





### RECOUP.CO.UK

### INFO@RECOUP.CO.UK

### 

### CONTENTS

What is WWHRS?	3
Why use WWHRS?	4 & 5
- Housebuilders & Developers	4
- Housing Associations, Landlords & Home Owners	5
- Commersial & Leisure Buildings	5
• SAP & Part L	6 & 7
• SBEM	7 & 8
• BREEAM	9 & 10
WWHRS for Passive Houses	10 & 11
Product Introduction	12
- Specification Considerations	
Product Application Key	12
Products - Recoup Pipe HEX Range	13 to 20
- Recoup Pipe HEX Range	13 & 14
- Recoup Pipe HEX Rd	15 & 16
- Recoup Pipe HEX Active	17 & 18
- Recoup Pipe HEX Rd Active	
Products - Recoup Easyfit+	21 & 22
Products - Recoup Drain+ Range	23 to 28
- Recoup Drain+ Duo HE	23 & 24
- Recoup Drain+ Duo	
- Recoup Drain+ Compact	
Installation	29 to 32
- Installation Method System A	
- Installation Method System B	
- Installation Method System C	
- Installation Requirements	
Other Information & Useful Links	32
Contact Us	33



INFO@RECOUP.CO.UK

### WHAT IS WWHRS?

WWHRS is the abbreviation of Waste Water Heat Recovery System. In the simplest terms a system or technology that uses the residual heat from the waste shower water to preheat the incoming cold feed that refills the system. Therefore, less energy is used to heat that water to the required temperature.





### WHY USE WWHRS?

WWHRS has been proven to provide a vital role in saving energy within both commercial and domestic properties. Compared to space heating that has many energy saving technologies in place, hot water has been an area where it has proven difficult to make substantial improvements. There are many significant benefits to using and running waste water heat recovery systems (WWHRS) in a building. Select your appropriate interest area from the sectors below to further answer "Why use WWHRS?".

### HOUSEBUILDERS & DEVELOPERS

Recoup's WWHRS provides the perfect solution in any new build dwelling. The systems help to achieve code cheaply and easily... even if that extra boost is needed after construction has commenced. The systems provide...

- Incredibly high SAP points for low system cost
- A must for simple 2013 Part L compliance
- Allows more expensive, awkward measures to be omitted
- Widely accepted as an extra 'renewable' solution by planners
- Easy to design into homes both houses & apartments
- Quick install with no commissioning
- No moving or mechanical parts
- Virtually undetectable once installed no unsightly technology on show!
- No planned maintenance required
- A major reduction in load for any centralised plant
- No end-user interaction required

We are specified by some of the largest House Builders in the UK, not to mention the many regional and smaller developers that use our systems to help them achieve compliance cheaply and easily... even if that extra boost is needed after construction has commenced.

More information on SAP can be found on page 6.





### **'BEST NEW PRODUCT' WINNERS** - BARRATT DEVELOPMENT PLC SUPPLIER EXCELLENCE AWARD



#### WHY USE WWHRS? - CONTINUED

### HOUSING ASSOCIATIONS, LANDLORDS $\ensuremath{\mathbb{G}}$ home owners

We have been working with several Housing Associations to help them gain the benefits of our WWHRS in their existing housing stocks. How can Housing Associations, Landlords & Home Owners benefit?

- · A variety of systems to suit nearly all applications
- Short ROI
- · Instant and understandable savings
- An easy option for hard to treat homes no extensive works required
- · Improve energy efficiency of the property
- Can help with MEES & EPC targets
- · Helping reduce bills in one of the most used areas of the home hot water
- The perfect partner to boiler, bathroom and/or kitchen upgrades
- Simple, cost effective and no interaction or planned maintenance required
- Can be used with any energy source

For a savings & C02 reduction calculator and proposal writing assistance, please contact us.

#### **COMMERCIAL** & LEISURE BUILDINGS

Recoup's range of WWHRS can make a dramatic impact on the showers used in Commercial & Leisure Buildings. We are involved with some of the following building types:

- Offices more and more people cycle and run before or during their working day, meaning shower usage is very high
- Hotels clearly a high user of hot water through showering every day of the year
- Student accommodation with all-inclusive bills, saving on hot water is a must
- Leisure/sports clubs high traffic with virtually users showering helps with capacity and costs
- WWHRS can also be used towards compliance ratings with SBEM & BREEAM

We work with some of the largest M&E designers and consultants helping to advise how our WWHRS can benefit their buildings both through code and through use. See page 7 for more information on SBEM and page 9 for BREEAM.





### RECOUP.CO.UK

### SAP & PART L

### WHAT IS SAP?

The Standard Assessment Procedure (SAP) is the methodology used by the Government to assess and compare the energy and environmental performance of dwellings. It was developed by the Building Research Establishment in 1992 and its purpose is to provide accurate and reliable assessments of dwelling energy performances.

Part L of the building regulations uses SAP (Since 1994) to assess a buildings energy performance and a reduced data SAP (rdSAP) was introduced in 2005 as a lower cost method to assess the performance of existing dwellings.

### HOW SAP WORKS

SAP assess how much energy a dwelling will use while delivering a defined level of comfort and service provision. The assessment is based on standardised assumptions for occupancy and behaviour and enables a like-for-like comparison of dwelling performance, with factors such as fuel costs and emissions of carbon dioxide  $(CO_2)$  determined from the assessment. SAP quantifies a dwelling's performance in terms of: energy use per unit floor area, a fuel-cost-based energy efficiency rating (the SAP Rating) and emissions of  $CO_2$  (the Environmental Impact Rating).

### SAP 2012

SAP 2012 is the latest revision of the SAP document and was published to underpin the 2013 Amendment to Part L of the Building Regulations for England and Wales, which is expected to deliver a 6% improvement in new dwelling performance

### WWHRS & SAP

WWHRS is a listed technology on the Products Characteristics Database (PCDB), and this database holds product information for a range of technologies used within different National Calculation Methodologies (NCM's) of which SAP and rdSAP are two.

#### CONTINUED ...









INFO@RECOUP.CO.UK



WWHRS specifically targets energy use in the home associated with hot water and showering uses the largest proportion of that energy. Because of the amount of energy required to heat hot water, using WWHRS has one of the highest cost vs SAP impact ratios within the software.

Savings are applied to a room with a shower that has WWHRS associated with it through the SAP modelling software. The level of impact in SAP will be determined by a few key factors: –

- The number of occupants SAP has calculated for the dwelling
- The total number of rooms for showering/bathing
- The number of rooms with WWHRS attached
- If the room has only a shower or a bath and shower.
- The System (A/B/C) installation method used during installation

Recoup offer support to specifiers / SAP assessors to help ensure that the impact of WWHRS is optimised for a dwelling, Contact us for any further information.

### SBEM

### WHAT IS SBEM?

Simplified Building Energy Model (SBEM) is one of the National Calculation Methodologies (\*NCM's) developed by BRE to define the energy consumption and  $CO_2$  emissions of non-domestic buildings. It is used to compare the designed building performance to the target standards. SBEM is an efficient and straightforward energy modelling tool to use and incorporates a wide range of building energy features.



### WHY IS SBEM NEEDED?

Any building that is not considered a dwelling (hotels, leisure facilities, commercial properties) will require an SBEM calculation to be produced as part of the design process. Compliance with Part L of the Building Regulations requires energy modelling of building designs in order to demonstrate low carbon performance.

CONTINUED ...



### SBEM COMPARED TO SAP

Essentially SBEM and SAP (Standard Assessment Procedure) have the same aim, to assess the design of a property against defined standards at. However SAP more accurately reflects the carbon emissions of our homes and SBEM of non-domestic properties.

### WWHRS & SBEM

Calculations can be made as part of an SBEM model to assess the impact of Waste Water Heat Recovery for Showers (WWHRS) reducing the  $CO_2$  produced by a building. The calculation focusses on the hot water (DHW) usage for showers within the building to indicate the  $CO_2$  reduction that could be made through WWHRS introduction.



INFO@RECOUP.CO.UK

A Dynamic Simulation Model (\*\*DSM) is produced to provide statistics for Domestic Hot Water (DHW) based on one of the National Calculation Methodologies (\*NCM's). The calculation uses these figures along with the total hot water energy demand for

Showers, the energy recovered from the shower and the efficiency of the WWHRS to calculate the  $CO_2$  reduction due to the waste water heat recovery system. The WWHRS recovery efficiency will then be applied to the total DHW heating demand as deemed by the SBEM calculation.

Designing in waste water heat recovery as part of a hotel, leisure facility or other commercial building with showers can provide a significant  $CO_2$  reduction through SBEM modelling. Particularly when compared to other more expensive measures such as Solar thermal, ASHP, PV or triple glazing.

\*NCM – (National Calculation Methodology) is standard usage profiles used for energy compliance studies and therefore NCM DHW Energy Consumption is the consumption of energy for Domestic Hot Water based upon standardised usage profiles.

\*\*DSM – (Dynamic Simulation Model) employs dynamic thermal techniques that model the building's thermal performance over time and on an hourly basis. This methodology is better able to model the relationship between the building and the local external environment. Particular strengths include detailing the effect of natural air movements, air temperature and ventilation strategies; overheating analysis and solar shading; HVAC plant sizing and selection; renewable energy feasibility studies; and fabric design.

At Recoup we have a wealth of experience assisting designers, developers, consultants and specifiers incorporating WWHRS into both commercial and residential developments, Contact us for any further information.

### BREEAM

### 

### WHAT IS BREEAM?

BREEAM stands for Building Research Establishment Environmental Assessment Method, the longest established and most widely used 3rd party certification scheme. It is a sustainability assessment method from BRE (Building Research Establishment) for planning projects, infrastructure and buildings. It recognises and reflects the value in using higher performing assets across the buildings life cycle, from new construction to in-use and refurbishment.

Designed by BRE to drive innovation and standards above the regulatory minimum. Most modern BREEAM projects are typically designed to achieve 'Very Good' and 'Excellent' ratings, although increasingly more new-build designs are aspiring to the challenge of achieving the BREEAM 'Outstanding' rating.

### HOW DOES BREEAM WORK?

BREEAM uses third party certification of the assessment of an asset's environmental, social and economic sustainability performance, using standards developed by BRE. Which means that BREEAM rated developments are more sustainable environments. The benefit being that they enhance the lives and well-being of the people who live and work in them, help protect natural resources, and make for more attractive property investments.

The assessment process comprises two stages: The Design Stage (interim) and the Post-Construction Stage (Final). Within these stages there are assessment sections. The Energy Section aims to encourage the design and operation of energy efficiency buildings, driving energy efficiency, and sustainable energy use to ultimately reduce  $CO_2$  emissions.

### BREEAM & WWHRS

For projects where there is to be significant shower use, such as residential developments or apartments, hotels or student accommodation, or sports and leisure facilities. Waste water heat recovery (WWHRS) can contribute towards BREEAM credits within the Energy section. Particularly credits for ENE04: Low or Zero Carbon technologies (LZC), where a 'meaningful reduction in regulated carbon dioxide' must be demonstrated to contribute towards a BREEAM credit. While the amount of energy or  $CO_2$  emissions reduction is not specified in Ene 04, it should not be a trivial amount. As a guide, the installation should contribute at least 5% of overall building energy demand and/or  $CO_2$  emissions.

CONTINUED ...

INFO@RECOUP.CO.UK



Using passive WWHRS technology will reduce the production of hot water in a building and in turn assist in reducing a buildings  $CO_2$  emission. The incorporation of WWHRS has been proven to contribute to achieving BREEAM status on projects.

Unlike the Ene 01 – Reduction of energy use and carbon emissions (which is focused on demonstrable and robust performance improvement), Ene 04 – Low

Contact us for any further information or for assistance incorporating WWHRS into your BREEAM project.

### WWHRS FOR PASSIVE HOUSES

### WHAT IS PASSIVE HOUSE?

Passive House (or Passivhaus) is one of the Worlds' most rigorous design standards for both residential and commercial buildings. Enhanced air tightness and exceptional levels of fabric insulation underpin the Passive house design ethos, which can ultimately bring the space heating requirements in Passive house dwellings down to around 90% of that of typical building stock, and in many cases down to zero.

### HOT WATER IN A PASSIVE HOUSE

A Passive House dwelling can save significant levels of energy through insulation and airtightness but the requirements for Domestic Hot Water (DHW) are roughly the same as they are in equivalent regular houses. Just because your house is super insulated, doesn't mean you necessarily bathe more or take shorter showers. Therefore, the hot water generation in a Passive House (and many other super insulated homes) can form the largest part of the household energy budget, with the DHW energy requirement commonly being 3-4 times larger than the energy requirement for space heating.

CONTINUED...









### PASSIVE HOUSE AND WWHRS

In the average UK home showering accounts for 50% of the generated hot water cost. However, around 85-90% of this heat energy goes straight down the drain (42% of the total dwelling DHW budget).\*



In a Passive House with a similar energy usage profile DHW generation accounts for 48.9% of the overall energy budget. Assuming the showering habits of those in Passive Houses do not differ from the average home, a staggering 20.8% of the energy used in passive houses could be pouring out of the building envelope via the shower drain.

Waste water heat recovery (WWHRS) is designed specifically to capture this wasted heat energy and recycle it back into the building hot water system, and the good news is, it can be designed into Passive House as cheaply and efficiently as it can for any other newbuild dwelling. As an example the Recoup Pipe+ HE with efficiency of up to 67% could recover a significant proportion of this wasted heat energy.

WWHRS is a much simpler solution than some more common Passive House applications such as mechanical ventilation heat recovery (MVHR). There are no moving or mechanical parts; no planned maintenance; and no end-user interaction. It is a fit and forget passive technology that simply offers on-demand energy savings with every shower.

Recoup WWHRS products are listed on the Passivhaus Institute Certified Component Database, so can be used directly to contribute towards Passivhaus certification or PHPP (Passive House Planning Package) calculations. Additionally, the Recoup Easyfit+ is the ideal product solution for Passive House retrofits through 'EnerPhit' and 'deep-green' too. Contact us for any further information.

\*Data gathered by the Energy Saving Trust from over 86,000 households.



### **PRODUCT INTRODUCTION**

We are proud to present our product range, providing high performing and high quality systems for any application from residential to commercial. Vertical and horizontal systems allowing for single and multi-levelled buildings. Our Easyfit+ also provides a simpleretrofit solution that can be instralled under a bath or shower tray. A unique high performace system, ideal for houing associations, housing managers and homeowners looking to save energy and money within existing buildings.

### SPECIFICATION CONSIDERATIONS

It is important to ensure the correct product is considered for each project. In turn which system is specified and how it installed has implications when modelling in SAP. Using the application key below the product pages will indicate suitable project types that the product can be applied to. Please contact us if you are unsure which system is best suited for your project or which will provide you with the greatest results.



We are happy to advise you on all aspects of our WWHRS so you can ensure your project gains the optimum benefit from using a Recoup system, please Contact Us.

### **PRODUCT APPLICATION KEY**

Each Recoup WWHRS are suitable for some but not all building applications. The symbols below will be used against each product type to illustrate the building application that the system is suitable for.



## RECCUP

10.0.2

HOTELS

HOUSES

## **TECHNICAL SPECIFICATION** RECOUP **PIPE HEX**

- Double-walled copper vertical heat exchanger
- Designed for first-floor showers or above
- Up to 68.5% heat recovery efficiency \*
- Fits within standard UK ceiling height
- Cost-effective SAP points for Part-L Compliance
- First-fix friendly design
- 3 recognised installation methods (System A, B & C)
- No-end user interaction required
- No planned maintenance
- PVC outer provides on-site theft deterrent
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- WRAS approved
- Legionella Control risk assessed
- Market leading 10 year guarantee
- Shorter Pipe HEX Rd & bespoke solutions available

### **GENERAL DATA**

DESCRIPTION	VALUE
Overall height required for installation	2308 mm
Outside diameter of external tube	63 mm
Material - Internal tube	Copper
Material - External tube	PVC
Shower flow rate range (when installed as System A)	5 - 15 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	40 °C
Mains & Preheated water connection	<sup>1</sup> ⁄ <sub>2</sub> " female BSP
Shower waste in & soil waste water out connection	43 mm
Full product weight	10 kg
Water volume - mains water	0.3 Litres

### PERFORMANCE & EFFICIENCY

	SHOWER FLOW RATE @	PIPE HEX EFFICIENCY (RECOVERED ENERGY KW) *		
40°C (LITRES/MIN)		SYSTEM A	SYSTEM B	SYSTEM C
	9.2	65.2% (10.88)		
	11.0	63.6% (12.69)	49.9% (9.96)	54.0% (10.77)
	12.5	62.5% (14.17)		

\* Based on KIWA test data and PCDB figures for SAP 2012

SHOWER FLOW RATE @		PIPE HEX PRESSURE DROP ( BAR )		
	40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
	9.2	0.39	0.24	0.16
	12.5	0.67	0.41	0.27



## TECHNICAL SPECIFICATION RECOUP **PIPE HEX**

## RECCUP



### **DRAWINGS & DIAGRAMS**

TECHNICAL@RECOUP.CO.UK

## RECCUP

HOTELS

HOUSES

## TECHNICAL SPECIFICATION Recoup Pipe Hex RD

- Double-walled copper vertical heat exchanger
- Designed for first-floor showers or above
- Up to 63.3% heat recovery efficiency \*
- Reduced height for restricted installations
- Cost-effective SAP points for Part-L Compliance
- First-fix friendly design
- 3 recognised installation methods (System A, B & C)
- No-end user interaction required
- No planned maintenance
- PVC outer provides on-site theft deterrent
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- WRAS approved
- Legionella Control risk assessed
- Market leading 10 year guarantee
- Longer Pipe HEX & bespoke solutions available

### **GENERAL DATA**

DESCRIPTION	VALUE
Overall height required for installation	1908 mm
Outside diameter of external tube	63 mm
Material - Internal tube	Copper
Material - External tube	PVC
Shower flow rate range (when installed as System A)	5 - 15 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	40 °C
Mains & Preheated water connection	1⁄2" female BSP
Shower waste in & soil waste water out connection	43 mm
Full product weight	8 kg
Water volume - mains water	0.24 Litres

### PERFORMANCE & EFFICIENCY

	SHOWER FLOW RATE @	PIPE HEX RD EFFICIENCY (RECOVERED ENERGY KW)*		
40°C (LITRES/MIN)		SYSTEM A	SYSTEM B	SYSTEM C
	9.2	60.0% (10.01)		
	11.0	57.3% (11.43)	45.3% (9.04)	49.6% (9.90)
	12.5	55.5% (12.58)		

\* Based on KIWA test data and PCDB figures for SAP 2012

SHOWER FLOW RATE @		PIPE HEX RD PRESSURE DROP ( BAR )		
	40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
	9.2	0.259		
	11.0	0.361	0.219	0.185
	12.5	0.441		



### TECHNICAL SPECIFICATION Recoup Pipe Hex RD

## RECCUP

### DRAWINGS & DIAGRAMS





Click or scan to download our document resource

# RECCUP

## **TECHNICAL SPECIFICATION** RECOUP **PIPE HEX ACTIVE**-F

SALUNS / GROUND THE







PREHEAT

WATER OUT

- Designed for same level installation with shower trays
- Low power Sanishower® Flat electrical pump
- Double-walled copper vertical heat exchanger
- Up to 68.5% heat recovery efficiency \*
- Cost-effective SAP points for Part-L Compliance
- First-fix & retrofit friendly design
- No-end user interaction required
- No planned maintenance
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- WRAS approved
- Legionella Control risk assessed
- Pipe HEX Rd Active available for reduced install height

### **GENERAL DATA**

DESCRIPTION	VALUE
Overall height required for installation	2347 mm
Outside diameter of external tube	63 mm
Material - Internal tube	Copper
Material - External tube	PVC
Shower flow rate range (when installed as System A)	5 - 15 Litres/min
Max. Mains water inlet pressure	l 10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	40 °C
Mains & Preheated water connection	1⁄2" female BSP
Shower waste in connection	32mm / 40 mm
Soil waste water out connection	43 mm
Water volume - mains water (Recoup Pipe HEX)	0.3 Litres
Sanishower <sup>®</sup> Flat Pump Dimensions	295 x 162 x 144 mm
Sanishower <sup>®</sup> Flat Pump Voltage - Frequency	220-240V - 50-60Hz
Sanishower <sup>®</sup> Flat Pump Noise Level	40 dB(A)
Combined product weight (Recoup Pipe HEX 10kg)	15 kg

### PERFORMANCE & EFFICIENCY

SHOWER FLOW RATE @	PIPE HEX ACTIVE EFFICIENCY (RECOVERED ENERGY KW)*		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
9.2	65.2% (10.88)		
11.0	63.6% (12.69)	49.9% (9.96)	54.0% (10.77)
12.5	62.5% (14.17)		

\* Based on KIWA test data and PCDB figures for SAP 2012

SHOWER FLOW RATE @	PIPE HEX ACTIVE PRESSURE DROP ( BAR )		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
9.2	0.39	0.24	0.16
12.5	0.67	0.41	0.27







### TECHNICAL SPECIFICATION Recoup PIPE HEX ACTIVE-F





01379 844010

# RECCUP

## TECHNICAL SPECIFICATION RECOUP PIPE HEX RD ACTIVE-F









- Designed for same level installation with shower trays
- Low power Sanishower<sup>®</sup> Flat electrical pump
- Double-walled copper vertical heat exchanger
- Up to 63.3% heat recovery efficiency \*
- Cost-effective SAP points for Part-L Compliance
- First-fix & retrofit friendly design
- No-end user interaction required
- No planned maintenance
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- WRAS approved
- Legionella Control risk assessed
- Longer Pipe HEX available for incresed efficiency

### **GENERAL DATA**

DESCRIPTION	VALUE
Overall height required for installation	1947 mm
Outside diameter of external tube	63 mm
Material - Internal tube	Copper
Material - External tube	PVC
Shower flow rate range (when installed as System A)	5 - 15 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	40 °C
Mains & Preheated water connection	1/2" female BSP
Shower waste in connection	32mm / 40 mm
Soil waste water out connection	43 mm
Water volume - mains water (Recoup Pipe HEX)	0.24 Litres
Sanishower <sup>®</sup> Flat Pump Dimensions	295 x 162 x 144 mm
Sanishower <sup>®</sup> Flat Pump Voltage - Frequency	220-240V - 50-60Hz
Sanishower <sup>®</sup> Flat Pump Noise Level	40 dB(A)
Combined product weight (Recoup Pipe HEX Rd at 8kg)	13 kg

### PERFORMANCE & EFFICIENCY

SHOW	ER FLOW RATE @	PIPE HEX RD ACTIVE EFFICIENCY (RECOVERED ENERGY KW) *		
40°(	C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
	9.2	60.0% (10.01)		
	11.0	57.3% (11.43)	45.3% (9.04)	49.6% (9.90)
	12.5	55.5% (12.58)		

\* Based on KIWA test data and PCDB figures for SAP 2012

SHOWER FLOW RATE @	PIPE HEX RD ACTIVE PRESSURE DROP ( BAR )			
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C	-
9.2	0.259			
11.0	0.361	0.219	0.185	
12.5	0.441			



### TECHNICAL SPECIFICATION RECOUP PIPE HEX RD ACTIVE-F





01379 844010

# RECCUP

## **TECHNICAL SPECIFICATION** RECOUP **EASYFIT+**

SHUWS / GROUND TES







- Double-walled copper horizontal heat exchanger
- Designed to fit under a standard bath
- Can be installed under suitably sized riser shower tray
- Up to 47.6% heat recovery efficiency \*
- Can be retrofitted into an existing system
- 3 recognised installation methods (System A, B & C)
- No-end user interaction required
- No planned maintenance
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- WRAS approved
- Legionella Control risk assessed

### **GENERAL DATA**

DESCRIPTION	VALUE
Minimum height required for installation	95 mm
Overall product length	1176 mm
Overall product width	386 mm
Material - Heat Exchanger	Copper
Shower flow rate range	5 - 20 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	85 °C
Mains & Preheated water connection	1⁄2" male BSP
Waste water connection	40 - 43 mm
Full product weight	9.7 kg
Water volume - mains water	0.87 Litres

### **PERFORMANCE & EFFICIENCY**

SHOWER FLOW RATE @	EASYFIT+ EFFICIENCY (RECOVERED ENERGY KW)*		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
5.8	47.6% (5.01)		
9.2	46.4% (7.74)		
11.0	44.2% (8.70)	35.2% (7.02)	39.2% (7.82)
12.5	41.8% (9.48)		

\* Based on KIWA test data and PCDB figures for SAP 2012

SHOWER FLOW RATE @	EASYFI	EASYFIT+ PRESSURE DROP ( BAR )		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C	
5.8	0.09	0.06	0.04	
9.2	0.26	0.16	0.10	
12.5	0.45	0.28	0.18	



### TECHNICAL SPECIFICATION RECOUP EASYFIT+

# RECCUP

### DRAWINGS & DIAGRAMS

#### Installation with bath / shower drain at the same end as the SVP soil waste



DOCUMENT RESOURCE



#### Installation with bath / shower drain at the opposite end to the SVP soil waste



# RECCUP

### **TECHNICAL SPECIFICATION RECOUP DRAIN+ DUO HE** WASTE WATER HEAT BECOVERY FOR SHOWERS

- · Double-walled copper horizontal heat exchanger
- · Designed for integration in wet room spaces
- · Patented heat exchanger with built-in shower trap
- Up to 57% heat recovery efficiency \*
- 3 recognised installation methods (System A, B & C)
- Can be incorporated into modular bathrooms
- Quadratto grate or tile grate cover options
- Horizontal and vertical waste connection options •
- No planned maintenance
- Easy access for cleaning •
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- · Legionella Control risk assessed

### PERFORMANCE & EFFICIENCY

9.2

11.0

12.5

NOWS / GROUND	NARTMEN/3	HSURE FACILITIES

### **GENERAL DATA**

DESCRIPTION	VALUE
Overall unit dimensions	866 x 310 mm
Minimum recess into structural floor	136 mm
Minimum recess from final finished floor level	152 mm
Material - Heat Exchanger	Copper
Shower flow rate range	5 - 12.5 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	85 °C
Mains & Preheated water connection	1⁄₂" male BSP
Waste water connection	40 - 43 mm
Full product weight	21 kg
Water volume - mains water	1.42 Litres

### PRESSURE DROP ON THE MAIN WATER CIRCUIT

SHOWER FLOW RATE @	DRAIN+ DUO HE PRESSURE DROP ( BAR )		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
5.8	0.14	0.08	0.06
9.2	0.32	0.20	0.13
12.5	0.54	0.34	0.22



#### SHOWER FLOW RATE @ DRAIN+ DUO HE EFFICIENCY (RECOVERED ENERGY KW)\* 40°C (LITRES/MIN) SYSTEM A SYSTEM B SYSTEM C 5.8 57.4% (6.04)

44.9% (8.96)

49.2% (9.82)

57.3% (9.56)

56.7% (11.31)

56.4% (12.79)

### TECHNICAL SPECIFICATION Recoup Drain+ Duo He

RECCUP

### **DRAWINGS & DIAGRAMS**



## RECCUP

## **TECHNICAL SPECIFICATION** RECOUP **DRAIN+ DUO**

WASTE WATER HEAT RECOVERY FOR SHOWERS

- Double-walled copper horizontal heat exchanger
- Designed for integration in wet room spaces
- Patented heat exchanger with built-in shower trap
- Up to 42% heat recovery efficiency \*
- 3 recognised installation methods (System A, B & C)
- Can be incorporated into modular bathrooms
- Quadratto grate or tile grate cover options
- Horizontal and vertical waste connection options
- No planned maintenance
- Easy access for cleaning
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- Legionella Control risk assessed

### PERFORMANCE & EFFICIENCY

SHOWER FLOW RATE @	DRAIN+ DUO EFFICIENCY ( RECOVERED ENERGY #		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
5.8	41.9% (4.41)		
9.2	41.6% (6.94)		
11.0	40.4% (8.06)	32.9% (6.56)	36.6% (7.30)
12.5	36.7% (9.00)		

\* Based on KIWA test data and PCDB figures for SAP 2012



### **GENERAL DATA**

DESCRIPTION	VALUE
Overall unit dimensions	866 x 310 mm
Minimum recess into structural floor	98 mm
Minimum recess from final finished floor level	114 mm
Material - Heat Exchanger	Copper
Shower flow rate range	5 - 12.5 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	85 °C
Mains & Preheated water connection	1⁄2" male BSP
Waste water connection	40 - 43 mm
Full product weight	18.1 kg
Water volume - mains water	0.71 Litres

SHOWER FLOW RATE @	DRAIN+ DUO PRESSURE DROP ( BAR )		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
5.8	0.07	0.04	0.03
9.2	0.17	0.11	0.07
12.5	0.27	0.17	0.11



### TECHNICAL SPECIFICATION RECOUP DRAIN+ DUO

RECCUP

### **DRAWINGS & DIAGRAMS**



RECOUP.CO.UK

TECHNICAL@RECOUP.CO.UK

01379 844010

## RECCUP

## **TECHNICAL SPECIFICATION RECOUP DRAIN+ COMPACT**

WASTE WATER HEAT RECOVERY FOR SHOWERS

- · Double-walled copper horizontal heat exchanger
- · Designed for integration in wet room spaces
- · Patented heat exchanger with built-in shower trap
- Up to 40% heat recovery efficiency \*
- 3 recognised installation methods (System A, B & C)
- Can be incorporated into modular bathrooms
- Case and cover made from brushed stainless steel
- No planned maintenance
- · Easy access for cleaning
- SAP listed, SBEM, BREEAM, DEAP & ETL recognised
- · Legionella Control risk assessed



### **GENERAL DATA**

DESCRIPTION	VALUE
Overall unit dimensions	860 x 258 mm
Minimum recess into structural floor	119 mm
Minimum recess from final finished floor level	136 mm
Material - Heat Exchanger	Copper
Shower flow rate range	5 - 12.5 Litres/min
Max. Mains water inlet pressure	10 bar
Min. Mains water inlet pressure	1 bar
Max. Mains water working temp	85 °C
Mains & Preheated water connection	1⁄2" male BSP
Waste water connection	40 - 43 mm
Full product weight	12.7 kg
Water volume - mains water	0.48 Litres

### PERFORMANCE & EFFICIENCY

### SHOWER FLOW RATE @ DRAIN+ COMPACT EFFICIENCY (RECOVERED ENERGY KW)\*

40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
9.0	38.6% (6.30)	31.0% (5.06)	35.5% (5.80)
9.2	38.1% (6.36)		
11.0	37.0% (7.38)	30.4% (6.07)	33.8% (6.74)
12.5	36.4% (8.25)		

\* Based on KIWA test data and PCDB figures for SAP 2012

SHOWER FLOW RATE @	DRAIN+ COMPACT PRESSURE DROP ( BAR )		
40°C (LITRES/MIN)	SYSTEM A	SYSTEM B	SYSTEM C
5.8	0.07	< 0.05	
9.2	0.16	0.10	0.06
12.5	0.25	0.16	0.10



### TECHNICAL SPECIFICATION RECOUP DRAIN+ COMPACT

RECCUP

### **DRAWINGS & DIAGRAMS**



RECOUP.CO.UK

TECHNICAL@RECOUP.CO.UK

01379 844010



INFO@RECOUP.CO.UK

### **INSTALLATION - INSTALLATION METHOD SYSTEM A**

There are three installation methods to choose from, each having an effect on the products performance and efficiency. The Recoup Pipe HEX is shown below installed with installation method System A, the most efficient, where preheated water is supplied to the water heater and the shower.





### **INSTALLATION - INSTALLATION METHOD SYSTEM B**

The Recoup Pipe HEX is shown below installed with the second installation method, System B. This method provides preheated water to just the shower. It produces lower efficiencies than System A or C, but it is the easiest method to install or retrofit.





INFO@RECOUP.CO.UK

### **INSTALLATION - INSTALLATION METHOD SYSTEM C**

The Recoup Pipe HEX is shown below installed with the third installation method, System C. This method provides preheated water to just the water heater. Greater efficiencies than System B are produced but lower than with System A. This installation method is often used when two showers are running into one WWHRS.





### **INSTALLATION REQUIREMENTS**

- The Domestic Hot Water (DHW) heater must be a mains pressure system and be able to accept pre-heated cold water.
- The system must create a 'cycle' of water
- The pre-heated water will be installed to supply the mains cold feed to the shower and / or the cold feed on the Domestic Hot Water (DHW) heater
- Can be installed under a bath with a shower over
- The DHW heater could be and unvented hot water cylinder, combination boiler, mains fed thermal store or a Heat Interface Unit (HIU) on a district heating scheme
- Installations with an electric shower are not currently recognised in SAP

### **FURTHER INFORMATION & USEFUL LINKS**



### FAQ'S

recoup.co.uk/wwhrs/faqs/ Answers to some of the most frequently asked questions about WWHRS.



### **DESIGN SUPPORT**

recoup.co.uk/technical/design-support/ Help to integrate Recoup WWHRS into you project plans.



### DOWNLOADS

recoup.co.uk/installation/downloads/ Copies of supporting information documents to download and print.



### STOCKISTS

recoup.co.uk/stockists/ Recoup products available from UK merchants and distributors.



### INSTALLATION VIDEOS

recoup.co.uk/installation/install-videos/ Installation assisstace for our main products.



### BIM

recoup.co.uk/technical/bim/ Using WWHRS in Building Information Modelling (BIM)



#### NEWS recoup.co.uk/news/

Our most recent news stories and access to our archive.



### INSTALLATION REGISTRATION

recoup.co.uk/installation/registration/ WWHRS installation registration is a requirement as part of SAP.

### RECOUP.CO.UK

### INFO@RECOUP.CO.UK



### **'BEST NEW PRODUCT' WINNERS** - BARRATT DEVELOPMENT PLC SUPPLIER EXCELLENCE AWARD

### KIWA EFFICIENCY $\boldsymbol{\vartheta}$ wras certification

All our Waste Water Heat Recovery Systems are material & mechanical tested by KIWA and WRAS Approved.

### LEGIONELLA GUIDANCE

Recoup WWHRS have been risk assessed by Legionella Control and are deemed low risk.

Please contact us for any further information

## 

Recoup Energy Solutions Ltd, Trumpeter House, Trumpeter Rise, Long Stratton, NR15 2DY

### WASTE WATER HEAT RECOVERY FOR SHOWERS