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Technology that puts you clean ahead of the rest.

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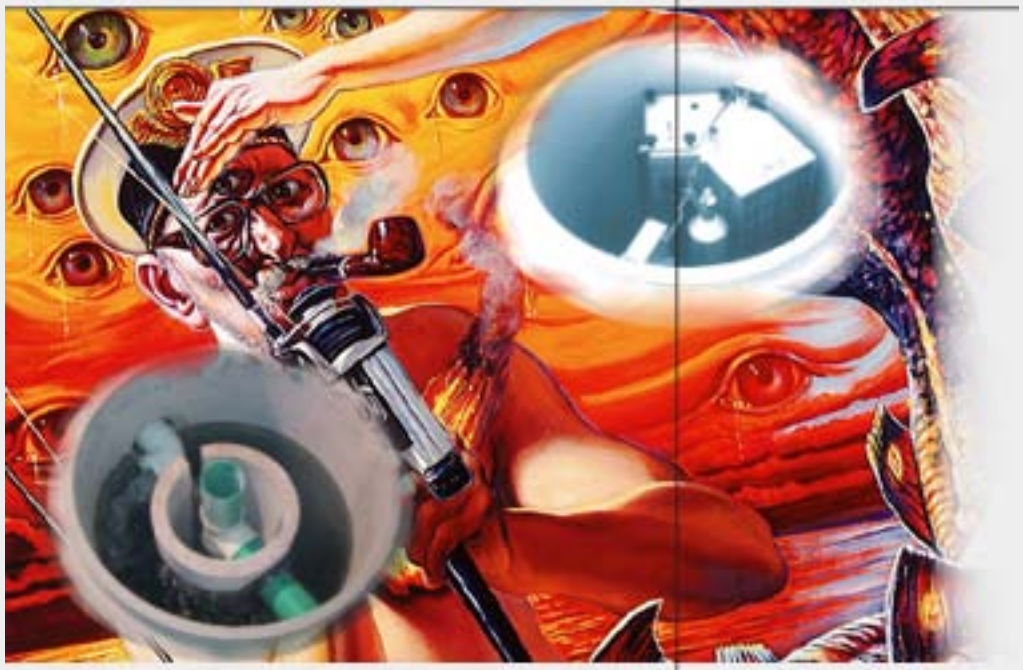

ecoGrease grease interceptor

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FREYTECH INC.

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The ecoGrease interceptor is designed according to the newly adopted European Standard pr-EN1825.

ecoGrease separates liquid, coagulating animal and vegetable fat and grease from water prior to discharge in septic or municipally owned sewer application.
Solid particles with a specific gravity > 1.0 are collected in the lower compartment.

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Physical Principles of Grease/Water Separation.

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Waste-water from **institutional kitchens, restaurants, food processing facilities**, ..., is contaminated with fat or grease of organic origin.

Generally the waste water has an **average temperature of above 30 ° C.**

All organic fat and grease components are **liquid** when entering the separator.

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The efficiency of separation depends on:

Retention time of the waste-water in the separator.

Difference in the specific gravity of water and grease.

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Physical Principles of Grease/Water Separation.

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The efficiency of separation depends on:

Diameter of grease particles.

Temperature of waste-water.

Stability of emulsions (amount of cleaning agents).

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Physical Principles of Grease/Water Separation.

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ecoGrease is designed to remove:

Solids with a specific gravity > 1.
Free separable organic fat and grease.

ecoGrease does not remove:

Emulsified grease (chemically or mechanically).
Dissolved grease.

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Physical Principles of Grease/Water Separation.

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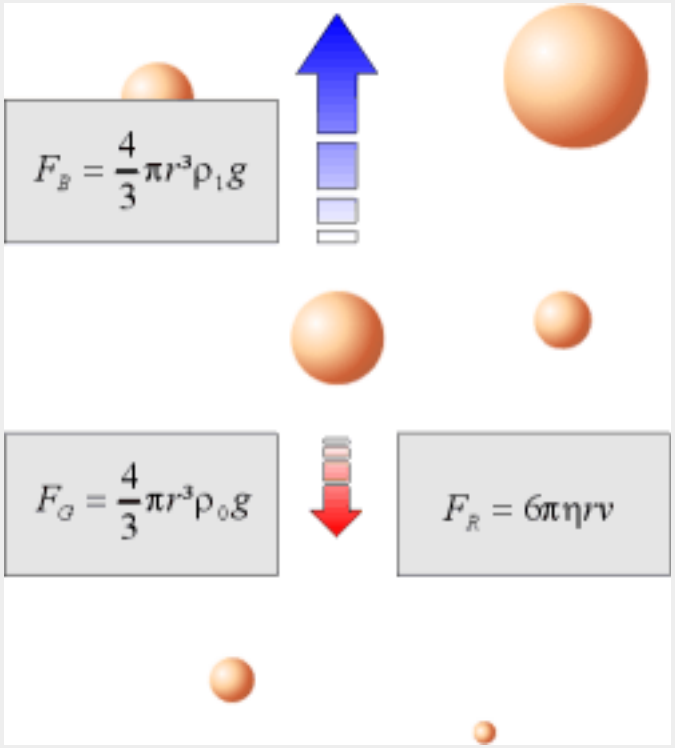

F_B	Buoyancy
F_G	Weight
F_R	Frictional Force
ρ_0	Specific gravity of oil
ρ_1	Specific gravity of water
g	Acceleration due to gravity
r	Radius of oil droplet
D	Diameter of oil droplet
v_v	Vertical velocity of oil droplet
η	Relative viscosity of water
μ	Absolute viscosity of water

$$v_v = \frac{g(\rho_1 - \rho_0)D^2}{18\mu}$$ Stoke's Law

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For the first time a grease separation technology will allow the consultant, plumber or end user to not only size the system strictly by flow-rate, but also achieve specific effluent removal efficiencies for these pollutants (< 25 ppm mandatory according to pr-EN 1825.

ecoGrease.
Dimensioning (example)

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1) Determine number and maximum flow-rate of fixtures:

examples:

Dishwasher:	2l/s (32gpm)
Sink 50mm (2 inch):	4l/s (63gpm)

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Dimensioning (example)

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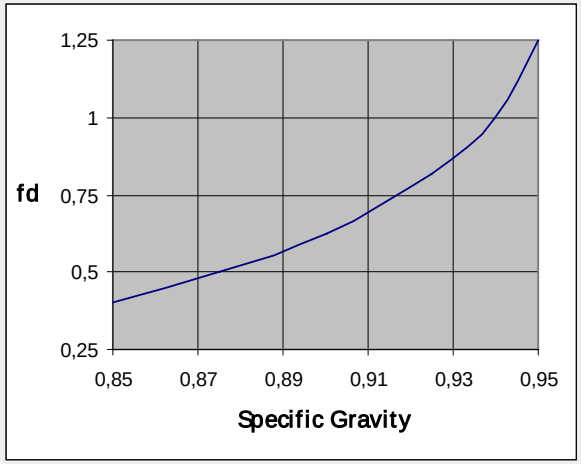
2) Determine adjustment factors:

a) Density Factor fd:

according to the fd/SG graph:



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Dimensioning (example)

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b) Temperature Factor ft:

for t< 60° C (140° F): ft= 1

for t> 60° C (140° F): ft= 1,3

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Dimensioning (example)

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c) Detergent Factor fr:

no detergents: fr= 1

detergents involved: fr= 1,3

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Dimensioning (example)

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3) Determine nominal size of grease separator:

fixtures	n	qi [l/s]	qi [gpm]	Z(n)	Qs [l/s]	Qs [gpm]	fd	ft	fr	NG [l/s]	NG [gpm]
dishwasher	1	2	32	0,6	1,2	19,0	1,0	1,3	1,3	**2,03**	**32,0**
sink d= 50mm max.	1	4	63	0,45	1,8	28,4	1,0	1,3	1,3	**3,04**	**48,1**

$$NG = Qs * fd * ft * fr$$

n ... number of fixtures
qi ... max. flow-rate per fixture
Z(n) ... factor for simultaneousness
Qs ... max. flow-rate
fd ... density factor
ft ... temperature factor
fr ... detergent factor
NG ... nominal size of separator

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Model sizes

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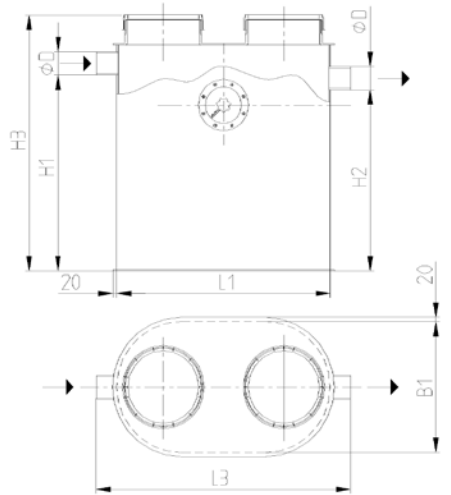

Nominal Size		Volume Grit Trap		Grease Capacity		Total Volume		Dimensions												Weight	
								D		L1		L3		H1		H2		H3		B1			
l/s	gpm	l	gal	l	gal	l	gal	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	kg	lb
2	32	200	52,8	90	23,8	410	108,3	110	4	1000	39	1160	46	915	36	845	33	1235	49	660	26	44	97
4	63	400	105,7	160	42,3	690	182,3	110	4	1560	61	1720	68	915	36	845	33	1235	49	660	26	64	141
7	111	700	184,9	282	74,5	1937	511,7	160	6	2170	85,4	2370	93,3	1180	46,5	1110	43,7	1570	61,8	910	35,8	280	617
10	159	1000	264,2	401	105,9	2754	727,5	160	6	2995	118	3195	126	1180	46,5	1110	43,7	1570	61,8	910	35,8	320	705

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Installation.

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ecoGrease is easy to install.

A 2l/s (32 gpm) ecoGrease unit only weighs 44kg (97 pounds) and can be carried into a basement by two people.

ecoGrease.
Maintenance.

ecoGrease

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ecoGrease is easy to maintain.

An integrated sight glass enables the owner to accurately monitor the thickness of accumulated grease and to determine the appropriate time for maintenance.

The sight glass is equipped with a wiper to clean the window.

ecoGrease.
Maintenance.

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ecoGrease is easy to maintain.

To cleanly and easily remediate collected pollutants, the ecoGrease system can be equipped with a flanged suction pipe.

This stainless steel pipe is then connected to a suction line that extends to grade .

Vacuum trucks then simply attach and pump at grade.

ecoGrease.
Performance.

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The **ecoGrease®** is tested in accordance with the European Standards (pr-1825) for the separation of grease from water **(< 25ppm separation ratios).**

Full size test certificates for all three standard model sizes are available.

Links:

- Test procedure for grease separators according to EN 1825

ecoGrease.
Performance.

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Full size test results achieved at 5,000ppm inlet oil concentration introduced at peak flow rate for each model.

Sample	ecoGrease NS02	ecoGrease NS04	ecoGrease NS07	ecoGrease NS10	Discharge Limit (ppm)
#1	17	19	14	19	25.0
#2	18	20	14	18	25.0
#3	13	14	16	20	25.0
#4	15	13	18	17	25.0
#5	16	17	16	16	25.0
Average	15,8	17	15,6	18	25.0

ecoGrease.
Fields of application.

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ecoGrease may be used in a wide range of water-quality improvement applications including:

Kitchens

Restaurants, hotels.

Institutional and processing facilities.

Ecogrease.
All Clear? ecoGrease at a glance.

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High separation efficiency

ecoGrease is designed according to the tough European Standard pr-EN 1825 for grease separation.

30% to 50% annual maintenance cost savings

Easy and clean remediation of collected pollutants with suction pipe to grade. Owner can monitor thickness of accumulated grease to accurately determine maintenance intervals.

High operational reliability

No external energy supply is needed. No electrical parts, and only grease resistant HDPE- and high grade stainless steel components.

ecoGrease.
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Brochure:

- ecoGrease brochure (english)

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