

# Sizing of grease arrestors for the retail food industry

## Trade waste information brochure - 23C

The size of a grease arrestor is critical in ensuring the wastewater discharged from a greasy waste producer (eg. restaurant, café or fast food take away business), has the optimum conditions for efficient suspended solids, oil and grease removal. Two methods can be used to determine the appropriate size of a grease arrestor and both are based on ensuring the wastewater has a minimum retention time of one hour.

Please note: Water Corporation has a minimum grease arrestor size of 540 litres and a maximum size of 2000 litres in effective capacity for any individual grease arrestor. Customers wishing to install larger grease arrestors should seek our approval before installation.

### Method 1 – Fixture Unit Rating Method

Add the fixture unit ratings (see Table 1) for all fixtures that feed into the grease arrestor and multiply this by 100L. Check where this calculated volume lies in the 'Calculated Grease Arrestor Size Range' (Table 2 below) to determine the corresponding 'Recommended Grease Arrestor Size'.

**Table 1: Fixture Unit Ratings**

Fixture	Fixture Unit Rating	Fixture	Fixture Unit Rating
Steamer	1	Kitchen sink	3
Wok (per burner)	1	Double kitchen sink	3
Hand basin	1	Pot sink	5
Rinse sink	3	Double pot sink	5
Combi Ovens	5		

**Table 2: Recommended Grease Arrestor Size**

Maximum Number of Fixture Units	Calculated Grease Arrestor Size Range	Recommended Grease Arrestor Size
7	100 L – 700L	540L
13	701 L – 1300L	1000L
17	1301 L – 1700L	1500L
26	1701 L – 2600L	2000L
40	2601 L – 4000L	2 x 2000L

## Method 2 - Peak Flow Rates

Where the hourly peak wastewater flow rate is known, it can be used to determine the recommended grease arrestor size. Compare the peak hourly flow with the 'Calculated Grease Arrestor Size Range' in Table 2 to determine the corresponding 'Recommended Grease Arrestor Size'.

### Shared Grease Arrestors

In circumstances where we approve businesses to share a grease arrestor the minimum size can be calculated using either Method 1 or Method 2. If it is not practical to connect grease arrestors in series, or the FU loading is too high for a single grease arrestor, then the waste streams are to be split and diverted to individual grease arrestors to accommodate the fixture loadings.

### Dishwashers & Glass washers

Dishwashers and glass washers are not to discharge into grease arrestors due to their use of detergents, high water temperatures and surge loads, which can liquefy or emulsify oil and grease allowing it to be discharged to sewer or overload the arrestor.

### Non – Typical Grease Arrestors

We may accept the use of other approved types of grease arrestors such as those which may include the use of filters. These types of grease arrestors may be subject to specific conditions or restrictions in use and therefore it is recommended prior to the installation of such arrestors customers seek advice from Water Corporation if any conditions or restrictions apply.

## Worked Examples

### Example 1: Fixture Unit Rating Method

If a restaurant kitchen has: 1 Double Pot Sink (5 FU), 1 Single Pot Sink (5 FU) and 1 Hand Basin (1 FU), the maximum hourly flow that could be expected can be calculated as follows:


$$11 \text{ FU} \times 100\text{L} = 1100\text{L}$$

Therefore the recommended size is 1000L (From Table 2).

### Example 2: Peak Flow Rate Method

The peak flow rate from a kitchen/production area is known to be 0.5L/sec. The recommended grease arrestor size is calculated as follows:

$$0.5\text{L/sec} \times 3600 \text{ sec/hour} = 1800\text{L/hour.}$$



Therefore the recommended size is 2000L (From Table 2).

**Example 3: Fixture Unit Rating Method – Shared Arrestor**

Business A – 5 FU, Business B – 11 FU and Business C – 4 FU

When three businesses (A, B, & C) share a grease arrestor, the maximum hourly flow that could be expected, and hence the grease arrestor size, is calculated as follows;

$$20 \text{ FU} \times 100\text{L} = 2000\text{L}$$

Therefore the recommended size is 2000L (From Table 2).

**More Information**

For further information on the sizing of grease arrestors please call 13 13 95.