	
	FEATHER FINISH	Rapid Drying Patching and Smoothing Compound	5kg, 11kg	refer to datasheet	
	AF 175	Luxury Vinyl Tile Adhesive	6kg, 12kg	refer to datasheet	
	AF 145	Pressure Sensitive Adhesive	12kg	refer to datasheet	
	AF 2575 PLUS	Heavy Duty Adhesive – One Component	12kg	refer to datasheet	

How to install soft floorcoverings onto Polypipe Underfloor Heating Overlay® Gypsum Panels

Key considerations before installing the flooring:

- **Subfloor stability:** Ensure the surface is rigid and free from deflection.

- **Board installation:** Verify that boards are properly installed.

- **System commissioning:** Confirm that the underfloor heating system has been commissioned.

Preparing the subfloor:

- **Priming:** Apply ARDEX P 51 Primer (diluted 1:3 with water) to the underfloor heating boards using a broom. Let it dry completely.

- **Levelling:** Apply ARDITEX NA® or ARDEX K 40 HB to a minimum depth of 6mm, up to 10mm. For thicker levelling requirements, this must be done prior to the installation of the panels.

- **Additional support:** If you anticipate high static or dynamic loads or increased footfall, installing a board above the system may be necessary. Contact Polypipe Underfloor Heating for more information.

- **Thermal cycling of the levelling compound:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day. This helps prevent shrinkage before installing the floorcovering.

Smoothing and patching:

- **Levelling:** Use ARDEX Feather Finish Rapid Drying Patching and Smoothing Compound to smooth out any unevenness in the leveled floor.

- **Installation:** Floorcoverings can be installed after 15 minutes without priming.

Vinyl/LVT installation:

- **Acclimatisation:** Allow vinyl/LVT to acclimate to the substrate temperature before installation.

- **Adhesive:** Use a suitable ARDEX Flooring Adhesive. Refer to the ARDEX website for more information.

- **Glue line temperatures:** Adhere to current industry standard glue line temperatures as specified by the flooring manufacturer.

- **High solar gain areas:** In areas with high solar gain (e.g., south-facing conservatories), use ARDEX AF 2575 PLUS.

Curing and temperature control:

- **Curing time:** Allow a minimum of 48 hours on completion of installation before heat commissioning.

Heat commissioning of the resilient floor covering:

- **Temperature control:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day. Thermal cycling must not exceed 27°C floor surface temperature.

Post-installation care:

- **Avoid loads:** Do not place static or dynamic loads, loaded trolleys, or furniture on the flooring until the adhesive has fully set (typically 48 hours at 20°C).

- **Setting a maximum temperature:** Do not raise the floor surface temperature above 27°C. This can be controlled by the thermostat connected to the pre-installed floor sensor.

How to install soft floorcoverings onto Polypipe Underfloor Heating Overlay® Plus Panels

Pre-installation considerations:

- **Subfloor stability:** Ensure the surface is rigid and free from deflection.
- **Board installation:** Verify that boards are properly installed.
- **System commissioning:** Confirm that the underfloor heating system has been commissioned.

Leveling:

- **Apply leveling compound:** Apply ARDEX K 40 HB or ARDITEX NA® or to a minimum depth of 10mm. For thicker levelling requirements, this must be done prior to the installation of the panels.
- **Additional support:** If you anticipate high static or dynamic loads or increased footfall, installing a board above the system may be necessary. Contact Polypipe Underfloor Heating for more information.
- **Thermal cycling:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day.

Smoothing and patching:

- **Levelling:** Use ARDEX Feather Finish Rapid Drying Patching and Smoothing Compound to smooth out any unevenness in the leveled floor.
- **Installation:** Floorcoverings can be installed after 15 minutes without priming.

Vinyl/LVT installation:

- **Acclimatisation:** Allow vinyl/LVT to acclimatise to the substrate temperature before installation.
- **Adhesive:** Use a suitable ARDEX Flooring Adhesive. Refer to the ARDEX website for more information.
- **Glue line temperatures:** Adhere to current industry standard glue line temperatures as specified by the flooring manufacturer.
- **High solar gain areas:** In areas with high solar gain (e.g., south-facing conservatories), use ARDEX AF 2575 PLUS.

Curing and temperature control:

- **Curing time:** Allow a minimum of 48 hours on completion of installation before heat commissioning.

Heat commissioning of the resilient floor covering:

- **Temperature control:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day. Thermal cycling must not exceed 27°C floor surface temperature.

Post-installation care:

- **Avoid loads:** Do not place static or dynamic loads, loaded trolleys, or furniture on the flooring until the adhesive has fully set (typically 48 hours at 20°C).
- **Setting a maximum temperature:** Do not raise the floor surface temperature above 27°C. This can be controlled by the thermostat connected to the pre-installed floor sensor.

Polypipe Underfloor Heating offers four systems designed for solid or screeded floors, primarily used in new construction or renovations requiring floor excavation.

These systems include the traditional Red Floor Panel system, both ensuring precise installation and positioning, as well as rail and staple systems.

### In this section we will be covering:

- System overview
- Installing Red Floor Panel system
- Installing Clip Rail System
- Staple System
- Installing an ARDEX screed prior to tile or floorcovering installation

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Name	Description	Unit Size Available	Coverage	Technical Information
	ARDITEX NA®	Rapid Setting Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	
	A 46	Multi-Purpose Concrete Repair Mortar	5kg, 11kg	refer to datasheet	
	A 38	Ultra Rapid Drying Cement for Internal & External Screeds	25kg	refer to datasheet	
	A 29	Rapid Hardening Floor Screed	25kg	refer to datasheet	

	Product Name	Description	Unit Size Available
	PB08576	Red Floor Panel System 1.2m x 1m	1
	PB02940	40mm Staple System Clip (for 60mm use code PB02930)	300
	PB08515	Clip Rail System for 15-18mm pipe 16 x 1m pack (16m) 200mm pipe centres (15mm pipe) & 200mm & 300mm pipe centres (18mm pipe). Use approx 1m/m2 floor area and secure with standard Pipe Clip PB02911	16
	PB05855	25mm Edge Expansion Coil	1
	PB02911	Standard UFCH Pipe Clip	250
	UFH5015B UFH8015B UFH10015B UFH15015B UFH30015B	15mm x 50m Coil UFH Pipe 15mm x 80m Coil UFH Pipe 15mm x 100m Coil UFH Pipe 15mm x 100m Coil UFH Pipe 15mm x 300m Coil UFH Pipe	1

Red Floor Panel

Clip Rail System

Staple System
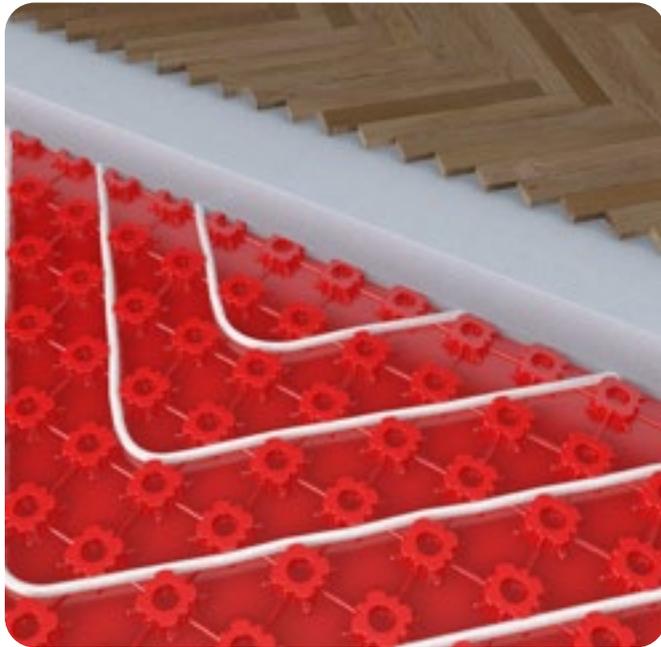
Red Floor Plate is our best practice in-floor system.

The lightweight molded plastic panels facilitate the optimal spiral pattern of pipework, holding the pipe through its entire length and maintaining regimented pipe spacing. The panels also lift the pipes up off the insulation, allowing the 360-degree surface of the pipe to be enveloped in screed, leading to better heat output.

Features and Benefts

- Best practice system for solid and screeded floors
- Simpler, more accurate installation
- Precise pipe positioning
- Ensures minimum pipe bending radius is achieved
- Panels are quick and easy to cut to size
- Can be used in any size or shape room
- Facilitates spiral configurations and 100mm pipe centres
- Approximately 15% less screed required

The clip rail system is a way of installing underfloor heating in to new solid/screeded floors.

Clip rails are slim rows of plastic which are fixed directly to the insulation. Pipe work is then laid in a serpentine configuration, with the pipe resting in notches in the rails, and a screed or concrete floor is poured on top.

Features and Benefts

- Cost-effective
- Provides a guide for pipe spacing
- Can be used in any size or shape room
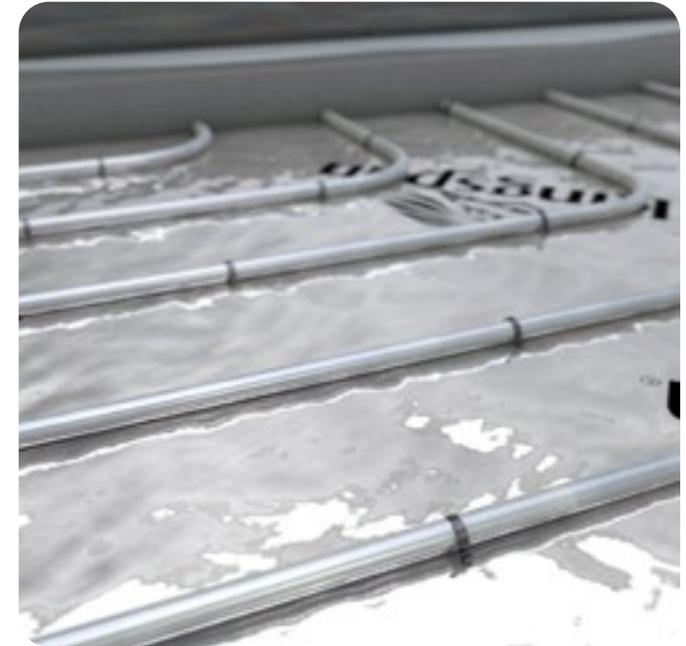
The staple system is a way of installing underfloor heating in to new solid/screeded floors.

This system uses plastic staples to fix the pipe directly to the insulation, after which a screed or concrete floor is poured on top. It relies upon freehand pipe placement by the installer.

Features and Benefts

- Cost-effective
- Minimum fixing materials needed
- Can be used in any size or shape room

Installing Red Floor Panel System

Preparing the Subfloor

- Before installing the insulation, the subfloor must be smooth and flat. If required, mechanically prepare the background to remove contaminants and to improve adhesion. Use a suitable ARDEX Levelling and Smoothing Compound such as ARDITEX NA®, or for localised repairs, use ARDEX A 46 Multi-Purpose Repair Mortar.

Installing Insulation

- To comply with Part L of the Building Regulations, include a suitable insulation layer in the floor construction. The architect or builder is responsible for ensuring compliance. However, insulation must always be placed under the underfloor heating system to prevent downward heat loss exceeding 10W/m².
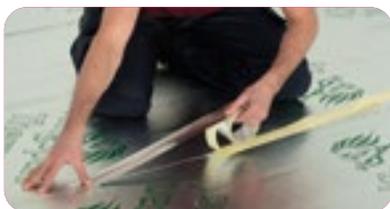
- When laying insulation boards, stagger the joints and tape them securely to minimise movement.

- Ensure a suitable vapour barrier is installed on top of the insulation in accordance with current building regulations and standards.

Installing the Edge Expansion Strip

- The edge expansion strip allows the floor screed to expand freely. It has a self-adhesive strip that bonds to the wall and should be installed around the perimeter and around fixed structures like columns, steps, and access doors.

- The strip also has a plastic skirt that prevents screed from seeping into the joint between the insulation panel and the strip. The edge expansion strip should be fitted in addition to perimeter insulation required by Building Regulations.

Installing the Red Floor Panel

- Lay the floor panels over the pre-installed insulation, ensuring the edges overlap.

Important Note: The ½ castellation should overlap the ¾ castellation. The first panel should be laid with the ½ castellation edge against the wall. Panels can be cut with a fine-tooth saw or overlapped to the nearest castellation fit.

Place the plastic skirt over the floor panel and push the outside run of pipe into the skirt-covered castellations to create a seal around the edge.

When using pumped screed, ensure all panel joints are made correctly and no panels "butt-up," as this may allow screed to penetrate below the underfloor heating system and cause the panels to rise. Secure the panels around the perimeter of the room with staples to prevent them from lifting.

Installing Clip Rail Systems

1. Ensure a suitable vapour barrier is installed on top of the insulation in accordance with current building regulations and standards.

2. Secure the clip rails to the insulation board by using the clips (PB02911). Firmly push the clips downwards into the insulation at 200mm centres so as to ensure that the clip rail is fully secured and lays flat to the insulation.

3. Continue to fit the clip rail across the room at 1m intervals making sure that sufficient space is left around the perimeters of the room (approx. 800mm) to accommodate any pipe returns or connection lengths back to the manifold. Care should also be taken to ensure that the clipping alignment is maintained.

4. It is not necessary to overlap the clip rails. They can be clipped together end to end to form longer lengths.

Installing Staple Systems

1. Ensure a suitable vapour barrier is installed on top of the insulation in accordance with current building regulations and standards.

2. Using the staple gun load the staples from the top and secure with the plastic weight so to ensure the staples stay in position.

3. When stapling the pipe into the insulation this should be done at a minimum of 500mm centres.

Installing an ARDEX screed prior to tile or floorcovering installation

- Prepare the Subfloor: Before installing panels and screed mortar, apply a suitable separating or damp-proof membrane over the insulation. Ensure the insulation board is appropriate for the intended application and has been laid according to the manufacturer's recommendations.

- Mix and Apply Screed: Mix ARDEX A 38 or ARDEX A 29 Screed as per the Technical Datasheet and apply it to the desired thickness (minimum 65 mm). Compact the screed thoroughly.

- Cure Screed with Underfloor Heating: When using the screed over a hot water floor system, allow time before heating the water to 25°C (3 days for ARDEX A 38, 7 days for ARDEX A 29). Maintain this temperature for 3 more days. Then, increase to the maximum floor temperature and maintain it for 4 days. Avoid drafts during this time. Let the floor cool to room temperature (above 15°C) before laying tiles.

Use of a floor sensor: If installing resilient floor coverings, such as LVT, it is recommended to install a floor sensor towards the finished height of the screed for accurate management of the surface temperature.

Tiling directly onto a Polypipe Underfloor Heating solid floor system requires specific steps for a flawless, long-lasting finish.

Adhering to these guidelines will prevent issues like cracked grout and ensure optimal heat transfer.

In this section we will be covering:

- Tiling on Polypipe Underfloor Heating Solid Floor Systems

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Code	Description	Unit Size Available	Coverage	Technical Information
	P 51	Concentrated Water-Based Primer & Bonding Agent	5kg	refer to datasheet	
	K 40 HB	Rapid Drying, High Build, Fibre Reinforced Levelling and Smoothing Compound	22kg	refer to datasheet	
	IndorTec Flexbone VA	Bonded uncoupling membrane for problematic floors	20m		
	X 7 R S1	Flexible Rapid Set Tile Adhesive (Available in White and Grey)	20kg	refer to datasheet	
	X 7	Flexible Standard Set Tile Adhesive (Available in White and Grey)	20kg	refer to datasheet	
	X 325 PTB	Thick Bed Tile Adhesive	20kg	refer to datasheet	
	S 27	MICROTEC® Flexible Rapid Set Tile & Stone Adhesive	20kg	refer to datasheet	
	S 28 W	MICROTEC® Flexible Rapid Set Semi-Pourable Floor Tile & Stone Adhesive	20kg	refer to datasheet	
	FLEX-FL	Flexible Rapid Set Tile Grout for Wide Joints	10kg, 2.5kg	refer to datasheet	

Tiling on Polypipe Underfloor Heating Solid Floor Systems

- **Prepare the Screed:** Prime the prepared ARDEX Screed surface with ARDEX P51 Primer (diluted 1:3 with water), applied with a broom, and allow to dry.

- **Apply Smoothing Layer (if needed):** If necessary, apply any ARDEX Levelling and Smoothing Compound.

- **Install Uncoupling Membrane (recommended):** For added protection against subfloor movement due to thermal changes, consider installing an uncoupling membrane like ARDEX Indortec Flexbone VA between the screed and the tiled layer. Mix a suitable ARDEX Flexible Tile Adhesive like ARDEX X 7 R S1 and apply it to the screed using a 4mm notched trowel. Depress the uncoupling membrane firmly into the adhesive.

- **Tile and Grout:** Fix the tiles ensuring a solid bed fix so that no cavities remain beneath. Using a suitable notched trowel, apply a flexible ARDEX Tile Adhesive and once cured, grout with ARDEX FLEX-FL Rapid-Setting Floor Grout.

Curing and temperature control:

- **Curing time:** Allow the tile installation 14 days to cure naturally. Rapid heating or exceeding recommended temperatures can cause system failure.
- **Faster commissioning:** ARDEX S 27 and S 28 Adhesives with Rapid-Dry technology allow commissioning after 48 hours. These can also be used for porcelain tiles if quicker commissioning is required.

Heat commissioning:

- **Temperature control:** Gradually increase the subfloor temperature by 5°C per day to reach the design temperature. Maintain this temperature for a defined period and then slowly decrease it by 5°C per day.

Note: Always mix and apply ARDEX products according to the relevant Technical Datasheet.

Installing resilient flooring directly onto a Polypipe Underfloor Heating solid floor system requires specific steps for a flawless, long-lasting finish.

Adhering to these guidelines will prevent issues like cracked grout and ensure optimal heat transfer.

In this section we will be covering:

- Installing resilient flooring on solid floor underfloor heating installations

Data sheets: Always refer to the relevant product data sheets for proper mixing and application of ARDEX products. Visit the ARDEX website (ARDEX.co.uk) for all datasheets.

	Product Code	Description	Unit Size Available	Coverage	Technical Information
	P 51	Concentrated Water-Based Primer & Bonding Agent	5kg	refer to datasheet	
	ARDITEX CL	Latex Levelling and Smoothing Compound	20kg (powder) 4.95kg (latex)	refer to datasheet	
	K 40 HB	Rapid Drying, High Build, Fibre Reinforced Levelling and Smoothing Compound	22kg	refer to datasheet	
	FEATHER FINISH	Rapid Drying Patching and Smoothing Compound	5kg, 11kg	refer to datasheet	
	AF 175	Luxury Vinyl Tile Adhesive	6kg, 12kg	refer to datasheet	
	AF 145	Pressure Sensitive Adhesive	12kg	refer to datasheet	
	AF 2575 PLUS	Heavy Duty Adhesive – One Component	12kg	refer to datasheet	

Installing resilient flooring on solid floor underfloor heating installations

- **Prime the Screed:** Prime the prepared ARDEX Screed surface with ARDEX P 51 Primer (diluted 1:3 with water), applied with a broom, and allow to dry.

- **Apply Smoothing Layer:** Apply a smoothing layer of ARDEX Levelling and Smoothing Compound at a minimum of 6mm - we recommend ARDITEX CL or ARDEX K 40 HB.

- **Apply Feather Finish:** For minor surface irregularities, use ARDEX Feather Finish.

- **Glue line temperatures:** Adhere to current industry standard glue line temperatures as specified by the flooring manufacturer.

- **Acclimatise Vinyl/LVT:** Allow vinyl/LVT to acclimatise to the substrate temperature.

- **Install Vinyl/LVT:** Fit vinyl/LVT with appropriate ARDEX Flooring Adhesives. Refer to the ARDEX website for more information.
  Note: In areas with high solar gain (e.g., south-facing conservatories) or floor-to-ceiling windows, use ARDEX AF 2575 PLUS.

- **Cure Adhesive:** After installation, allow at least 48 hours of constant temperature for the adhesive to cure properly before slowly increasing the temperature to the design temperature.

Post-installation care:

- **Setting a maximum temperature:** Do not raise the floor surface temperature above 27°C. This can be controlled by the thermostat connected to the pre-installed floor sensor.

- **Avoid loads:** Do not place static or dynamic loads, loaded trolleys, or furniture on the flooring until the adhesive has fully set (typically 48 hours at 20°C).

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