

How to Avoid Drain Pain

Specifying food-safe drainage solutions

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A recent increase in poor drain selection has highlighted the importance of specifying the correct drain for the application, especially in the hygiene conscious food processing industry.

In the past twelve months, we've seen an increase in requests for assistance with drainage from food processors as a result of food safety audits, particularly with concerns about the performance of floor drains and inability for cleaners to quickly clean to a required standard. With some recent projects requiring upwards of ninety drains for their processing area alone, a small problem can become substantial if something as seemingly small as a floor drain begins affecting operations as a repeating and persistent issue.

Drainage is often viewed from above as a small hole where production waste is hosed away, however as the wash-down water helps clear the processing area the real effects occur below. Besides the main role of collecting large amounts of water, floor drains are often points for collecting washed solids and preventing contaminated sewer gases from entering hygienic areas. For instance in Australia, recent regulations require primary and secondary screening before discharge to sewer, creating a situation where regular clearing of filter baskets and waste build-up is required to prevent a blockage.

Often, when drain problems are investigated, the problem is found to arise from bulk solids having entered and blocked the drainage pipework. Blockages often arise during processing and highlight the importance of regular cleaning, education and maintenance practices for food processors. Stopping production to clear pipes because the floor is pooling with backed up water is not desired by anyone, least of all the maintenance team; this gives rise to a costly time and financial burden.

It raises a substantial point to specifiers and installers and their liability for products installed without the necessary approvals such as WaterMark. In many cases, the drainage installed into concrete floors is very difficult to rectify or replace without substantial production downtime, equipment relocation or construction work. Maintenance staff are often omitted from the drainage selection process and left to resolve problems when drains are installed by others without adequate thought to the requirements of day to day operations.

We prefer to work with consultants, owners and maintenance managers to prevent these problems before they occur; at the design stage. Selecting a high performance floor drain depends on a few key factors including the expected amount of water, the amount of solids, load rating required, for example forklift traffic, cleanliness, material and temperature.

Primary considerations for hygienic design are minimising or eliminating corners and horizontal surfaces that can trap deposits of solids and harbour bacteria in these hard to clean parts of a drain bowl. Laps, crevices and corners are all undesirable attributes when it comes to drain bowl cleanliness. Managing bacteria is much easier when surfaces are smooth, easy to clean, self-draining and impervious, such as stainless steel. Outside the bowl it is important to fill voids such as under the drain top or folded edges with a permanent

bacteria resistant material. The material also needs to be suitable for harsh cleaning practices, with stainless steel resistant to many cleaning chemicals and suitable for high temperature water washdown.

Ideally the filter basket should be a snug fit within the drain bowl, directing all solids into it and preventing overspill into the drain below when it is removed for emptying. Secondary strainers function as a backup and are designed to catch overspill, but can be less accessible and harder to clear, especially during production. We've supplied oversized baskets to reduce emptying frequency for high solids content waste and for production waste with unusual solid shapes and sizes.

Another successful design solution that we have employed is a removable water trap. These are fitted within the drain bowl and serve to prevent sewer odours but can be removed for maintenance and allow unimpeded access to the pipework beyond. This feature is preferred to installing additional inspection points when each drain can act as both drain, clear-out and can be used without a traditional P-Trap.

Using removable items such as filter baskets and water traps allows for replacement should damage occur without affecting the fixed drain bowl and this extends the service life of the drain considerably. The grate of the drain should also be replaceable and in our experience can save expense when production area layouts are changed, such as when pedestrian areas become heavy forklift traffic areas. Replaceable grates make these changes to layout easier and quicker.

BLÜCHER's practical experience of more than 45 years in the industry has led to these design features being incorporated into best practice solutions for commercial and industrial drainage and becoming standard in an increasing number of large project specifications and plant upgrades.

Whether it is a single drain bowl or a solution incorporating industrial floor drains, channel linear drainage, stainless steel drainage pipework and custom kettle discharge pit, we've been able to supply products that are installed permanently, reliable and offer a long service life as part of the building, and we are proud to count leading food processors around the world among our reference objects.

Understanding the implications of poor drainage selection and the ongoing benefits of good choices for building design, are often only discovered when they're not performing properly but are crucial for an efficient and hygienic food production facility.

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