

GCT FLOW RATE vs GREASE STORAGE CAPACITY

A grease trap should not be specified on hydraulic flow rate alone. The nominal flow rate and the fat, oil and grease (FOG) storage capacity are independent design parameters that must be considered together. A reputable grease trap manufacturer will clearly specify both the nominal hydraulic flow rate and the grease storage capacity of the grease trap. These parameters are essential for correctly assessing the unit's hydraulic performance, maintenance requirements, and suitability for the intended application.

For example, a compact internal grease trap and a large external grease trap may both be rated for a nominal flow rate of 3 L/s. In hydraulic terms, both units are capable of treating the same peak wastewater inflow without exceeding their design flow conditions. However, their effective grease retention volumes can differ substantially.

A. A compact (single-fixture grease trap) is a small, point-of-use unit typically installed to handle low-volume, localized wastewater from a kitchen sink etc. Such compact grease traps have a small internal grease storage chamber. Consequently, although it can hydraulically process 3 L/s, it will accumulate fats, oils and grease more rapidly and reach its allowable storage limit sooner, requiring more frequent pump-out and cleaning intervals.

B. Large external grease traps are typically installed outside the building to treat wastewater from multiple fixtures or an entire commercial facility. Although a larger external grease trap may have the same nominal hydraulic flow rating of 3 L/s as a compact internal unit, it provides a substantially greater grease storage capacity. Consequently, while both units are capable of treating the same hydraulic flow, the larger external grease trap can retain a significantly greater quantity of fats, oils and grease (FOG) before servicing is required. This results in extended maintenance intervals, reduced pump-out frequency, lower operating costs, and improved long-term operational reliability.

Therefore, grease traps shall not be selected on hydraulic flow rate alone. Selection shall consider both the required hydraulic flow rate and the anticipated fats, oils and grease (FOG) loading. A grease trap that is hydraulically adequate may have insufficient grease storage capacity, resulting in more frequent pump-outs, higher maintenance costs, and an increased risk of grease carry-over. Conversely, applications with relatively low flow rates but high FOG loading may require a larger grease trap with greater grease storage capacity to achieve acceptable maintenance intervals and reliable long-term performance.

Parameter	Compact Internal Grease Trap	Large External Grease Trap
Nominal flow rate	3 L/s	3 L/s
Hydraulic treatment capacity	3 L/s	3 L/s
Hydraulic performance	Equivalent	Equivalent
Grease storage capacity	Low	High
Time to reach maximum grease storage	Short	Long
Pump-out / cleaning frequency	Frequent	Less frequent
Maintenance interval	Short	Extended
Operational autonomy	Limited	Greater
Suitable application	Low FOG loading or where frequent maintenance is acceptable	Moderate to high FOG loading or where extended maintenance intervals are preferred
Selection criterion	Hydraulic capacity only	Hydraulic capacity with increased grease storage capacity

