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Food & Beverage Enclosures:

What's the future?

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Introduction

So what's the difference - Food Grade vs Non Food Grade Enclosures?

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When it comes to food enclosures in Australia, things are changing fast. Legislation and design features that have already been implemented in Europe will most likely be introduced in Australia over the coming years. Investing in the right food and beverage enclosures now will save you time and money. It will also future-proof your business against process changes and the need for amendments if the new legislation is enforced.

Food and beverage enclosures come in many shapes and sizes. The decisions you make when purchasing enclosures will depend on a variety of factors like space, budget and your specific processes. But perhaps the first and most important decision you will make is whether to buy a Food Grade or Non Food Grade enclosure.

What Are Food Grade Enclosures?

Both types of enclosures may look similar but Food Grade Enclosures are designed specifically with the manufacturing and storage of food and beverages in mind. From the steel grade to the hinges, seals and screws, every aspect of a Food Grade Enclosure is created to optimise your processes and ensure the highest possible hygiene standards.

The latest European food and beverage enclosures focus on streamlining the Cleaning-in-Place (CIP) process. These enclosures have several features designed to reduce wash-down times and minimise your use of resources like water and cleaning chemicals. Food Grade Enclosures therefore save you time, labour, consumables and energy costs.

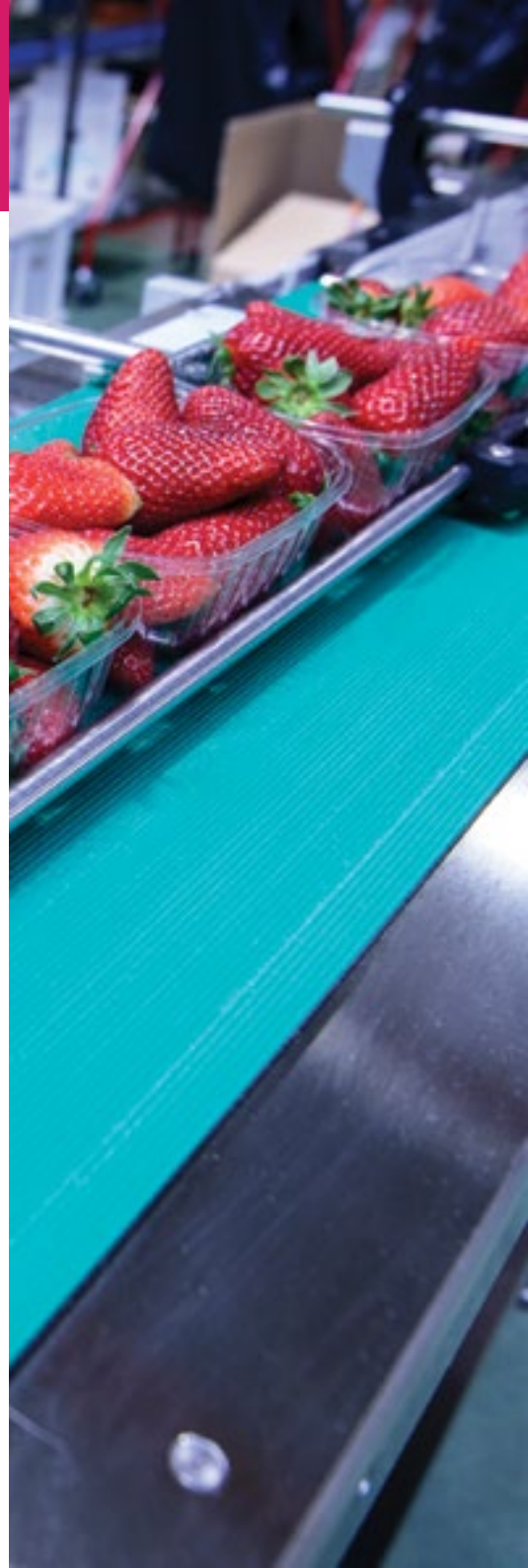
Features To Look Out For

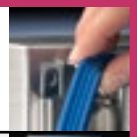
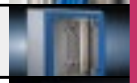
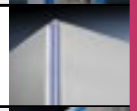
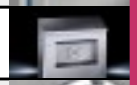
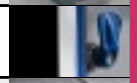
At first glance, Non Food Grade Enclosures seem to perform just fine. But upon further inspection, you will notice many aspects to these enclosures that could be significantly improved.

Scientific and technological advancements in the Food and Beverage industry have exposed hygiene risks and design flaws that can be avoided. Food Grade Enclosures have been made with this new information in mind and are designed to streamline operations as well as comply with the latest legislation.

So what features do you need to look for when selecting food and beverage enclosures? And what exactly makes Food Grade Enclosures better than their Non Food Grade counterparts?

The comparison chart below breaks down the key factors that separates Food Grade Enclosures from Non Food Grade Enclosures. Understanding these differences is key to making the right purchase for your business.



Feature	Food Grade	Non Food Grade	Benefits
Seal Material	Silicone 	Polyurthane	Silicone provides high heat tolerance ideal for hot water pressure cleaning (IP 69k). Silicone has the highest level tolerance to chemicals used in the wash down process whereas Polyurethane can degrade when treated with certain chemicals.
Seal Colour	Blue 	Black	Blue seals increases ability to identify contaminants. It can also be X-Ray and UV scanned for further detection.
Seal Positioning	External, joint free 	Internal	External seals ensure all gaps inside and outside the enclosure are covered which prevents contamination and provides a smooth surface for cleaning.
Seal Maintenance	Replaceable 	Non-replaceable	A removable silicone seal can be replaced by simply pulling out of the door frame, preventing unnecessary and costly replacement of full doors.
Hinges	Concealed, internal 	External	Hinges that are concealed inside the sealing zone create a smooth surface for easy cleaning. They also eliminate external cavities between the enclosure and the door which allow food and other contaminates to build up.
Roof	30 degree slope with door overhang 	Flat	Prevents staff using the enclosure as storage (which is a health and safety risk) and ensures water and contaminants run off which reduces wash-down process.
Seams	Enhanced fully welded 	Standard fully welded	Enhanced seams prevent contaminant build up in corners.
Lock Inserts	Contoured to have no angled corners 	Deep angled corners	External insert, round shaped locks allow easy access for cleaning and prevents contaminant build-up.
Lock Cam	Silicone coated 	Metal	The silicone coating prevents metal on metal contact which can cause metal filings and leads to contamination.
Steel Grade/Finish	304 400 grain 	316 grain	304 grade stainless steel is more resilient to the chemicals used for regular cleaning in the food and beverage industry. 400 grain carries less risk of contamination than No4 finish.
Mounting Brackets	50mm round wall bracket with silicone seal 	Standard folded bracket	Unexposed mounting bolt with 50mm spacing allows easy cleaning behind the enclosure. Standard brackets allow maximum 8mm spacing which doesn't allow access to clean rear of enclosure.
Cable Glands	Round with silicone seal 	Polyamide	The external silicone seal prevents contaminant build-up.
Cooling	Air/water heat exchanger, wall-mounted, 0.6 kW - 1.2 kW, Thermostat-controlled magnetic valve, NEMA 4X. 	Standard cooling units	Designed to be a sealed cooling unit for a hygienic environment.
Cleaning & Downtime	Contoured surfaces 	Standard surfaces for everyday environments	Contoured surfaces promote optimal cleaning down-time.

The Right Enclosure For Your Environment

Non Food Grade Enclosures are not badly made but are simply not designed for the needs of the Food and Beverage Industry. The right enclosure for you will be specific to your environment.

All of the features in the chart are designed to achieve the best possible hygiene standards as well as streamline your processes. Some are easy to comprehend but what about the more technical aspects of the design? And why are these features important to the Food and Beverage Industry?

Stainless Steel and the Food & Beverage Industry

Although 316 grade stainless steel is generally regarded as the premium stainless steel in Australia, 304 is actually the best grade for food and beverage enclosures.

316 grade steel is a versatile material that needs little maintenance. It is particularly effective if left outside for long periods of time. 304 grade stainless steel however is not only 20-30% cheaper than 316, but it is also more resilient to regular and vigorous chemical cleaning. This is essential in the food and beverage industry.
The finish of the steel is also important to consider. Until recently, most food enclosures used the No.4 finish. Now, manufacturers are using the No.7 (400-grain) finish which is finer and a lot less coarse.

It ultimately comes down the 'peak-to-valley' ratio. When looking at steel under a microscope, you will notice valleys at the bottom where food can get stuck. The smaller the peaks and valleys, the less chance of contaminates getting stuck in the grain and deteriorating the material. This is why 304 grade stainless steel with a No.7 finish is better suited for the food and beverage industry.

Silicone Seals

Silicone seals are designed to withstand chemicals and hot water pressure cleaning. This is a big requirement in the food and beverage industry. External, joint-free seals eliminate contamination risks and allow a quicker cleaning process.

Silicone seals are resilient and extremely durable. But, in the event that they need to be replaced, removable seals could save you a lot of money. To replace non-removable seals, you would have to replace the entire door which could cost you anywhere from $500 to $1500.

Rittal's unique blue seals featured in our Hygienic Design range are also a huge benefit for a food and beverage environment as the colouring allows clear visibility of foodstuff. They can also be X-ray scanned for further inspection, allowing you to achieve impeccable hygiene standards.

Hinges

Aside from allowing easier cleaning, hidden hinges prevent contamination. This is crucial because of their proximity to the enclosure door. To clean crevices where contaminants could congregate, you will have to open the door. By law, only a trained Electrician or licensed serviceman can open the door when the panel is live. Hidden hinges eliminate this issue, saving you time, labour and money during the cleaning process.

IP Rating

An IP rating refers to the level of protection against materials such as water and dust. An IP69K rated food enclosure can handle frequent high pressure and high temperature wash-downs.

Many manufacturers currently use IP66 rated enclosures. With new legislations and technological advancements however, IP69K enclosures will be at the forefront of the Australian food and beverage industry over the next few years.

More than Just a Box

A food and beverage enclosure is more than just a box. To find the right enclosure for your business, you need to consider the application, the environment and protection categories it requires.

Rittal's Hygienic Design range focuses on the particular needs of the Food and Beverage Industry. Our food grade enclosures are designed to compliment your environment and processes to save you time and money and help you maintain impeccable hygiene standards.

To find out more about the enclosure features you need, **book a one-on-one consultation** with one of Rittal's technical experts today.

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