

# Solving concrete kerb challenges to ensure hygiene and food safe wall protection in manufacturing environments

Using chemical- and water-resistant polymer composite kerbs and plinths help ensure that food production facilities remain hygienic.

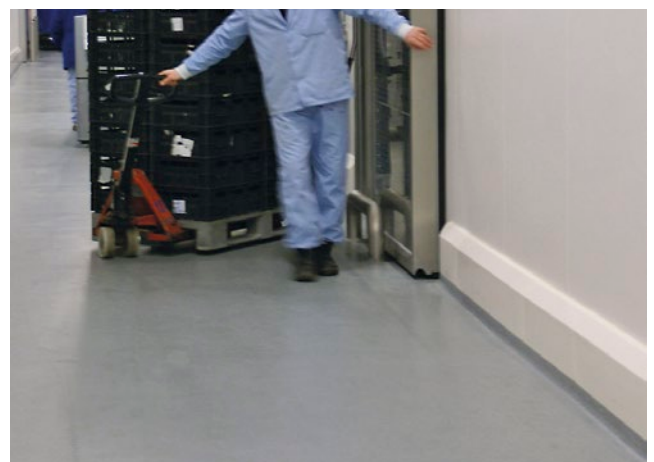
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For the past 25 years, sandwich panel constructions have been the most popular way to construct food safe rooms in Europe, because it offers fast installation, is easy to clean and provides good insulation value. Nevertheless, sandwich panels are very weak and quickly damaged. Often, kerbs in this scheme have been made onsite in the manufacturing plant during construction, composed of concrete and covered by the floor finishing. This system has some important disadvantages with regard to food safety, impact resistance and maintenance.



Figures 1 and 2. Damaged concrete kerbs, as shown, create harbourage niches for dirt and bacteria in food processing environments.

Concrete covered by any kind of flooring material is never a monolithic system and after some period of time, the bonding between the concrete and the floor material will break as the concrete deteriorates due to exposure to humidity and acids in the air and other physical impacts to the surface. Physical impacts from trolleys, forklifts, hand pallets and cleaning machines cause cracks to appear in the floor covering (Figures 1 and 2). The result is that dirt and cleaning water starts to leak through those cracks, building up behind the floor covering and absorbed by the concrete. This trapped dirty water will eventually begin to evaporate, creating a high pressure of humidity behind the floor covering. The pressure eventually breaks the bonding between the concrete and the floor finishing, exposing the concrete and creating food safety issues as dirt builds up in the resulting crevices and provides harbourage to harmful bacteria.



Figures 3 and 4. Kerbs and plinths for food safe environments.

Another problem that frequently arises when using concrete kerbs is that the sealant between the panel and concrete kerb can break. The difficulty is that there is no bonding with water-resistant glues or sealant between the concrete and sandwich panel. As such, dirty water will start to accumulate behind the concrete kerbs creating a niche where microorganisms can survive and grow – and become a real cross-contamination risk in the food production environment.

### Prefabricated polymer composite kerbs and plinths for food safe environments

For these reasons, kerbs used in food processing environments where hygiene is a priority should be constructed with materials that are chemical-, impact- and water-resistant. Polymer composite kerbs and plinths provide a solution to the hygiene challenges posed by kerbs composed of concrete. Prefabricated polymer composite kerb systems are made by mixing polyester resins and quartz granulates with the surface and then finished with a bacteriostatic and shock-resistant polyester gel coat surface. In the production of these kerbs, a monolithic system is created by moulding together the polyester quartz mass with the polyester gel coat covering. Both materials have the same chemical structure (polyester), which creates a strong kerb that is easy to clean, water- and chemical-resistant and repairable.

In addition to their fabrication from hygiene-promoting materials, polymer composite kerbs can be installed to improve hygiene in the food manufacturing environment. Polymer composite kerbs are bonded to the sandwich panel with a flexible; water-resistant polymer glue. The joints can be finished with a food-safe flexible sealant that is easy to dismantle for cleaning, or with a two-component

polyurethane finish. Even if the joints become damaged, the polymer glue creates a secondary water barrier so that water cannot infiltrate or become trapped behind the kerb. If the gel coat is damaged by heavy impacts over a period of time, the high water-resistance of the polymer composite mass will prevent water absorption. Damage or scratches to these types of kerbs can be easily repaired with a cleaner or a two-component repair kit. Finally, polymer composite kerbs can be delivered with a food-safe curving for renovations or with a rebate in the front to create a seamless connection with the floor curving.

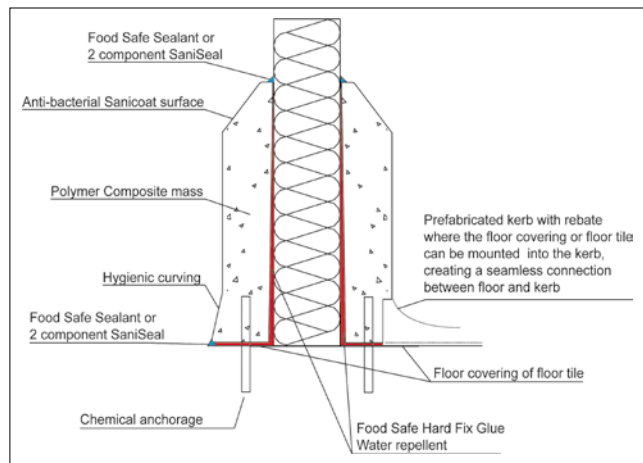


Fig. 5. Sectional drawing showing hygienic advantages of polymer composite kerbs.