



UNDERFLOOR HEATING & PLUMBING SYSTEMS

UNDERFLOOR HEATING

INTRODUCTION

REHAU is a leading worldwide extruder and processor of polymer products, the largest in its field in Europe.

The company offers a wide range of long-lasting, high-specification polymer products for key industry sectors including:

- Building Solutions
- Automotive
- Industry

Recognised for quality and performance, the REHAU Heating and Plumbing pipework system is the ideal solution for hot and cold water, central heating and underfloor heating. The REHAU system benefits from:

- High density cross linked polyethylene (PE-Xa) with EVAL barrier coating to prevent oxygen diffusion to DIN 4726.
 - Long life – pressure stability across the temperature range gives a projected life well in excess of 50 years BS 7291.
 - Pressure rating of 6 bar at 95°C for 50 years BS 7291.
 - Corrosion/ limescale free - Chemically inert there is no risk of corrosion.
 - Low frictional resistance through pipe and fittings results in low noise transition.
- Flexibility and EVERLOC™ compression jointing method saves installation time.
 - High integrity jointing system (over 50 million installed worldwide).
- Pipe-in-Pipe saves duct costs.
- Extensive fittings range made from DZR brass.
- WRc listed under the water fittings and bylaws scheme.
- All REHAU products are manufactured to ISO 9001 standards.

– Advantages of polymers over metal:

- No corrosion
- No Leaks
- Low weight = quick installation
- No welding/soldering required

The first REHAU underfloor heating pipes were installed 25 years ago and over 700 million metres of REHAU pipe have been installed since then.



REHAU

UNDERFLOOR HEATING PROJECTS

REHAU's underfloor heating products offer professional solutions for a wide range of installations across the UK and Ireland

Millenium Point, Birmingham

The huge and inspiring building, designed by architects Nicholas Grimshaw & Partners is the keystone for the regeneration of Birmingham City Centre's Eastside. The £114m Millennium Commission lottery-funded project is billed as the place where science comes to life. The floor finish throughout the atrium is granite – a good conductor of heat for REHAU's underfloor heating systems.



Foxhills Golf Club, Surrey

REHAU underfloor heating has been installed in a new hotel being built at the Foxhills Golf Club. 16mm RAUTHERM pipe has been laid throughout the 1500m² area using the Railfix fixing method. The heat source is a gas fired condensing boiler, and the REHAU cross-linked polyethylene PE-Xa pipe has been laid in a double meander pattern to ensure a constant temperature. The system was specified by Cundall Johnston & Partners and installed by a REHAU Authorised Partner.



Ringways Ford Dealership, Leeds

REHAU underfloor heating has been installed in the new Ringways Ford dealership in Leeds. The 800m² premises features REHAU's PEX-a pipe laid throughout using the RAILFIX method on Kingspan TF70 25mm insulation with a fully weather compensated gas fired condensing boiler providing the heat source. Robinsons Rocool recommended the REHAU system because of its quality and ease of installation. It was installed in conjunction with a REHAU Authorised Partner.



Applied Poultry

Applied Poultry is using underfloor heating for its four new 2,300m² chicken sheds in Chesterfield, which should help it to achieve the proposed maximum permitted stocking density of 38kg LW/m². It only needs to operate at around 31°C at floor level rather than the air temperature in the upper level of the house reaching up to 40°C to achieve 31°C at the floor. The installation was carried out by a Stockport-based REHAU Authorised Partner.



Timber House, Lochalsh

A new timber built house at Avernish, in Ross-shire has just been completed and features REHAU underfloor heating throughout. A REHAU Authorised Partner stapled REHAU's aluminium diffuser plates to the battens and joists and then clipped the REHAU 16mm Universal PEX-a pipe to the plates. The 0.8mm thick deliver even warmth across the whole floor. The system assures reliable heating which is to run in conjunction with their oil fired boiler.

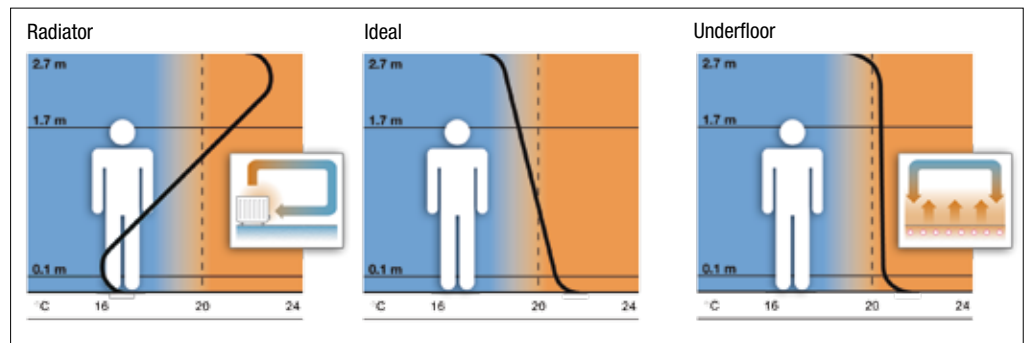


UNDERFLOOR HEATING

A BETTER SOLUTION

UNDERFLOOR HEATING IS FAST BECOMING A FAVOURED CHOICE FOR INDUSTRY PROFESSIONALS. PRACTICAL, COST EFFECTIVE AND FLEXIBLE, UNDERFLOOR HEATING IS INCREASINGLY BEING SPECIFIED OVER TRADITIONAL RADIATOR SYSTEMS AND ESTABLISHING A REPUTATION AS THE PREFERRED MODERN-DAY HEATING SOLUTION.

Temperature Profiles



Advantages include:

- Comfort** Even spread of heat provides a high level of comfort.
- Economy** Reduced demand on boilers and no wasted heat at ceiling height typically saves 15% in fuel costs*.
- Cost-efficiency** Reduced on-site maintenance – servicing of boilers and pumps only.
- Flexibility** Unrestricted wall surfaces in both old and new buildings.
- Safety** No hazardous wall projections or hot surfaces.
- Control** REHAU comprehensive controls package offers a solution for the majority of building applications.

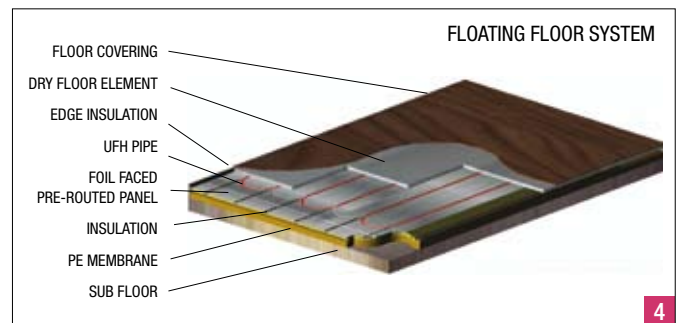
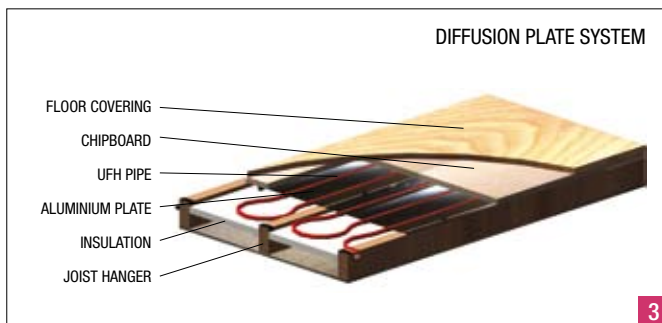
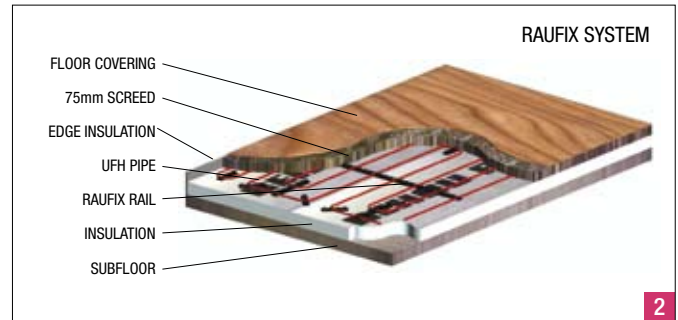
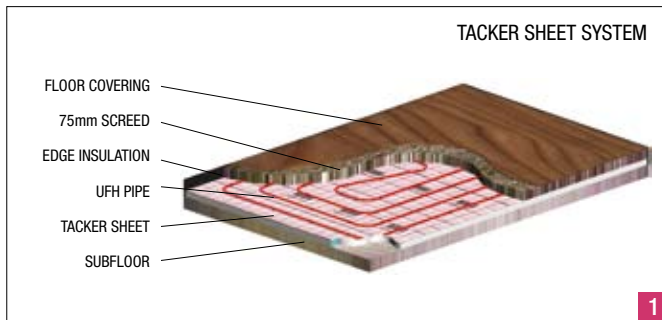
* Source: BSRIA application guide AG 12/2001

REHAU Underfloor Heating and Plumbing 10 Year Warranty. Up to £100,000 Consequential loss

If REHAU RAUTHERM Universal PE-Xa pipe or compression sleeve fittings are found to be defective due to a manufacturing fault within the first 10 years of the warranty period, compensation shall be paid for any damage resulting from the removal and replacement of the defective pipe and fittings. REHAU shall assume the liability up to an amount of £100,000 per installation, inclusive of the supply of the replacement pipe and fittings.

UNDERFLOOR HEATING APPLICATION

Underfloor heating systems are particularly adaptable and can be installed in both old and new buildings under a wide range of floor coverings including screed, flagstones, tiles, carpets, rugs, laminates and timber.



REHAU Floor System	Base	Load Distribution ¹⁾	Pipe Size in mm			Pipe Spacing	Typical Output ²⁾	Typical Imposed Load		
			ø16	ø20	ø25			distributed	Uniformity distributed	Concentrated
Wet Fit System	Tacker Sheet	<ul style="list-style-type: none"> Solid Beam & Block Pre-stressed Beams 	<ul style="list-style-type: none"> CT CA CA-F 	✓	✓		Up to 100 W/m ²	Up to 5 kN/m ²		
	RAUFIX	<ul style="list-style-type: none"> Solid Base Slab Beam & Block Pre-stressed Beams 	<ul style="list-style-type: none"> CT CA CA-F ³⁾ 	✓	✓					
	Industrial*	<ul style="list-style-type: none"> Compacted hardcore 	<ul style="list-style-type: none"> Reinforced/Pre-stressed Concrete 		✓	✓				• 150
Dry Fit Systems	Diffusion Plate	<ul style="list-style-type: none"> Suspended Timber Battens on Concrete Beam & Block 	<ul style="list-style-type: none"> Chipboard Plywood Dry flooring elements 	✓			Up to 70 W/m ²	Up to 2 kN/m ²⁻⁴⁾		
	Floating Floor	<ul style="list-style-type: none"> Solid Base Slab Beam & Block Suspended Timber 	<ul style="list-style-type: none"> Chipboard Plywood Dry flooring elements 		✓					
	Sprung Floor*	<ul style="list-style-type: none"> Solid Base Slab Beam & Block Pre-stressed Beams 	<ul style="list-style-type: none"> Sports Floor 		✓					• 100

1) Screed types according to BS EN 13813, e.g. CT: Screed with cementitious binder, CA: Screed with Calcium sulfate binder, CA-F: Flow screed with Calcium sulfate binder

2) At 20°C room temperature

3) although not recommended

4) Typical values – please confirm with flooring manufacturer

SYSTEM AND LAYING POSSIBILITIES

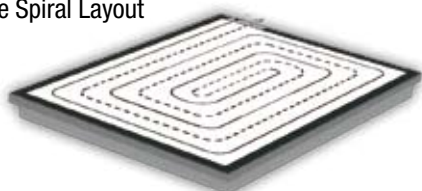
1 TACKER SHEET SYSTEM

Installation advantages include:

- Fast pipe installation
- Circuit pattern flexibility
- Multiple functions in one product
 - Insulation
 - Moisture barrier
 - Pre-marked grid for accurate pipe spacing
 - Foil glued to insulation aiding pipe fixing

Tacker Sheet is available in EPS70 and EPS100 grades in both 25mm and 50mm thickness. Standard Fire Class F (BS EN 13163).

Reverse Spiral Layout

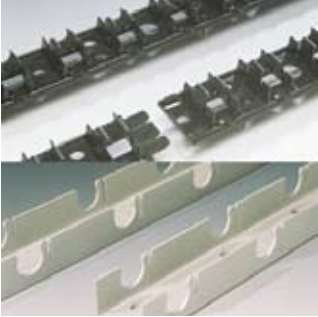


Reverse Spiral Layout	
REHAU Tacker Sheet System	✓
REHAU RAUFIX/Railfix System	✗
REHAU Diffusion Plate System	✗
REHAU Floating Floor System	✗

Reverse Spiral Layout	
Application	All installations except suspended floors
Room geometry	Suitable for any area
Temperature distribution	



2 RAUFIX/RAILFIX FLOOR SYSTEM



RAUFIX rail

The RAUFIX rail is manufactured from polypropylene. Its unique pipe clip design makes it suitable for both 16mm and 20mm REHAU pipe sizes. It is manufactured in 1 metre lengths.

Railfix System

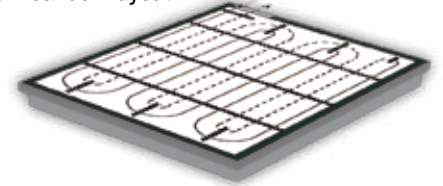
REHAU's Railfix System is an alternative to RAUFIX. The installation methods are similar, using Railfix rails instead of RAUFIX. Railfix is manufactured in 3 meter lengths.

Installation advantages include:

- Secures underfloor heating circuits in the planned pattern.
- Fast assembly of the RAUFIX/Railfix rail without tooling.
- Can be used with any insulation type.
- Suitable for large area applications.

Double Meander Layout	
Application	Large industrial installations
Room geometry	Suitable for large/ industrial areas
Temperature distribution	

Double Meander Layout



Double Meander Layout	
REHAU Tacker Sheet System	✓
REHAU RAUFIX/Railfix System	✓
REHAU Diffusion Plate System	✗
REHAU Floating Floor System	✗



Important

The heating requirement for a room is met using any of the layout patterns, with the temperature distribution within a room determined by the pattern used.

REHAU underfloor heating systems are approved by the BBA.

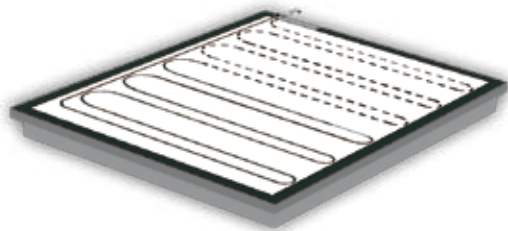


3 DIFFUSION PLATE SYSTEM

Installation advantages include:

- Designed for timber joist floor applications.
- Maximum heat transfer.
- Even heat diffusion – highly conductive aluminium diffuses heat over the floor surface.
- Reduced reaction time compared to screed.

Single Meander Layout



Single Meander Layout	
REHAU Tacker Sheet System	✗
REHAU RAUFIX/Railfix System	✗
REHAU Diffusion Plate System	✓
REHAU Floating Floor System	✓

Single Meander Layout	
Application	Suspended floors
Room geometry	Suitable for any area
Temperature distribution	

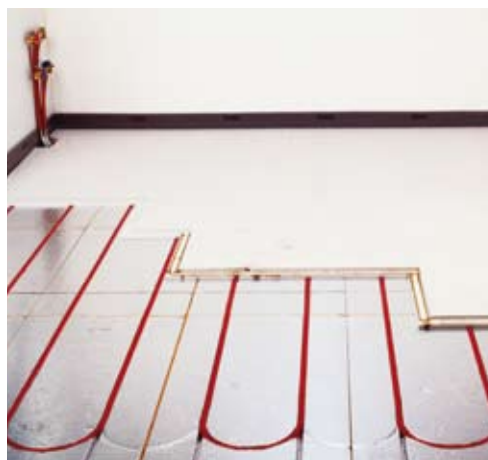
Note: Floor insulation must be installed below the plates to reduce heat loss.



4 FLOATING FLOOR SYSTEM

Installation advantages include:

- Dry system – ideal when a finished floor is required quickly.
- Suitable for domestic and commercial applications.
- Polystyrene panels pre-routed in a range of patterns and laminated with strong aluminium foil.
- Even heat diffusion – highly conductive aluminium diffuses heat over the entire floor surface.
- Faster response time than screed systems due to lower thermal mass.

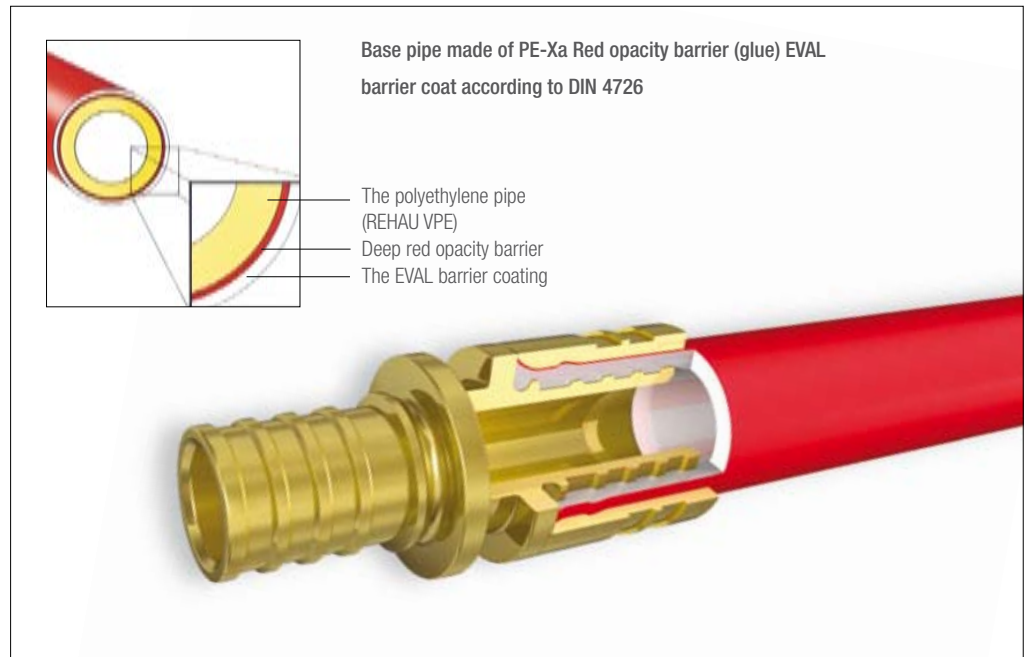


THE RAUTHERM

PE-Xa UNIVERSAL PIPE

The RAUTHERM universal pipe has exceptional physical properties including:

- Flexibility – Pipes can be threaded through walls and floors making routing easy.
- Speed – Reliable, secure joints can be assembled in seconds.
- Safety – No naked flames, swarf, flux, grease or oil mean a safer working environment.
- Durability – REHAU pipework has a service life in excess of 50 years (BS7291).
- Resistance – Non-corroding and resistant to abrasion, stress, cracks and kink damage.



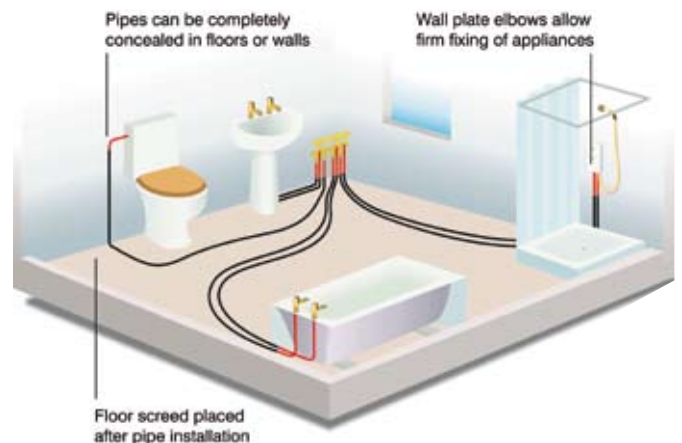
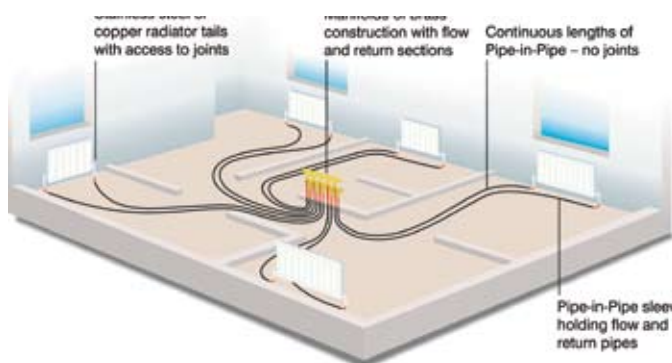
REHAU EVERLOC™ Compression Sleeve Connection

- Sizes 16mm – 160mm
- Permanent fitting
- No O-rings
- High integrity
- Proven over 50 million times

One pipe for every application

The RAUTHERM universal pipe supports all service applications in sizes from 16mm – 32mm. Additionally, plumbing or heating pipes are available in 40mm – 160mm options. Fully compatible with traditional systems.

The REHAU pipe has been tested continuously for over 30 years.



EVERLOC™

HEATING AND PLUMBER SYSTEM

REHAU's range of flexible heating and plumbing pipework effectively compliments traditional systems, saving time, money and effort.

EVERLOC™ fittings

An extensive range of cold-jointing fittings for all applications. Superbly engineered, purpose-designed DZR brass compression sleeve fittings enable permanent and secure joints to be assembled in seconds.

Fixings

First fixing of all common heating and plumbing applications are supported by a full range of REHAU brackets, which can be easily concealed.

Support channelling and stainless steel radiator tails are also available.

Manifolds for central distribution

Services can be run out from a central point to radiators and sanitary fixtures, enabling straight forward installation and maintenance.



REHAU Pipe-in-Pipe

- Practical – Combined pipe and corrugated sleeve is light and easy to handle.
- Economical – Saves installation time and material costs.
- Fast – Fitted prior to laying floor screed, eliminating the need to construct special ducts.
- Accessible – Screed-set pipes Can be retrieved and replaced if damage occurs.
- Regulated – Fully compliant with pipe accessibility Water Regulations.

Pipework can be run out from a single point, keeping installation simple and completed in less time.

REHAU

CUSTOMER SERVICE

REHAU's high-specification, top-performing heating and plumbing systems are backed by equally high standards of customer service and support.

Local support

Service and information provided by local area sales representatives.

Technical support

A dedicated team of experts on hand to help with technical enquiries.

Design support and Estimating

REHAU are able to offer you support with designing and costing a system. If you provide us with the project data, we will be able to assist with calculations, design drawings and material costs, together with providing you with all the materials you need for a successful installation!

REHAU underfloor heating and plumbing products are available throughout the UK and Ireland, distributed through our regional Sales Offices in Glasgow, Dublin, Manchester, Birmingham and Slough.

In addition, REHAU are able to offer a national distribution network ensuring that you can obtain product with ease and at your convenience. Please contact your local REHAU Sales Office for further details.

The REHAU Academy

The REHAU Academy offers a range of specialist training courses for heating and plumbing professionals. The flexible courses are designed to ensure up-to-date knowledge of REHAU product capability and application, combined with relevant market information and opportunities.

The courses are free of charge and normally held at the REHAU headquarters in Ross-on-Wye, Herefordshire. Where appropriate, courses can be provided at customer premises or at a regional facility.

Current courses include:

- Underfloor heating for specifiers
- Underfloor heating for installers
- Underfloor heating design
- RAUTHERMEX – pre-insulated mains system
- Heating and plumbing

For further information on the REHAU Academy, please contact your local Sales Office or visit www.rehau.co.uk



REHAU Limited – UK Sales Offices:

London

The Building Centre,
26 Store Street,
London
WC1E 7BT

Tel: (0207) 580 6155
Fax: (0207) 307 8595

Slough

Units J & K
Langley Business Centre
Station Road, Langley
Slough, SL3 8DS

Tel: (01753) 588500
Fax: (01753) 588501

Birmingham

Tameside Drive,
Holford Way, Witton,
Birmingham
B6 7AY

Tel: (0121) 344 2300
Fax: (0121) 344 2301

Manchester

Brinell Drive,
Irlam,
Manchester
M44 5BL

Tel: (0161) 777 7400
Fax: (0161) 777 7401

Glasgow

Phoenix House,
Phoenix Crescent,
Strathclyde Business Park,
Bellshill, North Lanarkshire
ML4 3NJ

Tel: (01698) 503700
Fax: (01698) 503701

Dublin

9 St. Johns Court
Business Park,
Swords Road,
Santry,
Dublin 9

Tel: 00353 (0)1 8165020
Fax: 00353 (0)1 8165021

www.rehau.co.uk email: enquiries@rehau.com

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