

Grease traps in commercial kitchens:

Fatty wastewater can cause clogging/corrosion both on the private properties in the piping systems to the sewer networks and in the public sewerage itself.

This can lead to commercial kitchen operations, for example, having to be suspended to clean or renovate pipe parts. Municipalities must also use public funds in the event of blockages/corrosion to restore affected municipal sewer sections to an operational condition.

For this reason, municipal statutes usually require that commercial kitchen wastewater contaminated with animal or vegetable fats and oils is pre-cleaned in accordance with the current state before being cut into the public sewerage system with treatment systems. Currently, grease traps are mostly used for this purpose, which are designed, manufactured, tested, installed, operated, and emptied in accordance to DIN EN 1825/DIN 4040-100.

The grease trap must be designed according to the theoretically expected wastewater flow in liters per second. The size code for grease separator "NS" (Nominal Size) provides information about the permitted maximum wastewater inflow in liters per second into the grease trap. For example, a grease trap NS 4 is allowed for a maximum wastewater inflow of four liters per second.

The calculation of the nominal size can be carried out based on the design proposals in accordance with DIN EN 1825, Part 2. In a first step, the kitchen wastewater inflow is determined either by the kitchen equipment used or the kitchen type, the operating hours per day and the food portions produced per day.

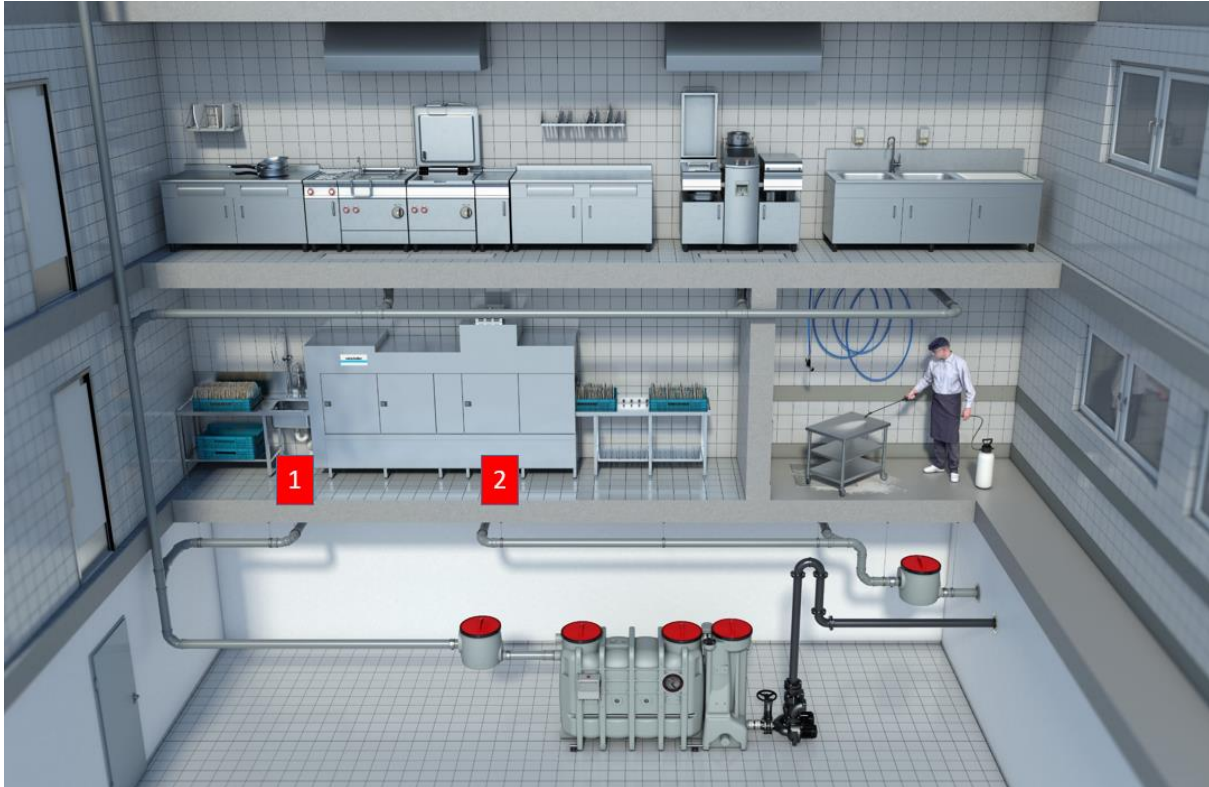
The following factors exert an influence on the deposition of fats and oils in commercial wastewater and can then be included to a certain extent in the above-mentioned calculation methods:

- the temperature of the wastewater,
- the contents of the fats and oils used,
- and the detergents and cleaning agents used.

To ensure the separability of the deposable fats and oils contained in the wastewater, DIN 4040-100 therefore requires „grease-trap-friendly" cleaning agents. The same applies to DIN EN 1825: Cleaning agents should not impair the deposition effect as far as possible and should not form stable emulsions.

Basically, manual cleaning agents in the commercial kitchen area are particularly good for grease and oil emulsifying due to their proportions of anionic surfactants, while cleaning agents for the dishwashing area contain no or only very small amounts of surfactants and thus do not form stable emulsions with fat and oil. Therefore, we can assume that cleaning products for the machine dishwashing area are largely separation-friendly, although this term is not exactly defined and methods for testing do not exist.

In accordance with DIN 4040-100 Annex A, care must always be taken when cleaning dishes by a dishwasher to ensure that the dishes to be washed are cleared well in advance and that the dirt load on the dishwasher remains as low as possible. To reduce the amount of soil into the wastewater, it is also advisable to empty strainers and other food residues from the dishwasher do not go into the drain, but into special waste containers.



Example: The wastewater (1) of the pre-clearance (cleaning water mixed with greases and oils) is passed through the grease separator. The wastewater from the subsequent mechanical purification stage of the dishwasher (2) then contains only small amounts of grease and might be discharged directly into the sewage system if possible.

Further explanations can also be found in the Compendium of practice section 12 Environment and sustainability of the Working Group Commercial Dishwashing (AK GGS – Arbeitskreis Gewerbliches Geschirrspülen).

In the case of manual cleaning products, care must be taken to avoid overdose. By using automatic dosing devices or admixture devices, this is often sufficiently realized.

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