JP Concrete

DESIGN | SUPPLY | INSTALL

CAST-IN RETAINING WALL

www.jpconcrete.co.uk

Expert advice

Our product specialists will advise on the most cost-effective precast solution for your project.

Quality Assured

We are proud to hold ISO: 9001, 14001 & 18001 Constructionline Silver Membership & SSIP

Precast solutions

Our skilled teams of engineers, groundworkers & precast installers cover the entire project life-cycle.

CAST-IN **RETAINING WALL**

Cast-in retaining wall units are a versatile product which can be used to store and retain a wide variety of materials.

- Retaining Wall Heights 1.0m to 5.0m
- 90 Degree Corner Units
- 20kN/m^2 Surcharge Capacity
- C50 Concrete Mix Strength
- Installation Service Available

Features

Cast-in retaining wall units are available in two profiles; tapered or straight stem, depending on the surcharge capacity required.

Mastic application, or other sealing systems, can be applied to joints to make the cast-in retaining wall units suitable for storing liquids.

Wall units are manufactured under factory-controlled conditions, designed to relevant British standards and are CE marked.

The cast-in retaining wall units are suitable for a wide range of applications including:

- Salt Barns
- Waste Transfer Stations
- Silage Clamps
- Slurry Lagoons
- Bund Walls
- Material Storage Bays

We provide a full design, construction & installation service for all of our products, enabling us to offer turnkey solutions. Call the team today to discuss your project. 01158 220 282

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PRODUCT **SPECIFICATIONS**

Below is a table outlining the characteristics of the cast-in retaining wall units.

Here you can find information on concrete strength, material density and surcharge capacity.

Wall units are manufactured under factory control, have been designed to relevant British (BS) standards and are CE marked.

If you require any further details please contact us and one of our product experts will be happy to provide more information.

See webpage for full spec details - www.jpconcrete.co.uk/precast-cast-in-retaining-wall/

Concrete Strength C50	**Material Density** 18	**Surcharge Capacity** 10*	**Design Life** 50*
Compressive strength of concrete after 28 days of curing.	Maximum material density of retained material, measured in kN/m^3.	Maximum surcharge capacity of precast element, measured in kN/m^2	Number of years precast element has been designed for.
Connection	**Edge Detail**	**Concrete Finish** A*	**Fire Resistance** N/A
Precast elements have flat sides & do not interlock.	Square edges enable close alignment & reduced movement joints between units.	Smooth mould finish Type A to precast element, defined in British Standards.	Number of minutes precast element would provide fire resistance.
Reinforcement Cover 30	**Tolerances** 6	**Foundation Type** RC	**Retained Face** DL
Minimum cover to steel reinforcement in precast element, measured in mm.	Typical manufacturing tolerances & dimensional variations +/- in mm.	A reinforced concrete (RC) foundation is required for installation.	Double Load - Precast element is suitable for retaining material on both faces.

* These are the maximum values that can be achieved with the cast-in retaining wall. The surcharge capacity will vary depending on the overall wall height. Concrete panel finish is class A to the front face and hand trowel finish to the back face.

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PRODUCT **RANGE**

The main product dimensions, unit weights and sizes available in the cast-in retaining wall range can be found below.

Cast in retaining walls are designed for situations where a new reinforced concrete floor will be poured. The units are manufactured with reinforcement extending from the toe, so you can tie them into the mesh of a reinforced concrete floor slab. Once the units are cast into the concrete slab, no additional support is required, making them the perfect solution if you have no existing steelwork to fix to.

Height (mm)	Length (mm)	Width (mm)	Unit Weight (kg)
1000	1000	700	830
1500	1000	700	920
1750	1000	700	1000
2000	1000	700	1120
2550	1000	700	1320
3200	1000	900	1620
3800	1000	900	1770

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PRODUCT **SPECIFICATIONS (HD)**

Below is a table outlining the characteristics of the heavy duty cast-in retaining wall units.

Here you can find information on concrete strength, material density and surcharge capacity.

Wall units are manufactured under factory control, have been designed to relevant British (BS) standards and are CE marked.

If you require any further details please contact us and one of our product experts will be happy to provide more information.

See webpage for full spec details - www.jpconcrete.co.uk/heavy-duty-retaining-wall/

Concrete Strength C50	**Material Density** 18	**Surcharge Capacity** 20*	**Design Life** 100*
Compressive strength of concrete after 28 days of curing.	Maximum material density of retained material, measured in kN/m^3.	Maximum surcharge capacity of precast element, measured in kN/m^2	Number of years precast element has been designed for.
Connection	**Edge Detail**	**Concrete Finish** A*	**Fire Resistance** 180*
Precast elements have flat sides & do not interlock.	Square edges enable close alignment & reduced movement joints between units.	Smooth mould finish Type A to precast element, defined in British Standards.	Number of minutes precast element would provide fire resistance.
Reinforcement Cover 30	**Tolerances** 6	**Foundation Type** RC	**Retained Face** DL
Minimum cover to steel reinforcement in precast element, measured in mm.	Typical manufacturing tolerances & dimensional variations +/- in mm.	A reinforced concrete (RC) foundation is required for installation.	Double Load - Precast element is suitable for retaining material on both faces.

* These are the maximum values that can be achieved with the heavy-duty retaining wall. The surcharge capacity will vary, depending on the overall wall height. Extending the design life to 100-years will also reduce the capacity of the wall. Concrete finish is class A to the front face and hand trowel finish to the back face.

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PRODUCT **RANGE**

The main product dimensions, unit weights and sizes available in the heavy duty retaining wall range can be found below.

Heavy duty cast in retaining walls are designed for situations where a higher surcharge capacity is needed. The units are manufactured with reinforcement extending from the toe, so you can tie them into the mesh of a reinforced concrete floor slab. Once the units are cast into the concrete slab, no additional support is required, making them the perfect solution if you have no existing steelwork to fix to.

Height (mm)	Length (mm)	Width (mm)	Unit Weight (kg)
1000	1000	750	910
1500	1000	750	1210
2000	1000	750	1510
2500	1000	750	1810
3000	1000	750	2110
3500	1000	750	2410
4000	1000	750	2710
4500	1000	750	3000
5000	1000	750	3310

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JP Concrete

DESIGN | SUPPLY | INSTALL

Sales

Suite 3

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Derby DE21 4AS

Manufacturing

Langar Trading Estate

Harby Rd

Langar

Nottingham NG13 9HY

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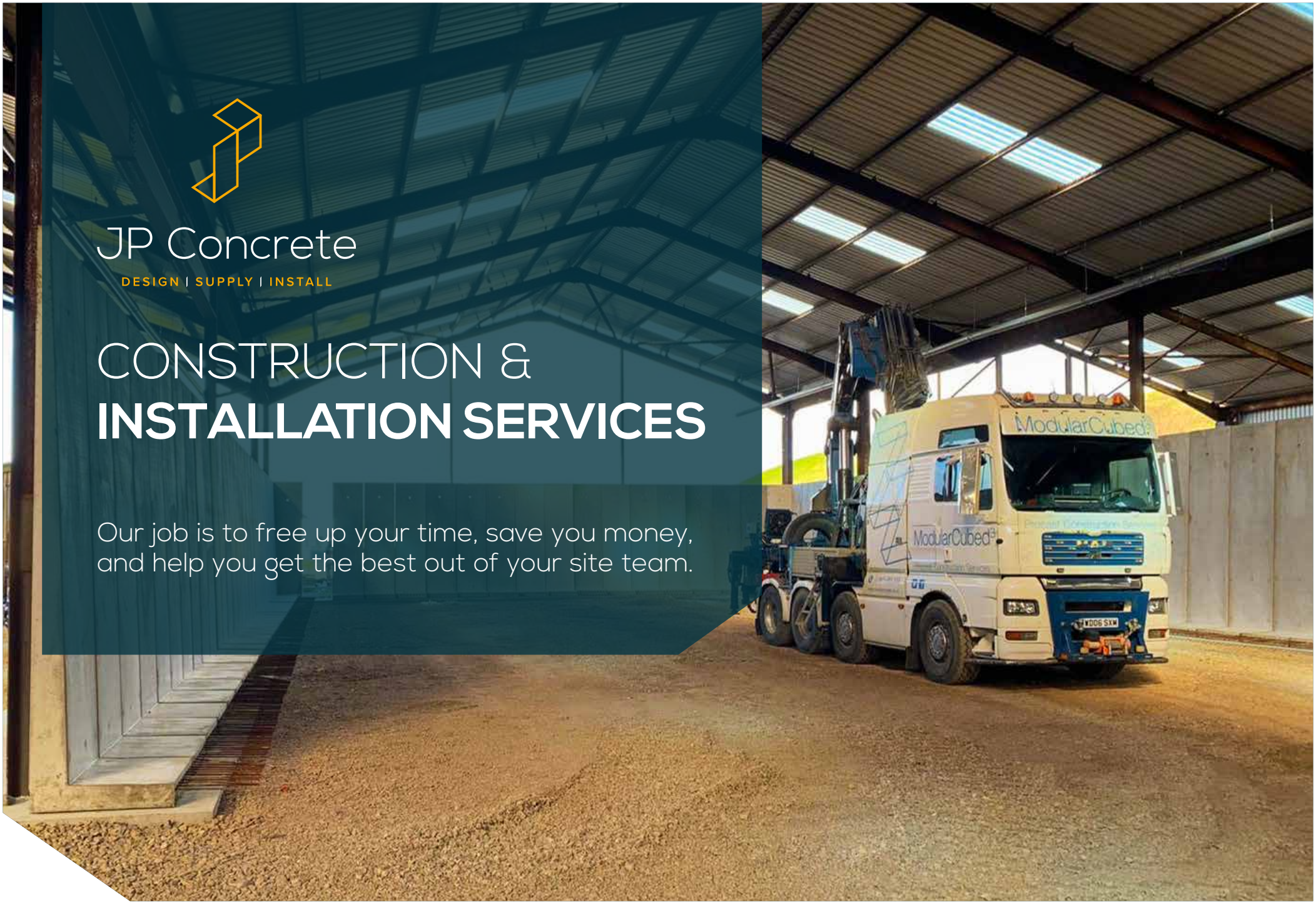
JP Concrete

DESIGN | SUPPLY | INSTALL

CONSTRUCTION & **INSTALLATION SERVICES**

Our job is to free up your time, save you money, and help you get the best out of your site team.



Our inventive problem-solving makes sure you get the most for your money, and our precast products mean your site teams can focus on the project.

"

JP Concrete were very flexible, listening closely to what we wanted, which was not to over-complicate matters at a steep development, which already had its challenges. Access restrictions didn't faze them at all, the new precast panels flew in; ten days installation instead of five weeks has been a big benefit to us.

Mark Cutler - McDermott Homes

The types of services we provide include:

– Structural Design
– Technical Drawing
– Site Surveys
– Groundworks
– Foundations
– Precast Installation
– Joint Sealing
– Transport & Logistics

We provide, design, construction & installation services for all of our products.

Our teams of engineers, groundworkers & precast installers have completed a wide range of projects across the UK.

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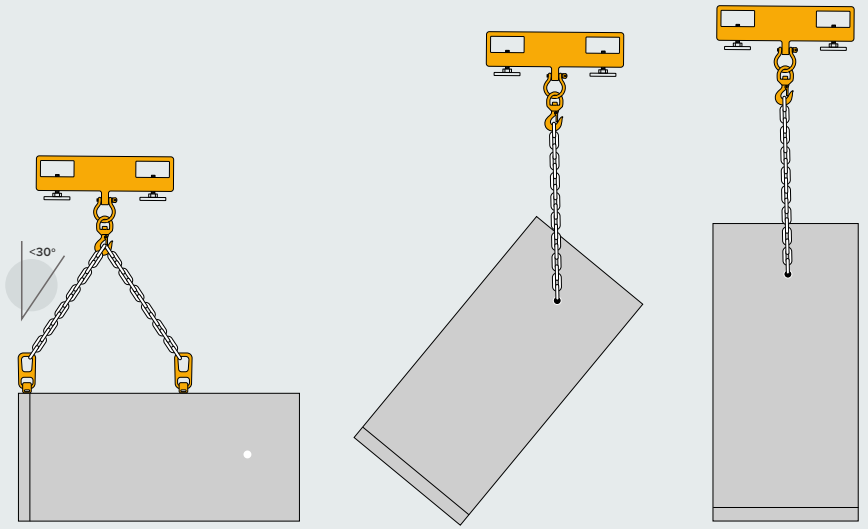
CAST-IN RETAINING WALL **HANDLING GUIDE**

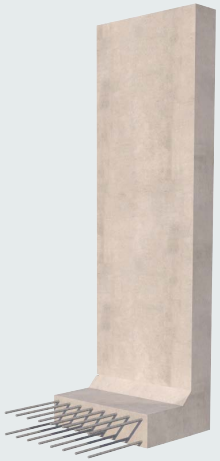
These handling instructions are for guidance only. A site-specific risk assessment and method statement should be completed before any deliveries arrive.

1. Your precast products will be delivered on an articulated flatbed vehicle. If space is limited on site, please let us know so we can make alternative arrangements.
2. The retaining walls have 2no DEHA pin anchors cast into the side of the units – Please see page two for instructions of how to attach correctly.
3. You will need chains or straps to connect to the DEHA lifting shackles to your plant. All lifting equipment and vehicles must be checked and be capable of lifting the precast units within their safe working capacities. The individual precast product weight can be found on the product data sheet.
4. When attaching the lifting equipment to a forklift or telehandler, please make sure that the chains or straps are secured to the plant and not just laid over the forks. A fork mounted lifting hook or similar attachment should be used.
5. If you have two or more lifting points, please make sure chains or straps are the are long enough so they hang at a maximum angle of 30° from vertical.
6. UNDER NO CIRCUMSTANCES SHOULD ANY PERSON STAND UNDER OR NEAR THE PRODUCT DURING LIFTING.
7. The precast products should be carefully lifted off the trailer and placed onto the wooden bearers on a hard, level surface.
8. The DEHA shackles are removed from the side if the unit and a lifting eye is bolted through the precasthole in the to of the unit.
9. Attach your lifting equipment to the lifting pins.
10. To stand the units up, drive slowly towards the unit and raise the boom or mast on the vehicle at the same time until the retaining wall is vertical.



OPERATION & MAINTENANCE **MANUAL**

Cast-in Retaining Wall



SCOPE OF WORK / CONTACTS

COMPONENTS

MAINTENANCE

RESIDUAL RISKS

REMOVAL, DISPOSAL & RE-USE

OPERATION & MAINTENANCE **MANUAL**

Contact Details

Head Office
Suite 3
Alfreton Road
Derby
DE21 4AS

T: 01158 220 282

E: info@jpconcrete.co.uk

W: www.jpconcrete.co.uk

OPERATION & MAINTENANCE **MANUAL**

Components

Concrete

C50 Grade Concrete

Reinforcement

Reinforcing bars designed and fabricated to suit design requirements.

Fixing

Units are required to be cast into a concrete floor slab or reinforced concrete toe extension.

Maintenance

Cleaning

Precast units can be cleaned using a normal pressure washer.

Fixings

N/A

Damage and Repair

Small non-structural damage may be repaired using an appropriate cementitious or epoxy repair system.

Suitable products include:

OSCRETE - RENOCEM FC30 Light Grey

Repair method statements and COSHH sheets are available from:

OSCRETE - a division of Christeyns UK Ltd
Rutland Street
Bradford
West Yorkshire
BD4 7EA

Tel: +44 (0)1274 393 286
Website: www.oscrete.co.uk

For advice on remedial action, or if more substantial damage is apparent, contact JP Concrete Products Ltd

OPERATION & MAINTENANCE **MANUAL**

Residual Risks - Alterations

Future alterations to the precast product could lead to instability - the following precautions should be taken:

- Do not remove any fixings without first ensuring units are adequately supported.
- Do not connect additional items to the units not already considered in the design.

Removal, Disposal or Re-use of Cast-in Retaining Wall

Planned removal

- Isolate local working area if possible
- Use the lifting points in top of units to lift the units off the ground or fork pockets in the bottom of the unit.

Demolition

If the blocks are crushed it should be noted that they do contain steel reinforcement, and may have steel lifting points or sockets.

Re-use/Recycle

Crushed concrete can be used for building hardcore.

JP CONCRETE **SAFETY DATA SHEET**

1. Identification of the products & the company

Product Name:	Precast Concrete Products
Product Description:	Precast retaining walls, prestressed concrete panels, interlocking concrete blocks, concrete barriers, precast stairs, ballast and kentledge blocks.
Company:	JP Concrete Products Ltd
Address:	Suite 3, Alfreton Road, Derby, Derbyshire DE21 4AS
Telephone Number:	01158 220 282
Email:	info@jpconcrete.co.uk

2. Composition / Information on Ingredients

Precast concrete is a mixture of sand, cement, aggregates (which may contain silica), admixtures and water - some products contain steel reinforcement.

3. Hazards Identification

The precast concrete products are inert and not hazardous to health. However, any cutting, drilling or grinding will produce large amounts of dust and flying fragments.

The dust will contain quantities of Respirable Crystalline Silica (RCS). Long term prolonged exposure to high levels of RCS can lead to an increased risk of developing silicosis and lung cancer.

The fragments can be propelled at high speed, so there is a risk of injury or damage.

If the concrete has rough edges or steel reinforcement is exposed, cuts & abrasions and skin irritations can occur - gloves should be worn when handling.

4. First Aid Measures

Inhalation - Remove from exposure to an area with fresh air.

Skin contact - Wash thoroughly with soap and water.

Eye contact - Irrigate with eyewash solution or clean water. Take extra care as the material is abrasive and may scratch the surface of the eye.

Ingestion - Wash out mouth and drink plenty of water. Seek medical attention if large amounts are swallowed.

If in doubt or symptoms persist, seek medical advice. Cuts and abrasions should be treated using normal First-Aid.

JP CONCRETE **SAFETY DATA SHEET**

5. Fire Fighting Measures

Precast and prestressed concrete products are not flammable.

6. Accidental Release Measures

Personal protection - Where dust is created, avoid inhaling dust & wear dust mask and goggles. See section 8 for more information.

Environment measures - The release of dust into the atmosphere is not a significant hazard. Waste material should be disposed of responsibly.

7. Handling & Storage

Offloading the precast product from the delivery vehicle should be done by competent persons using suitable machinery and lifting equipment. All lifting equipment and vehicles must be capable of lifting the precast units within their safe working capacities.

- Under no circumstances should any person stand under or near the product during lifting.
- Off-load and store products on hard level surfaces.
- Where lifting points are provided - they must be used.
- Where lifting points are not provided - suitable canvas/ fabric slings should be used around the product.

8. Exposure Controls / Personal Protection

Workplace exposure limits - The following Workplace Exposure Limits (WEL) for airborne dust are given in HSE Guidance Note EH40. TWA: Time Weighted Average of 8-hours

- Total Inhalable Dust - 10mg/m3
- Respirable Dust - 4mg/m3
- Respirable Crystalline Silica - 0.1mg/m3

PPE

Respiratory protection: HSE approved standard

Hand protection: Abrasion-resistant gloves

Eye protection: HSE approved standard safety/dust goggles

Skin protection: Overalls

9. Physical & Chemical Properties

Odourless, solid concrete formed from a mixture of sand, aggregate, cementitious material, admixtures and water - No other chemical properties.

JP CONCRETE **SAFETY DATA SHEET**

10. Stability & Reactivity

Conditions contributing to chemical instability: None
Hazardous decomposition products: None
Special precautions: None

11. Toxicological Information

Health effects of airborne dust from cutting, drilling and grinding.

Eyes: May cause irritation.

Skin: Unlikely to cause irritation with brief or occasional contact.

Inhalation: Over a long period of time may give rise to lung damage.

Ingestion: Unlikely to cause harm.

12. Ecological Information

Precast products are not hazardous or biodegradable.

13. Disposal Considerations

Concrete is inert and may be recycled - disposal of precast products should be in accordance with local legal requirements.

14. Transport Information

Precast products are not subject to hazardous substance regulations - vehicle labelling is not required.

15. Regulatory Information

Precast and prestressed products are not classified as dangerous for supply in the UK.

16. Legislation & Other Information

Health & Safety at Work Act 1974

Control of Substances Hazardous to Health (COSHH) 2002

Manual Handling Operations Regulations 1992 (as amended)

The Personal Protective Equipment at Work Regulations 1992 (as amended)

Guidance Notes:

HSE Guidance Note EH44 – Dust, General Principles of Protection

HSE Guidance Note EH40 – Workplace Exposure Limits

17. Other Information

The data and advice given above apply when the products are used as intended.

If the products are re-distributed for sale, details of their hazards and recommendations for safe handling should be passed to all customers.

If you are an employer, it is your duty to tell your employees and others who may be affected by any hazards described in this sheet, and of any precautions which should be taken.

Information on Safety and Handling is continuously being updated and further advice, as it becomes available, can be given on request.

18. Legal Notice

The information contained in this Safety Data Sheet was considered the best available at the date of issue. However, no warranty is made or implied that the information is accurate or complete. It is the user's obligation to evaluate and use these products safely and to comply with all the applicable laws and regulations.