

Clean water structures

Intercrete® materials have an impressive history of providing durable, fully certified repair and protection systems for the clean water industry. Our materials are relied upon by water companies all around the world for structural protection.



With a product offer ranging from rapid-setting repair mortars and levelling coats to high performance cementitious coatings, Intercrete materials are approved under Regulation 31 of the Water Supply (Water Quality) Regulations 2000. They are also listed under the Water Regulations Advisory Scheme and are CE marked to BS EN 1504, the pan European standard for concrete repair.

The Intercrete range is ideal for containment in the clean water industry and is perfectly suited to both new build and refurbishment applications. Our materials can be reliably used to extend the design life of structures and reduce maintenance cycles, whilst also achieving significant cost savings.

Enhanced chemical protection

Intercrete products provide concrete and masonry with outstanding protection against typical problems encountered in the clean water industry, such as chemical attack, cracking, joint failure and surface

corrosion. Compared to normal concrete, they provide greatly enhanced protection from chemicals as well as soft or acidic moorland water. Once cured, Intercrete products are resistant to water under 10 bar hydrostatic pressure.

Waterborne and environmentally friendly

Intercrete products are also safe to apply and cause virtually no disruption, even when water facilities are still in operation. With water-based, low odour formulations, they contain ultra-low VOC levels, and help facilitate sustainability in the built environment. They are also exceptionally rapid curing, and can be applied to damp substrates and in confined spaces, so any downtime is kept to a minimum.

As Intercrete products are Portland cement-based, they are compatible with original concrete. Many are single pack and only need the addition of clean water on-site, making them extremely user-friendly and all equipment can be easily cleaned with water after use.

Clean water applications

Intercrete products are suitable for the repair and rehabilitation of a wide range of clean water installations, including:

- Service and impounding reservoirs
- Water towers
- Sand and gravity filters
- Contact, service and dosage tanks
- Bunds
- Aqueducts and pipelines
- Dams and spillways
- Roofs



Intercrete products extend durability and enable the structure's original design life to be achieved

Typical problems and challenges in the clean water industry



The versatility of Intercrete products makes them ideal for treating a range of common structural problems associated with clean water installations.

Repairing leaking structures

Problem: Failure of concrete tanking and the degradation of brick lined reservoirs can lead to loss of water or the ingress of ground water.



Solution: Internal repairs to concrete structures can be carried out using **Intercrete 4800**, a high build, hand applied mortar. For large scale repairs, **Intercrete 4800 (WS Grey)** is ideal and is applied using wet spray techniques. Elsewhere, defective pointing on brickwork can be reinstated using **Intercrete 4820**. The entire surface of both brick and concrete structures can then be overcoated with **Intercrete 4841**, in order to provide complete waterproofing and damp-proof protection.

Soft water attack

Problem: Soft or acidic moorland water attacks concrete readily, dissolving lime and leaving a weak, permeable substrate.



Solution: Once unsound concrete is removed, the substrate can be reinstated with **Intercrete 4820**, an engineering grade waterproof screed and fairing coat. For additional long term protection, **Intercrete 4841** can be brush or spray applied to all surfaces to provide superior chemical resistance. **Intercrete 4841** is approved for use in public water supplies and is reliably used by all leading water companies for its excellent waterproofing and protective properties.

Refurbishing aqueducts and pipelines

Problem: Water is transported many miles to major cities via aqueducts and pipelines which are under constant attack from aggressive elements.



Solution: Where limited time is available, **Intercrete 4802**, a rapid-setting, Portland cement-based repair mortar can be used to reinstate concrete or brick pipes and channels to provide a durable waterproof repair. Its water-based, ultra-low VOC formulation makes it ideal for use in confined spaces.

Roof waterproofing

Problem: Service reservoir roofs can show signs of cracking and deterioration of joints can lead to damaging ingress of water.



Solution: Live cracks can be sealed with a 2mm coat of **Intercrete 4842**. Over formed joints and details where differential movement is expected, **Intercrete 4842** can be reinforced with **Intercrete 4872**, an advanced, highly tear-resistant reinforcing tape which allows up to 600% elongation.

Approval certification

	Intercrete product code									
	4871	4841	4802	4820	4800	4800 (WS Grey)	4810	4807	4872	
Approval for use in public water supplies	✓	✓	✓	✓	✓	✓				
WRAS Approval	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Waste water structures

Intercrete® products have an outstanding track record in the waste water sector and include advanced cementitious mortars and coatings to repair existing deteriorated structures and enhance durability in new construction.



Reinforced concrete forms the basis of many waste water installations, but concrete alone cannot withstand chemical attack from raw sewage and aggressive condensates. This issue is often exacerbated by regular abrasion and the general effects of weathering and freeze/thaw damage.

Concrete damage is determined by the corrosive nature of the substances present and the quality of the existing concrete. For example, Biogenic Sulphuric Acid Attack can cause the most serious forms of damage. European Standard EN 206-1 defines various levels of chemical attack on concrete in sewage facilities and we have developed an extensive range of compliant systems designed to provide the ultimate in protection.

Intercrete can provide a complete repair and protection system, ranging from engineering grade fairing coats and rapid setting mortars to water-based, cementitious coatings which are impermeable to water and provide exceptional protection against chemical attack, thus extending the service life of structures significantly.

Minimising downtime

In addition to proven concrete repair and protection materials, the **Intercrete** product portfolio includes innovative epoxy and polymer cement technology to prevent corrosion of steel in humid or immersed conditions. Typically, our materials are applied directly to the substrate without primers, and can be applied in both damp and dry conditions, enabling facilities to be rapidly returned to normal.

Environmentally friendly and sustainable

Intercrete materials are water-based, ultra-low odour and solvent free, and can be safely applied whilst facilities are in operation. In some countries, additional taxes must be paid for products that release Volatile Organic Compounds (VOC's), but this is not a concern when **Intercrete** materials are specified. As our products are Portland cement-based, they are fully compatible with original concrete and the single pack nature of the majority of our products makes them user-friendly and easy to apply on-site with the simple addition of clean water.

Waste water applications

Intercrete products are suitable for the most demanding environments and are ideal for repairing and protecting many structures in the waste water industry, including:

- Aeration tanks
- Digester tanks
- Sludge tanks
- BAFF tanks
- Storm water tanks
- Support chambers
- Primary settlement tanks
- Filter plants
- Spillways
- Weirs
- Bunds
- Humus tanks
- Flume channels
- Final filtration tanks



Intercrete provides reliable solutions to complex challenges faced by dirty water structures

Typical problems and challenges in the waste water industry



Intercrete's repair and protection range helps to reinstate and extend the lifespan of structures in this highly demanding sector.

Biogenic sulphuric acid attack

Problem: Bacteria present in sewage can form acidic gases which condense on surfaces in confined areas and break down to form sulphuric acid which attacks concrete.



Solution: Eroded surfaces can be reinstated with **Intercrete 4820**, an engineering grade fairing coat, prior to overcoating with **Intercrete 4840**. This unique epoxy and cement modified polymer coating can be applied with minimal substrate preparation and offers excellent resistance to aggressive acids and sewage chemicals.

Leaking storm water tanks

Problem: Concrete tanks, particularly circular tanks, within a treatment works are prone to thermal movement and cracking, leading to leaking of the structure.



Solution: **Intercrete 4842** has outstanding crack bridging properties and its high elongation combined with excellent resistance to storm water make it ideal for sealing cracks subject to further cyclic movement. Where there are joints, **Intercrete 4842** can be reinforced with **Intercrete 4872**, a waterproof tape with 600% elongation.

Degrading settlement tanks

Problem: Chemical attack from raw sewage breaks down the matrix of the concrete whilst abrasion accelerates surface deterioration.



Solution: Damaged areas can be reinstated with **Intercrete 4800**, or **Intercrete 4802** where fast-track remediation is required. Both offer long-term, durable repairs with excellent chemical resistance. An overall application of **Intercrete 4840**, incorporating advanced cementitious technology, protects existing concrete from further deterioration.

Reinstatement of manholes and sewers

Problem: Manholes and sewers are under constant attack by sewage and sulphuric acid, leading to degradation and costly leaks.



Solution: Cracked or damaged concrete can be rapidly repaired and water ingress arrested using **Intercrete 4802**. **Intercrete 4820** can be trowel applied to rough surfaces to provide a smooth, engineering finish with excellent abrasion resistance and durability. Further protection can be provided by overcoating with our epoxy and cement modified polymer coating, **Intercrete 4840**.

Intercrete 4840 - in a class of its own

Intercrete 4840 is extremely versatile and is applied without a primer both to concrete and ferrous metals in the waste water industry.

	Strength @ 28 days		Adhesive bond		Equivalent concrete thickness	
	Compressive	Flexural	Concrete	Steel	Permeability to CO ₂	Permeability to water
Intercrete 4840	50-60MPa	12.47MPa	> 2MPa	> 3MPa	100mm	6000mm