

Intercrete solutions guides



Clean water structures



Commercial buildings



Floors and trafficked areas



Solutions for infrastructure



New build construction



Structural waterproofing



Solutions for coastal structures



Concrete weatherproofing



Hygienic environments



Motorways and highway structures



Solutions for roofing



Waste water structures

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Solutions for coastal structures

Marine environments impose unique challenges. High chloride levels, combined with the aggressive action of waves and currents, push structural integrity to the limits, whilst at the same time offering only fleeting opportunities for repair.



Structures in service, such as wharfs, jetties, piers and coastal defences, need to withstand extreme loading variations from wind and water movement, as well as abrasion damage from waterborne debris.

Aggressive attack on concrete and steel

Reinforced concrete structures in coastal environments are highly susceptible to attack from chlorides due to their constant submersion in saltwater and the regular exposure to airborne sea spray. Chloride ions will readily penetrate even the densest concrete to initiate corrosion of the reinforcement. Ultimately, spalling will occur, necessitating major and costly repairs.

Meanwhile, coastal steel structures and those in a saline location are particularly prone to corrosion, due to the aggressive nature of the environment, often exacerbated by a lack of preventative maintenance. There are many products available for remedial works, although a

high level of surface preparation is generally needed. This includes the removal of all contaminants and corrosion by-products back to bright metal, a scenario often impossible in marine environments with restrictive tidal windows.

Innovative Intercrete® solutions

Our advanced reinstatement mortars are specially engineered for marine use and our cementitious coatings provide long-term protection in hostile coastal environments.

Highly resistant to early wash-out, **Intercrete** products afford optimum performance in wet, chloride-laden environments. Suitable for both remedial and new build projects, application requires minimal preparation and can be undertaken on damp substrates between tides. **Intercrete** mortars and coatings will cure normally under water to form an abrasion resistant, impenetrable barrier to chlorides whilst also preventing the ingress of oxygen and carbon dioxide in reinforced concrete exposed to the atmosphere.

Fighting the threat of ALWC

Accelerated Low Water Corrosion (ALWC) is an aggressive form of corrosion found on sheet piled quays and steel coastal structures. If left untreated, concentrated corrosion rates can dramatically reduce the design life, potentially leading to catastrophic, sudden failure.



Intercrete products provide an effective defence against ALWC:

- **Intercrete 4840** can be spray or brush applied direct to steel substrates in tidal zones. It rapidly stabilises to form a dense barrier coating that protects from water, oxygen and chloride ions
- **Intercrete 4840** seals the surface gap at the interlock, effectively protecting these vulnerable areas

Typical problems and challenges in coastal engineering

Used in some of the world's most hostile environments, Intercrete products offer outstanding protection for coastal structures:

Corrosion protection

Problem: Steel and reinforced concrete structures require protection from the corrosive effects of chlorides found in seawater. Any coatings used must be applied in wet environments with less than ideal surface preparation.



With Intercrete 4840, only UHP cleaning techniques are required

Solution: **Intercrete 4841** is easily applied to damp concrete with excellent adhesion. It cures to form a dense coating with high levels of protection from water, oxygen and chloride ion penetration. **Intercrete 4840**, a cement and epoxy modified polymer coating, can be successfully sprayed directly onto steel substrates in damp conditions. Its impressively high resistance to the ingress of the fuels for corrosion and inherent alkalinity will ensure it provides stand-alone anti-corrosion protection.

Splash zone repairs

Problem: Corrosion of steel reinforcement and the subsequent spalling of concrete can occur in splash zones due to continual wetting and drying of surfaces and the action of salt spray.



Intercrete products are non-hazardous and completely safe to apply

Solution: **Intercrete 4800** can be hand applied to re-profile small areas of damage and a special grade **Intercrete 4800 (WS Grey)** is available for application by wet spray process in larger areas. **Intercrete 4879** can be applied to concrete faces and it diffuses through the structure to form a mono-molecular layer on the reinforcement that protects it from corrosion.

Repairs to coastal defences

Problem: Jetties, harbours and sea walls can erode from the continual onslaught of waves and waterborne shingle. Stone and concrete structures require superior pointing and bedding to ensure long term structural integrity.

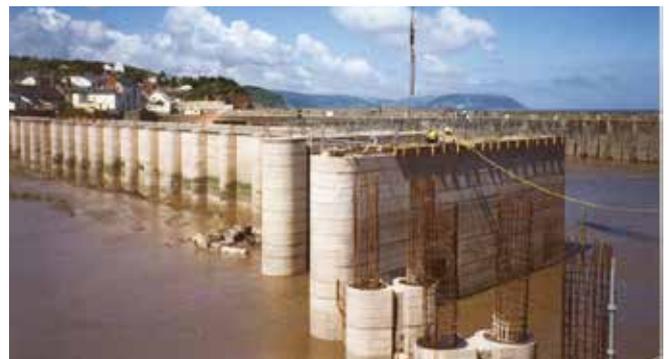


Intercrete 4802 can be easily applied to both horizontal and vertical surfaces

Solution: **Intercrete 4802**, a rapid setting mortar can be applied into voids and joints to provide a resilient, durable repair solution with excellent abrasion resistance. **Intercrete 4820** and **Intercrete 4810** can be combined to provide a high strength pointing and bedding mortar with excellent waterproofing and wash-out resistance properties. **Intercrete 4804** with the addition of washed shingle improves impact strength from waterborne shingle and can be hand applied to re-profile damaged areas.

Tidal zone repairs

Problem: Corrosion of steel reinforcement and spalling of concrete in tidal zones due to continual pounding and erosion from wave action. The opportunity to carry out repairs is limited to tidal windows.



2mm of Intercrete 4841 offers protection equivalent to 1m of quality concrete

Solution: **Intercrete 4804** is a specially formulated repair material that is perfectly suited to areas subject to early immersion, providing excellent wash-out resistance against wave action. **Intercrete 4841** is easily applied to damp concrete, curing to form a dense coating with high levels of protection from water, oxygen and chloride ion penetration.

Commercial buildings

Over time, the effects of weathering mean that even the most well designed buildings and commercial structures will degrade. As a result, they will require refurbishment in order to extend their design life or improve their appearance.



These problems are not just limited to older buildings and there are often structural challenges to overcome with new build projects. Whether it's down to design complexity, poor workmanship or other environmental factors, it's equally important to protect new structures in order to avoid a reduction in the anticipated service life.

Ensuring structural integrity

Factors such as carbonation, water penetration, chemical attack, freeze/thaw cycling and chloride attack can all lead to significant deterioration of precast and in-situ concrete. This in turn can cause steel reinforcement to quickly corrode and compromise the overall structural integrity of the building.

The costly threat of structural issues such as this makes it essential to carry out periodic maintenance in order to guarantee the original design life of buildings and, above all, keep the people and contents within them safe.

Solutions for today's structures

Our technical expertise lies in the concrete repair and protection of all types of buildings and structures. We have a vast range of specialist products designed to solve complex structural problems whilst causing the minimum of disruption during application.

The **Intercrete®** range includes structural repair mortars with exceptional high-build qualities, fast-setting repair solutions for heavily trafficked areas, and technically advanced cementitious coatings designed to reinstate low concrete cover. For a decorative finish, the **Intercrete 4890** series of weatherproof anti-carbonation coatings provides the ultimate protection against the ingress of carbon dioxide, oxygen and water.

Intercrete systems deliver reliable solutions to typical concrete repair problems. Structural integrity and the original design life can be restored, and the overall aesthetic appearance of ageing concrete structures can be significantly improved.

New build and refurbishment

Intercrete products can be found on some of the world's most iconic buildings, and are trusted to perform by engineers and clients alike. They utilise state-of-the-art cementitious and polymer technology to provide many important benefits:

- Excellent low sag properties enabling high build application in vertical, horizontal and overhead situations
- Exceptionally high bond and tensile strength
- Low permeability to water, even at 10 bar negative pressure
- Quick to install and non-toxic when cured



Intercrete solutions provide versatile protection for buildings and commercial construction

Concrete repair and protection challenges for buildings

Intercrete products have been used successfully for over 30 years to solve structural problems experienced by buildings and commercial construction.

Refurbishment of carbonated concrete

Problem: Carbonation is a problem that causes localised corrosion of steel reinforcement, leading to spalling of the surrounding concrete cover. If left untreated, the design life of the structure can be severely compromised.



Intercrete 4800 can be applied up to 80mm thick in a single layer

Solution: Following surface preparation, any missing concrete can be reinstated using **Intercrete 4801**, a high build structural repair mortar. **Intercrete 4822** can then be applied to achieve a fair-faced finish. The complete structure is then treated with **Intercrete 4891**, a coating with outstanding anti-carbonation properties. This highly aesthetic coating also has excellent weathering and UV resistance and a serviceable life of at least 15 years.

Rendering and profiling of concrete

Problem: Building movement and the effects of ageing can cause decorative cladding and rendering to crack and delaminate. Careful removal and replacement of the damaged areas is therefore essential.



Intercrete 4823 cures rapidly to produce a waterproof, fair-faced render

Solution: **Intercrete 4823**, a polymer modified, fibre reinforced cementitious render is perfect for achieving a high quality finish. It has low sag qualities, excellent tensile and impact strength and effectively protects against the ingress of moisture, gases and chlorides. Elsewhere, **Intercrete 4800**, a low density, high strength structural repair mortar can be used to reinstate and match the original concrete profile on detail areas such as lintels.

Clear anti-carbonation protection

Problem: Harmful weathering can affect all types of buildings, and sometimes an anti-carbonation solution is required that will also enable the original surface appearance of the concrete substrate to be maintained.



Intercrete 4893 has an equivalent air layer resistance to CO₂ diffusion of 81m

Solution: Any minor defects can be repaired using **Intercrete 4822**, available in grey or white to match the parent concrete. **Intercrete 4893**, a transparent anti-carbonation coating can then be used to effectively prevent the ingress of chlorides, whilst also allowing the release of moisture from the substrate. **Intercrete 4893** is ideal for decorative concrete finishes, exposed aggregate panels and textured or coloured concrete.

Reinstatement of soffits and balconies

Problem: Concrete soffits and balconies can decay badly over time, allowing water to seep through and cause corrosion. A highly decorative solution is required that also bonds effectively to the existing substrate.

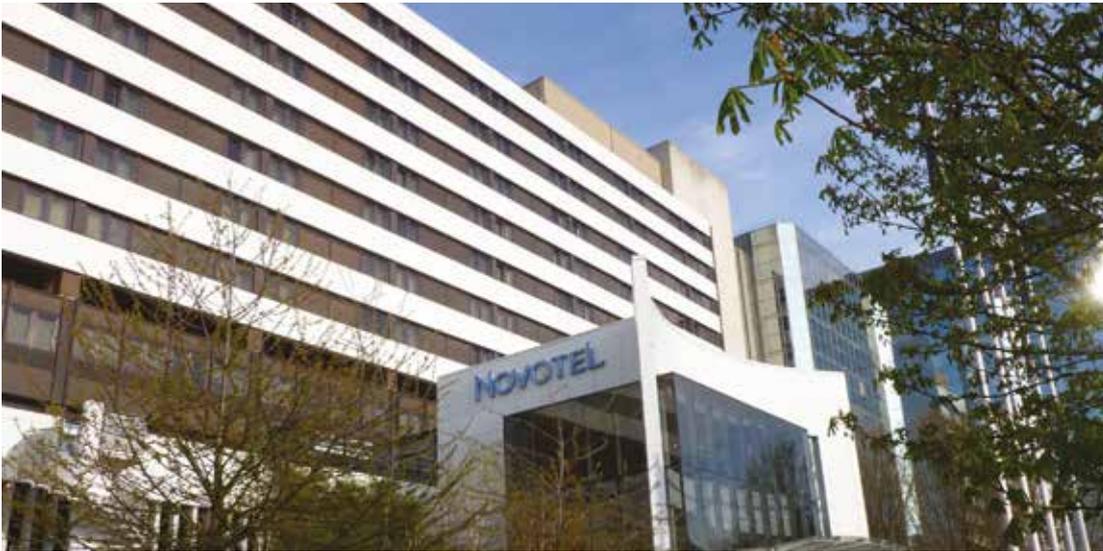


Intercrete 4892 is ideal for waterproofing surfaces with a rough, uneven finish

Solution: Following preparation, areas requiring concrete repair can be treated with **Intercrete 4871** and **Intercrete 4803** repair mortar. **Intercrete 4824**, a fine grade cementitious fairing coat, can then be used to level out the surface of the balconies and soffits and provide an even surface. Following this, **Intercrete 4811** can be applied to seal the substrate prior to the application of one of the **Intercrete 4890** range of anti-carbonation coatings.

Concrete weatherproofing

The Intercrete® 4890 series of weatherproof, anti-carbonation coatings provides outstanding protection against the ingress of carbon dioxide, oxygen and water, whilst allowing damp substrates to breathe without blistering.



Reinforced concrete is not as durable as once anticipated and further protection is often necessary in order to achieve the desired design life. Drab concrete can also be revitalised using imaginative colour schemes to improve the aesthetics and add value to the building.

Market leading performance

With water-based, high build formulations, **Intercrete 4890** coatings are ultra-fast drying, enabling two coat applications on the same day even in inclement weather conditions. They also incorporate an active in-film fungicide which inhibits the growth of mould, fungi and lichens and with an elastomeric formulation, are able to cover static cracks and bridge dynamic cracks.

Able to withstand extremes of temperature without deterioration, **Intercrete 4890** coatings remain unaffected by exposure to direct sunlight, even in the most aggressive of climates. Designed to last for

up to 15 years, **Intercrete 4890** coatings considerably extend the life expectancy of new, existing and repaired concrete and masonry structures. They are available in a variety of attractive colours and the product range also includes **Intercrete 4893**, a transparent, water-based anti-carbonation coating which demonstrates exceptional resistance to carbon dioxide diffusion.

The highest quality products

Intercrete 4890 coatings are environmentally friendly products, formulated with minimal VOC contents and the latest encapsulated biocide technology. They are manufactured in accordance with the strictest international quality, environmental and safety standards, including ISO 9001, ISO 14001 and OHSAS 18001.

All **Intercrete** products are also backed by independent testing and accreditation making them the preferred choice globally for their unparalleled reliability and durability.

Class-leading results

The **Intercrete 4890** series of products offer unique characteristics, but also share a number of key benefits:

- Outstanding protection against carbonation and the effects of weathering
- Long-lasting, reliable performance
- Fast-drying and simple application
- Environmentally friendly formulations
- Suitable for a range of building substrates
- Manufactured in the UK in accordance with BS EN 9001 and BS EN 14001 standards



Intercrete 4890 coatings are used to protect buildings and structures all around the world

Intercrete 4890 series specification options



The Intercrete 4890 product family offers a number of solutions to meet specific project requirements;

Intercrete 4890

A technically advanced, minimal VOC, water-based decorative coating which protects against carbonation and water ingress without entrapping moisture. It is fast drying for year round use externally and offers excellent fire performance characteristics for internal use. **Intercrete 4890** prevents water ingress and resists the growth of mould and fungi, making it the ideal low cost coating for both new build and maintenance projects.



Intercrete 4890 has a matt finish and is available in a range of colours

Intercrete 4891

A high performance, water based, elastomeric, high build decorative coating which provides protection against carbonation and water ingress, yet allows damp substrates to breathe. **Intercrete 4891** is ultra-fast drying which enables two coat applications to take place on the same day and facilitates year round usage. It resists the growth of mould and fungi and is ideal both for new construction and refurbishment projects.



Intercrete 4891 features advanced polymer resin for excellent adhesion

Intercrete 4892

A highly engineered, acrylic-based decorative wall coating with an attractive textured finish. Due to its high build, textured composition, **Intercrete 4892** is ideal for use on buildings and structures that have a rough, uneven finish with surface defects and imperfections. This product will effectively disguise any defects and provide walls with a uniform appearance, vastly improving the aesthetic appearance of buildings.



Intercrete 4892 has encapsulated in-film biocides to resist mould and lichens

Intercrete 4893

A transparent, elastomeric coating, ideal for maintaining the surface appearance of the concrete substrate, whilst still providing excellent anti-carbonation and weatherproof protection. Designed for application to external walls and facades, **Intercrete 4893** is ideal for decorative concrete finishes, exposed aggregate panels, textured concrete, heritage applications, coloured concrete and other cementitious substrates.



Intercrete 4893 has a clear, satin gloss finish that sheds dirt and retains clarity

Performance characteristics

Intercrete 4890 coatings offer class-leading performance and deliver long-term weatherproofing protection:

Product name	Coverage rate (2 coats)	Curing time (through cure)	Equivalent air layer thickness		Artificial weathering
			Permeability to CO ₂	Water vapour transmission	
Intercrete 4890	0.2 litres/m ² /coat	2-24 hours	547m	1.09m	20,000 hours
Intercrete 4891	0.2 litres/m ² /coat	2-24 hours	320m	0.48m	20,000 hours
Intercrete 4892	0.5 litres/m ² /coat	6 hours @ 20°C	n/a	1.71m	12,500 hours
Intercrete 4893	0.2 litres/m ² /coat	2-12 hours	83m	0.42m	2,500 hours

Floors and trafficked areas

Fast-track construction is critical during many of today's projects and installation of the waterproofing membrane and flooring system is often one of the highest priorities in order that other trades can progress.



Floor spaces in areas such as airports, railway stations and bus stations cannot be taken out of service for long periods of time, so it is important that downtime is kept to an absolute minimum, whilst waterproof, durable floor protection is reinstated.

Elsewhere, surfaces such as industrial floors, loading bays, car parks and runways can be subject to very heavy trafficking and are all highly vulnerable to damage. Years of trafficking and exposure to freeze-thaw cycles can result in mechanical damage not only to the concrete deck but also degradation of the existing waterproofing system. Edges of concrete slabs are particularly prone to damage and will rapidly deteriorate unless remedial action is taken.

Durable, rapid reinstatement

Intercrete® flooring systems are designed to speed up the construction process and bring schedules back on track. **Intercrete** products are fast-curing and can

be applied to damp or green concrete, making them ideal for use in new build developments.

Our fast setting repair mortars allow for the rapid reinstatement of vehicular and foot traffic, whilst our high performance thin-film cementitious coatings are impervious to water and offer outstanding chemical and skid resistance.

Thin-film cementitious coatings

The **Intercrete** range of durable epoxy and cementitious floor coating systems has been specially formulated to provide years of effective waterproofing. They provide abrasion protection in even the most demanding situations, and offer excellent freeze-thaw resistance, thereby preventing any spalling of the concrete surface.

Intercrete products are often used as flooring finishes in their own right, but they can also be used as a fast-drying levelling layer or overlaid with other flooring materials such as vinyl, resin finishes or carpet.

Class-leading results

Intercrete flooring products are used in many diverse and demanding locations:

- Internal and external concrete floors / slabs
- Heavy duty loading bays and industrial floors
- Below water table cellars and basements
- Ground floor slabs with ineffective damp proof membrane
- Aircraft taxiways and hard-standings
- Balconies and pedestrian walkways
- Manufacturing and storage areas
- Kitchens and food preparation areas



The Intercrete range offers a complete one-stop shop for high performance flooring solutions

Typical problems and challenges facing floors and trafficked areas



Intercrete products offer outstanding performance and durability and are ideal for both new build and refurbishment flooring projects:

Fast-track construction

Problem: Sealing of green or fresh concrete to enable installation of impervious floor coatings or coverings, or to allow finishing trades to operate whilst work continues.



Intercrete 4851 is compatible with a wide range of other flooring materials

Solution: A 2mm coat of **Intercrete 4851** will cure rapidly, without the risk of osmotic blistering, to provide a totally waterproof coating. A fine quartz sand can be broadcast into the surface of the freshly laid material to aid curing and enhance adhesion, and any subsequent coverings can be installed after just 48 hours. If concrete floors have extremely uneven surfaces, **Intercrete 4853** is ideal for use as a flowing, levelling screed prior to the application of the **Intercrete 4851** flooring system.

Repairs in trafficked areas

Problem: Deterioration of the surface of concrete slabs and reduction in slip resistance due to the effects of freeze-thaw and trafficking exposure.



Once spread using a skid leveller, spike rolling helps remove trapped air

Solution: All potholes and damaged areas can be rapidly reinstated with **Intercrete 4802** or, where speed is not critical, **Intercrete 4801** can be used. **Intercrete 4852** is spread to a minimum depth of 3-6mm and, whilst the surface is still wet, coloured quartz sand can be broadcast into the surface to provide a slip resistant, decorative finish and to aid curing. A proprietary sealing coat can be applied to the finished surface to enhance longevity.

Water infiltration

Problem: Prevention of water penetration via substrate concrete, either where the damp proof membrane has failed, or to stop water infiltration between floors.



Intercrete 4851 can be safely used without the risk of contamination

Solution: Active water infiltration must first be arrested using **Intercrete 4809**, a Portland cement-based mortar which sets in 2 minutes. **Intercrete 4851**, a high performance, cement and epoxy modified polymer coating, can then be applied at a thickness of 2mm. The complete system is solvent-free and odourless, and can withstand up to 10 bar hydrostatic pressure. **Intercrete 4854** can be broadcast into the surface to aid curing and provide a durable slip and abrasion resistant finish.

Enhanced abrasion resistance

Problem: Concrete industrial floors can erode due to rigorous cleaning regimes and extensive exposure to heavy trafficking such as steel-wheeled trolleys.



Intercrete 4851 can be easily applied using pumping or pouring techniques

Solution: Following priming with **Intercrete 4850**, a 2mm layer of **Intercrete 4851** can be applied to the concrete surface to impart high resistance to both impact and abrasion. It is also unaffected by many common chemicals and is totally waterproof. For additional hard wearing properties, aluminium oxide aggregate can be cast into the surface, and the non-slip finish can be locked in place using a proprietary sealing coat.

Hygienic environments

One of the biggest threats to food and drink manufacturers, hospitals, pharmaceutical facilities and operators in the leisure industry is the growth of mould and bacteria, and this is not a problem that can afford to be ignored.



International® offers a range of hygiene coatings for the protection and decoration of internal walls and ceilings in hygiene sensitive environments. Our water-based, resin-rich Intercrete® 4880 series coatings provide a totally seamless, easy clean finish and leave no joints or crevices in which bacteria can thrive. They offer long-lasting, reliable performance and complete peace of mind.

Complying with hygiene legislation

Highly publicised outbreaks of bacteria such as E.coli all too effectively demonstrate the need for the strictest hygiene standards and compliance with rigorously enforced hygiene legislation.

The **Intercrete 4880** series of hygiene coatings are formulated using advanced encapsulated biocide technology combined with the latest generation silver ion additives to combat germs. They are proven to prevent the growth of

a wide range of mould, fungus and bacteria, including E.coli, Aspergillus and Penicillium. The products are also non-leaching and non-toxic, making them totally safe to use in even the most sensitive of locations. Compliant with stringent hygiene legislation, they enable building owners and facilities managers to simply and safely meet the highest standards of cleanliness in virtually any hygienic operating environment.

Versatile applications

Intercrete specialist hygiene coatings are formulated for use in a wide range of hygienic environments:

- Food and drink processing plants
- Pharmaceutical facilities
- Commercial kitchens and bathrooms
- Healthcare facilities including:
 - » Cat 1: Operating rooms, aseptic rooms
 - » Cat 2: Food preparation areas, laundry
 - » Cat 3: Sterilising rooms, utility areas, post operative facilities, corridors
 - » Cat 4: Bathrooms
 - » Cat 5: Wards, reception areas
 - » Cat 6: Changing rooms, offices

Technologically advanced

Intercrete hygiene coatings are UK manufactured and are engineered to offer state-of-the-art technology:

- Intelligent protection which allows for the ultra-slow controlled release of active ingredients into the film throughout the long life span of the coatings
- Dual action mechanism, combatting both germs and the growth of micro-organisms
- Water-based formulations which are safe to install, safe for the environment and WRAS listed



Intercrete 4880 is ideal for surfaces that are permanently exposed to moisture and humidity

The Intercrete 4880 series offers cutting-edge protection against common problems such as mould growth and infection control. These specialist hygiene coatings have been subjected to extensive testing to confirm resistance to a wide range of micro-organisms. In all tests, a rating of zero was recorded on the Evaluation Scale, demonstrating complete efficacy of the biostatic membrane with no growth on the surface of the coating.

Anti-microbial protection

Problem: The growth of mould on coatings is a major problem in damp and humid environments such as food processing and beverage plants. To provide effective protection against micro-organisms, a wall or ceiling finish must provide an easy to clean, hard-wearing surface that is free from joints and seams which might harbour dirt.



Mould growth is a common problem in damp and moist environments

Solution: Intercrete 4880 coatings are non-toxic and non-leaching, and incorporate encapsulated biocide technology to control the growth of micro-organisms. The advanced chemistry allows for the ultra slow release of active ingredients into the coating film throughout a long service life, even where harsh cleaning regimes are used. The products are elastomeric and vapour permeable and don't crack or flake even under extreme temperature changes. They are also available in a range of decorative colours and finishes, including matt and sheen.

Infection control

Problem: Colonisation of micro-organisms can cause infections and diseases if effective control measures are not in place. Hospital-acquired infections (HAI's) are caused by a wide variety of organisms and can lead to the death of patients. An effective hygienic wall and ceiling finish is therefore required to reduce the risk of HAI's.



Intercrete systems help combat the risk of hospital-acquired infections (HAI's)

Solution: Intercrete 4880 biostatic coatings combine traditional silver ion technology with encapsulated biocides to provide multi-functional protection. It's active in-film protection slowly releases biocidal ingredients to combat against the growth of HAI's, whilst the addition of silver ion technology provides effective antimicrobial performance and resistance to germs. Independent tests have shown effective control of a wide range of common micro-organisms such as E.Coli and MRSA, making it an ideal solution for hospitals and operating theatres.

The Intercrete 4880 range

Intercrete 4880 and 4881 lie at the heart of our offer for hygiene sensitive areas. When used in conjunction with suitable cleaners, primers and reinforcements, these products offer market-leading hygienic performance that can be relied upon for many years.

Intercrete 4880

Intercrete 4880 is a highly elastomeric, high build hygiene coating for use in the most demanding service conditions. Inherently tough and permanently flexible, it is the ideal choice where substrate movement is anticipated, or where it is appropriate to impart additional tensile strength with overall reinforcement. Intercrete 4880 has a full matt, low glare finish which is particularly well suited to hospital operating theatres, and is also manufactured in wide a range of attractive colours.



Intercrete 4881

Intercrete 4881 is a tough, semi-gloss hygiene coating which is specified for all industries where strict standards of hygiene are observed. It is available in a range of colours and is also widely used in many public areas requiring long term durability and efficacy. Intercrete 4881 is the preferred biostatic coating for both maintenance and new build works, exhibiting very fast drying with two coats easily applied within a single working day using standard painting techniques.



Solutions for infrastructure

When subjected to the elements and environmental attack, even the most well designed structures, constructed using the best quality concrete, need repair and protection in order to ensure that the intended design life can be achieved.



Factors such as carbonation, water penetration, chemical or chloride attack, and freeze/thaw cycling can all lead to significant deterioration of precast and in-situ concrete, quickly leading to corrosion of the steel reinforcement. It is therefore essential to carry out periodic maintenance in order to keep these structures in a serviceable and, above all, safe condition.

Impacts of a changing world

Concrete was once regarded as a low maintenance or maintenance-free material. In reality, structures which were originally created with an anticipated design life of 60, or even 120 years, can quickly show signs of degradation. In addition to aggressive environmental factors, there are increasing demands placed on modern infrastructure that can push the performance of concrete structures to the absolute limits.

Solving structural problems

Older bridges and highway structures can often need urgent remedial

action to reinstate their structural integrity. In such instances, **Intercrete®** products provide a comprehensive refurbishment solution incorporating a full range of engineering quality mortars and high performance cementitious and anti-carbonation coatings.

Intercrete products have an impressive track record of international performance in some of the world's harshest conditions, spanning over 30 years. They have been successfully used to weatherproof airports, bus stations, tunnels, rail structures, roads and other infrastructure in highly demanding environments such as nuclear power stations and chemical facilities.

Our range of advanced repair and protection systems provide durable, engineered solutions to concrete repair problems. Structural integrity and the original design life can be restored, whilst the overall appearance of ageing concrete structures can be significantly improved with the **Intercrete** range of weatherproof decorative finishes.

Engineered to perform

Intercrete concrete repair mortars have been designed to offer class-leading performance. They incorporate the latest cementitious and polymer technology to provide many important benefits:

- Excellent low sag properties enabling high build application in vertical, horizontal and overhead situations
- Exceptionally high bond and tensile strength
- Low permeability to water, even at 10 bar negative pressure
- Quick to install and non-toxic when cured



Intercrete repair solutions are chosen because of their reliability and proven performance

Concrete repair and protection challenges for infrastructure

Intercrete cementitious technology is regularly applied to solve challenging structural problems experienced by concrete infrastructure.

Corrosion of reinforcement

Problem: Due to carbonation, localised corrosion of the reinforcement can occur, resulting in spalling of the concrete cover. If left untreated, the design life of the structure can be shortened significantly.



Intercrete 4800 can be applied up to 80mm thick in a single layer

Solution: Following removal of unsound concrete and preparation of the steel, **Intercrete 4871** is applied by brush. Missing or removed concrete can then be reinstated using **Intercrete 4800**, a high build structural repair mortar. Afterwards, **Intercrete 4822** may be applied to all surfaces using a bag rubbing technique to achieve a fair-faced finish, prior to the application of an anti-carbonation coating such as **Intercrete 4891**.

Reinstatement of runways and bridges

Problem: Roads, runways and bridges are often subject to heavy wear, and cannot be taken out of service for long periods of time. Repairs to voids or worn trafficked surfaces require a fast-track, high strength solution.



Intercrete 4802 is extremely quick-setting, enabling rapid return to service

Solution: Where speed of reinstatement is important, all voids and removed concrete should be reinstated with **Intercrete 4802**, a shrinkage compensated, polymer modified, Portland cement based concrete repair mortar. **Intercrete 4802** sets in just 10 minutes and, when bulked out with aggregate, achieves a strength of over 30N/mm² in just 2 hours. As an additional friction wearing course, **Intercrete 4851** can be installed at a thickness of 2mm.

Chloride ingress

Problem: Chloride attack can severely damage bridges and other reinforced concrete structures that are exposed to de-icing salts. The result can be extensive corrosion, loss of steel section and large areas of spalled concrete.



Intercrete 4841 conforms with Highways Agency Specification Clause 1770

Solution: **Intercrete 4841** is a polymer modified waterproof coating that provides exceptional protection against water ingress, chloride attack and carbonation. It is quick, simple and safe to apply without the need for a primer, ensuring that any disruption is kept to a minimum. Independent tests prove that **Intercrete 4841** continues to provide an effective barrier to moisture, chloride ions and carbon dioxide after well in excess of 27 years.

Lining of concrete bunds

Problem: Concrete bunds often surround storage tanks containing highly hazardous chemicals. To ensure their structural integrity and eradicate the risk of harm to the environment, a chemically resistant lining is required.



Intercrete 4840 resists water, chloride ions and aggressive chemicals

Solution: **Intercrete 4840** provides a highly effective solution for waterproofing and protecting chemical bunds. Applied by brush or spray, it cures rapidly to form an exceptionally tough, chemically resistant finish and, with a water-based formulation, no hazardous solvents or heavy odours are released during application. **Intercrete 4872** can also be embedded into the coating over live cracks and expansion joints, providing permanent elasticity.

Motorways and highway structures

The pressure to provide safer, less congested travel for motorists poses ever more engineering challenges. The durability of both new and existing highways structures must be assured by using materials capable of achieving the required design life.



Reinforced concrete structures are common on motorways and highways but their durability is constantly threatened by exposure to chloride attack from de-icing salts, as well as freeze-thaw attack, water ingress and carbonation. Engineers need to use the most advanced materials available to reinstate the integrity and durability of these structures, whilst also meeting the current and future demands of our ever-evolving highway infrastructure.

Assuring structural integrity

Intercrete® has spent over 30 years developing a comprehensive suite of materials that are regularly specified by Highways Agencies and local authorities for reinstatement and protection projects. Incorporating the latest cementitious and polymer technology, **Intercrete** products are proven to perform in even the most demanding situations and offer rapid, straightforward application. They are also CE Marked in accordance with BS EN 1504

and meet the high performance standards required by Highways Agency Specification Clause 1770.

Intercrete offers practical, economic solutions which meet the needs of both existing motorway structures and new construction developments. This includes the latest SMART motorway schemes and other widening projects which are being introduced to manage increasing levels of traffic and congestion. Such schemes may involve alterations to existing structures as well as new construction (e.g. gantries) which may require low cover issues to be addressed or additional chloride protection in order to reinstate their durability.

Minimising disruption

With environmentally friendly, water-based formulations, **Intercrete's** range of engineered products enable repair and protection projects to be carried out in a sustainable, long-term manner. What's more, they are quick and easy to apply direct to concrete without the need for a primer, ensuring that minimal disruption is caused to motorway users.

One-stop solution

Intercrete provides a comprehensive range of engineering quality mortars and high performance cementitious and anti-carbonation coatings. They are perfectly suited to reinstating and protecting a wide range of motorway and highway structures, including:

- Gantries and vehicle restraint barriers
- Overbridge decks and concrete elements
- Concrete hard shoulder areas
- Transit and freight rail bridges
- Drainage kerbs and channels
- Culverts and retaining walls
- Foot bridges and cycle bridges



Intercrete repair and protection solutions are ideal for use on SMART motorway construction

Keeping our motorway and highway network moving



Intercrete's innovative solutions help to maintain a safe, efficient and reliable road network, which in turn can help cut both costs and congestion.

SMART motorways and new construction

Problem: SMART motorway upgrades and widening schemes can reveal areas of low cover which require remedial work. If untreated, this can cause chloride ingress which can severely compromise the intended design life.



Intercrete 4841 effectively reinstates cover and protects from chlorides

Solution: The **Intercrete** range of cementitious coatings and technical mortars is ideally suited to reinstating the durability of reinforced concrete in order to ensure that the design life is achieved. **Intercrete** products are totally impermeable to water and have excellent resistance to both chloride and carbon dioxide ingress. A 2mm coating of **Intercrete 4841** provides the equivalent of 100mm of good quality concrete cover.

Repairs to decks, kerbs and channels

Problem: Structural repairs and refurbishment are often required on trafficked concrete decks, as well as drainage kerbs and channels. A reliable, fast-setting material is required in order to minimise disruption to road users.



Intercrete 4802 sets 10 minutes, achieving a final strength of over 60MPa

Solution: Trafficked areas can be quickly repaired and strengthened using **Intercrete 4802**. This rapid hardening, fibre reinforced, polymer modified repair mortar is based on Portland cement technology and achieves a compressive strength of 14MPa in just 1 hour at 20°C. It can also be used to reinstate concrete prior to surface dressing with asphalt or a waterproofing membrane, allowing the road to be rapidly returned to service.

Concrete repair and protection

Problem: Reinforced concrete elements on bridges and other highway structures are exposed to an aggressive environment whereby the passivating layer around the steel is broken down leading to corrosion and spalling.



Intercrete 4891 has an anticipated lifespan of at least 15 years

Solution: **Intercrete 4801** is a structural repair mortar, CE Marked to EN1504-3 and compliant with the requirements of with Highways Agency Specification BD27/86. Its physical characteristics are similar to bridge quality concrete and it can be built up to 80mm even on soffits. **Intercrete 4891** is a high performance coating that provides a decorative finish with excellent protection from carbonation and ingress of chlorides from salt-spray.

Protection from de-icing salts

Problem: Bridges and other reinforced structures that are exposed to de-icing salts can be severely damaged by chloride attack. This can cause extensive corrosion, loss of steel section and large areas of spalled concrete.



Intercrete products meet Highways Agency Specification Clause 1770

Solution: **Intercrete 4841** offers exceptional protection from chloride ion ingress and is ideal for use on both new and existing structures. Independent tests have confirmed that it will provide an effective barrier to chlorides for at least 27 years. **Intercrete 4841** also provides outstanding resistance to freeze-thaw cycling, and its innovative formulation allows the product to behave in a similar manner to the parent concrete.

New build construction

Defects not only affect older buildings and structures. New build construction schemes can also experience problems, caused by a variety of factors such as design complexity, variations to specification or simply poor workmanship.



The structural challenges facing new build projects are an important consideration for designers, engineers and contractors alike. Grout loss and damage when removing formwork can result in unacceptable blemishes and poor compaction causes honeycombing.

Concrete, often considered as an aesthetic finish in its own right, must meet the required standards if durability is to be assured. The Intercrete® range therefore includes all of the necessary reinstatement and finishing materials needed in new construction.

Repairing the defects

Defects to concrete structures need to be rectified using materials that are visually and structurally compatible. We offer a range of materials to suit all applications from structural mortars for reinstating large areas of honeycombing to colour-matched, fine grade mortars for producing a fair-faced finish.

The Intercrete range also includes waterproof tie hole fillers and a range of high performance coatings to ensure that a watertight seal is achieved in basements and other water retaining structures.

Reinstatement of cover

Inadequate concrete cover adversely affects the durability of reinforced concrete. Careless fixing of the formwork or incorrect use of spacers can lead to low cover. This undermines the protection of the steel reinforcement, ultimately leading to spalling of the concrete and expensive maintenance.

Intercrete cementitious coatings are engineered so that just a 2mm application provides equivalent protection to a minimum of 100mm of additional good quality concrete cover. Rapidly and easily applied by brush or spray, these high performance coatings offer unparalleled resistance to water, carbon dioxide and chlorides and never need replacing during the design life of the structure.

Trusted Intercrete protection

There are many reasons why Intercrete products have become the preferred choice on new build construction:

- High quality repair and protection solutions for the entire building envelope
- CE marked in accordance with BS EN 1504
- Environmentally friendly formulations
- Proven technology with a 30 year international track record
- Manufactured in the UK in accordance with BS EN 9001 and BS EN 14001 standards



Intercrete products protect many of the world's most iconic new build projects.

Typical problems and challenges in new construction

Whether it's waterproofing, reinstating inadequate cover or simply to fast-track the construction cycle, Intercrete has the ideal solution;

Reinstating surface defects

Problem: Areas of honeycombing, blow-holes and surface voids caused by poor compaction or defects in the formwork placing resulting in grout loss. The surface requires filling to achieve the specified quality of finish.



Intercrete 4822 colours can be blended to match the shade of concrete

Solution: A fine, formed finish can be achieved with **Intercrete 4822**, applied using a simple bag-rubbing technique. Available in white and grey formulations, the shades can be blended to match the colour of the parent concrete, resulting in a uniform finish. If any areas need to be cut out, reinstatement can be easily achieved using **Intercrete 4800**, and minor surface defects can be filled using **Intercrete 4825** to give a super-fine finish.

Low concrete cover

Problem: Incorrect positioning of shutters or reinforcement and spacers, as well as problems with compaction often results in low cover to the steel, which can compromise long-term durability and design life of the structure.



Intercrete 4841 exhibits excellent adhesion to both concrete and steel

Solution: **Intercrete 4822** or **Intercrete 4800** can be used to reinstate the profile of the concrete, whilst applying two 1mm coats of **Intercrete 4841** by brush or spray provides the equivalent protection to 100mm of good quality concrete cover. **Intercrete 4841** is also an effective barrier to chloride ions and is impermeable to water under 10 bar hydrostatic pressure, making it ideal for demanding applications.

Waterproofing of tie holes

Problem: Tie holes left on removal of formwork in new construction must be filled to provide an integral, even finish. In water retaining structures the tie hole must also be made waterproof to prevent leakage.



Intercrete 4807 is a fast curing, high strength waterproofing solution

Solution: Voids can be filled with **Intercrete 4807**, a rapid setting, non-shrink repair mortar. The product has WRAS Approval and is totally waterproof, enabling it to be used in water tanks, even those containing potable water. **Intercrete 4807** can also be used to seal grout holes and voids around fixings in pre-cast elements. It is supplied as a single component system requiring only the addition of clean water to give a durable high strength mortar.

Waterproofing concrete decks

Problem: New build projects need to waterproof and protect freshly cast, green concrete with environmentally friendly products in order to fast track the construction process and achieve significant cost and time savings.



Intercrete water-based coatings for concrete decks are engineered to last

Solution: The **Intercrete** range of water based cementitious coatings can be applied to green concrete and are totally waterproof even under a 100m head of water. Incorporating unique epoxy and polymer technology, the **Intercrete 4851** and **Intercrete 4840** systems hydrate rapidly to form highly durable coatings with outstanding abrasion and chemical resistance that are designed to last the life of the structure.

Solutions for roofing

Waterproofing the roof is one of the most important structural requirements of any building, as a watertight roof performs a vital function in protecting employees, visitors and physical assets.



At International®, our heritage is based on the development of industry-leading waterproofing technology and in recent years, we have invested heavily in the introduction of state-of-the-art, cold fluid applied roofing materials.

Intercrete® 4885 for modern construction

Intercrete 4885 is a revolutionary high build, waterborne liquid roof coating. It is suitable for both roof refurbishment and new build projects, and is also compatible with a wide range of flat or pitched roofs including asphalt, felt and cementitious substrates.

Intercrete 4885's technically advanced, vapour permeable formulation provides outstanding performance in some of the world's most hostile conditions. It is elastomeric in nature and able to tolerate both thermal and structural movement and extreme temperatures without degrading.

Simple, safe, convenient application

Intercrete 4885 is also completely odourless and environmentally friendly with ultra-low VOC levels, meaning that no hazardous solvents are released and no disruption is caused to activities in the underlying building during application. In addition the product poses no fire risks as it also achieves the highest possible fire rating of EXT.F.AA when tested to BS 476: Part 3:2004.

Sustainable roofing technology

Intercrete 4885 is available in a range of colours, including solar reflective white to reduce energy consumption by lowering heat gain from direct sunlight in summer and minimising heat loss in winter.

Furthermore, as environmental sustainability becomes more of a concern globally, **Intercrete 4885's** inherent root resistant properties mean that it can be effectively incorporated as the waterproofing membrane of a green roof system.

Versatile design options

Intercrete 4885 is UK manufactured and has been designed to offer versatile performance. A range of systems can be created to suit particular specification requirements, including:

- Full built-up warm roofs
- Economical roof overlays
- Inverted roofs and podium decks
- New build and refurbishment
- Pitched roof waterproofing
- Green roofing systems



Intercrete 4885 is a waterproofing membrane that is ideal for use in a variety of roofing systems

Intercrete 4885 in action



Intercrete 4885 is a vapour permeable, styrene acrylic coating which is virtually odourless on application and inherently protected against biofilm attack. It is resistant to water ponding and remains flexible throughout its long service life on flat or pitched roofs. Intercrete 4885's high build, thixotropic nature is ideal for embedment of reinforcement and allows for treatment of upstands and other roof details without slumping.

Complex waterproofing of details

Problem: Existing roof degradation due to the aggressive effects of weathering. Complex detailing requirements mean that specifying effective waterproofing can be particularly challenging.

Protecting sensitive areas

Problem: Ponded water on roofs can be a breeding ground for microorganisms and other bacteria. This can be particularly problematic where the roof is protecting a sensitive environment such as a hospital or school.



Intercrete 4885 is compatible with flat, pitched and curved roofs



Intercrete 4885 is a single pack product, meaning no complex mixing on site

Solution: Intercrete 4885 offers quick and effective application. It is easily applied by roller, brush or airless spray in a cold, fluid form to create a completely seamless, waterproof membrane. Exceptional UV resistance helps ensure that the product will provide outstanding protection for up to 20 years.

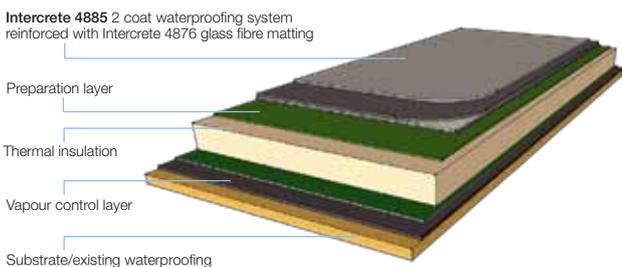
Solution: Intercrete 4885 incorporates a highly engineered formulation, including state-of-the-art active biocide technology. These active ingredients combat the growth of harmful bacteria and incorporate in-film protection, affording excellent resistance against algae and other biofilm attack.

Performance characteristics

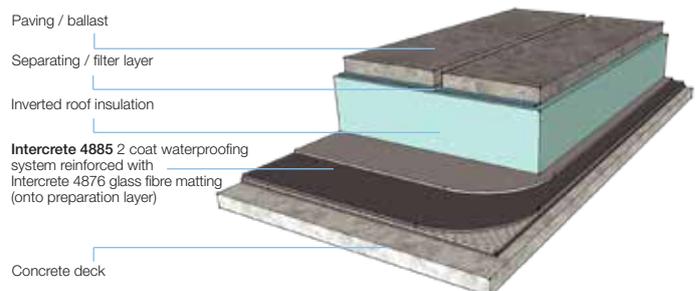
Intercrete 4885 can be used unreinforced for the ultimate in cost-effective waterproofing, or it can be reinforced with glass fibre matting to provide long-term weatherproofing protection.

System	Coats	Min coverage	Reinforcement	Elongation	Tensile strength	Curing times/coat
Solar reflective waterproofing	2	0.75 litres/m ²	Unreinforced	500%	0.68MPa	1 - 12 hours
Weatherproofing 15 years	2	1.75 litres/m ²	Intercrete 4876 225gsm	5%	16.60MPa	4 - 24 hours

Intercrete 4885 warm roof build up



Intercrete 4885 inverted roof build up



Structural waterproofing

Suitable for both refurbishment and new build works, the Intercrete® range includes impermeable, sulphate resistant, cementitious coatings for the structural waterproofing of below ground and water retaining structures.



Modern construction techniques enable structures to be built deep below ground level, making it a significant challenge to seal against water infiltration. Rising water tables around the world have also created demand for reliable tanking systems for basements, tunnels and other underground structures, many of which were not originally designed to resist water ingress. Effective waterproofing is therefore essential in order to preserve a long service life.

Waterborne and environmentally friendly

Whether as part of the original design or as a subsequent remedial measure, the **Intercrete** range of structural waterproofing and tanking systems offers long-lasting, practical solutions to a range of typical problems. Our thin-film cementitious coatings can help reduce the cost of post-construction underground structural waterproofing and, in most cases, the waterproofing will last for the design life of the structure.

With water-based, non-hazardous formulations, **Intercrete** products can be safely applied in confined spaces and cure rapidly without releasing any strong odours or hazardous solvents. The range also includes mortars and coatings which are approved under Regulation 31(4)(a) for use in public drinking water supplies.

Ideal for demanding conditions

Intercrete cementitious coatings are designed to provide exceptional waterproofing protection. They resist both positive and negative water infiltration at pressures up to 10 bar and are perfect for application on to damp surfaces.

Intercrete products offer excellent chemical resistance and are ideal for sealing secondary containment facilities or bunds to eradicate the possibility of aggressive substances leaking from storage tanks and silos into groundwater. They are also perfectly suited to the demands of deep level construction and, when used in new construction, specialist linings can be applied without waiting for a full cure of the substrate concrete.

Performing under pressure

Intercrete structural waterproofing products have been specially engineered to cope with the extreme demands of below ground applications:

- Able to resist 10 bar water pressure
- Resists aggressive groundwater
- Ideal for application in damp environments
- Ultra-low VOC content - perfect for use in confined spaces
- Approved under Regulation 31(4)(a) for use in contact with potable water and WRAS listed



Structural waterproofing systems from Intercrete provide a long-term, cost-effective solution

Typical problems and challenges in structural waterproofing

Intercrete systems are engineered to provide reliable waterproof protection for a wide range of commercial buildings and infrastructure.

Waterproofing in new construction

Problem: Damp or leaking underground structures and piled walls may often be below the water table. They therefore require effective waterproofing to prevent damage to the fixtures and fittings.



Intercrete 4841 is simple to apply and is an effective barrier to chloride ions

Solution: Masonry, brick and concrete substrates can be effectively waterproofed by applying two 1mm coats of **Intercrete 4841**. It is suitable for use both internally and externally and can resist positive and negative pressure under 100m head in water retaining and below ground structures. Where pointing requires reinstating, or a fair-faced, waterproof render is required then **Intercrete 4820** can be used in thicknesses up to 6mm per layer.

Podium deck waterproofing

Problem: As building owners look to maximise their sites, podium decks are often a feature of modern construction. Effective waterproofing is required that can accommodate structural movement and potential dynamic loads.



Intercrete 4842 is well suited to the demands of buried roof applications

Solution: **Intercrete 4885** is a waterborne, cold-applied liquid roofing membrane that is completely seamless and vapour permeable. It can also tolerate thermal and substrate movement and extreme temperature ranges without degrading. For buried roofs, **Intercrete 4842** is ideal, offering a tough, flexible coating which maintains its elastomeric properties even under immersed conditions to accommodate any movement in cracks.

Moisture suppression for flooring

Problem: Damp or freshly laid concrete floors require an effective treatment to eliminate osmotic blistering when impervious floor coatings and finishes are subsequently applied. Fast-track construction is also often a priority.



Intercrete 4851 offers equivalent properties to an extra 1 metre of concrete

Solution: **Intercrete 4851** can be applied to damp surfaces to form a waterproof wearing course. Tested for water permeability under 10 bar pressure, it is spread to a minimum 2mm thickness and can be cured with sand for a slip resistant finish, or using **Intercrete 4870** when a smooth finish is required. Subsequent coatings can be applied after just 48 hours, keeping downtime to an absolute minimum so that following trades can progress.

Leaking basements

Problem: Dampness can be a persistent problem on the internal walls of concrete and brickwork basements. A reliable repair and protection system is required to provide a fully waterproof tanking solution.



Intercrete 4823 is fibre-reinforced for added strength and durability

Solution: Active water infiltration under pressure can be quickly arrested using **Intercrete 4809**, a rapid setting, polymer modified plugging mortar. **Intercrete 4823** is ideal for application to vertical, horizontal and overhead brickwork surfaces and rapidly cures to form a high performance, waterproof, fair-faced render. To prevent water infiltration through leaking joints, the system can also be reinforced with **Intercrete 4872** waterproof tape.

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