

DISCHARGE OF CONDITION 4 AT AMBERLEY ROAD, HORSHAM, WEST SUSSEX, RH12 4LN.

H2Ogeo Reference: 20240716P2

HDC Reference: DC/24/1893

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1 Introduction

Following the approval for the demolition of existing garages and erection of a three-bed dwelling at 26 Amberley Road in Horsham West Sussex, a set of planning conditions were issued.

Approval was received on the 5 February 2025 and the proposed conditions set out in a decision notice (DC/24/1893). Condition 4 of the decision notice, outlined below is the subject of this document:

Condition 4: Pre-Commencement (Slab Level) Condition

No new-build development above ground floor slab level shall commence until full details of the water efficiency measures and rainwater/greywater harvesting system required by the approved water neutrality strategy (Water Neutrality Statement received 25.11.2024) have been submitted to and approved in writing by the Local Planning Authority.

Reason: To ensure the development is water neutral to avoid an adverse impact on the Arun Valley SACSPA and Ramsar sites in accordance with Policy 31 of the Horsham District Planning Framework (2015), Paragraphs 179 and 180 of the National Planning Policy Framework (2021), its duties under the Conservation of Habitats and Species Regulations 2017 (as amended), and s40 of the NERC Act 2006 (Priority habitats & species).

1.1 Scope of Work

H2Ogeo was requested to provide the details required to discharge this condition and this report summarises that information.

1.2 Background

A water neutrality statement¹ was submitted and approved by Horsham District Council as part of the planning application DC/24/1893.

The proposed mitigation was two-fold and included:

1. Improving the water efficiency in the existing property through fixtures and fittings; and
2. Installing grey water recycling in both properties.

Details of the mitigation are presented in the following section.

¹ Water Neutrality Statement for the proposed development at 26 Amberley Road, Horsham, West Sussex, RH12 4LN. Ref: 20240716P2, 14/11/2024, Final v2.0 H2Ogeo

2 Mitigation

The proposed fixtures and fittings will be capable of achieving the following BREEAM Performance Levels:

Table 1 Performance Level 4 Efficiency Fixtures and Fittings

Room	Fixture	BREEAM Performance Level	Flow	Unit
Kitchen	Tap	4	5	Litres/minute
	Dishwasher	4	0.85	Litres/Place setting
Utility Room	Tap	4	5	Litres/minute
	Washing Machine*	3	5	Litres/Dry kg
Downstairs Toilet	Dual Flush WC	4	3.5	Litres/minute
	Wash-hand Basin Tap	4	4	Litres/minute
	Shower	4	5	Litres/minute
Family Bathroom	Dual Flush WC	4	3.5	Litres/minute
	Wash-hand Basin Tap	4	4	Litres/minute
	Bath	4	120	Litres to overflow
	Shower	4	5	Litres/minute
En-Suite Bathroom	Dual Flush WC	4	3.5	Litres/minute
	Wash-hand Basin Tap	4	4	Litres/minute
	Bath	4	120	Litres to overflow
	Shower over Bath	4	5	Litres/minute
	Shower	4	5	Litres/minute

*Performance Level 3 for washing machines as PL4 <5 Litres/dry kg load is not readily achievable in normal use.

2.1 Fixture and Fittings

Examples of fixtures and fittings that can achieve these performance levels are presented in Attachment A and summarised below. The actual makes and models have not been determined at the time of writing however the applicant will ensure they will meet, or exceed, the performance levels prescribed above in Table 1:

Table 2 Examples of Efficiency Fixtures and Fittings

Fixture	Make Model	Link
Kitchen Tap	Grifema G4008-98 Kitchen Sink Taps Mixer Low Pressure, Single Lever 360° Swivel High Spout for Kitchen Sink with UK Standard Fittings, Chrome, Silver	https://amzn.eu/d/bfnZxUZ
Dishwasher	Miele G-7600 SC AutoDos	02_C7F13838C0C61EEEB1801DA88F3C043C.pdf
Washing Machine*	Hisense 3 Series WFQA8014EVJMT 8kg Washing Machine with 1400 rpm – Titanium	mmo_103213162_1665745668_6378_14022 (1).pdf
Dual Flush WC	I.Life Ideal Standard	E2478 i.Life A Close coupled cistern 4/2.6 litre dual flush e
Wash-hand Basin Tap	Ideal Standard	Ideal Standard Tesi Basin Mixer Tap with Pop Up Waste A6592
Shower	Hansgrohe Crometta 100 1 Jet Green Shower Handset – 6 L/Min – 26334400	https://bathroomshopuk.co.uk/product/hansgrohe-crometta-100-1-jet-green-shower-handset-6-l-min-26334400/
Bath	Twyford Celtic White Slip Resistant Steel Bath With Grips - 1700 x 700mm - 140 Litre	https://www.gssupplies.co.uk/bathroom-furniture-shower-taps/77733.htm

2.2 Greywater Recycling

In addition to water-efficient fixtures and fittings a Hydraloop grey-water recycling system is proposed. The systems will enable both properties to recycle up to 95% of sink, bath and shower water and provide filtered grey water for use in the WCs at 26 Amberley Road and the approved three-bed property at 26A Amberley Road.

The Hydraloop unit will be positioned downstairs in 26 Amberley Road next to the downstairs bathroom. It will collect grey water from the downstairs shower and wash-hand basin and upstairs baths, shower and wash-hand basins.

In the proposed dwelling, 26A Amberley Road, the system will be positioned in the cupboard under the stairs and take water from the ensuite and family bathrooms and provide treated water to the WCs.

Details of the proposed grey water recycling system are provided in Attachment B.

3 Conclusion

Through the installation of water efficient fixtures and fittings and grey water recycling units listed above the proposed development will be water neutral and Condition 4 of decision notice DC/24/1893 can be discharged.

4 Attachments

Example Fixtures and Fittings Performance Level 4

Hydraloop System Details

Example Fixtures and Fittings Performance Level 4

Type	Brand/Make/Model	Flow Rate	Unit	Performance Level
Wash-hand Basin Tap	Grohe Eurosmart Cosmopolitan Basin Mixer Tap	3.5	Litres/Minute	4
	Hansgrohe Talis S EcoSmart Basin Mixer Tap	3.5	Litres/Minute	4
	Methven Minimalist Basin Mixer Tap with Satinjet Technology	3.5	Litres/Minute	4
Showers	Mira Eco 4 Spray Showerhead	4	Litres/Minute	4
	Hansgrohe Croma 100 Vario EcoSmart Showerhead	3.5	Litres/Minute	4
	Methven Waipori Satinjet Ultra Low Flow Showerhead	4.5	Litres/Minute	4
	Triton Dene Low Flow Fixed Showerhead	4	Litres/Minute	4
	Aqualisa EcoSpray 105 Showerhead	3.8	Litres/Minute	4
Baths	Armitage Shanks Sandringham 21 Compact Bath	110	Litres Overflow	4
	Twyford Celtic Compact Bath	100	Litres Overflow	4
	Kalderwei Saniform Plus Small Steel Bath	105	Litres Overflow	4
	Carron Compact Acrylic Bath	115	Litres Overflow	4
	Ideal Standard Tempo Space Saving Bath	110	Litres Overflow	4
WC	Roca The Gap Wall-Hung Toilet with 3/4.5L Dual Flush	3.38	Effective Flush Litres	4
	Ideal Standard Concept Air Back-to-Wall Toilet with Dual Flush	3.38	Effective Flush Litres	4
	VitrA S50 Compact Wall-Hung WC with Dual Flush	3.38	Effective Flush Litres	4
	Twyford E100 Square Close-Coupled WC with 3/4.5L Dual Flush	3.38	Effective Flush Litres	4
	Grohe Bau Ceramic Wall-Hung WC with 3/4.5L Dual Flush	3.38	Effective Flush Litres	4
Kitchen Taps	Grohe BauEdge Single-Lever Kitchen Mixer Tap	4.5	Litres/Minute	4
	Hansgrohe Metris Select Kitchen Mixer Tap	4	Litres/Minute	4
	Franke Eiger Eco Kitchen Mixer Tap	4	Litres/Minute	4
	Blanco Fontas II Filter Kitchen Mixer Tap	4.5	Litres/Minute	4
	Bristan Orta Eco Kitchen Mixer Tap	4.8	Litres/Minute	4
Dishwashers	Bosch Serie 6 SMS6ZDW48G Freestanding Dishwasher	0.74	Litres/Place Setting	4
	Miele G5260 SCVi Integrated Dishwasher	0.73	Litres/Place Setting	4
	Siemens iQ500 SN258I06TG Freestanding Dishwasher	0.75	Litres/Place Setting	4
	Neff N50 S513K60X1G Integrated Dishwasher	0.75	Litres/Place Setting	4
	AEG FFE62620PM Freestanding Dishwasher	0.76	Litres/Place Setting	4

Hydraloop System Details

FACT SHEET - Residential Water Recycling

With a Hydraloop system, you can recycle up to 95% of shower & bath water and optionally 50% of washing machine water – which enables you to reuse up to 85% of the total in-house domestic water. Due to its innovative and breakthrough technology, Hydraloop water is clean, clear, safe and certified and for toilet flushing, washing machine, garden irrigation and/or to top-up a swimming pool.

Hydraloop H300

H300	Input: Greywater from shower and bath Output: Two (2) valves for recycled water to the toilets and the washing machine Colour: Stone Front Plate: Stainless-steel front plate with white coloured logo and small status light
H300 Premium	Input: Greywater from shower and bath Output: Two (2) valves for recycled water to the toilets and the washing machine Choose from three colours: Dew, Chili and Stone Front Plate: Premium stainless-steel front plate with Hydraloop LED logo lights

Add-ons

Output Garden	One (1) extra valve for recycled water in the garden
Output Pool	One (1) extra valve for recycled water for the pool
Washing Machine Option	Option to recycle 50% of greywater from washing machine, including sanitary lift pump
Lift pumps *	DAB Novabox 30/300. This lift pump is submerged underneath the floor DAB Genix VT 030. This lift pump is on the floor

A lift pump is only necessary if the Hydraloop is positioned on the same floor or a storey higher as the shower/bathtub

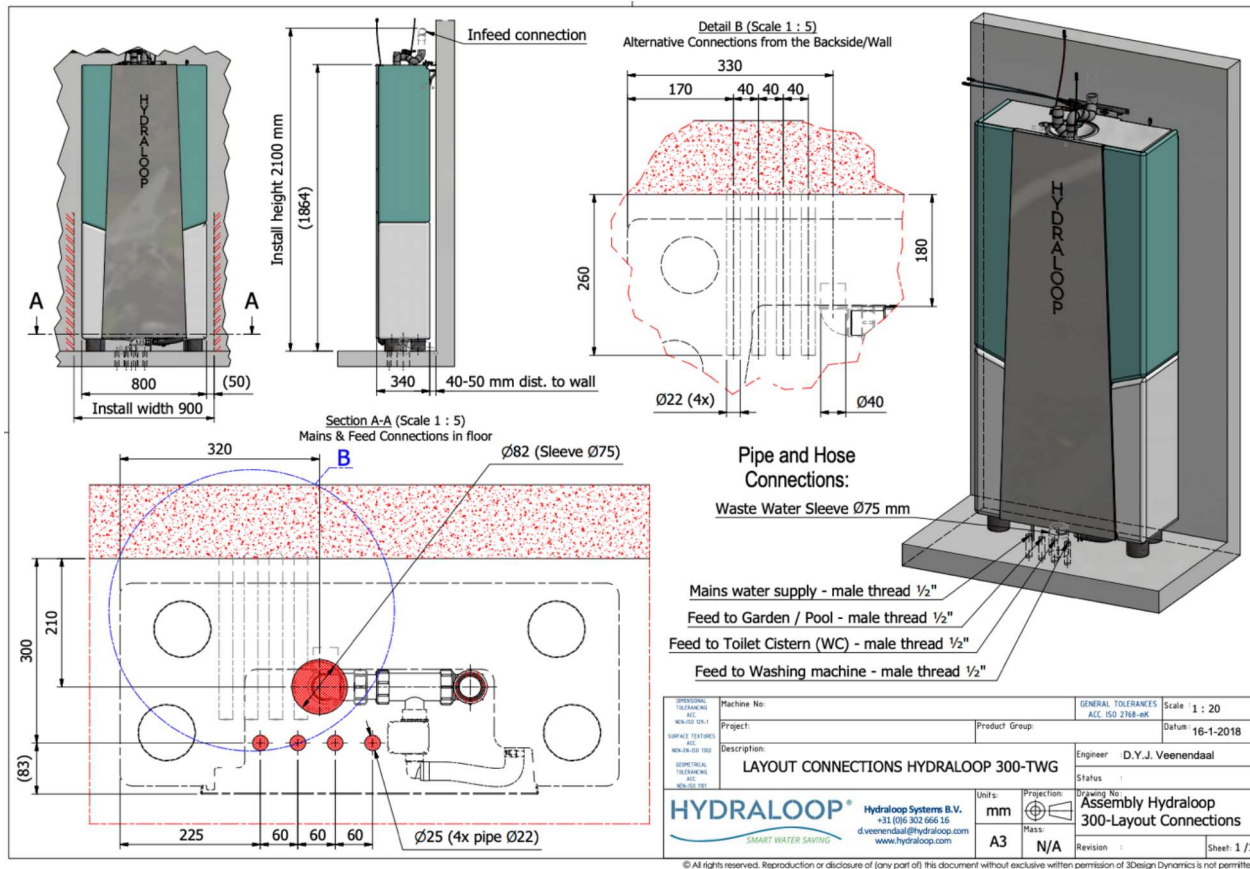
Hydraloop H300 Specifications

Volume	300 liter / 80 gallons
Average cleaning capacity	530 liter / 140 gallons per day
Dimensions	80 cm wide, 34 cm deep, 187 cm high 31,5" wide, 13,4" deep, 74" high
Voltage	100/240 Volt, 24 Volt internal
Usage	20 watts during treatment. Average power consumption: 200kWh/year
WIFI	The Hydraloop unit needs to be connected with an internal WIFI-network
Average recycled water quality	non-potable water CBOD5 (mg/L) < 10 TSS (mg/L) < 10 Turbidity (NTU) < 5 E. coli (MPN/100ml.) < 14 PH (SU) 6.0 – 9.0
Noise Level	± 44 dB.

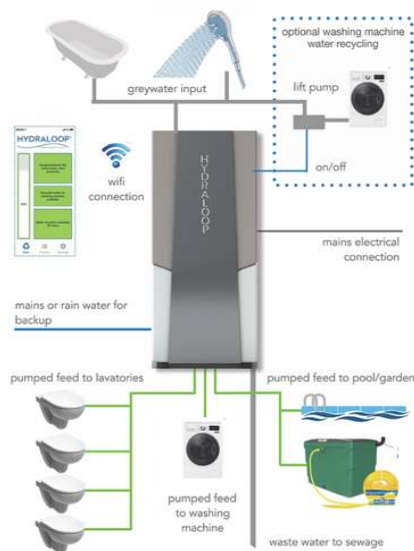
LED Light Indications

White	Hydraloop provides recycled water.
Blue	Hydraloop provides mains water (until recycled water becomes available).
Purple	The washing machine mode is active.
Green	In self-cleaning mode.
Orange + two (2) short sound signals per minute	The UV disinfection lamp is not functioning properly.
Red + three (3) short sound signals/minute	The water distribution pump has switched itself off. Which might happen when water is leaking somewhere in-house.

Sizes



Schematic overview



- Input from wastewater of bath & shower
- Output for toilet flushing, washing machine, garden irrigation and / or pool
- Wifi connected for Smartphone app, over the air updates and remote support
- 'Fit & Forget' turnkey product
- No filters, membranes or chemicals
- Fully automatic, self-cleaning, low maintenance
- BREEAM and LEED certification points
- No compromise on hygiene and living comfort
- Contribute towards sustainable and offgrid living

For more information, please visit www.hydraloop.com

HYDRALOOP®

NSF

kiwa

Safety certificate
K16223661

CERTIFICATE

Water recycling system

Hydraloop International B.V.
The Hydraloop 300-TWG is a turnkey product for water recycling. It is designed to be installed in a bathroom or kitchen. The system consists of a pump, a filter, and a storage tank. The pump draws water from the sink or shower and pumps it into the storage tank. The filter removes any debris or hair from the water. The storage tank holds the water until it is needed for flushing the toilet or for use in the garden. The system is fully automatic and requires no maintenance.

Performance values of the incoming greywater used for the 20 week test

Parameter	Value
Flow rate (l/min)	10-15 l/min
Temperature (°C)	15-20°C
pH value	6.5-8.5
Conductivity (µS/cm)	400-600 µS/cm
Hardness (°dH)	10-15 °dH
Calcium (mg/l)	10-15 mg/l
Magnesium (mg/l)	10-15 mg/l
Iron (mg/l)	0.1-0.2 mg/l
Copper (mg/l)	0.1-0.2 mg/l
Zinc (mg/l)	0.1-0.2 mg/l
Lead (mg/l)	0.1-0.2 mg/l
Chlorine (mg/l)	0.1-0.2 mg/l
Ammonia (mg/l)	0.1-0.2 mg/l
Nitrate (mg/l)	0.1-0.2 mg/l
Phosphate (mg/l)	0.1-0.2 mg/l

Diffusion values according to EN 12455 and Hydraloop water recycling system

Parameter	Value
Water vapor permeability (µg/m²s)	0.1-0.2 µg/m²s
Gas permeability (m³/m²s)	0.1-0.2 m³/m²s
Heat conductivity (W/mK)	0.1-0.2 W/mK
Thermal capacity (J/kgK)	0.1-0.2 J/kgK
Sound absorption (dB)	0.1-0.2 dB

'RECYCLE READY' GUIDE

A Hydraloop water recycling system collects, treats and redistributes lightly contaminated greywater. Before the installation of a Hydraloop unit, make sure that the plumbing in your building is well prepared. In this 'Recycle Ready' Guide, you will find all necessary information to get any building 'Recycle Ready'.

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LEGEND

	Greywater to Hydraloop
	Backup water to Hydraloop
	Treated greywater to toilet
	Treated greywater to washing machine
	Treated greywater to garden or pool
	Greywater waste to sewer
	Ventilation

OWNER GUIDELINES



Work with professionals

The preparation of your plumbing must be completed by a professional plumber.



Submit your Pre-Installation Checklist

Before the installation of your Hydraloop unit, it is important to ensure the building is 'Recycle Ready'. If the preparations are not carried out correctly and complete, additional work and costs may be needed.

Please complete the Pre-Installation Checklist with your plumber, sign it, and forward to your installer at least one week before the installation date.



Check your local regulations

Before moving forward with your Hydraloop installation, please check your local guidelines for recycled water re-use.

PLUMBING GUIDELINES



Input Connections

Only collect lightly contaminated greywater. Do not connect water sources that contain grease, food scraps or waste. **No wash basin, kitchen sink, dishwasher or floor drain.**

Do not connect a washing machine without owner having purchased the Washing Machine Water Recycle Option (WMR).



Output connections

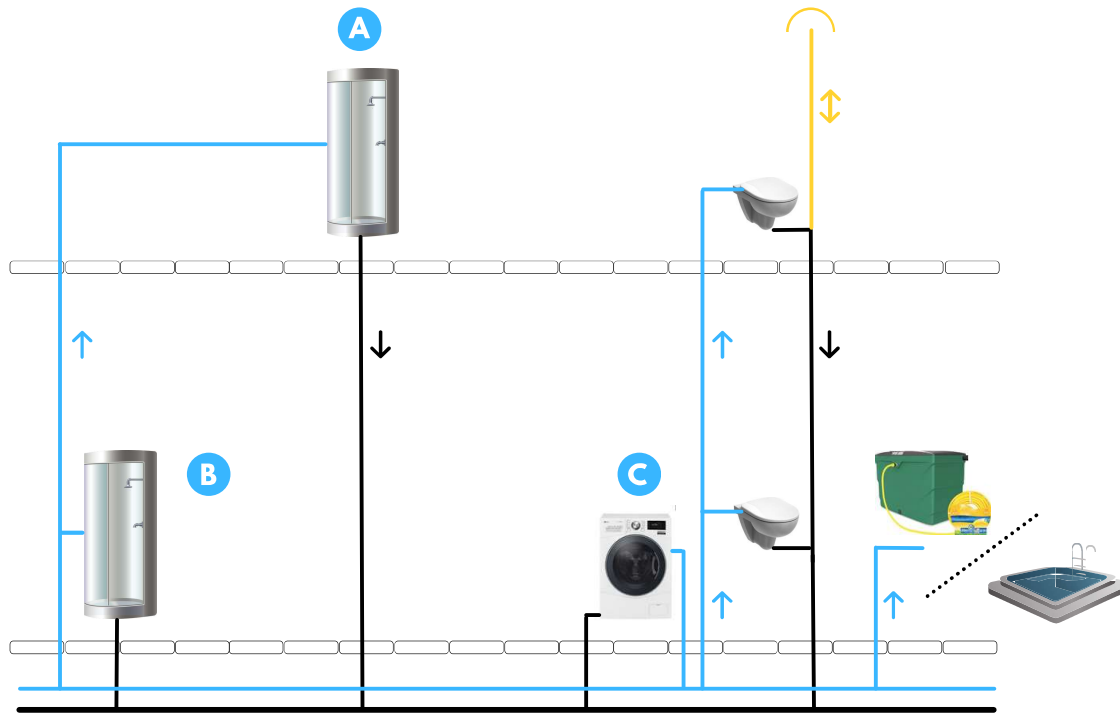
In addition to the general information in this document, please work with the technical drawings on pages 7-9.



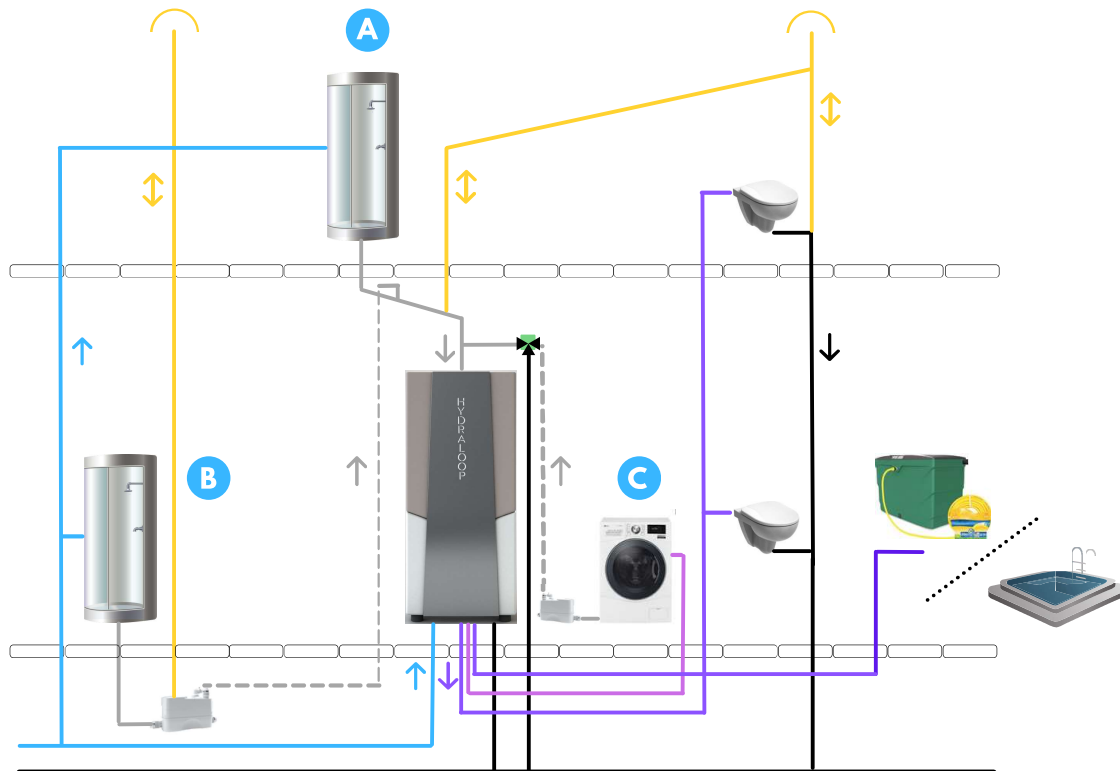
Non-potable Water Identification

All outputs from the Hydraloop system must be identified with the word 'Non-Potable water' or by a Non-Potable water sign.

CONVENTIONAL PLUMBING DIAGRAM



'RECYCLE READY' PLUMBING DIAGRAM WITH PLUMBING OPTIONS



A Hydraloop installation on lower floor – input by gravity
Greywater from the shower, bath or other sources is gravity fed into Hydraloop

B Hydraloop installation on same floor – input via lift pump
Greywater from the shower, bath or other sources enters Hydraloop through lift pump

C Optional: Hydraloop Washing Machine Water Recycle Option (WMR)
50% of washing machine greywater enters the Hydraloop unit through Hydraloop-controlled WMR-valve

CONNECTION OVERVIEW

Greywater inlet to Hydraloop for water from

- shower
- bath

H300
H600

- tumble dryer
- air conditioning
- heat pump

H600*

- washing machine (only with **WMR** option)

H300
H600

See
page 4

*In the current setup, the H300 system cannot collect condensation water. This option will become available in 2023. If you want to know more, please contact Hydraloop or your Hydraloop Partner.

Power/network connections

- power supply
- wifi internet connection

See
page 5

Treated greywater output dedicated lines for

- toilet flushing
- washing machine
- garden irrigation or swimming pool

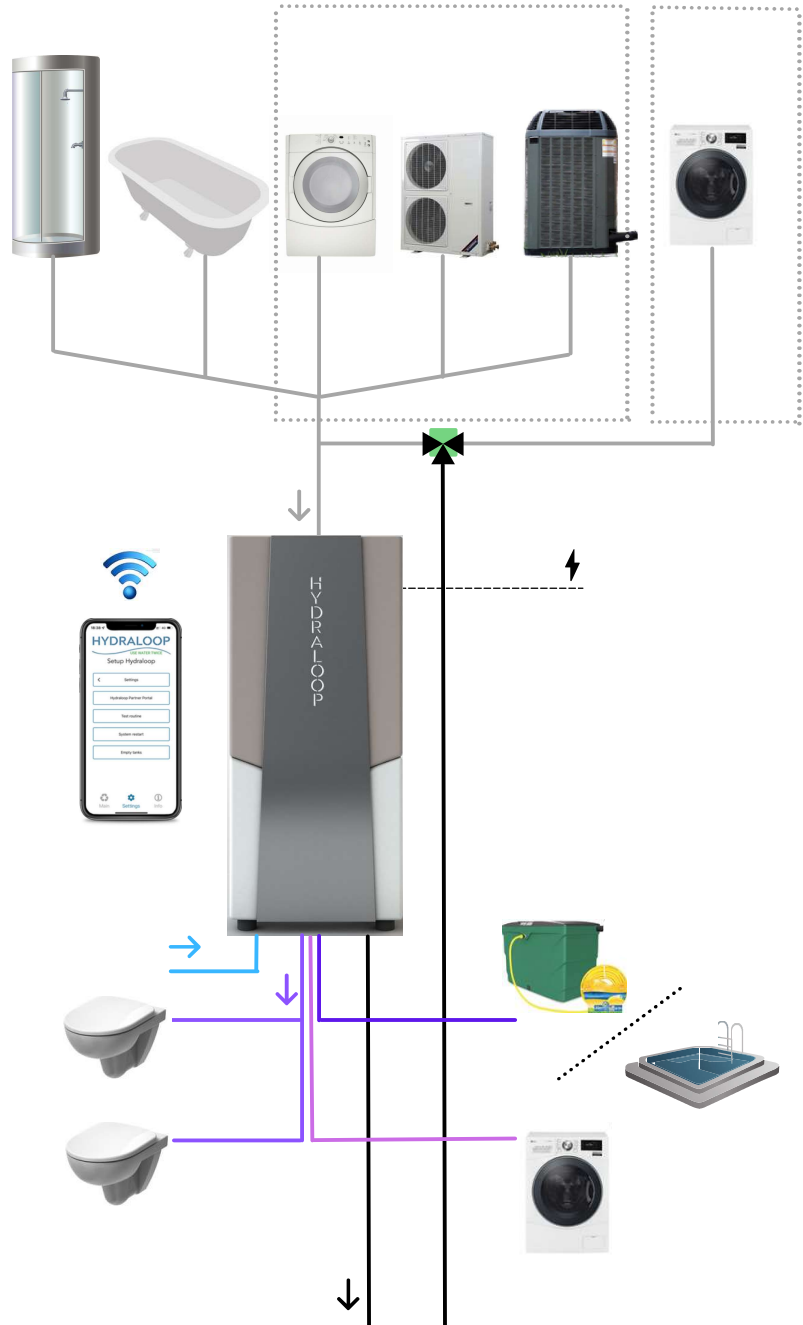
Backup water inlet

- tap water or filtered rainwater

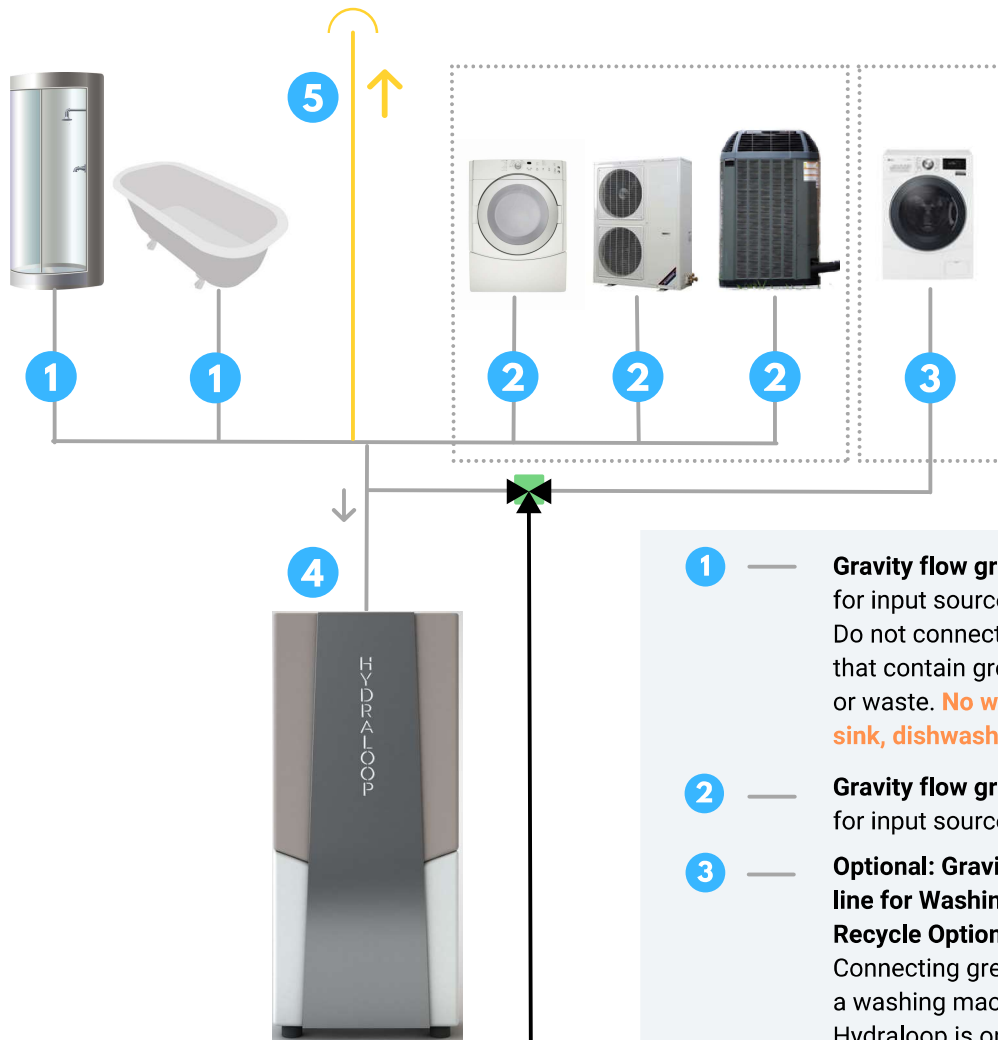
Wastewater outlet

- connection to sewer

See
page 6



GREYWATER INPUT CONNECTIONS



CONNECTION DETAILS

Greywater into Hydraloop

40mm | 1½" connections

Use separate greywater lines

Make sure that all greywater sources enter the Hydraloop unit from above. Ensure that all greywater connections are separated from black water.

Bring all greywater sources into one dedicated line

Connect all incoming greywater pipes into one single line going into the inlet (40 mm | 1½") on top of the Hydraloop system.

Input by gravity or lift pump

If your greywater input sources are located on a higher floor than the Hydraloop system, you can use gravity for the input greywater. In other circumstances, you'll need a lift pump. For lift pump requirements, see page 5.

See
page 5

- 1** — **Gravity flow greywater line**
for input sources to H300 & H600
Do not connect water sources that contain grease, food scraps or waste. **No wash basin, kitchen sink, dishwasher or floor drain.**
- 2** — **Gravity flow greywater line**
for input sources to H600
- 3** — **Optional: Gravity flow greywater line for Washing Machine Water Recycle Option (WMR)**
Connecting greywater output from a washing machine to the Hydraloop is only possible if you specifically choose the **WMR**. You can connect only one washing machine to the Hydraloop unit.



4 — **Greywater inlet**

5 — **Ventilation**

Placed along the greywater line to ensure proper ventilation and to help prevent air locks.

Ensure that greywater input and sewage output both have proper two-way ventilation. For more information, see schematic overview 'Recycle Ready' Plumbing Diagram on page 2.

The ventilation for the greywater input should be positioned above all greywater lines and end outside the building. You can also combine it with the sewage ventilation.

SYSTEM CONNECTIONS, POSITIONING, LIFT PUMP REQUIREMENTS



SYSTEM CONNECTIONS

INTERNET

- 1 Internet connection**
Stable internet connection with working Wifi in the room.
- !** Make sure to have a working Wifi connection with a bandwidth of 2.4 GHz or 5 GHz prior to installation. It's not possible to connect an internet cable.

POWER

- 2 Electricity (Hydraloop system)**
100-120V (60Hz) or 200-240V, depending on region.

We advise to position the power outlet in the room close to the top or the side of the system.

POSITIONING

Room specifications

Greywater inlet and optional **WMR** should be positioned at least 210 cm, 6.10" above the ground.

The room temperature should be between 14-35° C | 57-95° F. Extreme high or low temperatures should be avoided.

At any time: avoid direct sunlight on the Hydraloop unit.

We recommend placing the Hydraloop unit in a laundry room, mechanical room, or garage.

Allow at least 60 cm or 24" of space in front of the Hydraloop unit for maintenance access.

LIFT PUMP REQUIREMENTS

Please feel free to install a lift pump that is locally available and matches the following criteria:

Flow

Maximum flow of appr. 100 liters per minute (LPM) | 27 USGPM.



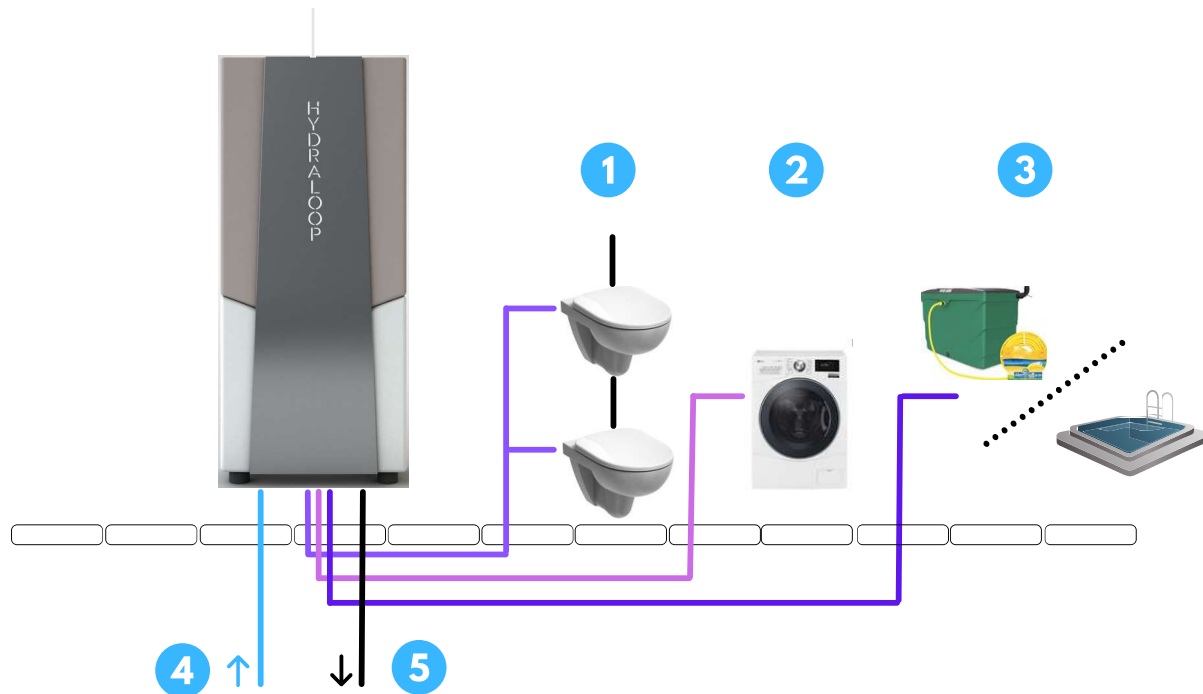
Ventilation

Please ensure proper two-way ventilation by installing a ventilation stack that leads outside or by creating a relief line/overflow to the sewage.

Examples of suitable lift pumps

DAB NovaBox 30/300 (230 Volt countries)
Saniflo Sanivite (110 Volt countries)
Liberty 405 Pump (110 Volt countries, CSA certified)

HYDRALOOP OUTPUT CONNECTIONS: TREATED GREYWATER OUTPUT, BACKUP WATER INPUT, WASTEWATER OUTPUT



TREATED GREYWATER

- 1 Toilet feed water**
Treated Hydraloop-water to toilets (pressure-controlled)
- 2 Washing machine feed water**
Treated Hydraloop-water to a washing machine (pressure-controlled)
- 3 Garden/pool output**
Treated Hydraloop-water to garden or pool (Hydraloop-controlled, unpressurized open connection to an external storage or swimming pool) Note: Treated greywater cannot be connected directly to a garden hose or sprinkler system.

BACKUP WATER

- 4 Backup water inlet**
Connection to tap water or filtered rainwater supply

WASTEWATER

- 5 Wastewater output**
Wastewater from Hydraloop to sewer (gravity). Output operates on a timer for wastewater release every 7 days.

CONNECTIONS

Treated greywater

All output connections are ½" male thread (MNPT). Prepare the plumbing in the wall behind the future location of the Hydraloop unit. Connect with flexible hose. For details, see 'Technical Drawings for your Plumber', page 8-9.

Backup water

½" male thread (MNPT), minimum water flow of 20 LPM | 5.3 USGPM, 1½-3 bar | 21-43 psi. If the pressure is higher, install a pressure regulator. If a rainwater pump is used, also install an expansion vessel and a 50-micron mesh filter.

Wastewater

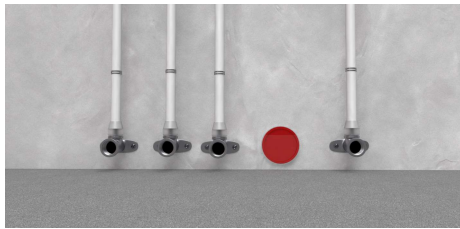
40mm | 1½" connection to sewer
Sewer connection (minimum 50 mm | 2") with rubber sleeve underneath or behind the Hydraloop unit into the floor or wall.

WATER SUPPLY CONFIGURATION PRIOR TO HYDRALOOP INSTALLATION

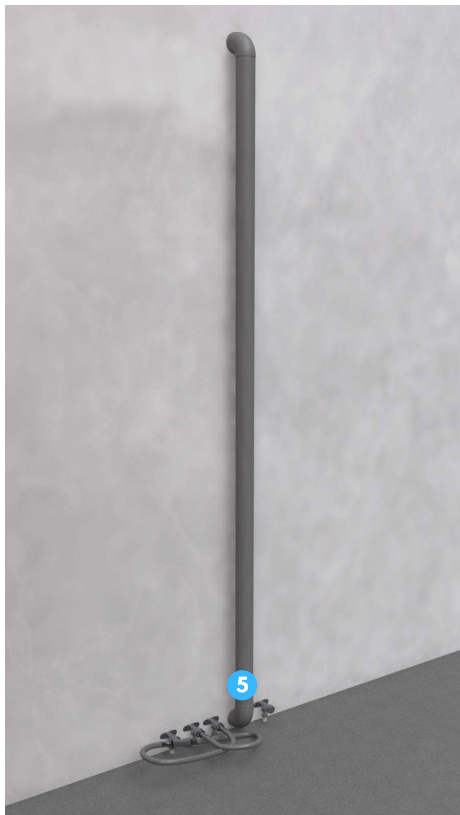
When the plumbing in your building is 'Recycle Ready', you can install a (temporary) bridge connection. This bridge connects the greywater input lines to the sewer and the backup water supply to the toilets and the washing machine. This enables you to use the showers, baths, toilets, and washing machine as usual, until your greywater recycling system is installed.

- 1 Toilet feed water
- 2 Washing machine feed water
- 3 Garden/pool output
- 4 Backup water inlet
- 5 Wastewater output

IN THE WALL (RECOMMENDED)



- 4
- 1
- 2
- 5
- 3



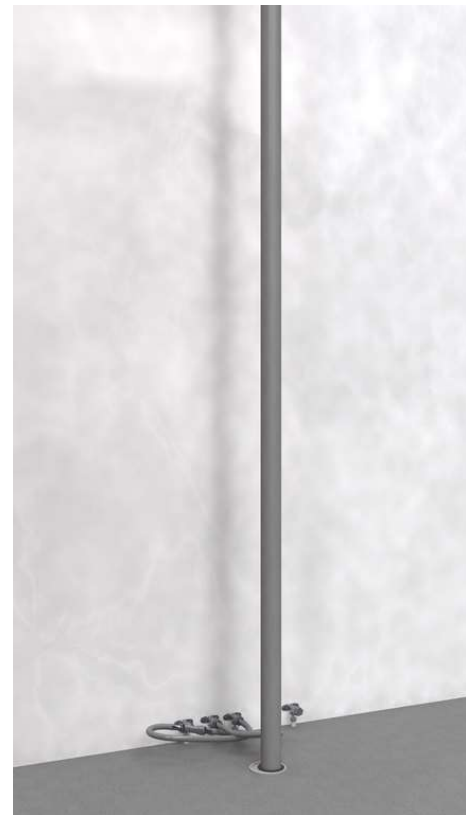
- 4
- 1
- 2
- 5
- 3



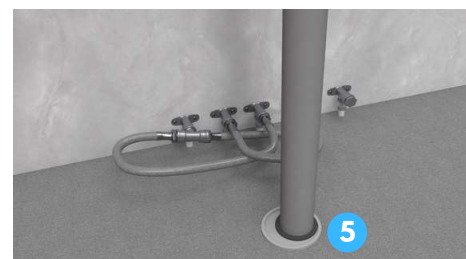
IN THE FLOOR

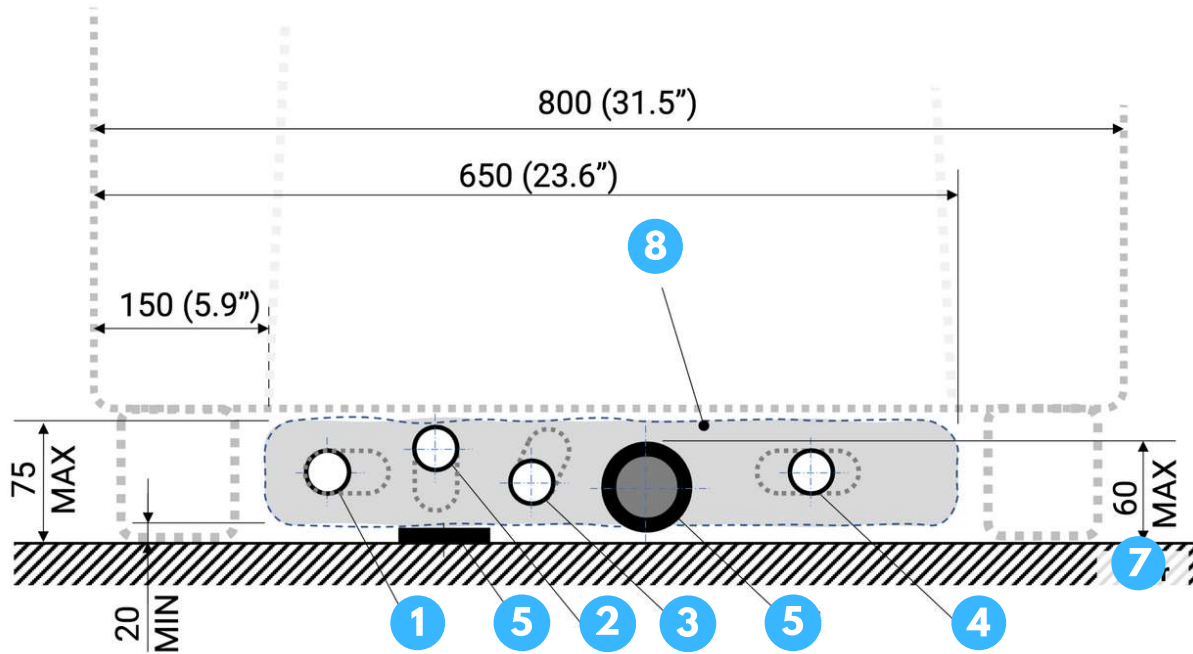


- 4
- 5
- 1
- 2
- 3



- 4
- 1
- 2
- 5
- 3





Front view - H300 / H600

All dimensions in mm (inches)

- 1 Toilet feed water**
Treated Hydraloop-greywater to toilets (pressure-controlled)
- 2 Washing machine feed water**
Treated Hydraloop-greywater to one washing machine (pressure-controlled)
- 3 Garden/pool feed water**
Treated Hydraloop-greywater to garden or pool (unpressurized open connection to an external storage or swimming pool)
- 4 Backup water**
Connection to tap water or filtered rainwater supply
- 5 Wastewater output**
Wastewater from Hydraloop to sewer
option 1: in the wall (recommended)
option 2: in the floor
- 7 Wall**
- 8 Allowed area**

See
page 7

Toilet, washing machine, and garden/pool feed connections

All output connections are ½" male thread – MNPT. We recommend preparing the plumbing in the wall behind the future location of the Hydraloop unit. Connect with flexible hose.

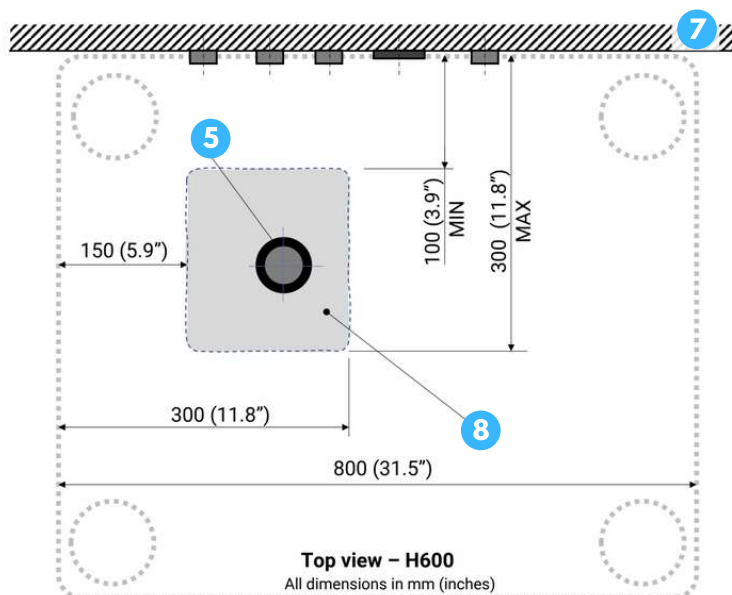
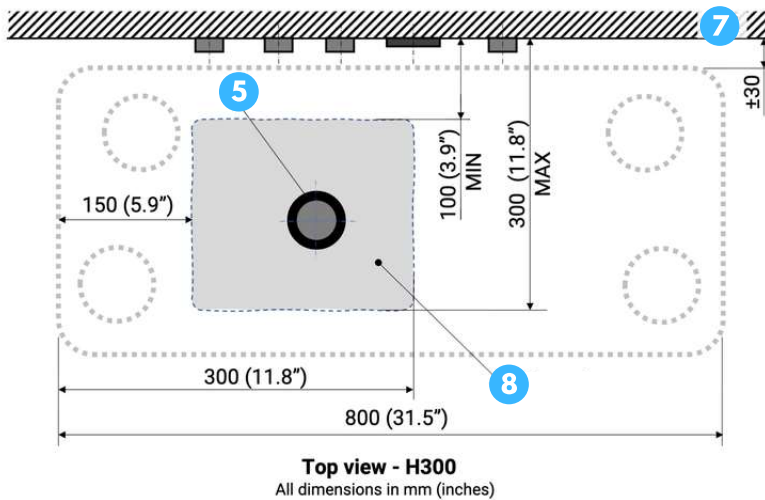
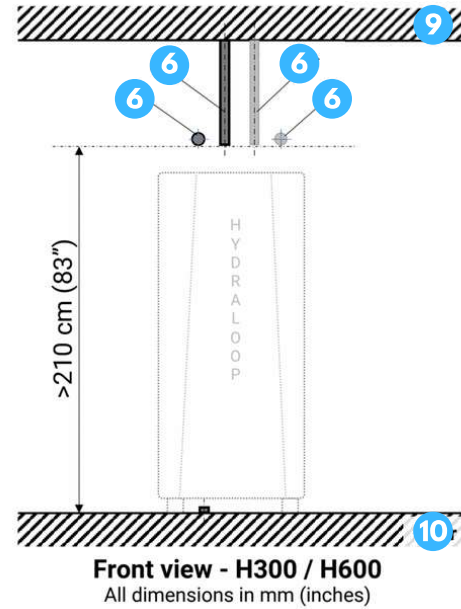
Backup water connection

½" male thread (MNPT), minimum water flow of 20 LPM | 5.3 USGPM, 1½-3 bar | 21-43 psi. If the pressure is higher, install a pressure regulator. If a rainwater pump is used, also install an expansion vessel and a 50-micron mesh filter.

Wastewater output

40mm | 1½" connection to sewer – Sewer connection (75 to 50mm | 3" to 2") with rubber manchet underneath or behind the Hydraloop unit into floor or wall.

- 5 Wastewater output**
Wastewater from Hydraloop to sewer
option 1: in the wall (recommended)
option 2: in the floor
- 6 Greywater inlet**
option 1: (left) in the wall
option 2: (right) vertical, from the ceiling
- 7 Wall**
- 8 Allowed area**
- 9 Ceiling**
- 10 Floor**



SYSTEM SPECIFICATIONS

H300

Capacity

300 liters | 80 gallons

Dimensions

80 cm wide, 34 cm deep, 187 cm high |
31 ½" wide, 13'4" deep, 74" high

Voltage

Versions for 100-120V (60Hz) or 200-240V
(50 Hz), 24 Volt internal

Power consumption

On average: 180 kWh/year per system

Noise Level

± 44 dB

Greywater input sources

- shower
- bath
- washing machine (only with WMR)

H600

Capacity

600 liters | 160 gallons

Dimensions

80 cm wide, 69 cm deep, 187 cm high |
31 ½" wide, 27,5" deep, 74" high

Voltage

Versions for 100-120V (60Hz) or 200-240V
(50 Hz), 24 Volt internal

Power consumption

On average: 350 kWh/year per system

Noise Level

± 46 dB

Greywater input sources

- shower
- bath
- tumble dryer
- air conditioning
- heat pump
- washing machine (only with WMR)





Certified to
NSF/ANSI
Standard 350

The NSF/ANSI 350 standard verifies that all design and performance requirements of the standard have been met, and confirms through testing that effluent reuse water meets the stringent quality criteria. The NSF/ANSI 350 standard also sets water quality requirements for the reduction of chemical and microbiological contaminants for non-potable water use.

During the 26-week NSF/ANSI 350 testing period, the Hydraloop product was dosed daily with a greywater mix that contained raw wastewater, secondary effluent, body wash, shampoo, conditioner, soap, toothpaste, deodorant, bath cleaner, lactic acid, liquid handsoap, laundry detergent & softener, Na_2SO_4 , NaHCO_3 , Na_3PO_4 and test dust. The incoming greywater and the treated recycled water was lab tested for 26 weeks, typically 3 days a week.

Influent values of the incoming greywater used for the 26 week test

Parameters	Required range
TSS (mg/L)	50 - 160 mg/L
BOD5	130 - 210 mg/L
Temperature	25 - 35 Celcius
PH (SU)	6.0 - 8.5
Turbidity	30 - 100 NTU
Total phosphorous-P	1.0 - 3.0 mg/L
Total Kjeldahl -N	3.0 5.0 mg/L
COD	250 - 400 mg/L
Total coliforms	$10^3 - 10^7$ cfu/100 mL
E.coli	$10^2 - 10^6$ cfu/100 mL

Effluent values NSF-350 requirements and Hydraloop treated water test results

NSF/ANSI 350 requirements		HYDRALOOP average results	
CBDOS (mg/L)	< 10	CBDOS (mg/L)	6
TSS (mg/L)	< 10	TSS (mg/L)	3.3
Turbidity (NTU)	< 5	Turbidity (NTU)	2.3
E. coli (MPN/100mL)	< 14	E. coli (MPN/100mL)	< 1
PH (SU)	6.0 - 9.0	PH (SU)	6.0 - 9.0