

U Value Calculator :



U-Value Calculator

Project

PROPOSED ONE STOREY REAR EXTENSION AT 25
MADRAS ROAD, AUCHTERMUCHTY, KY14 7BW

Reference

MR2011

Building Type

Cavity Wall Timber Frame Construction

Element Type: External Wall

☒ Max U-Value $U = 1/RT$

Perimeter (m):

Area (m²):

P/A = N/A

Material	Thermal Cond. (W/m ² K)	Thickness (mm)	Resistance (m ² K/W)
Internal Surface (R_{si})			0.1300
External High Strength Blockwork	0.19	102	0.5368
Air Cavity	0.18	50	0.2778
Timber Stud Internal	0.13	150	1.1538
Kingspan TW55 Wall Insulation	0.020	100	5.0000
Insulation Plasterboard Kooltherm	0.022	25	1.1364
External Surface (R_{se})			0.0400

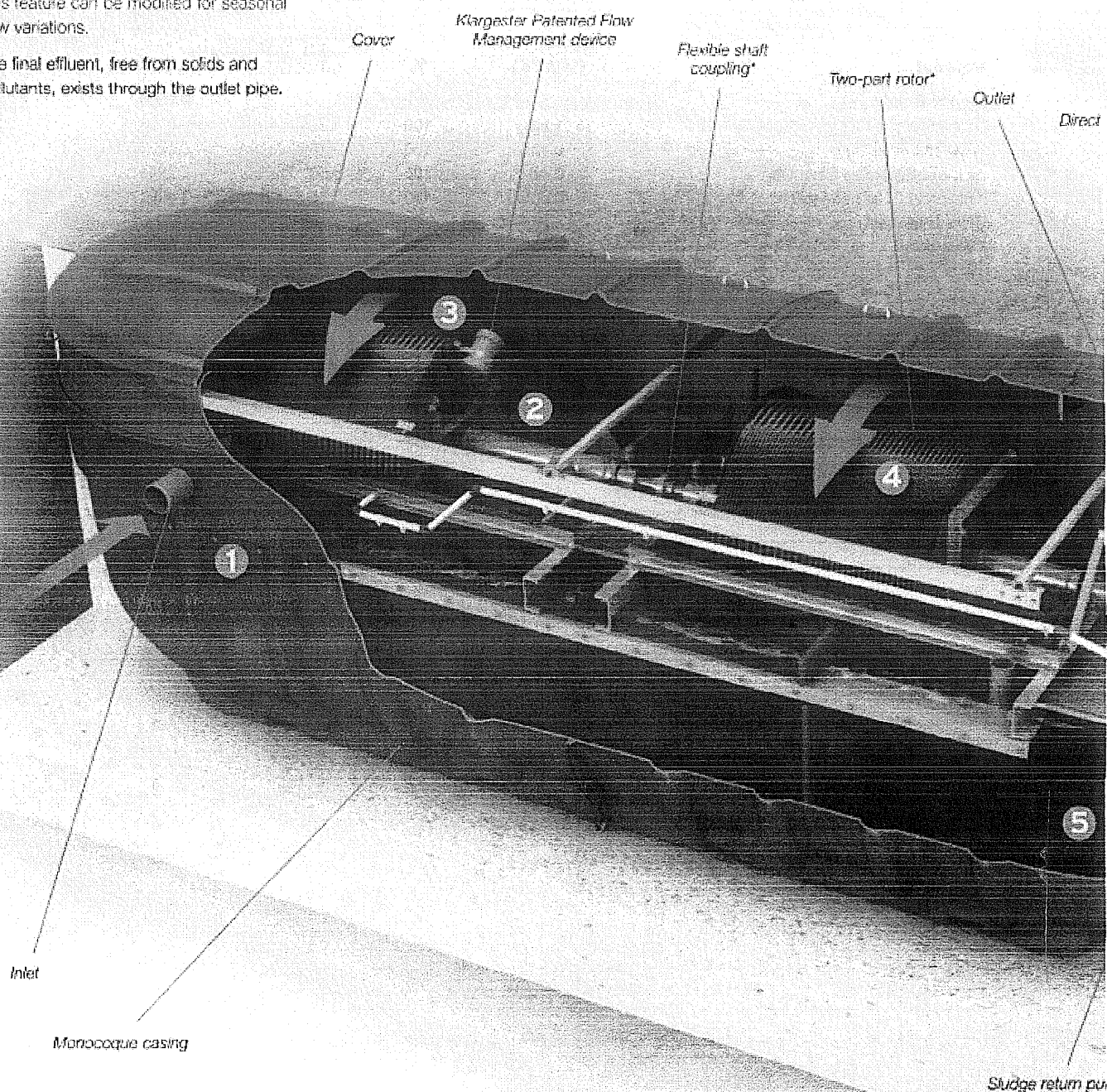
Total thickness:		427.0	mm
Total resistance:	$RT = R_{si} + R + R_{se} =$	8.275	m ² K/W
U-Value (uncorrected):	$U = 1/RT =$	0.121	W/m ² K
Total ΔU :	0.04		
U-Value (corrected):	$U = 1/RT + \Delta U =$	0.161	W/m ² K

Final Settlement Zone ⑤: The almost fully treated effluent, is displaced from the disc area into the final settlement zone. The final settlement zone is fitted with a simple sludge return pump that transfers the settled material from the base of this zone into the primary settlement zone. This improves process performance by protecting the outlet and returning dilute and active biomass into the primary tank. This feature can be modified for seasonal flow variations.

The final effluent, free from solids and pollutants, exists through the outlet pipe.

PROCESS FEATURES

- Klargester Patented Flow Management (KPFM)
- No process maintenance required
- Simple mechanics
- Self generating bacteriological process
- KPFM provides the capability to adjust plant performance
- Compliance with BS EN 12566-3 (BioDisc® BE-BF units only), BS 6297 and Building Regulations Part H2
- Sludge return pump in final settlement tank to enhance performance. Sludge return can be configured to help overcome seasonal flow variations
- No odour or environmental nuisance
- Silent in operation



* BioDisc® BH-BL only

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PROPOSED ONE STOREY REAR EXTENSION AT 25
MADRAS ROAD, AUCHTERMUCHTY, KY14 7BW

Reference

MR2011

Building Type

Timber Truss Roof Construction

Element Type: Pitched Roof (cold)

Max U-Value $U = 1/RT$

Perimeter (m):

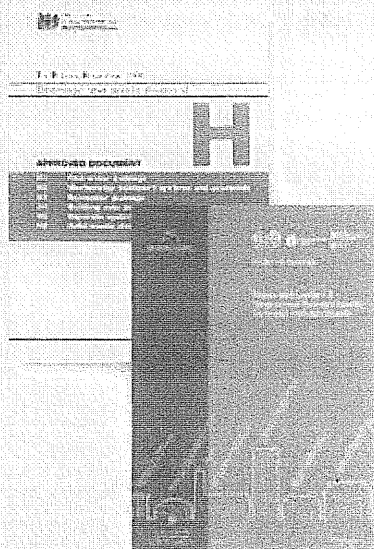
Area (m²):

P/A = N/A

Material	Thermal Cond. (W/m ² K)	Thickness (mm)	Resistance (m ² K/W)
Internal Surface (R _{si})			0.1000
Concrete tiles	1.50	20	0.0133
Plywood Sheathing	0.13	16	0.1231
Air Layer Ventilated Minimum	0.17	50	0.2941
Kingspan TP10 Thermapitch	0.022	75	3.4091
Glass fibre/Wool quilt	0.040	200	5.0000
Plasterboard	0.25	13	0.0520
External Surface (R _{se})			0.0400

Total thickness:		374.0	mm
Total resistance:	$RT = R_{si} + R + R_{se} =$	9.032	m ² K/W
U-Value (uncorrected):	$U = 1/RT =$	0.111	W/m ² K
Total ΔU:	0.000		
U-Value (corrected):	$U = 1/RT + ΔU =$	0.111	W/m ² K



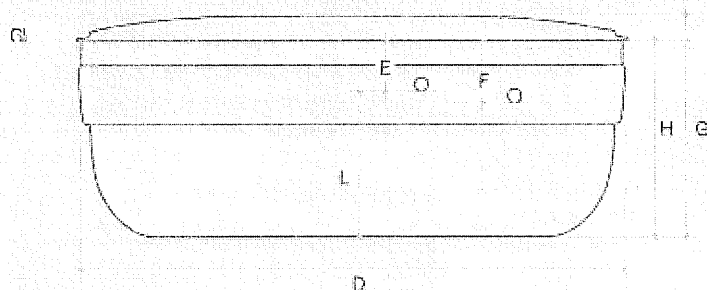


Consistent Effluent Quality

These plant are designed to achieve an effluent quality of 20mg/l BOD, 30mg/l Suspended Solids and 20mg/l Ammonia on a 95% basis. These BioDisc® can also be configured to produce better standards of effluent quality with Ammonia levels as low as 5mg/l being achievable. Contact Klargester for design support and further information.

- The systems are designed to deal with flows up to 3x DWF.
- Applications where commercial catering takes place will generate significant volumes of grease which should not be allowed to enter any treatment system.
- Klargester manufacture a wide range of grease traps and their specialist advice should be sought in these types of applications.
- The treatment of sewage from applications other than domestic housing can often demand special precautions, therefore specialist advice should be sought from Klargester.

STANDARD BIODISC® SINGLE PIECE SYSTEM



Note: Illustration is a schematic, do not use for installation. Refer to customer drawings for true pipework orientation.

The loadings given in the chart below are representative of typical domestic housing applications. The sizing of sewage treatment plant requires specialised knowledge and experience. Please consult Klargester for an assessment of your application.

G.L. = Ground Level

UNIT SIZE	BD	BE	BF	BG	BH	BJ	BK	BL
MAXIMUM DAILY BOD (kg)	1.5	2.1	3.0	4.2	4.5	6.0	7.5	9.0
MAXIMUM DAILY FLOW (m³)	5	7	10	14	15	20	25	30
D LENGTH (mm)	3,340	3,340	4,345	5,235	7,755	7,755	7,755	7,755
WIDTH (mm)	2,450	2,450	2,450	2,450	2,455	2,455	2,455	2,455
E INLET INVERT DEPTH (mm)	600*	600	600	600	600	600	600	600
L DEPTH BELOW INLET INVERT (mm)	1,820	1,825	1,820	1,820	1,790	1,790	1,790	1,790
F OUTLET INVERT DEPTH (mm)	685	685	700	700	750	750	750	750
G OVERALL HEIGHT (mm)	2,825	2,825	2,825	2,675	2,630	2,830	2,830	2,830
H HEIGHT TO RIM OF COVER (mm)	2,485	2,485	2,485	2,485	2,500	2,500	2,500	2,500
EMPTY WEIGHT (kg)	1,100	1,200	1,315	1,660	3,000	3,100	3,200	3,300
STANDARD POWER SUPPLY	1 PHASE	1 PHASE	1 PHASE	1 PHASE	3 PHASE	3 PHASE	3 PHASE	3 PHASE
OPTIONAL POWER SUPPLY	3 PHASE	3 PHASE	3 PHASE	3 PHASE	1 PHASE	1 PHASE	1 PHASE	1 PHASE
MOTOR RATING: 1 PHASE/3 PHASE (watts)	75/60	75/60	120	180	250	250	370	370
FULL LOAD CURRENT 1 PHASE (amps)	110	110	1.26	1.70	1.95	1.95	2.35	2.35
FULL LOAD CURRENT 3 PHASE (amps)	0.55	0.35	0.42	0.63	0.89	0.88	1.35	1.35
SLUDGE RETURN PUMP RATING (watts)	-	-	-	250	480	480	480	480

*Optional invert depth of 1,100mm is available

Please refer to Klargester for specialist advice for applications where primary settlement tanks or pump stations may be required