

# A SOLUTION FOR EVERY ROOM

IN THE FOOD PRODUCTION FACILITY





NO WOODEN PALLETS  
BEYOND THIS POINT

# INTRODUCTION

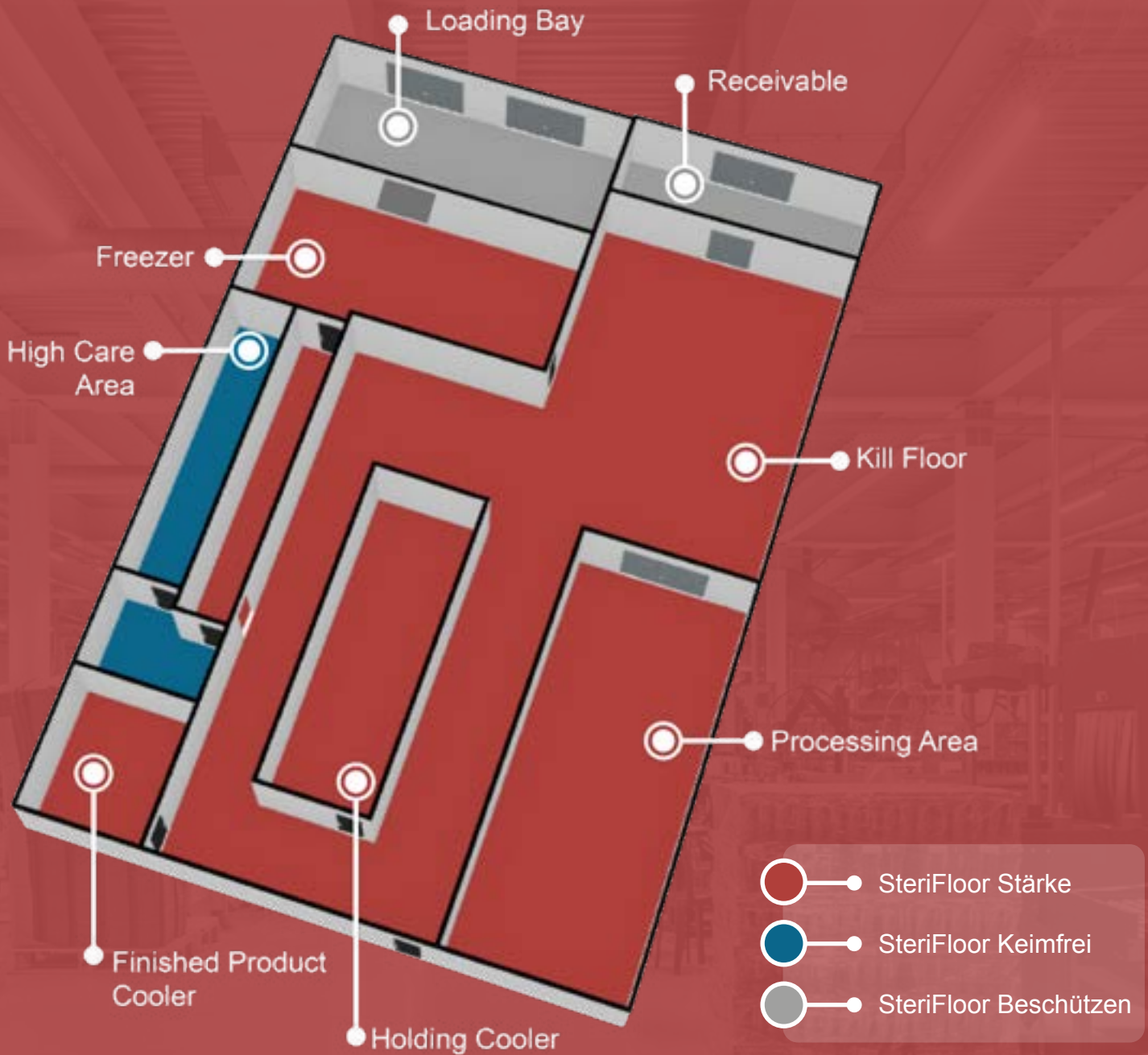
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With the food manufacturing industry of Australia having approximately six main sectors, it is impossible to find a flooring solution that caters to every need in every facility. Some facilities require particularly heavy duty floors, while others need a floor that can stand up to certain acids, such as lactic acid.

In this whitepaper, we explore the six main sectors within the food manufacturing industry, and outline the particular challenges each sector faces. We then provide an analysis on the ideal flooring solution for this sector. Read on to explore what you need to keep in mind when choosing a new flooring solution for your facility.



# Abattoirs & Meat Processing



## ABOUT THE SECTOR

With a workforce of around 34,000 people, the Australian Meat Processing Sector is a world leader in processing beef, lamb, poultry & goat meat. Hygiene and worker safety are two of the most important things when it comes to this industry. This has recently been emphasised in a comprehensive article<sup>1</sup> written by AuManufacturing regarding good food manufacturing practice being part of the Australian culture, and the impact this has had on minimising the effect of Covid-19 in Food Manufacturing facilities. Understanding this greatly assists us in providing the right antimicrobial flooring solutions.

# MAIN CHALLENGES

There are four main challenges when it comes to flooring in the abattoir and meat processing industry:



## Wet Production Areas

Throughout many areas in an abattoir or meat processing facility, there are constant liquids on the floor, blood and other animal liquids, as well as cleaning liquids and chemicals. This imposes a large amount of stress on the floor, and if preparation is not adequate, the floor will fail.



## Exposure to Bacteria

Abattoirs and meat processing facilities are constantly exposed to airborne and water-borne bacteria. If the floor has been incorrectly installed, it can become an ideal breeding ground for bacteria.



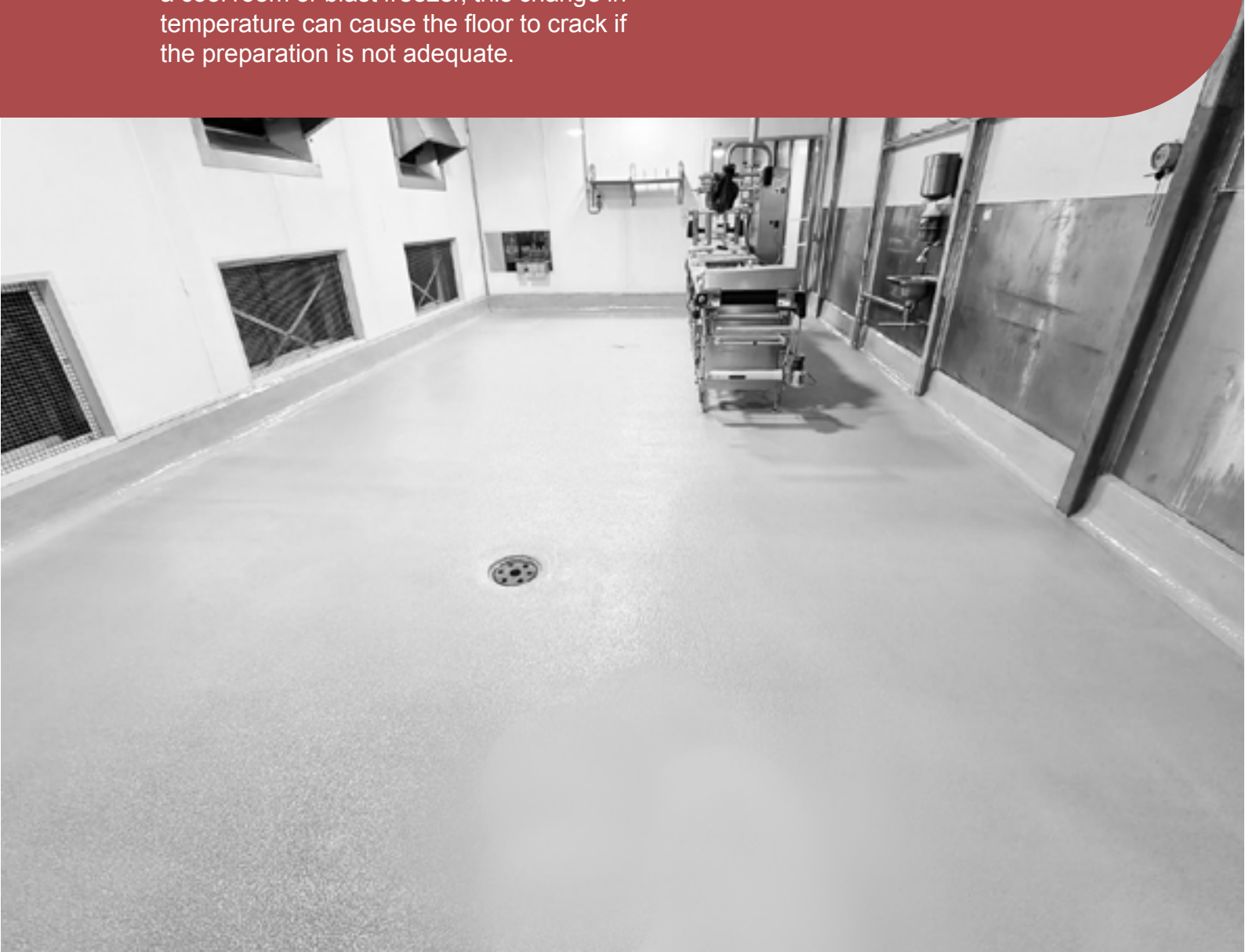
## Thermal Shock

One final challenge with flooring is the temperature variances throughout the facility. As the meat moves through the processing stages, eventually getting into a cool room or blast freezer, this change in temperature can cause the floor to crack if the preparation is not adequate.



## Constant Traffic

The constant forklift, heavy machinery and pedestrian traffic creates a very demanding environment, and a lot of stress on the floor.







## THE IDEAL FLOORING SOLUTION

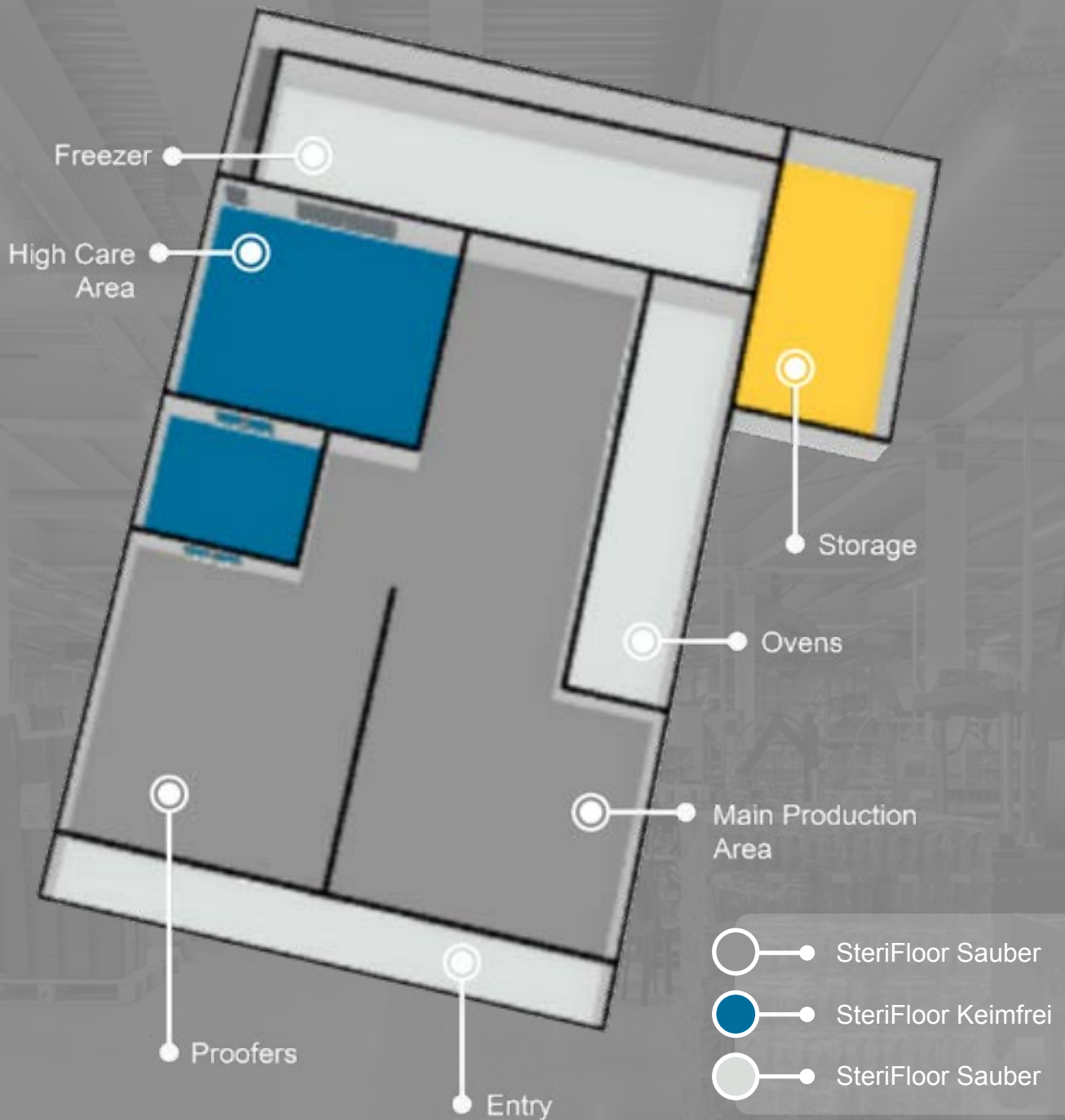
Finding a flooring solution that will withstand significant temperature changes, constant heavy traffic, wet production areas, while reducing the risk of bacteria growth on the floor is a challenge.

Firstly, the one area that epoxy flooring solutions remain the superior answer in the meat processing industry is 'high-care' or 'ready-to-eat' (RTE) areas. In this case, where there is limited foot and forklift traffic, and where the maximum hygiene standards must be upheld, an epoxy flooring solution is ideal. We recommend our SteriFloor Keimfrei flooring solution, preferably in a stipple finish to provide a measure of non-slip while still being extremely easy to keep clean and maintain.

But for all other areas in the meat processing facility, a polyurethane cement system **with verified anti-microbial properties** is ideal. At the right thickness, these systems can withstand high traffic volumes, are flexible in terms of temperature variances, and provide excellent resistance to chemicals, acids and alkalis. As indicated in the map, the main flooring solutions we recommend are our SteriFloor Stärke and Beschützen systems.

<sup>1</sup><https://www.aumanufacturing.com.au/why-good-manufacturing-practice-has-protected-food-factories-from-covid-19>

# Commercial Bakery & Dry Goods



## ABOUT THE SECTOR

From Pasta to Pastry manufacturing, the Commercial Bakery & Dry Goods sector covers a wide range of food manufacturing. Using common ingredients (flours, sugars & oils), similar cleaning chemicals, and comparable volumes of traffic, many of the challenges faced are very similar.



# MAIN CHALLENGES

When it comes to flooring in the Commercial Bakery & Dry Goods sector, there are three main challenges to consider:



## Oil & Fats

Throughout main processing areas, butter, oils, water and fats make for not only a slippery floor, but one that is more susceptible to corrosion due to the tendency of such ingredients and chemicals to 'wick' and penetrate minute voids. As well as this, a highly slip-resistant (grippy) floor is often harder to clean, increasing the risk of bacteria growth and creating another challenge.



## Cleanability

As mentioned above, a high non-slip profile is needed to eliminate slips and trips, but it tends to increase the risk of trapped food and debris which can lead to bacteria growth. In addition, commercial bakery production involves a lot of heat and moisture, encouraging bacteria and other unwanted microbes to thrive on cracks in the floor and around drainage.



## Downtime

As the commercial bakery sector produces fresh goods with short expiry dates, production schedules are tightly planned with minimal maintenance shutdowns or planned downtime. Flooring installation needs to be fast, but not compromising on durability or longevity.





## THE IDEAL FLOORING SOLUTION

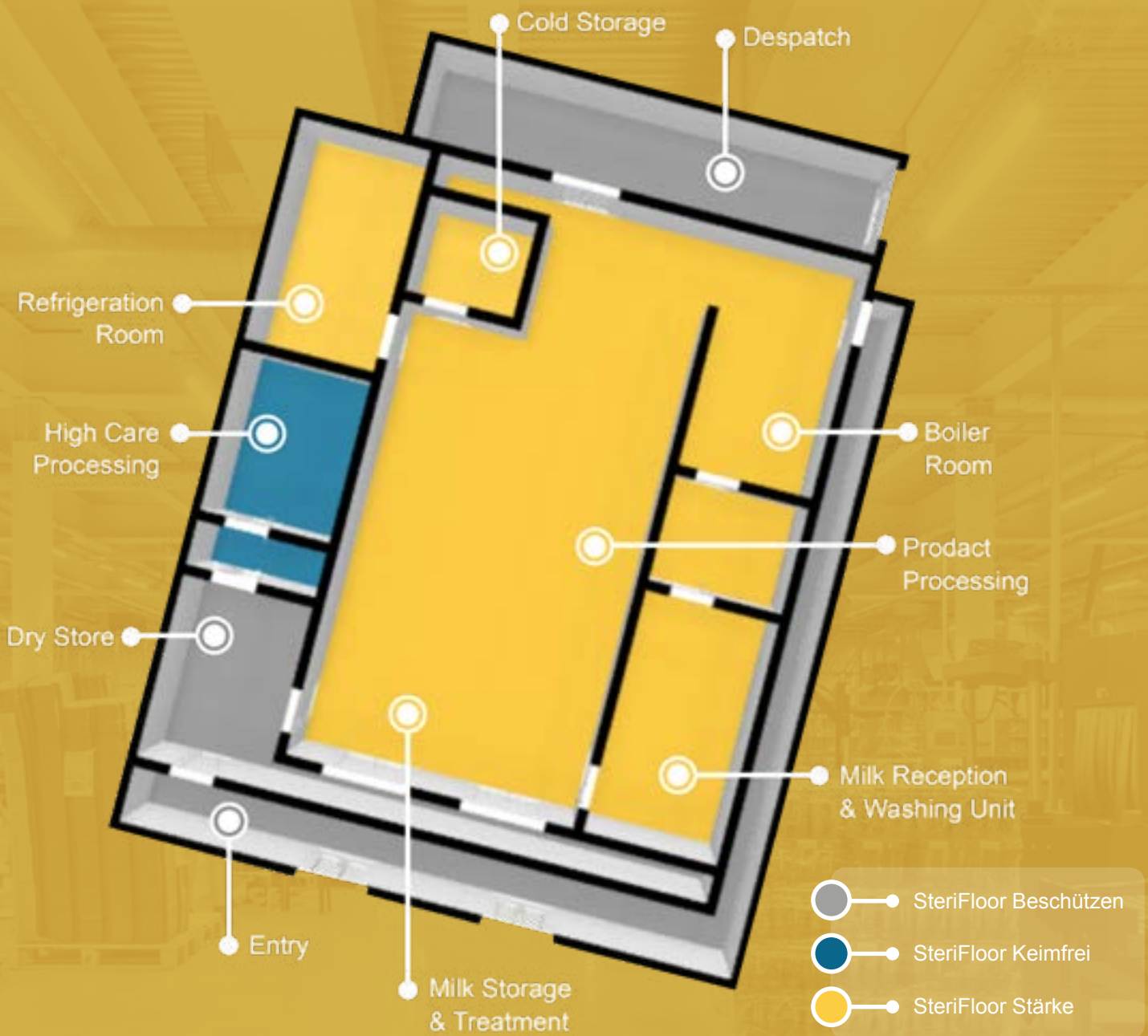
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For a flooring installation where the downtime has been carefully planned, involving a company with significant experience in the sector is vital.

SteriFloor Sauber is the ideal flooring solution for commercial bakeries and dry goods facilities. The system is specifically designed for floors exposed to oils, with excellent substrate and inter-coat adhesion, but also high tolerance to temperature extremes, and enhanced cleanability.



# Dairy Production



## ABOUT THE SECTOR

Dairy is one of Australia's most important rural industries, producing approximately 8.8 billion litres of milk in 2018-19 and directly employing approximately 46,200 people<sup>2</sup>. Flooring in the dairy production industry is challenging. From wet production areas to extreme temperature variances, as well as controlling bacteria growth, there are a lot of considerations when having a new floor installed.

# MAIN CHALLENGES

There are four main challenges to be considered when looking at flooring options:



## Wet Production Areas

Due to the nature of dairy production being a wet process, constant immersion of the floor is often the reality. This creates issues including slip hazards, pooling of liquids (if falls have been done incorrectly), and corrosion of the floor. Along with these challenges, harsh chemicals are often used to eliminate bad bacteria growth, which can corrode a non-acid and chemical resistant floor.



## Controlling Bad Bacteria

With the dairy production process often involving both heat and moisture, without control measures, the floor can become a perfect medium for unwanted bacteria to thrive. Food Standards Australia and New Zealand describes the importance of temperature to bacteria as follows:

"... bacteria can grow at temperatures between 5°C and 60°C, which is known as the temperature danger zone. The fastest rate of growth is at around 37°C, the temperature of the human body."<sup>3</sup>



## Thermal Shock

With most dairy products, such as cheese, yoghurt, custard and cream, the production and cleaning process involves heat, while storage will typically be between 2°C and 5°C. Obviously frozen dairy products such as ice cream needs to be stored at sub-zero temperatures. With two extreme temperatures, differential expansion and contraction of the floors can cause cracking, which can often lead to serious failure and exposure of bare concrete.



## Chemical and Acid Exposure

Exposure to acids such as nitric and phosphoric acid (in cleaning chemicals), as well as lactic acid from the dairy product can place the floor under significant pressure. Because of this, a flooring solution with excellent chemical resistance is highly recommended to stand up to these acids.







## THE IDEAL FLOORING SOLUTION

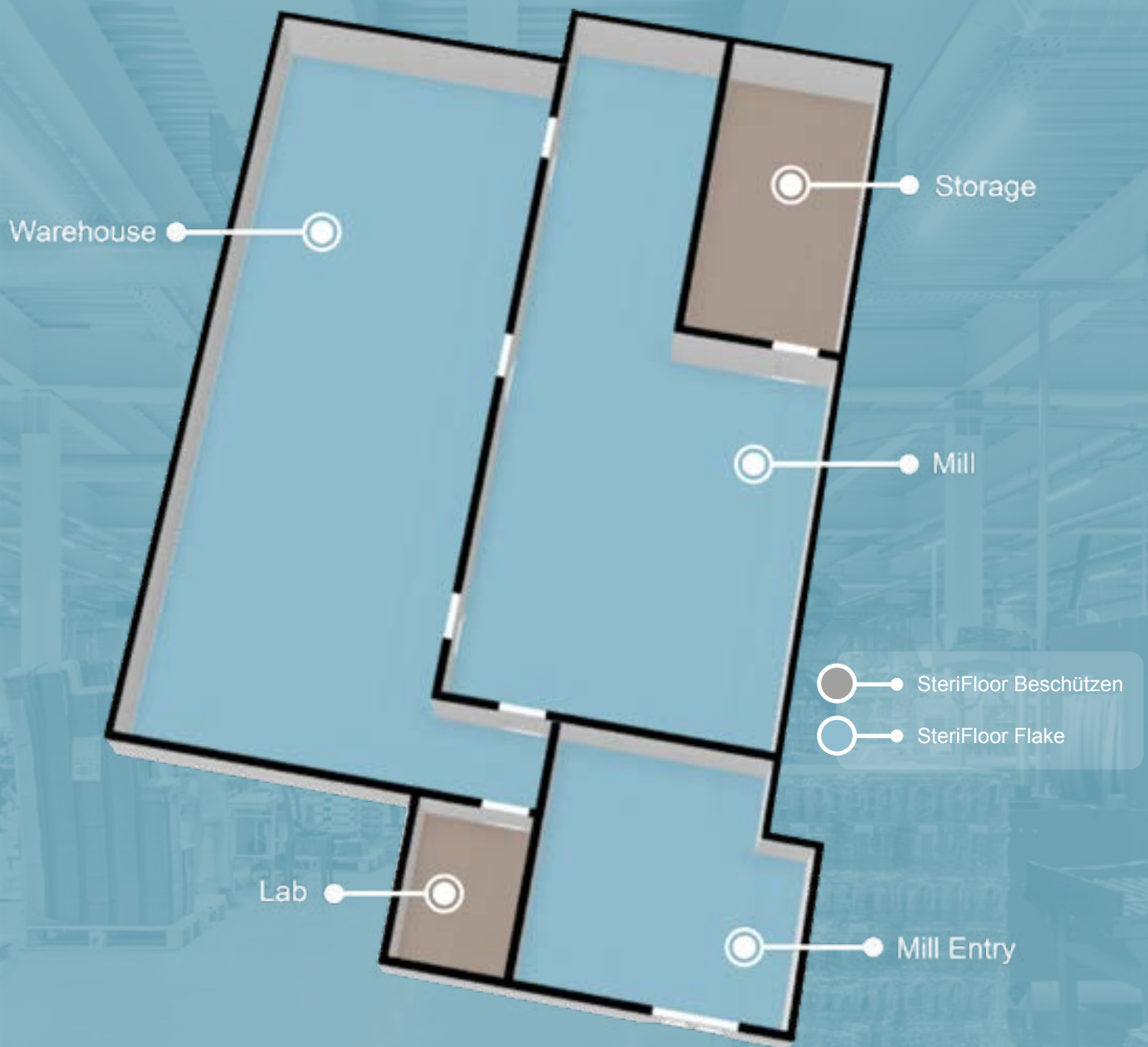
As outlined above, flooring solutions in the dairy production industry must be able to withstand specific stresses. As a broad rule, polyurethane cement systems are best suited to this industry, while epoxy solutions are suitable in high care areas of these facilities.

Our recommended flooring solution for dairy production facilities is SteriFloor Stärke. Effective in both coolrooms and freezers, with high acid resistance and antimicrobial technology within every layer of the system, this solution is ideal for dairy production facilities. SteriFloor Keimfrei is recommended for high care areas, where optimal hygiene requirements must be upheld.

<sup>2</sup> <https://www.agriculture.gov.au/ag-farm-food/meat-wool-dairy/dairy#:~:text=Dairy%20is%20one%20of%20Australia's,directly%20employing%20approximately%2046%2C200%20people>.

<sup>3</sup> <https://www.foodstandards.gov.au/consumer/safety/faqsafety/pages/foodsafetyfactsheets/charitiesandcommunityorganisationsfactsheets/temperaturecontrolma1477.aspx>

# Flour & Grain Milling



## ABOUT THE SECTOR

Australia is one of the world's largest grain producers and exporters. From wheat to rice to oilseeds, the grain industry of Australia is a vital part of the food manufacturing chain. As the milling process is largely contained inside machines, flooring requirements are different to that of many food manufacturing facilities, with emphasis on low maintenance and ease of cleaning rather than food health compliance.



# MAIN CHALLENGES

There are a couple of challenges with flooring in flour and grain mills that need to be considered:



## Cleanability

With pests and vermin being a constant threat, eliminating places for them to hide and thrive is essential. Typical non-slip finishes can trap flour particles, making the floor hard to dry clean. A stipple finish or flake finish is typically advised to assist with ease of cleaning.



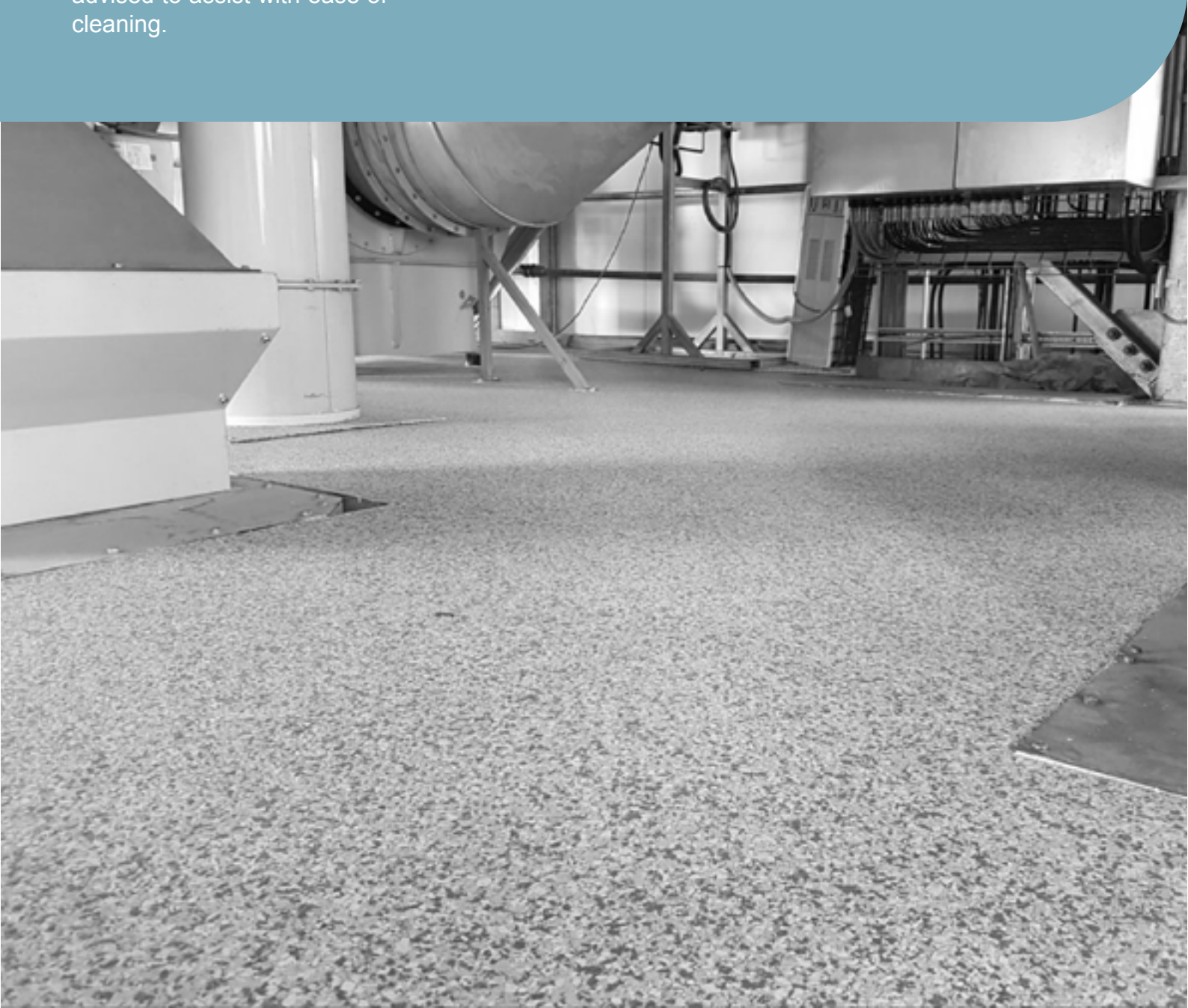
## Durability

With constant foot traffic, and on some floors, forklift traffic, durability of the floor is important. If the wrong flooring solution has been installed, it may wear prematurely.



## Downtime

Flour and grain mill facilities are under constant pressure to maintain and often increase production, so downtime is limited, and the installation must be done right the first time.





## THE IDEAL FLOORING SOLUTION

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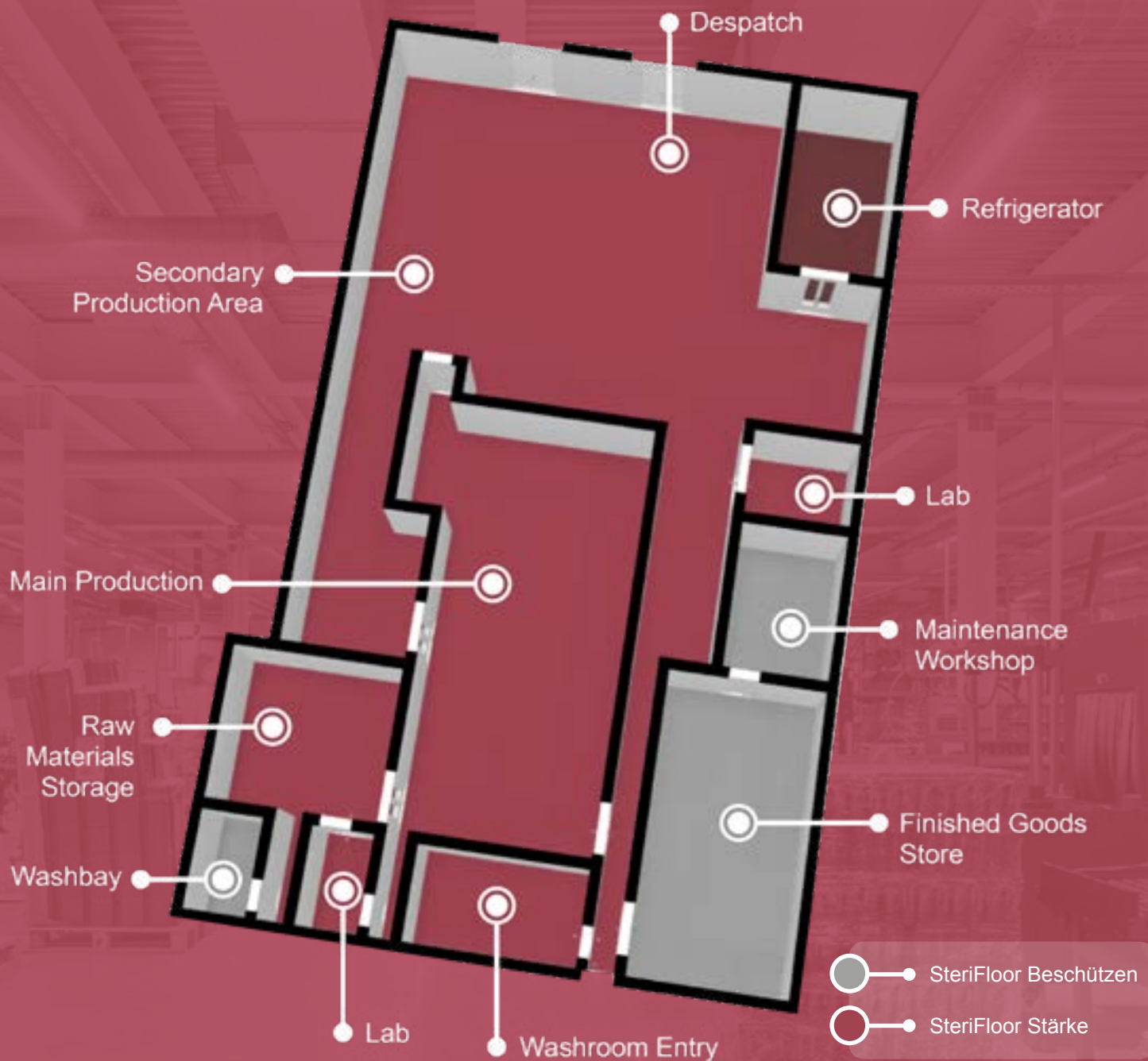
A typical epoxy or polyurethane cement flooring solution with a non-slip film does not work for flour or grain mills as it traps flour particles, making it hard to clean and maintain. However, a floor with a light non-slip profile is obviously more dangerous for worker safety.

A well-sealed flake floor is ideal for flour and grain mills, as the flake provides an element of grip but does not allow particles to get trapped in the profile of the floor. While the modified non-slip profile provides grip, the floor is still easy to clean and maintain.

For flour and grain milling facilities, our recommended flooring solution is SteriFloor Flake. An antimicrobial flake flooring solution, that is fast to install and lasts for many years. SteriFloor Flake is an aesthetically pleasing solution that maintains its appearance for years.



# Snack Food & Confectionary



## ABOUT THE SECTOR

The Snack Food and Confectionary sector of Australia covers a wide range of sweet, savoury & salty foods such as chocolate confectionery, sugar confectionery, preserved pastry goods, and cakes as well as potato chips, tortilla chips, pretzels, cookies and crackers.



# MAIN CHALLENGES

There are three main challenges with flooring in Snack Food and Confectionary manufacturing facilities:



## Sugar Exposure

With the extensive amounts of sugar being used in snack food & confectionary manufacturing facilities, corrosion is a common challenge, with only certain flooring solutions standing up to it.



## Oil & Fats

Throughout main manufacturing areas, oils, water and fats make for not only a slippery floor, but one that is more susceptible to corrosion. Typically, a floor with high slip-resistance will be needed, however this increases the risk of bacteria growth, further outlined in the challenge below.



## Cleanability

As mentioned above, a high non-slip profile increases the risk of bacteria growth but is needed to eliminate slips and trips. As snack food and confectionary production often involves a lot of heat and moisture, bacteria and other unwanted microbes are more likely to thrive in this environment, particularly on a floor with a higher non-slip profile.





## THE IDEAL FLOORING SOLUTION

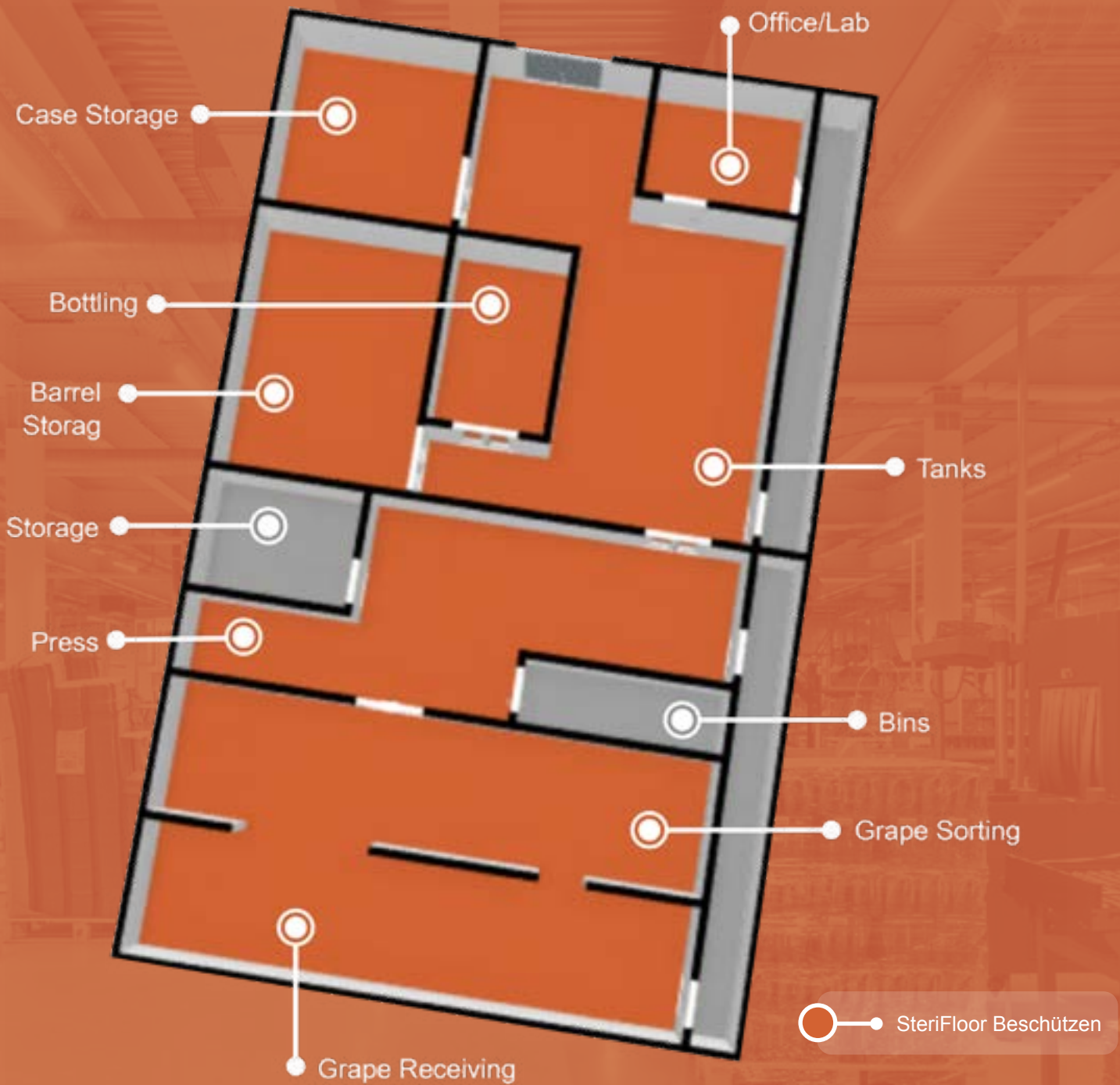
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With sugars, fats, oils and water posing a continual threat to flooring in snack food and confectionary manufacturing facilities, an ideal flooring solution is one that can not only stand up to all of this, but maintain effectiveness under the additional stresses caused by foot and forklift traffic.

Keeping in mind the key differentiating challenge in this sector being sugar exposure, the first flooring solution to consider is epoxy solutions. While epoxies typically have good acid and chemical resistance, penetrating sugars with heat will tend to be too corrosive. Polyurethane cement solutions, on the other hand, can withstand far more attack from corroding materials like sugar. Additionally, particular polyurethane cement systems will maintain their efficacy and appearance under high volumes of foot and forklift traffic.

Our recommended flooring solution for this sector is SteriFloor Stärke. A solution with excellent chemical & acid resistance, with antimicrobial technology, that actively fights against bacteria growth on the floor for the entire floor lifetime.

# Wine & Alcoholic Beverages



## ABOUT THE SECTOR

There are estimated to be 2361 wineries, and about 400 breweries across Australia. Australia exported 729 million litres of wine in 2019-20, valued at \$2.8 billion (FOB). Every year, wineries and breweries across Australia invest millions into repairing or replacing concrete floors due to corrosion damage. Polyurethane cements and epoxies provide a long-lasting solution to this need, protecting the concrete, and standing up to acids and chemicals which typically corrode concrete floors.



# MAIN CHALLENGES

There are three main challenges when it comes to flooring in wineries and alcoholic beverage manufacturing facilities:



## Wet Production Areas

Due to the nature of winery and alcoholic beverage production being a wet process, a lot of floors are constantly wet. This creates a couple of issues including slip hazards, pooling of liquids (if falls have been done incorrectly), and corrosion.



## Chemicals & Acid Exposure

Floors in these facilities are often exposed to chemicals and acids such as nitric and phosphoric acid (in cleaning chemicals), placing the floor under significant pressure. Concrete will erode under these acids and chemicals, so a polyurethane cement system is needed for protection.



## Aesthetics

An important aspect of wineries and breweries is the aesthetics. They need to look impressive for important clients and customers visiting, and remain in good condition for many years.





## THE IDEAL FLOORING SOLUTION

A flooring solution in winery and alcoholic beverage production facilities must be durable, long lasting and pleasing to the eye. Not all flooring solutions can handle the acids and chemicals in these facilities, which is one of the first things to keep in mind. Epoxies can tolerate certain acids and chemicals, however polyurethane cement systems have the best resistance to all acids and chemicals.

Our recommended flooring solution for this sector is SteriFloor Beschützen. Beschützen is particularly ideal for Winery and Brewery facilities as it has excellent chemical, acid and heat resistance. The constant acidic liquids on the floor, as well as frequent cleaning, typically erodes concrete flooring, however, our polyurethane cement Beschützen system will stand up to this.

## ALLIED FINISHES

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Allied Finishes specialises in antimicrobial, fast-curing flooring and drainage solutions for the food, beverage and pharmaceutical sectors. This Australian company supplies and installs premium floors that are durable, safe, compliant and delivered fast; reducing production downtime to deliver uptime for their valued customers.

### Get in touch today:

☎ 1800 033 444

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🌐 [www.alliedfinishes.com](http://www.alliedfinishes.com)