Product Pack for

Fosroc® Conbextra HF High-flow, Non-shrink, Cementitious Grout

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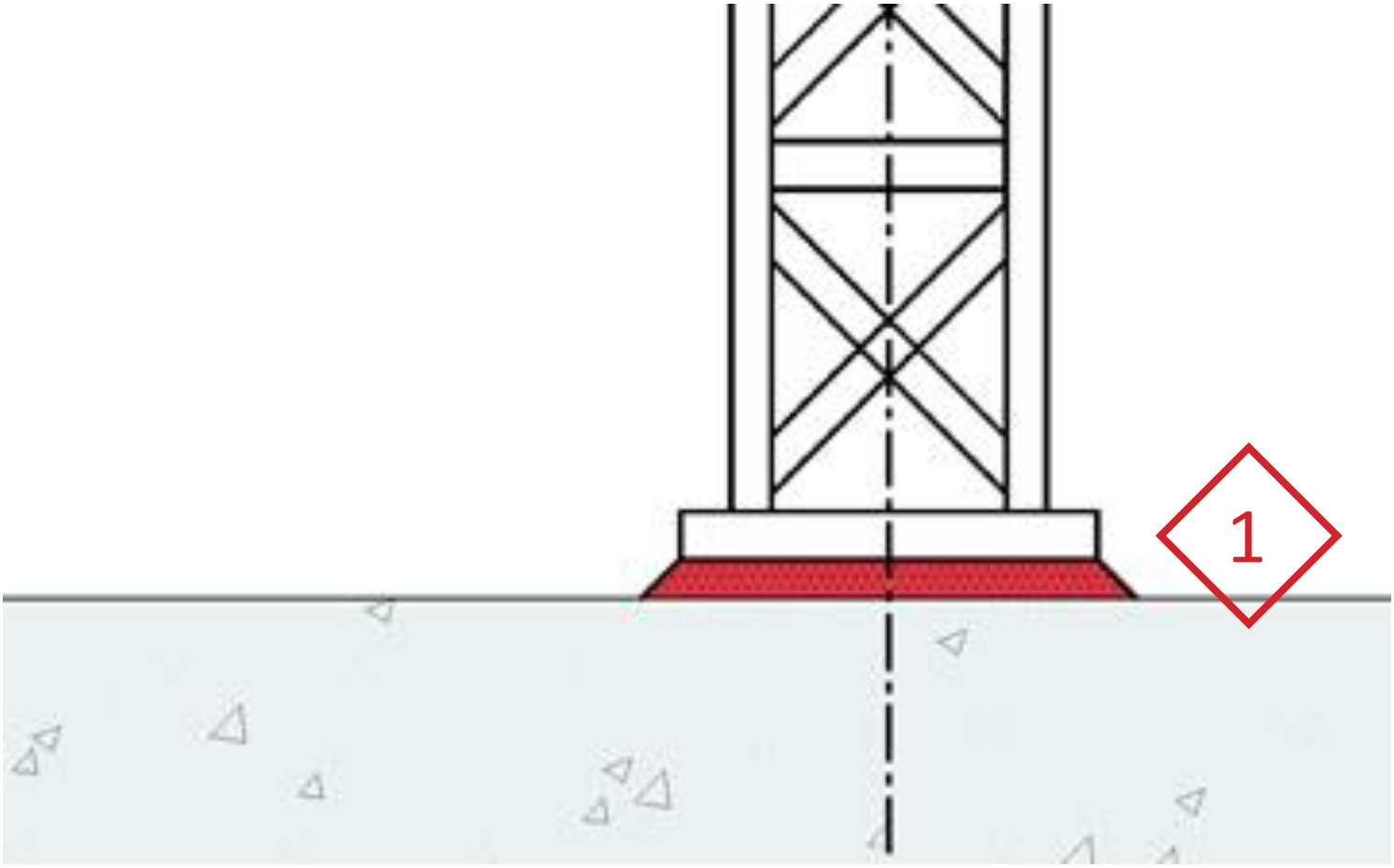
PRODUCT INTRODUCTION

Conbextra HF

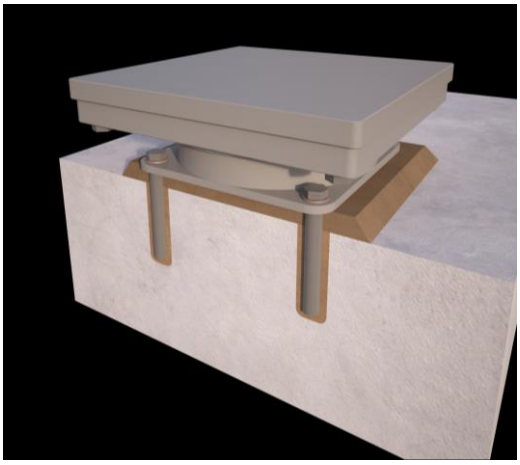
Product Information

Product Name.	**Conbextra HF**.
Description.	High-flow, non-shrink, cementitious grout conforming to the requirements of BS EN 1504-3 Class R4 and BS EN 1504-6: Anchoring of reinforcing steel bar.
Photo.	
Colour.	Grey Powder
Packaging:.	25 kg/bag

System & Application Area



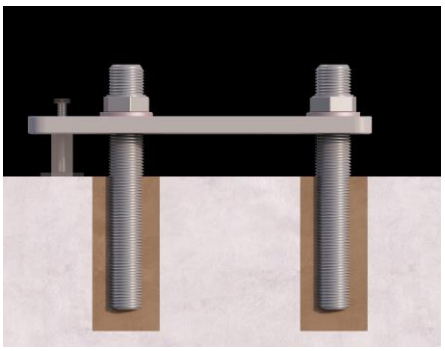
1 Conbextra HF



Large stanchion baseplates

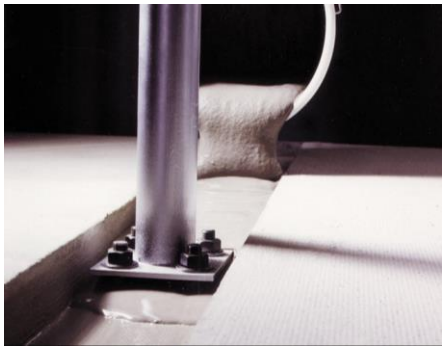
Product Advantages

Conbextra HF is a high-flow, non-shrink, cementitious grout conforming to the requirements of BS EN 1504-3 Class R4 and BS EN 1504-6: Anchoring of reinforcing steel bar.



Non-shrink

Highly flowable



Chloride free

Suitable for pumping

PRODUCT DATA SHEETS

Fosroc® Conbextra HF

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High-flow, non-shrink, cementitious grout conforming to the requirements of BS EN 1504-3 Class R4 and BS EN 1504-6: Anchoring of reinforcing steel bar.

Uses

Conbextra HF is used for free flow, non-shrink, cementitious grouting of gap thicknesses 10 to 100 mm. Recommended applications include:

- Large stanchion baseplates
- Joints between pre-cast concrete panels
- Pumped grouting applications
- Grouting applications where pouring access is restricted
- Anchoring of reinforcing steel bars
- Installation of tie bars

Advantages

- Non-shrink
- Highly flowable
- High early age strength
- Chloride free
- Suitable for pumping
- Conbextra HF complies with LU Standard 1-085 'Fire Safety Performance of Materials'.

Description

Conbextra HF is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a free- flowing grout for gap thicknesses up to 100 mm. In addition the low water requirement ensures high early strength and long-term durability.

Conbextra HF is a blend of Portland cements, graded fillers and chemical additives. The filler grading produces a highly flowable grout which will not segregate or bleed.

Specification clause

The grout shall be Conbextra HF, a pre-bagged, single component cementitious material which conforms with the requirements of BS EN 1504-3 class R4 and BS EN 1504-6. The grout shall fully conform to the requirements of US Army Corps of Engineers Specification for non-shrink grout CRD-C621-82A

It shall be mixed with clean water to the required consistency and not exhibit bleed or segregation

A volumetric expansion of up to 1% shall occur while the grout is in a plastic state by means of a gaseous system.

The compressive strength of the grout must exceed 40 MPa at 7 days and 65 MPa at 28 days.

The storage, handling and placement of the grout must be in strict accordance with the manufacturer's instructions

Standards compliance

Conbextra HF complies with classification R4 according to BS EN 1504-3.

Conbextra HF complies with the requirements of BS EN 1504 -6 : Anchoring of reinforced steel bar.

Conbextra HF conforms fully to U.S. Corps of Engineers Specification for non-shrink grout CRD-C621-82A and ASTM C1107-91 (Type C).

CE
0370
09
0370–CPR–0845

DOP: UK9-10

Fosroc International Limited
Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3TL, UK

Conbextra HF

EN1504-3: Structural and non-structural repair methods 3 and 4
EN 1504-6: Anchoring of reinforcing steel bar

Compressive strength	Class R4 (≥ 45 MPa)
Adhesion strength by pull-off test	≥ 2.0 MPa
Chloride ion content	≤ 0.05%
Thermal compatibility: freeze thaw cycling with immersion	≥ 2.0 MPa
Carbonation resistance	Passes
Elastic modulus	32.7 GPa
Testing of anchoring products by the pull-out method	≤ 0.6 mm at 75 kN load
Fire classification	Class A1
Dangerous substances	Complies with 5.3 (EN1504-6) 5.3 (EN1504-3)

CERTIFIED CARBON NEUTRAL® product
CarbonNeutral.com

Fosroc® Conbextra HF

Properties

The following results were obtained at a water : powder ratio of 0.192 and a temperature of 20°C unless otherwise stated.

Test Method	Standard	EN1504 Requirement	Result
Compressive Strength	EN 12190:1999	Class R4 ≥ 45 MPa	@ 1 Day 22 MPa @ 7 Day 55 MPa @ 28 Days 70 MPa
Bond strength by pull off:	EN 1542:1999	Class R4 ≥ 2.0 MPa	2.6 MPa
Chloride ion content:	EN 1015-17:2000	Class R4 ≤ 0.05 %	0.04%
Freeze thaw cycling:	EN 13687-1:2002	Class R4 ≥ 2.0 MPa	2.4 MPa
Resistance to carbonation d_k	EN 13295:2005	Class R4 ≤ ref concrete	Conforms
Elastic Modulus in Compression	EN 13412	Class R4 ≥ 20 GPa	32.7 GPa @ 28 days
Testing of anchoring products by pull out method	EN 1881:2006	@ 75 KN load ≤ 0.6 mm	0.44 mm Dry Test 0.43 mm Wet Test
Fire rating	EN 1504-3 cl.5.5	-	Class A1 Non-Combustible
Flexural strength	BS 6319 Pt 3:1990	-	5.5 MPa @ 28 days
Tensile strength	BS 6319 Pt 3:1985	-	3.7 MPa @ 28 days
Setting time	BS 4551 Pt14:1980	-	Initial set: 6 hours
Fresh wet density		-	Nominally 2130 kg/m^{-3}
Alkali reactive particles	Method TI-B 52	-	≤ 1.0 vol %
Flow Characteristics (efflux time)	CRD-C Cone	-	26 - 35 Seconds
Grout consistency / Water addition	CRD-C621-82A definitions	-	Flowable: 4.5 litres water/ 25kg bag Fluid: 4.8 litres water/ 25kg bag
Minimum thickness **Maximum thickness**	- -	- -	10 mm 100 mm

Clarification of property values: The typical properties given above are derived from laboratory testing. Results derived from field applied samples may vary.

Consistency of mixed grout

The flow distances given below are intended as a guide. Actual flow distances will vary depending on site conditions:

Gap depth mm	Flowable 100 mm head	Flowable 250 mm head	Fluid 100mm head	Fluid 250mm head
10	360 mm	1200 mm	900 mm	2500 mm
20	950 mm	2600 mm	1900 mm	3000 mm
30	1500 mm	3000 mm	3000 mm	3000+ mm
40	2200 mm	3000+ mm	3000+ mm	3000+ mm
50	3000 mm	3000+ mm	-	-

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Application instructions

Preparation

Foundation surface

The substrate surface must be free from oil, grease or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut back / scabbled to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt or debris.

Pre-soaking

For a minimum of 2 hours prior to grouting, the area of cleaned foundation should be flooded with fresh water. Immediately before grouting takes place, any free water should be removed. Particular care should be taken to blow out all bolt holes and pockets. Where water soaking is impossible contact Fosroc Technical Service.

Base plate

It is essential that this is clean and free from oil, grease or scale. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Levelling shims

If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

Formwork

The formwork should be constructed to be leakproof as Conbextra HF is a free-flowing grout. This can be achieved by using foam rubber strip or Nitoseal MS60* beneath the constructed formwork and between joints.

In some cases it is practical to use a sacrificial semi-dry sand and cement formwork. The formwork should include outlets for the pre-soaking water.

The unrestrained surface area of the grout must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should not exceed 150 mm on the pouring side and 50 mm on the opposite side. There should be no gap at the flank sides.

Mixing

For mixing quantities up to 50 kg a high power, 280 to 640 rpm, 110 volt drill, fitted with a Conbextra Mixing Paddle (MR3) is suitable. For best results a mechanically powered grout mixer should be used. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity.

Prior to the first mix the vessel should be wetted and drained. The selected water content 4.5 - 4.8 litres per 25 Kg (see table) should be accurately measured into the mixer. Slowly add the total contents of the Conbextra HF bag, mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained.

Placing

Place the grout within 20 minutes of mixing to gain the full benefit of the expansion process.

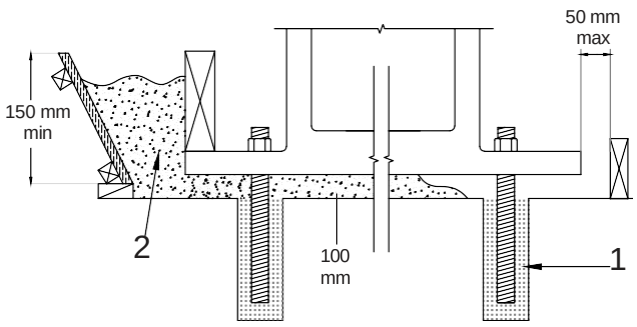
Conbextra HF can be placed in thicknesses up to 100 mm in a single pour.

For thicker sections use Conbextra TS grout.

Any bolt pockets must be grouted prior to grouting between the substrate and the base plate.

Continuous grout flow is essential.

Example of a typical hopper system:



1. Conbextra HF or Lokfix* (first stage)

2. Conbextra HF poured or pumped into removable hopper (second stage)

* Also available from Fosroc.*

Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one.

The mixed grout should be poured only from one side of the void to eliminate the entrapment of air or surplus pre-soaking water. This is best achieved by pouring the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout front is achieved.

Fosroc® Conbextra HF

Where large volumes have to be placed, Conbextra HF may be pumped. Screw feed and piston pumps are suitable for this purpose.

When the Conbextra HF has reached trowellable consistency, the unrestrained portion should be cut back to the baseplate/ bearing plate.

Curing

On completion of the grouting operation, exposed areas should be thoroughly cured with Concure WB curing membrane, continuous application of water and/or wet hessian.

Anchoring applications

Holes should be drilled with a rotary percussive air flush drill and deformed bars should be used. Diamond cored holes should be roughened or under-reamed. The holes should be prewetted for a minimum of 2 hours prior to grouting. Remove water before grouting.

The mixed grout should be poured into the hole and the bar pushed through the grout

Cleaning

Conbextra HF should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Fosroc Acid Etch.

Estimating

Supply

Conbextra HF is supplied in 25 kg bags.

Yield

Allowance should be made for wastage when estimating quantities required. The approximate yield per 25 kg bag for different consistencies is:

Consistency	Flowable	Fluid
Yield:	13.25 litres	13.5 litres

Limitations

Low temperature working

When the air or contact surface temperatures are 5°C or below on a falling thermometer, warm water (30°C to 40°C) is recommended to accelerate strength development. Substrates should be free from ice.

For ambient temperatures below 10°C the grout consistency should be flowable and the formwork should be maintained in place for at least 36 hours.

Normal precautions for winter working with cementitious materials should then be adopted, specifically protecting the grout from freezing in the first 24 hours after placing.

High temperature working

At ambient temperatures above 35°C the mixed grout should be stored in the shade. Cool water (below 20°C) should be used for mixing the grout.

Storage

Store unopened bags in cool dry internal conditions. Conbextra HF has a shelf life of 12 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity locations the shelf life may be reduced to less than 6 months.

Conbextra HF is not supplied in waterproof packaging; individually or palletised.

Precautions

Health and safety

For further information refer to appropriate Product Safety Data Sheet available at www.fosroc.com

Fire

Conbextra HF is non-flammable.

Environmental Data (EPD)

GWP Total, A1 – A3: 0.407 kgCO2e per 1kg product.
GWP Total, A1 – D: 0.611 kgCO2e per 1kg product.

Fosroc International Limited
Drayton Manor Business Park
Coleshill Road, Tamworth,
Staffordshire B78 3XN, UK

telephone:
+44 (0)1827 262222

email:
enquiryuk@fosroc.com

www.fosroc.com

ISO 45001 Occupational Health and Safety CERTIFIED OHS 740931
ISO 9001 Quality Management Systems CERTIFIED FM 610
ISO 14001 Environmental Management CERTIFIED EMS 61113

December 2024

SDS

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Revision date 18/09/2023 **Revision Number** 9.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s) 1178000UK9

Product Name CONBEXTRA HF

Unique Formula Identifier (UFI) JA00-C0F3-200W-QG9N

Pure substance/mixture Mixture

Contains ORDINARY PORTLAND CEMENT, CALCIUM ALUMINATE SULPHATE

2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Restricted to professional users

Uses advised against Consumer use

3. Details of the supplier of the safety data sheet

Supplier

Fosroc International Limited
Drayton Manor Business Park
Coleshill Road
Tamworth
Staffordshire
B78 3XN
England
Tel. +44 (0) 1827 262222
Fax. +44 (0) 1827 262444

For further information, please contact

E-mail address enquiryuk@fosroc.com

1.4. Emergency telephone number

Emergency Telephone +44 (0) 1827 265 279 (Monday to Sunday, 24 hours a day)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitisation	Category 1 - (H317)
Specific target organ toxicity — single exposure	Category 3 - (H335)

2.2. Label elements

Contains ORDINARY PORTLAND CEMENT, CALCIUM ALUMINATE SULPHATE

Signal word
Danger

Hazard statements
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation
H318 - Causes serious eye damage

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P280 - Wear protective gloves/protective clothing and eye/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB according to applicable EU criteria.

SECTION 3: Composition/information on ingredients

1 . Substances

Not applicable

2 . Mixtures

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
SILICA SAND 14808-60-7	25 - <50%	238-878-4	-	-	-	-	-
ORDINARY PORTLAND CEMENT 65997-15-1	25 - <50%	266-043-4	-	Eye Dam. 1 (H318) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) STOT SE 3 (H335)	-	-	-
CALCIUM	1 - <2.5%	818-462-4	-	Skin Sens. 1 (H317)	-	-	-

ALUMINAT E SULPHATE 12005-25-3							

Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration >= 0.1% (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

4.2. Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Itching. Rashes.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours. Product is or contains a sensitiser. May cause sensitisation by skin contact.

Hazardous combustion products	There are no known hazardous decomposition products.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections	See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Avoid breathing vapours or mists.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

7.3. Specific end use(s)

Specific use(s)
The identified uses for this product are detailed in Section 1.2.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	United Kingdom
SILICA SAND 14808-60-7	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³
ORDINARY PORTLAND CEMENT 65997-15-1	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers

Derived No Effect Level (DNEL) - General Public

Derived No Effect Level (DNEL) - Other

Predicted No Effect Concentration (PNEC)

8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Hand protection Wear suitable gloves. Use impervious, abrasion and alkali resistant gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection Wear a suitable dust mask.
Recommended filter type: particulate filter, type P2.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Environmental exposure controls Avoid creating dust.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Dusty powder
Colour	grey
Odour	Odourless.
Odour threshold	Not applicable

Property	Values	Remarks • Method
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	Not applicable
Flammability	No data available	Not applicable
Flammability Limit in Air		Not applicable
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	No data available	Not applicable
Autoignition temperature	No data available	Not applicable
Decomposition temperature		Not determined
pH	12	pH (concentrated solution): >12
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No data available	Not applicable
Dynamic viscosity	No data available	Not applicable
Water solubility	Slightly soluble Soluble in water	None known
Solubility(ies)	Insoluble in water	Not determined
Partition coefficient	No data available	None known
Vapour pressure	No data available	Not applicable
Relative density	No data available	Not determined
Bulk density	No data available	
Liquid Density	No data available	
Relative vapour density	No data available	Not applicable
Particle characteristics		
Particle Size	no information available.	
Particle Size Distribution	no information available.	
Explosive properties	Not considered to be explosive.	
Oxidising properties	The mixture does not meet the criteria for classification as oxidising.	

9.2. Other information

Evaporation rate Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity When mixed with water, hardens to form a stable mass that is not reactive in normal conditions.

10.2. Chemical stability

Stability Stable under normal temperature conditions. When stored under humid conditions, the chromate neutralization will decrease.
This product contains a chromate reducing agent to reduce the risk of allergic dermatitis causes by chromium (VI).

This product has a shelf life. If not stored in accordance with packaging instructions (sealed and dry), there is an increased risk of the presence of hexavalent chromate leading to an increased risk of an allergic reaction.

Explosion data

Sensitivity to mechanical impact Not applicable.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Incompatible materials Acids. Oxidising agent.

10.6. Hazardous decomposition products

Hazardous decomposition products None under normal use conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. May cause irritation of respiratory tract.

Eye contact Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May cause sensitisation by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. Coughing and/ or wheezing. Itching. Rashes.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	6,226.40 mg/kg
ATEmix (dermal)	6,226.40 mg/kg
ATEmix (inhalation-gas)	51,887.00 ppm
ATEmix (inhalation-dust/mist)	99,999.000 mg/l
ATEmix (inhalation-vapour)	207.50 mg/l

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on data available for ingredients. Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye damage. Causes burns.
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Other adverse effects	no information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	The product is not expected to be hazardous to the environment.
Unknown aquatic toxicity	Contains 0 % of components with unknown hazards to the aquatic environment.

12.2. Persistence and degradability

Persistence and degradability	The product is not expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation	Material does not bioaccumulate.

12.4. Mobility in soil

Mobility in soil The product hardens to a solid, immobile substance.
The product is not volatile but may be spread by dust-raising handling.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product contains substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
ORDINARY PORTLAND CEMENT	The substance is not PBT / vPvB PBT assessment does not apply

12.6. Other adverse effects

Other adverse effects None known.

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Cement that has exceeded its shelf life: when demonstrated that it contains more than 0.0002% Cr (VI), the product shall not be used other than in controlled closed and totally automated processes. It may be recycled and/or treated again with a reducing agent.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

IATA

1. UN number or ID number	Not regulated
2. UN proper shipping name	Not regulated
3. Transport hazard class(es)	Not regulated
4. Packing group	Not regulated
5. Environmental hazards	Not applicable
6. Special precautions for user Special Provisions	None

IMDG

1. UN number or ID number	Not regulated
2. UN proper shipping name	Not regulated
3. Transport hazard class(es)	Not regulated
4. Packing group	Not regulated
5. Environmental hazards	Not applicable
6. Special precautions for user Special Provisions	None
7. Maritime transport in bulk according to IMO instruments	no information available.

RID

1. UN number or ID number	Not regulated
2. UN proper shipping name	Not regulated
3. Transport hazard class(es)	Not regulated
4. Packing group	Not regulated

5. Environmental hazards	Not applicable
6. Special precautions for user	
Special Provisions	None

ADR

1. UN number or ID number	Not regulated
2. UN proper shipping name	Not regulated
3. Transport hazard class(es)	Not regulated
4. Packing group	Not regulated
5. Environmental hazards	Not applicable
6. Special precautions for user	
Special Provisions	None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758 Workplace Exposure Limits EH40 Control of Substances Hazardous to Health Regulations 2002 (as amended).

Authorisations and/or restrictions on use:
This product contains one or more substances subject to restriction (UK REACH - Annex XVII).

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
ORDINARY PORTLAND CEMENT - 65997-15-1	Use restricted. See item 47.	-

Persistent Organic Pollutants
Not applicable

Export Notification requirements
Not applicable

Named dangerous substances per COMAH Regulations 2015 (as amended)
Not applicable

The Ozone-Depleting Substances Regulations 2015
Not applicable

The Biocidal Products Regulations 2001 (as amended)
Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)
Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)
Not applicable

15.2. Chemical safety assessment

Chemical Safety Report No chemical safety assessment has been carried out for this product.

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Legend
SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date	18/09/2023
Restrictions on use	For professional use only
Further information	The information contained in this sheet is based on the best knowledge and experience currently available

This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

DECLARATION OF PERFORMANCE

Number: UK9-10

UK DECLARATION OF PERFORMANCE

In compliance with the Construction Products Regulation (EU) No 305/2011
as amended by The Construction Products (Amendment etc.)
(EU Exit) Regulations 2019 (S.I. 2019/465)

1 Unique identification code of the product-type:

CONBEXTRA HF, 1178006

2 Intended use as foreseen by the manufacturer of the construction product in accordance with the harmonised technical specification:

Anchoring of reinforcing steel bar

Structural and non-structural repair methods 3 and 4

3 Name, registered trade name or registered trade mark and contact address of the manufacturer as set out in article 11 (5)

Fosroc International Limited
Drayton Manor Business Park
Coleshill Road, Tamworth
Staffordshire, B78 3XN, UK

4 Name and contact address of the authorised representative who has received a mandate for the tasks set out on Article 12 (2):

Not Relevant

5 System or systems for assessment and verification of constancy of performance of the construction product in accordance with Annex V

System 2+

6a In the case of a declaration of performance concerning a construction product that is covered by a harmonised standard

EN 1504-3:2005
EN 1504-6:2006

The notified body

BBA 0836

6b In case of a declaration of performance concerning a construction product for which a European Technical Assessment was issued

Not Relevant

Issue Number: 1

Number: UK9-10

7 Declared performance

Essential Characteristics	Performance	Test Method
Compressive strength	Class R4: ≥ 45 MPa	EN 12190:1999
Adhesion strength by pull-off test	≥ 2.0 MPa	EN 1542:1999
Thermal compatibility: freeze-thaw cycling with immersion	≥ 2.0 MPa	EN 13687-1
Elastic modulus	≥ 20 GPa	EN 13412:2002
Testing of anchoring products by the pull-out method	≤ 0.6 mm at 75 kN load	EN 1881:2006
Chloride ion content	≤0.05%	EN 1015-17:2000
Carbonation resistance	Pass	EN 13295:2005
Reaction to fire	Class A1	EN 13501-1
Dangerous substances	Complies with 5.3 (EN1504-6) Complies with 5.4 (EN1504-3)	

8 Appropriate Technical Documentation and/or Specific Technical Documentation:

Not Relevant

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued under the sole responsibility of the manufacturer identified above.

Signed for the manufacturer and in the name of the manufacturer by:

Jon Potter

Technical Manager

Place and Date of Issue: 30th June 2022 Tamworth

Issue Number: 1

METHOD STATEMENT

HIGH-FLOW, NON-SHRINK, CEMENTITIOUS GROUT - Conbextra HF

1. Foundation Surface

a. The substrate surface must be free from oil, grease or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut back / scabbled to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt or debris.

2. Pre-soaking

a. For a minimum of 2 hours prior to grouting, the area of cleaned foundation should be flooded with fresh water. Immediately before grouting takes place, any free water should be removed. Particular care should be taken to blow out all bolt holes and pockets. Where water soaking is impossible contact Fosroc Technical Service.

3. Base plate

a. It is essential that this is clean and free from oil, grease or scale. Air pressure relief holes should be provided to allow venting of any isolated high spots.

4. Levelling shims

a. If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

5. Formwork

a. The formwork should be constructed to be leakproof as Conbextra HF is a free-flowing grout. This can be achieved by using foam rubber strip or Nitoseal MS60* beneath the constructed formwork and between joints.

b. In some cases it is practical to use a sacrificial semi-dry sand and cement formwork. The formwork should include outlets for the pre-soaking water.

c. The unrestrained surface area of the grout must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should not exceed 150 mm on the pouring side and 50 mm on the opposite side. There should be no gap at the flank sides.

6. Mixing

a. For mixing quantities up to 50 kg a high power, 280 to 640 rpm, 110 volt drill, fitted with a Conbextra Mixing Paddle (MR3) is suitable. For best results a mechanically powered grout mixer should be used. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

b. It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity.

c. Prior to the first mix the vessel should be wetted and drained. The selected water content 4.5 - 4.8 litres per 25 Kg (see table) should be accurately measured into the mixer. Slowly add the total contents of the Conbextra HF bag, mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained.

7. Placing

a. Place the grout within 20 minutes of mixing to gain the full benefit of the expansion process.

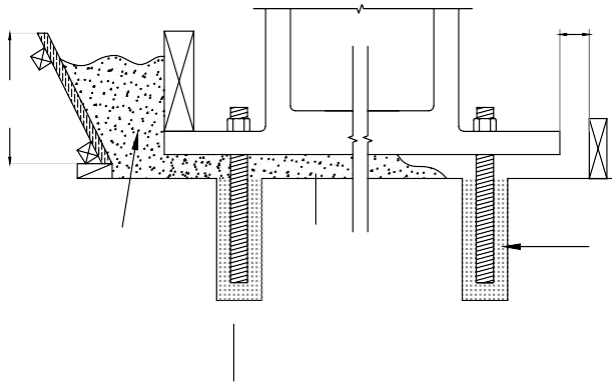
b. Conbextra HF can be placed in thicknesses up to 100 mm in a single pour.

c. For thicker sections use Conbextra TS grout.

d. Any bolt pockets must be grouted prior to grouting between the substrate and the base plate.

e. Continuous grout flow is essential.

f. Example of a typical hopper system:



1. Conbextra HF or Lokfix* (first stage)

2. Conbextra HF poured or pumped into removable hopper (second stage)

g. Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one.

h. The mixed grout should be poured only from one side of the void to eliminate the entrapment of air or surplus pre-soaking water. This is best achieved by pouring the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout front is achieved.

i. Where large volumes have to be placed, Conbextra HF may be pumped. Screw feed and piston pumps are suitable for this purpose.

j. When the Conbextra HF has reached trowellable consistency, the unrestrained portion should be cut back to the baseplate/ bearing plate.

8. Curing

a. On completion of the grouting operation, exposed areas should be thoroughly cured with Concure WB curing membrane, continuous application of water and/or wet hessian.

9. Anchoring applications

a. Holes should be drilled with a rotary percussive air flush drill and deformed bars should be used. Diamond cored holes should be roughened or under-reamed. The holes should be prewetted for a minimum of 2 hours prior to grouting. Remove water before grouting.

b. The mixed grout should be poured into the hole and the bar pushed through the grout

10.Cleaning

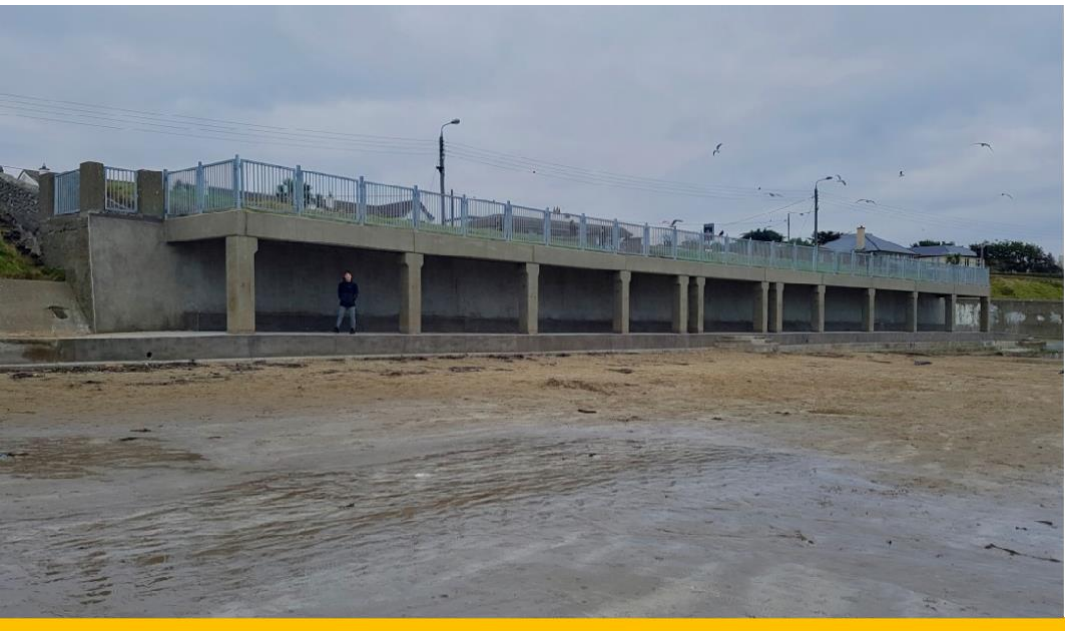
a. Conbextra HF should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Fosroc Acid Etch.

PROJECT REFERENCES

FOSROC

constructive solutions

CASE STUDY



Portmarnock Beach Shelter

Dublin

CUSTOMER
Fingal Co Council

SECTOR
Marine

DATE
Sept 2018

PRODUCTS

- Nitoproof 800 System
- Nitoseal MS600
- Conbextra BM & HF

THE PROJECT

A complete program of restoration and rebuilding of the 100m long Victorian-style, Portmarnock Beach Shelter was carried out almost exactly 100 years after it was first constructed. The old insitu concrete was in a very poor state of disrepair and degradation and had been propped up for many years because of the risk of collapse. However, because of the extent of the deterioration, a rebuild was needed for most of the structure. A number of strong tides, the erosion of loose concrete and the deterioration of metal works left the council with no alternative.

Extent of the chloride induced corrosion

THE SOLUTION

Fosroc provided a full project specification. In the subsequent rebuild / repairs scope of works, Fosroc were at hand to provide advice and support for a number of solutions for the refurbishment of the structure. The products that were used included grouts, sealants, surface coating and roof deck membrane for the upper side of the viewing platform.

Finished base & precast columns

THE BENEFITS

Fosroc were able to demonstrate to the client, the consultants and the contractor that they were very well placed to offer solutions and support for both the new build aspects and the repair and protection parts of this project. The result is that the shelter has now returned to its original function as a beach shelter, a place for locals to meet and socialize and to enjoy the amenity of the strand and the ocean.

Upper deck /platform (Nitoproof 800)

T: +44 (0) 1827 262222 F+44 (0) 1827 262444 E: enquiryuk@fosroc.com
Fosroc Ltd, Drayton Manor Business Park, Coleshill Road, Tamworth, Staffordshire, B78 3XN, UK

www.fosroc.com

CASE STUDIES

Thackeray Building, London

The Thackeray Building is a 5-storey block of residential flats in Herbrand Street dating back to the early 1900's, constructed of concrete and brick. Over the years the concrete elements have suffered from water ingress which has resulted in spalling and also corrosion of steel 'H' sections above the windows. Fosroc were able to supply a total solution package.

ICAIR, Sheffield

During construction the concrete to form the tanks had been poured to the wrong measurements and in order to correct the situation a product was required that could withstand the pressure and load from the stored water and gain a compressive strength similar to the parent concrete. Repairs were successfully carried out using Renderoc LA60.

A404M, Cannon Lane

Works included reconstruction of the joint edges and repairing defective concrete in the bridge deck with a clear objective to get the works completed quickly and reduce the closure of the very busy major route.
Patchroc 250 thick section repair mortar which exceeds the requirements of BS EN 1504, and Highways England was successfully installed minimising disruption and allowing a rapid return to service.

Central Station, Glasgow

When platform repairs were required at Central Station, Glasgow Fosroc's Paveroc pavement reinstatement mortar was selected due to its rapid strength gain which means it can accept pedestrian traffic at 12 hours. In addition to providing a rapid return to service of the platforms Paveroc's high strength, abrasion and weather resistance ensures that it will provide a durable repair.

Victoria Hospital, Blackpool

The Maternity Wing at Blackpool Victoria Hospital was constructed in the 1960's and over the years had been subjected to many environmental stresses, particularly due to its marine location. Fosroc provided a specification to repair the degraded concrete and bring a new lease of life to the structure using the Renderoc Repair System.

Oldbury Viaduct, M5 Midlands

Fosroc delivered a sustainable motorway repair solution using Renderoc LA60 meeting Highways England's quality standards. Fosroc successfully introduced innovations in product design, and in bulk supply, maintaining regular supply to site through a fully integrated supply chain and production process. This approach helped reduce costs, save time and enabled concrete repairs to be carried out effectively in a challenging environment.

Fosroc offers a full range of construction chemical solutions, helping to protect structures throughout the world. Please refer to our brochures, which include:

www.fosroc.com

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constructive solutions