SIKA AT WORK
ENERGY RECOVERY FACILITY, CARDIFF, UK

FLOORING: SikaEmaco® T 1200 PG, Sika® Ucrete® FL, Sika® Ucrete® IF

BUILDING TRUST

REPAIR AND REFURBISHMENT OF CONCRETE FLOOR

PROJECT DESCRIPTION
Project name: Energy Recovery Facility
Location: Cardiff, United Kingdom
Size: ca. 1,000 m^2

This Energy Recovery Facility is the largest ERF in Wales handling several hundred thousand tons of residential waste (non-recyclable) per year. During the operation of the facility, the sorted waste is dropped into a series of concrete bays via overhead conveyor belts. Once each bay is filled, 50-ton wheel loaders with buckets deposit the material into collection vehicles for onward transportation and further processing. One of the main components of the waste is hot ash from the incineration of "black bag" domestic waste. The ash contains fine glass particles which create a highly abrasive media; in the often-damp environment. The maneuvering of large wheeled vehicular traffic and scraping action of the bucket has resulted in significant loss of concrete section/falls to the bay floors. Vertical impact from heavy metallic and building debris has further exacerbated the deterioration of the concrete floors.

PROJECT REQUIREMENTS
The 24-hour operation of the facility was to be maintained by implementing a phased 12-week plan of repair. A rapid setting fluid mortar was required to reinstate the lost concrete section and encapsulate the replacement steel reinforcement, whilst enabling falls to be established to provide water run off to the drains.

In areas where less abrasion was evident a moisture tolerant thick section polyurethane underlayment screed was required to assist the transit between floor levels and falls. A moisture tolerant abrasion and impact resistant polyurethane screed was required to overlay the repaired concrete within 24 hours of placement; to ensure the individual bays could be returned to service within the phased repair program.

SIKA SOLUTIONS
The defective concrete was broken out and where required replacement reinforcing steel was placed and secured. SikaEmaco® T 1200 PG, a rapid setting flowable cementitious mortar was applied at a minimum thickness of 25 mm to the pre-soaked concrete substrate in shuttered sections. The floor including falls was returned to its original level of concrete and steel cover. Each shuttered repair area was cured with polythene sheeting overnight.

In bays where less abrasion was evident and to avoid unnecessary break out and repair, the floor including falls was returned to its original level with Sika® Ucrete® FL thick section polyurethane screed applied at a nominal 12 mm thickness. After 24 hours, the repaired floor was ground and 15 mm of Sika® Ucrete® IF iron armored heavy duty polyurethane screed applied; to protect against further abrasion and impact damage.

PROJECT PARTICIPANTS

Project Owner:	Viridor
Applicator/Contractor:	TPS360

SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com

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