33

Your Reference : EH/EP/MPB
Our Reference : Martin P Brock
Ask for : 831857
Direct Dialling No : 20th August 1993
Date

City of Coventry

HOUSING AND ENVIRONMENTAL SERVICES DIRECTORATE
Director Howard T. Farrand
Providing Housing, Environmental and Client Agency Services
Michael J. Green
City Environment Officer
Broadgate House
Broadgate
Coventry. CV1 1NH
Telephone : 0203 83 1832.34
Telecom Gold Mailbox : 76 : END042
Fax : 0203 83 1831

THE ENVIRONMENTAL PROTECTION ACT 1990

The Environmental Protection (Prescribed Processes and Substances) Regulations 1991, SI 472.

The Environmental Protection (Application, Appeals and Registers) Regulations 1991, SI 507.

Authorisation No: 033
Application Received: 15th September 1992

Notice is hereby given that under the Environmental Protection Act 1990 Coventry City Council (hereafter called the Authority) gives authorisation to:

Longford Concrete Ltd
Dordon House
Grindle Road
Longford
COVENTRY
CV6 6BQ

For the batching of ready mixed concrete as described on Page 2 at

Longford Concrete Ltd
Dordon House
Grindle Road
Longford
COVENTRY
CV6 6BQ

Subject to the conditions specified on the attached pages, Nos 1 to 4 and within the process boundary as indicated on Plan No. 1.

Signed [redacted]..... Dated. 23rd day of. August ...1993.
City Environment Officer

1. DESCRIPTION OF PROCESS

1.1 This authorisation is for the manufacturing of concrete structures as prescribed in the Environmental Protection (Prescribed Processes and Substances) Regulations 1991. S.I. 472, Section 3.1, Part B, Paragraph (a)(ii) within the process boundary outlined in red on the attached plan numbered 2 and specifically relates to the processes outlined below.

1.2 The delivery of grey cement by bulk pressure tankers and pressure discharge to storage in 1, 12 Tonne capacity sealed cement silo employing a sock filter unit and a high level warning indicator.

1.3 The delivery of white cement in 50kg bags and movement to the cement storage area marked on the Plan numbered 1 via fork lift truck.

1.4 The delivery of aggregate by tipper truck, and storage of aggregate in 8, ground bays and movement of aggregate to 5 holding silos by rubber tyred loading shovel.

1.5 The movement of cement from storage to the open topped mixer via the weigh hopper.

1.6 The movement of aggregate from the holding silos to the mixing hopper via the conveyor belt.

1.7 The mixing of cement aggregate, water and admixture and discharge into wooden and steel mould boxes.

1.8 Any change to the above descriptions or to the process boundary must not take place without the prior consent from this authority.

2. EMISSION LIMITS AND CONTROLS

2.1 All emissions to air shall be free from offensive odour outside the process boundary as perceived by the Local Authority Inspector.

2.2 There shall be no persistent emissions of particulate matter noticeable beyond the process boundary.

2.3 All pollution concentrations shall be expressed at standard conditions of 273K and 101.2 KPa without correction for water vapour content.

2.4 The introduction of dilution air to achieve the emission concentration limits in this authorisation is not permitted. Exhaust flow rates should be consistent with efficient capture of emissions.

3. MONITORING SAMPLING AND MEASUREMENT OF EMISSIONS

3.1 A visual assessment of emissions from the sock filter shall be carried out at least once while bulk deliveries of cement are taking place. This assessment shall be carried out by the site personnel from the position marked X on plan 1.

3.2 A visual assessment of emissions noticeable beyond the process boundary shall be carried out at least once in any one day by site personnel. This shall be carried out by checking for cement or aggregate fall out on a suitable surface outside of the process boundary.

3.3 The results of all monitoring to comply with 3.1 and 3.2 shall be recorded in a log book which shall include details of: date; time; weather conditions; the name of the observer and an assessment of the emissions. This log book shall be made available for inspection by this authority for a minimum of four years.

3.4 Any adverse results from monitoring of 3.1 and 3.2 shall be followed up immediately by the investigation of the cause of the emission and any corrective actions taken, with this also being noted in the log book.

3.5 Within 6 months of this authorisation being issued, a notice displaying the procedures for charging cement shall be displayed in a prominent position near to the point of delivery of bulk cement.

4. MATERIALS HANDLING

4.1 Stocks of bulk cement shall only be stored in the sealed cement silos marked A on plan 1. This silo must only be vented to atmosphere through the sock filter while charging of cement takes place.

4.2 The seating of all pressure relief valves on the cement silo shall be checked visually and reseated if necessary or at least once a week and after any high pressure release incident.

4.3 The site personnel shall ensure that all persons responsible for charging the cement silo comply with all site operating procedures. Vehicle operators must not be allowed to clean their tanks out on this site.

4.4 The site personnel shall ensure that the cement silo is not charged if there are any leaks in the feed lines or connection points.

4.5 The sock filter shall be inspected, by authorised personnel, at least once a month. The report from this inspection shall also be recorded in the log book.

4.6 Aggregates in the storage areas shall be kept moist to avoid wind entertainment or shall be suitably covered.

4.7 Any spillage of material outside the process boundary shall be cleared up immediately using wet handling methods or a vacuum cleaning system.

4.8 The dry cutting of finished concrete products shall only take place within the confines of the factory building.

5. GENERAL OPERATIONS

5.1 Any mechanical malfunctions or spillage of material shall be attended to and remedied as soon as possible. Any incident likely to give rise to atmospheric emissions shall be noted in detail in the process log book as in 3.3.

5.2 Any incidents likely to give rise to emissions which may have an impact on neighbouring residents shall be reported immediately to this Authority.

5.3 A copy of this authorisation shall be displayed so it can be conveniently ready by persons having duties which are or may be affected by the requirements of this authorisation.

5.4 The operator shall supply to this authority, on demand and without charge, a copy of all or part of the monitoring records kept in accordance with this authorisation.

6. UPGRADING PROGRAMME

6.1 No later than six months from the date of this authorisation a programme for upgrading the process shall be submitted for the approval of this Authority. The upgrading programme shall have regard to the Secretary of State's Guidance - Blending, packing, loading and use of bulk cement. PG 3/1 (91) (as amended).

SUPPLEMENTARY NOTES

THESE NOTES ARE NOT PART OF THE AUTHORISATION

1. Your attention is drawn to your obligation under Section 7(2) of the Environmental Protection Act 1990 to ensure that the best available techniques, not entailing excessive cost (BATNEEC) for:

   A) preventing the release of prescribed substances into the air or where that is not practicable by such means, for reducing the release into the air of such substances to the minimum and for rendering harmless any such substances that are so released

   and

   B) for rendering harmless any other substances which might cause harm if released into the air.

2. The authority for contact purposes should be taken to mean the head of the Pollution Control Section, Tel 831810 during office hours, 832222 outside office hours.

3. You will note that condition 6.1 of the authorisation requires you to submit a schedule of works for approval by this Authority, within six months of the issue date. This schedule must describe the procedures and improvements that you intend to implement in order to meet the requirements of the relevant guidance note referenced within the authorisation. From observations and inspections of the process I would recommend that the following topics are specifically included.

   a) The results of non-continuous emission sampling to show that emissions from the dust arrestment equipment will meet the limit stated in the relevant Process Guidance Note.

   b) The proposed frequency of further non-continuous emission sampling, taking into account the results of the initial monitoring exercise.

   c) Proposals for the installation of a new filter and high level indicator to the bulk cement silo.

   d) Improvements to the mixer housing or the building to the mixing shop to prevent fugitive emissions of dust. This should include a dust extraction system ducted to suitable arrestment plant.

   e) Proposals for ensuring that hard surfaces are sufficiently cleansed or otherwise treated to minimise airborne dust emissions.

   f) Proposals for the suitable containment of aggregate within the storage area shown on the Plan numbered 1.

g) A strategy for the reduction of vehicle movements between the aggregate storage area and the production area. The relocation of the waste storage area should be given serious consideration here.

h) All other aspects contained within the Secretary of State's Guidance - Blending, packing, loading and use of bulk cement. PG 3/1 (91).

epaBauth/longford

ENVIRONMENTAL PROTECTION ACT 1990, PART 1
THE ENVIRONMENTAL PROTECTION (PRESCRIBED PROCESSES AND SUBSTANCES) REGULATIONS 1991 SI [ ]
THE ENVIRONMENTAL PROTECTION (APPLICATIONS, APPEALS AND REGISTERS) REGULATIONS 1991 SI [ ]

APPLICATION FOR AUTHORISATION UNDER SECTION 6 OF THE ENVIRONMENTAL PROTECTION ACT 1990

1. Either Name and address of applicant*

Longford Concrete Limited
Dordon House, Grindle Road
Longford
COVENTRY CV6 6BQ

OR Name, number and registered office of applicant company* (if applicable)

As above

* the person/company who will operate the process, not e.g the person/consultant who is writing the application on the operator's behalf.

2. Name and address of premises where process is or will be carried on (not applicable to mobile processes)

As above

3. Address for correspondence if different from 1

As above

4. List of maps or plans enclosed with the application showing the location of the premises where the process is or will be carried on.

...Two Maps.....

...Area Location.....

.....

.....

Where the process is or will be carried on only part of the premises whose address is given at 2 above, either describe which part of the premises or list the plan(s) which identifies these parts.

.....

.....

.....

.....

5. List of attached documents comprising part of the application **

1...Description of process.....

2...List of prescribed substances....

3...Techniques presently used.....

4...Further steps to be taken to.....

...improve procedures.....

.....

.....

.....

(use continuation sheet if necessary)

** Regulation 2 of the Environmental Protection (Applications, Appeals and Registers) regulations 1991 requires that all applications must include the following information (for guidance on these requirements see General Guidance note No 3) - "Secretary of State's Guidance: Application and Registers", HMSO. 1991):-

- description of the prescribed process

- list of prescribed substances (and any other substances) which might cause harm if released into the air) used in connection with or resulting from the prescribed process

- description of the techniques to be used for preventing releases into the air of such substances, for reducing such substances to a minimum and for rendering harmless any such substances that are released

- details of any proposed release of such a substance into the air and an assessment of the environmental consequences

- proposals for monitoring any release of such substances, the environmental consequences or any such release and the use of techniques for preventing (etc)?? releases

- the matters on which the applicant relies to establish that the objectives in section 7(2) of the Act will be achieved and that he will be able to comply with the condition implied by section 7(4) of the Act

The applicant may also supply any other information he wishes the Local Authority to take into account in considering his application.

Fee enclosed (cheques to be made payable to

COVENTRY CITY ..... Council)

£ 800 —

I hereby certify that all the information contained in this application is, to the best of my knowledge, correct.

..... [redacted] ..... (Signature)

13-8-92 ..... (Date)

pol/kc25032ms

LONGFORD
CONCRETE · LIMITED
Specialists in architectural precast components
Dordon House, Grindle Road, Longford, Coventry CV6 6BQ.
Tel: Coventry (0203) 364655 Fax: 365636

Description of the prescribed process.

The objective is to manufacture special concrete structures. This is achieved by the receipt and storage of bulk cement and aggregates, which are mixed together to provide wet concrete. This concrete is then wet cast into wooden and steel mould boxes and allowed to cure. The cured products are then finished, stored and delivered to customers by heavy goods vehicles.

LONGFORD
CONCRETE · LIMITED
Specialists in architectural precast components
Dordon House, Grindle Road, Longford, Coventry CV6 6BQ.
Tel: Coventry (0203) 364655 Fax: 365636

List of prescribed substances.

Substances used in our manufacturing process are :-

1. Cement
2. Various Aggregates
3. Sand
4. Grout
5. M1 Plasticiser
6. Mould Oil
7. Hydrochloric Acid.

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● Specialists in architectural precast components ●
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Tel: Coventry (0203) 364655 Fax: 365636

Techniques used to prevent or to minimise release into air.

1. Cement
The bulk cement is stored in a silo in the mixing shop, and the shop has doors which are kept closed to contain the dust created, especially when deliveries are received by tanker. The discharge is closely monitored

2. Aggregate, Sand, Etc.
These are stored in bins and are dampened down from time to time to prevent becoming wind borne.

3. Grout.
Kept in sealed packets until use is required and then immediately mixed with water to create a paste.

4. M1 Plasticiser.
Kept in a sealed drum.

5. Mould Oil.
Kept in a sealed drum.

6. Hydrochloric Acid.
Kept in a sealed container.

7. General.
Roads, yards and floor areas are regularly swept and kept as clear as possible of dust and rubble to minimise air pollution etc.

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Further steps to be taken to improve procedures and to enable us to comply with the act.

1. The cement silo needs modernising to prevent cement dust from entering the atmosphere when it is bulk fed. This will involve new filters, a high level indicator and alarm.

2. The mixer house should be made more secure from the rest of the workshop and adjoining areas so that any accidental releases into the air can be contained within that area.

3. All spillage to be immediately cleared up and safely disposed of.

4. Dust covers to be provided for all aggregates stores.

5. The yard to be mechanically swept at frequent intervals.

6. All vehicle movement on site to be kept to a minimum.

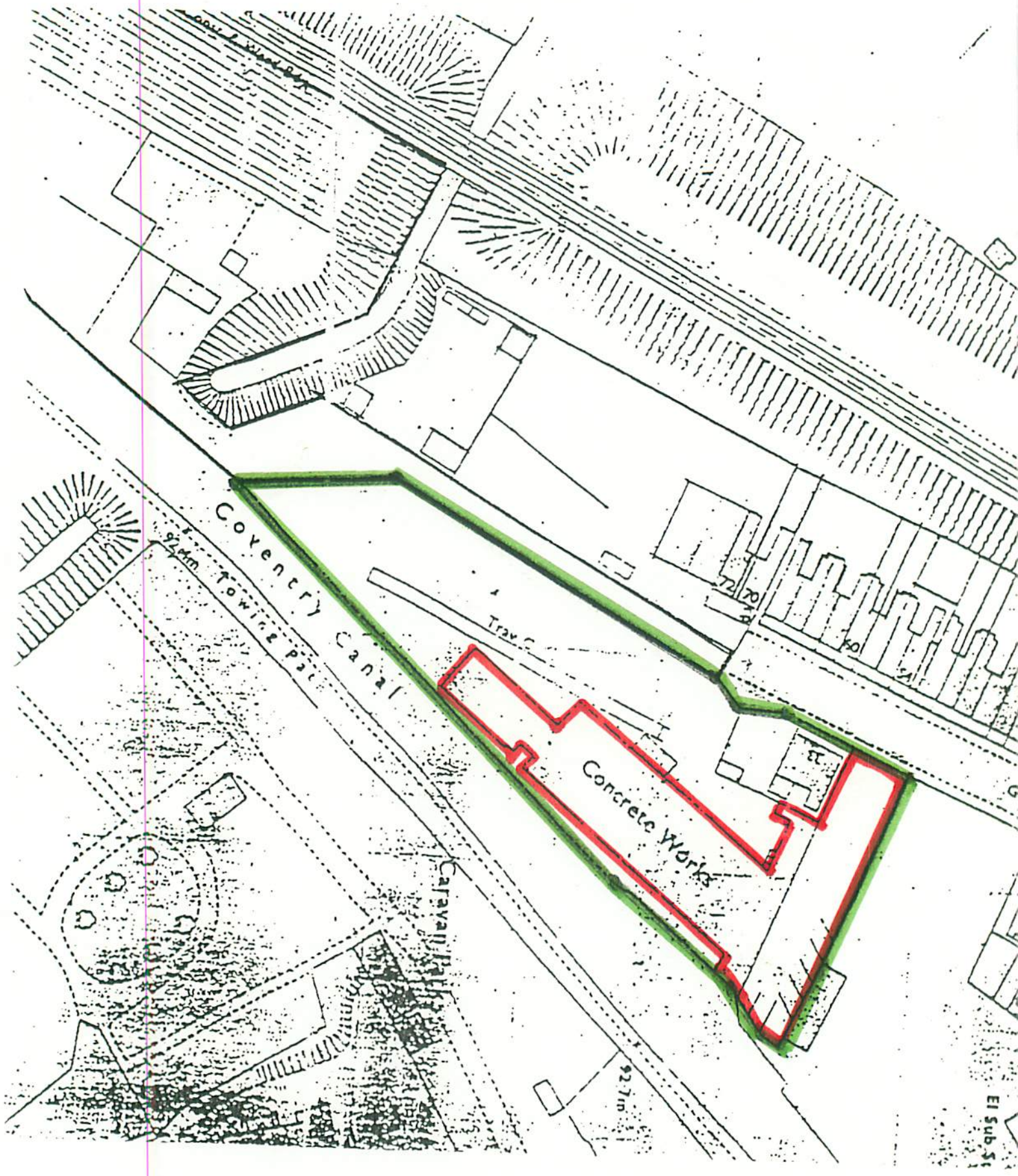
7. All staff to have proper training and instruction on the requirements of the Environmental Protection act, and be properly supervised to ensure that the requirements are strictly adhered to .

8. Generally a high standard of housekeeping to be maintained.

9. Investment from time to time in up todate mechanism and technology, subject to economic constraints.

10. All bought materials to have COSHE handling/using data sheets and to be handled in accordance with recommendations.

We are planning to complete the above steps within the next six months.


Coventry Canal
Concrete Works
Caravan
92.7m
El Sub St

033

LONGFORD

CONCRETE · LIMITED

Specialists in architectural precast components

Dordon House, Grindle Road, Longford, Coventry CV6 6BQ.
Tel: Coventry (0203) 364655 Fax: 365636

ENVIRONMENTAL SERVICES DEPT.
10 SEPT 92
REF. TO | ACK. | REPLY

4th September 1992

Ref : JD/ZH/TL/1

City Of Coventry
Environmental Services Department
Broadgate House
Broadgate
Coventry
CV1 1NH

Jim,
ant Dave if any problems. Advise longford duly made - issue std letters etc
good luck
Mark

For the attention of Mr.M.Slater.

Dear Sir,

RE : Application for Authorization Under the Environmental Protection 1990.

Further to your letter dated the 25th August 1992, I now have pleasure in enclosing information as requested.

The information file is split into sections as follows :-

A. Quality Manual.
B. Health And Safety Policy.
C. Relevant Working Procedure.
D. Technical Data.
E. Storage Of Raw Materials.
F. Waste.

I hope that this meets with your approval. If you have any further queries, please do not hesitate to contact the us.

X I also enclose as requested a cheque for £100.00.

Yours faithfully

[redacted]

P.P Zac Hildick
QUALITY MANAGER

QUALITY MANUAL CONTENTS RECORD.

QUALITY MANUAL CONTENTS RECORD.

Longford Concrete Ltd. Issue 02.

STATEMENT OF QUALITY POLICY

Longford Concrete is a company specialising in precast concrete units and has over seventy years experience. It is the policy of Longford Concrete Ltd. to provide materials that meet the requirements of the customer's specifications, and which exceed the stated standards applicable to these materials.

In order to meet these quality objectives in a formal manner, the company has established and will maintain and improve, where necessary, quality systems that comply with the requirements of B.S.5750 part 2 1987.

The Managing Director of Longford Concrete Ltd is responsible for the administration of the Quality Manual and issue of all amendments. All statements in this manual are binding on all employees, servants or agents of Longford Concrete Ltd. This manual is the property of Longford Concrete Ltd. This manual will be amended only with our authority following agreement with quality representatives of inspection organizations.

Longford Concrete Ltd. recognise the right of Inspection Organizations to visit our works to carry out verification and evaluation.

These procedures are approved by the undersigned and must be adhered to as applicable when orders qualifying for release or quality note under the above approvals are being progressed.

All accommodation and assistance will be provided.

K. Jones. (Managing Director)

Z. R. Hildick. (Quality Manager)

Quality Manual Number : 2.
Issued to :2 HILDICK
Date of issue :26-2-91
Signed [redacted]

General Terms of Reference for Employees Concerned with Quality.

1. Managing Director

   The total and ultimate responsibility of the company in all aspects and functions.

2. Quality Manager \ Chief Inspector.

   Directly responsible to the Managing Director and is the senior Quality Executive for the Company. Total control of all quality staff, is responsible for the direction and interpretation of specifications and technical data. The investigation and solution of fault variations from standard returns from customers and the recording for fact and future references. Analytical control of process solutions and advising on additions and discards.

3. Assistant Chief Inspector.
   Responsible to the Quality Manager \ Chief Inspector, to assist and assume the roll of Chief Inspector in his absence.

4. Viewers.

   Responsible to the Quality controller to check and evaluate parts and work.

5. Production Director.

   Responsible to the Managing Director for all production.The management and control of all employees with regard to welfare. and safety. The control and management of all production employees. The control and scheduling of work and processing within the factory, liaising with customers representative. To implement control decisions.

Issued to	:Z. Hilcock
Date of Issue	:26-2-91
Signed	[redacted]

MANAGEMENT STRUCTURE.

MANAGING DIRECTOR

DORDON BRICK LTD.	DORDON JOINERY	LONGFORD CONCRETE LTD.
General Manager	General Manager	General Manager Quality Assurance, Buying, Planning, Scheduling, Personnel.
		Technical Manager Design, Detailing Estimating, Site
		Quality Manager
		Production Foreman Assistant Quality Control.

The Quality Manager has the authority to over-ride any sales, purchasing or warehousing matters with would affect the Quality Control procedures outlined in this manual.

Issued to	:2. Hillock
Date of Issue	:26-2-91
Signed	[redacted]

Management Review

The management review is carried out at six monthly intervals, the review panel consists of:-

Managing Director
General Manager
Technical Manager
Quality Manager

The following aspects of Q.C. are examined:

1. To review and revise the complete Quality System for the six months prior to the latest review, to give clear precise instructions to personnel and any initial or continuing problems which may arise from the observation reports which are made by the review panel, to minimise or avoid the particular problems reoccurrence.

2. To revise any External and Internal Reject reports consider any problems involved and to implement any relevant recommendations to personnel concerned to minimise any reject levels.

3. To consider whether any aspects of the quality system needs up-grading relative to customers requirements or any new technologies or concepts.

4. To discuss the latest Review Audit of the system and further consider the Corrective Action Notices.

5. To examine the Returns from Customer Book.

A record of the meeting together with relevant instructions and recommendations shall be maintained.

At the above meeting a copy of B.S.5750 1987 part 0 section 0.2 to 4.4 is useful to have to hand.

Issued to : Z. Hilditch
Date of Issue : 26-2-91
Signed [redacted]

THE QUALITY MANUAL

This manual specifies the organization, practices, procedures and inspection facilities by Longford Concrete Ltd. To ensure that achievement of a Quality Standard that meets the requirements of the customer and conforms with the appropriate specifications.

INTRODUCTION

1. Purpose of Quality Manual.

   The purpose of this Quality Manual is to describe and define the production and quality control \ inspection procedures and the facilities of the Company. Together with the managerial responsibilities ensures compliance with all orders placed upon it under the terms of approval or registration, granted by the British Standards Institution or any other applicable regulatory authorities.

2. Inspection Negotiation.

   All aspects of negotiation with inspection authorities must be addressed to the Managing Director.

3. Quality Manual

   The Quality Manager of Longford Concrete Ltd. is responsible for the administration of the Quality Manual and issue of all amendments.

4. Specifications, Publications, and Technical Records.

   All specifications, publications and technical records will be raised, maintained and be available to the latest issue or amendment. This will be used in connection with all work and services undertaken and will be the responsibility of the Quality Manager.

Issued to : Z. Hilcock
Date of Issue : 26-2-91
Signed [redacted]

DISTRIBUTION LIST.

	COPY No.
1. The Managing Director.	01
2. The Quality Manager.	02
3. The Works Manager.	03
4. The Technical Manager	04
5. CARES	05

Issued to :Z. Hilcick
Date of issue: 26-2-91
Signed [redacted]

AMENDMENT RECORD

Should any amendments - as a result of the Internal Q.A. Audit, external amendments to Standards \ Specification, or just day to day operations prove necessary - then the relevant pages in this manual will be re-typed accordingly (with the date of amendment shown on that page) and the changes discussed as appropriate. All outdated pages to be returned to the Quality Manager whose overall responsibility is to ensure that all copies of this Quality Manual are up to date, relevant and effective.

Any alterations to policy or procedure will be notified in writing to the British standard Institution and any other certification bodies.

Date	Page No.	Amendment Details\Para.No	Copies To

Summary.

We would welcome any suggestions or comment from customers, potential customers or supplies, on the Quality System documented in this manual as we seek to continually maintain and improve our service.

Issued to	:2. HILDICK
Date of Issue	:26-2-91
Signed	[redacted]

CONTRACT REVIEW.

All enquiries received by Longford Concrete Ltd. are primarily examined to establish whether the company has the capability to undertake all requirements specified by the customer. Any problems which may arise are thoroughly discussed. A solution to any problem must be obtained with the customer before any quotations are presented.

The initial order is checked against the quotation to identify any abnormalities and that instructions stated are unambiguous. Any special quality requirements needed by the customer are agreed upon. When specified by contract approved samples will be used as visual aids during manufacture and inspection. Two sets of samples will be maintained, one set for general use by production and inspection personnel, and the other set situated in the Quality Department as a Master Reference.

Responsibility: Managing Director.

General Manager

Technical Manager

Quality Manager

Issued to	:Z. Hilditch
Date of Issue	:26-2-91
Signed	[redacted]

DOCUMENTATION.

All documents which may be regarded as relevant to the operation of the Quality System of the company will in the form of complete documents or extracts be maintained under strict control. Any obsolete specifications are separated from current issues. A red line on the front page from corner to corner and\or stamped SUPERSEDED will be used to identify obsclete specifications.

Certificates of Conformity are retained by Longford Concrete Ltd. under the supervision of the Quality Manager.

Current drawings will be filed under the job in question, if a drawing is superseded then it will be stamped accordingly. A Drawing Register will be kept for each job. When the job has been completed then the drawings will be archived for a minimum of ten years.

The company are members of B.S.I.and their standard updating service is used as a means to ensure that the latest issues of the relevant documents are being utilised at all times.

Responsibility: Quality Manager

Technical Manager

Issued to	:Z. HILDICK
Date of Issue	:26-2-91
Signed	[redacted]

PURCHASING.

Scope

All items and services purchased by Longford Concrete Ltd. which may be used in connection with work, will be subject to a quality note. Materials or services for which a specification to purity or quality exists must at all times be used.

The use of subcontract services shall be restricted to firms or companies who can show their capability to undertake work to the highest standards. Surveillance of such firms is to be undertaken in all cases. For work which requires B.S.I. or C.A.R.E.S.approval only firms approved by such bodies will be used.

A list of approved suppliers and subcontractors shall be maintained by the Quality Manager.

The company shall ensure that clear precise details of the ordered specification are included in the purchasing documents and that all purchased products conform to the specified requirements.

Purchaser Supplied Product.

Purchaser supplied materials shall be handled in accordance with all other materials brought into the company. Any such products lost, damaged, or found unsuitable for use shall be recorded and reported to the customer.

Methods.

Sub-Contractor/Supplier Approval shall be performed with the use of the appropriate Assessment Questionnaire. Only when a supplier can complete and conform to this document will it be included on the list of approved suppliers held by the Quality Manager. All reinforcement purchased to B.S. 4449 and B.S. 4483 shall be purchased from C.A.R.E.S. approved sources only.

Responsibility: Quality Manager

An Assessment Questionnaire will be completed for each subcontractor used. Subcontractor assessment forms are maintained on file in the head office.

Issued to :ZHILDICK
Date of Issue :26-2-96
Signed [redacted]

PRODUCT IDENTIFICATION AND TRACEABILITY.

All material shall be positively identified with either a ticket, labelled bay, or stamped accordingly. Identification of all reinforcing steel from stock through production and through to despatch shall enable traceability back to cast.

The following information will be used for identification purposes:-

a) Contract number.
b) Type/Bar number.
c) Size.
d) Quantity.
e) Unit Type.
f) Date of casting.

RESPONSIBILITY: QUALITY MANAGER.

Issued to :Z. HILDICK
Date of issue: 26-2-91
Signed [redacted]

PRODUCT IDENTIFICATION AND TRACEABILITY

Where a customer specifies that a unit will be classified as a Control Item additional procedures will be enforced:-

1. Additional Records will be maintained, and retained for a period of ten years.

   a) Record of packing, and procedures, to achieve effective control of quality.

   b) Record of product acceptance tests.

   c) Record of drawings, specifications, modifications and concessions.

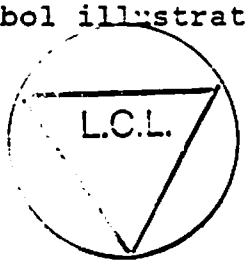
   d) Records of Quality Control procedure, testing and measuring equipment used for production.

   e) Laboratory records of material tests (if appropriate).

   f) Records if significant problems encountered, together with corrective action taken.

   g) Manufacturers advice note and certificate of conformity.

2. Where a unit is designated a Control Item, all documentation will incorporate the symbol illustrated below:-



3. Every package of Control Item parts will display the above symbol.

4. The Certificate of Conformity will also display the above symbol with each consignment.

Issued to : Z. Hilditch
Date of Issue : 26-2-91
Signed [redacted]

PROCESS CONTROL

Documented work instructions defining the manner of production and installation, where the absence of such instructions would adversely affect quality, take the form of Appendices to this manual and are also displayed in prominent locations at the various stages of production.

Distribution:-

1. Head Office.
2. The relevant extract at each stage of production.

Monitoring and control of suitable processes and product characteristics during production and installation will be carried out by the Quality Control Personnel.

SPECIAL PROCESSES.

On any special processes from which results cannot be fully verified by subsequent inspection and testing of the product, documentation will be such that details of method of control to maintain compliance with specified requirements shall be recorded.

Responsibility:- Quality Manager.

Issued to :Z. Hiwick
Date of Issue: 26-2-91
Signed [redacted]

BASIC SPECIFICATIONS FOR INSPECTION AND TEST.

Customer specifications for pre-cast concrete units combine two essential features:

1) Variable Specifications: dimensions, minimum compressive strength. The equipment used for verification of these parameters shall be calibrated and traceable to nationally recognised standards. The tolerances for dimensions and minimum compressive crushing strength are defined by the customer's specification or in otherwise British Standards.

2) Attribute Specifications: overall colour of the unit, colour of the course grain and fine fraction, the degree of exposure of the course grain and final surface finish/texture. Attribute specifications are established by the production of samples which are submitted to the customer for approval if required. Approved samples shall be used as a production and inspection aid. The production, identification and issue of such samples is maintained under a formal quality system.

NOTE : Special attention is given to the selection and use of the highest quality raw materials for the manufacture of samples and subsequent production of units. As natural aggregates are used, some colour fluctuation may occur due to aggregates being extracted from different strata within mineral deposits. Where necessary, aggregates are purchased in bulk quantity to minimise colour variation. However, there may be some minor variation in colour between units. Where necessary, units shall be dry assembled to ensure consistent product quality prior to delivery.

Issued to :Z. Hilditch
Date of Issue: 26-2-96
Signed [redacted]

INSPECTION AND TEST STATUS OF PRODUCTS.

All units produced at Longford Concrete shall be identified with the date of manufacture and unit type enabling traceability to the following records:

1) LONGFORD CONCRETE DAILY PRODUCTION RECORD: Visual checks during manufacture and dimensional/visual inspection after manufacture.

2) LONGFORD CONCRETE TEST RESULTS: All compressive test cube results and analysis. Certificates are held by the Quality Manager in Head Office.

Approved production personnel carrying out mandatory checks during production shall sign or stamp record cards after completion of the check operation.

The inspection and test status of products shall be denoted by the application of stamps or signatures to records.

All pallets of units will be subjected to Final Inspection before being loaded for delivery. Goods release records are incorporated on the advice note and records maintained in Head Office.

Issued to : J. Hilock
Date of Issue: 26-2-91
Signed [redacted]

INSPECTION AND TESTING.

Receiving Inspection:-

All incoming conforming materials destined for use in the finished product shall not be used or processed until they have been inspected or otherwise verified as conforming to specified requirements by either the Quality Controller or Assistant Quality Manager or Technical Manager.

In-process Inspection:-

All in-process material is checked for fitness for purpose by the operator at each stage of the production. Measurements will be made to ensure compliance with specified requirements and these will be recorded.

The inspection status of material will be identified in order that no material is forwarded to the next operation until it has satisfied all inspection criteria at that stage.

Completed Item Inspection:-

Prior to despatch a final inspection will be carried out by a member of the Quality Control Personnel to ensure that completed components meet customer requirements . Final inspections will include results of tests for materials used in the finished units.

Inspection Records:-

Records of inspections, which include works test certificates, are well maintained and readily retrievable and are kept when specified for a period of ten years from the date of despatch of the material concerned.

Issued to	: Z. Hilditch
Date of Issue	: 26-2-91
Signed	[redacted]

INSPECTION MEASURING AND TEST EQUIPMENT.

Equipment shall be used in a manner which ensures that measurement uncertainty is known and is consistent with the required measurement capability.

The measurement and calibration system for this equipment shall be in accordance with the relevant British Standards.

If instruments are to be sent away for calibration then they will only be sent to one of the approved companies, a list of which is held in the head office. In this way a record is maintained of the company undertaking the checking and a signed receipt is obtained to the effect that the instruments have been checked. This receipt or certificate of test is then filed.

Any calibrated equipment found to be out of calibration shall be clearly marked so, this shall be identified in the calibration records and the equipment shall not be used again until it can be used in a calibrated condition.

Replacement calibrated equipment shall be used immediately, in place of any out of calibration equipment and a careful note made of the results of readings obtained from the replacement equipment. The amount of error is established and if this error could have adversely affected the quality then the work is rejected or if the work has been despatched to the customer, then they are informed of the delivery number and units affected.

Issued to :Z. HILDICK
Date of Issue :26-2-91
Signed [redacted]

INSPECTION AND TEST STATUS

Inspection and test status is maintained with the aid of the following:-

a) Labels.

b) Operative signatures on production sheets.

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Date of Issue	:26-2-91
Signed	[redacted]

CONTROL OF NON-CONFORMING PRODUCT.

Procedures will be maintained to ensure that if the product does not conform to specified requirements it is prevented from inadvertent use or installation.

Control shall provide for identification, documentation, evaluation, segregation (when practicable) disposition of non-conforming product and for notification to the functions concerned.

Non-conforming material will be identified with a label or stamp indicating the reason for rejection and action to be taken e.g. reprocess / concession / scrap.

Non-conforming product shall be reviewed in accordance with documented procedures; it may be:-

a) reworked to meet the specified requirements

or

b) accepted with or without repair by concession

or

c) re-graded for alternative application

or

d) rejected and scrapped.

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Date of Issue	:26-2-91
Signed	[redacted]

IDENTIFICATION AND CONTROL OF NONCONFORMING PRODUCT.

All material shall be categorised as nonconforming due to one or more of the following :

a) Dimensional errors which are outside the stated tolerance defined by Quality Instructions or contract requirements.

b) Damage which is not capable of being made good before Final Inspection.

c) Visually unacceptable.

d) Mechanically unacceptable due to cracks/laminations.

e) Low compressive strength after cure which is indicated by poor results from destructive testing of samples with known cure duration.

On finding nonconforming products, authorised personnel will:

1) Immediately scrap - such material shall be segregated from conforming products and immediately destroyed.

2) Identify as Reject - units shall be clearly identified in black indelible ink and/or with "Reject" tape and segregated from conforming products until disposal instructions are given by the Production Manager and/or the Quality Assurance Manager. All incidents of scrap or rejection shall be recorded on relevant Rejection Sections of Inspection Records. Rejection records shall be reviewed by the Quality Assurance Manager.

Responsibility: Quality Manager

Issued to	: Z. Hilduck
Date of Issue	: 26-2-91
Signed	[redacted]

REJECT PROCEDURE.

If for any reason material has been rejected by a customer, then it would be normal procedure for a member of our management to visit the customer and inspect 'on site'.

If the material is to be returned for further inspection, a collection note is raised by the person involved detailing:- quantity, size, specification, original delivery note number and reason for return.

Should the rejection be due to any apparent defect in the material, and there is material remaining in stock, that stock is quarantined with a label attached pending clarification. (see below for recall procedure)

Prior to a collection from the customer, our driver will be given a 'rejected' label to be attached to the material before loading on to our transport.

Upon return to our factory if the rejected material is found to be defective then it will be moved into our quarantine area to await collection by our supplier after prior discussion.

If the rejected material is found to be rejectable by the customer but is still acceptable for resale then it will be returned to stock either as conforming material - having followed the inspection procedure for normal incoming conforming material - or non-conforming as appropriate. If the customer cannot accept the rejected material but agrees to take an alternative 'in lieu' then the details of this concession would be noted on an amended delivery note to the customer (and again confirmed in writing).

Recall:-

Should any material be found to have any inherent defect, eference to the Batch Record,previous despatches to other customers and the original supplier can be informed that the material is suspect. Assuming the material is still available from the customer it would be collected. quarantined and returned to the original supplier for investigation as appropriate.

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Date of Issue	:26-2-91
Signed	[redacted]

HANDLING PACKING AND STORAGE.

The control of product handling is important to the protection of product quality during all phases of manufacture. Controls and procedures ensure that:-

a) Material is suitably handled to avoid damage. The majority of lifting is by overhead crane - using chains and/or nylon slings as appropriate.

b) Each unit is marked or labelled with its reference number and date of casting.

c) Each unit is shrink wrapped after being marked and stacked on a pallet reserved for that type of unit alone.

d) When a pallet is fully loaded it will be shrink wrapped with a number of sheets of paper marked with unit type and bound into the wrapping .

e) The forklift truck will be used for loading and unloading certain types of vehicles with appropriately packed material. Care will be taken to avoid any damage or score marks.

STORAGE.

Storage areas are located such that damage and deterioration of the product are prevented, pending use or delivery. Any non-conforming product will be stored in separately marked designated areas. In order to detect deterioration, the condition of the product in stock shall be re-assessed at appropriate intervals.

PACKAGING.

Packaging will be sufficient to preserve the quality of the product or where appropriate customer specified packaging is used. The packaging will contain adequate identification and provide protection during delivery.

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Date of Issue	: 26-2-91
Signed	[redacted]

DELIVERY.

The protection of the product after final inspection and test where contractually specified will be extended to include delivery to destination.

ISSUED TO Z. HILDICK

Date of Issue : 26-2-91
Signed [redacted]

QUALITY RECORDS.

All quality records will be the responsibility of the Quality Manager who will maintain them appropriately in the head office. All records will be maintained in a clean and stable environment to prevent deterioration.

Retention of quality records will be for ten years unless specified under contract. Where agreed contractually, quality records shall be made available for evaluation by the purchaser or his representative for an agreed period.

Disposition of records after ten years may only be carried out with the written consent of the Managing Director.

The following records will be maintained on file by the Estimating, Buying, Production and Quality Departments:

British Standards specified by this manual	Quality
Production and Contract Review Records	Quality
Drawings	Technical
Reinforcement Schedules	Technical
Internal Works Orders	Production
Sample Register	Technical
Quality Instructions	Quality
Approved Supplier List	Quality
Purchase Orders and Amendments for Material placed directly in aid of a contract	Production
Daily Production Records	Quality
Supplier Advice Notes, Release Notes/Certificates of Conformity	Production

Issued to :Z. Hilaire
Date of Issue: 06-2-91
Signed [redacted]

QUALITY RECORDS CONTINUED.

Signed Pink Copies of Purchase Orders (Denoting Inwards Goods Inspection has been completed)	Quality
Goods Rejection advice Notes	Quality
Production Sheets: Visual checks during manufacture and dimensional/visual inspection after manufacture.	Quality
Test Records	Quality
Final Visual Inspection Records	Quality
Approved Personnel/Stamp Issue Register	Quality
Calibration Certificates	Quality
Corrective Action Records	Quality
Customer Complaints Register	Quality
Longford Concrete Certificates of Conformity	Quality
Internal Quality Audit Records	Quality
Raw Materials Sample Register	Technical
Samples for Visual Aids During Production and Inspection	Quality
Production Formulations	Technical
Personnel Training Register	Personnel

Issued to :Z. HILDICK
Date of Issue :26-2-91
Signed [redacted]

INTERNAL QUALITY AUDIT.

Internal quality audits shall be carried out to verify whether quality activities comply with planned arrangements and to determine the effectiveness of the quality system.

Procedure:-

Frequency: Once a year (End of calendar year)

Method: To use a checklist "Internal Audit Questionnaire". Completed checklists will act as audit reports, the results of which will be investigated at quality reviews. Any discrepancies found will be the subject of re-investigation after an appropriate period of time.

The results of the audits shall be documented and brought to the attention of the personnel having responsibility in the area audited. The management personnel responsible for the area shall take timely corrective action on the deficiencies found by the audit.

Responsibility: Quality Manager.

Issued to	: Z Hilditch
Date of Issue	: 26-2-91
Signed	[redacted]

TRAINING.

Longford Concrete Ltd will establish and maintain procedures for identifying the training needs and provide for the training of all personnel activities affecting quality during production and installation. Personnel performing specific assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required. Appropriate records of training shall be maintained.

Normally training is 'on the job training' under supervision, and by attendance at suitable courses as required - or in the event of new processes/equipment - training by the supplying company personnel.

Responsibility: General Manager.
Quality Manager.

Issued to	:Z. HILDICK
Date of Issue	:26-2-91
Signed	[redacted]

STATISTICAL TECHNIQUES.

Where appropriate procedures will be established for identifying the statistical techniques required for verifying the acceptability of process capability and product characteristics. All graphical records with reference to British Standards will be drawn up by the quality personnel and held in the head office.

STATISTICAL SAMPLING PLANS:

Where specified by contract the following plans shall be used for Visual Inspection During Manufacture, Dimensional Inspection, Testing and Final Inspection.

Visual Inspection During Manufacture - Production and Quality Supervision will inspect each "first off" Unit to ensure production equipment has been set to produce units of the correct visual standard before bulk production commences.

Production employees will visually check each unit immediately after manufacture and advise Supervision of any deterioration in product quality. Approved quality personnel shall visually inspect all output at regular intervals and maintain records or inspection operations together with details of any nonconforming units which will be immediately scrapped. A summary of corrective action to prevent continuing manufacture of nonconforming products will be recorded on Inspection Records. Where necessary, units will be dry assembled to ensure colour and texture consistency of products.

Dimensional Inspection - All wooden and steel moulds will be dimensionally inspected and approved before release to production. It is the responsibility of production employees to ensure the correct fitting of moulds before use and to immediately report any deterioration to Production Supervision who will identify and quarantine the mould from production until it is overhauled and reset.
Formal dimensional inspection will be undertaken by approved quality personnel using the following sampling plan developed from BS 6001.

Issued to :Z. HILDICK
Date of Issue: 2-9-91
Signed [redacted]

INSPECTION LEVEL FOR SAMPLE SIZE AND SINGLE SAMPLING PLANS FOR NORMAL INSPECTION

Daily Output	Minimum No. of Units to be Inspected.
1	1
2 TO 15	2
16 TO 25	3
26 TO 90	5
91 TO 150	8
151 TO 280	13
281 TO 500	20

Should any unit from the randomly selected units be out of tolerances defined by the Quality Instructions, the whole batch to which the sample relates shall be quarantined and subjected to 100% inspection of the suspected dimension.

TESTING

The following sampling plan will be used for selection and testing products:

WET CAST — 4 OFF (150x150x150 or 100x100x100) cubes to be cast per day from each mix type when used in structural components, otherwise as specified by the customer.

In all cases half of the samples will be tested after 7 days cure and the other half after 28 days cure.

Responsibility: Quality Manager.

Issued to :Z. HILDICK
Date of Issue :26-2-91
Signed [redacted]

FINAL INSPECTION.

FINAL INSPECTION - All pallets shall be visually inspected at the time of Final Inspection. If any pallet is found to be damaged, the whole pallet shall be identified, quarantined and 100% inspected.

All packaging and strapping will be checked.

Final Visual Inspection will be signified by responsible personnel signing advice notes these are subsequently held on file as records.

Issued to :Z. Hilbick
Date of Issue: 26-2-91
Signed [redacted]

LONGFORD
CONCRETE · LIMITED
Dordon House, Grindle Road, Longford, Coventry CV6 6BQ
Tel: Coventry (0203) 364655 Fax: 365636

DATE : APRIL 1988

SUBJECT: LONGFORD CONCRETE LTD HEALTH & SAFETY POLICY

1. General Policy Statement

Longford Concrete Ltd attaches the greatest importance to the safety of its employees and will pursue policies designed to ensure that, as far as is reasonably practicable, all employees are provided with a safe and healthy environment and with safe methods of working. This policy cannot operate without full consultation and full co-operation, and it places a high priority on accident prevention by management and staff working together to identify those situations which could lead to personal injury and hazard to the health of staff, or other persons, and by rectifying these situations before accidents occur.

The promotion of safety is seen by Longford Concrete Ltd as being a joint responsibility of management and employees. Management's responsibility includes the promotion of safety in the total working environment it provides and for safe work methods, safety training, information and supervision, and compliance with appropriate legislation. The employee's responsibility includes a constant awareness for the safety of himself, his colleagues and other persons in the working environment, to contribute to ideas and methods of promoting a safe environment and systems of working, and to participate in safety training.

2. Objectives

2/1 To provide our employees with work methods, work areas, premises and plant which are safe, thereby reducing the risk of injuries, accidents and damage to property.

2/2 To safeguard our employees from any foreseeable hazard to health or safety in existing processes and working systems and in the introduction of new substances, plant, machinery and equipment, processes or premises.

2/3 To train all employees to be aware of their own responsibilities in respect of health and safety matters.

2/4 To provide general health and safety training for all new entrants and to identity training needs for all levels of our employees in the area of health and safety, and to design training programmes to meet these needs.

cont...../

LONGFORD
CONCRETE · LIMITED
Dordon House, Grindle Road, Longford, Coventry CV6 6BQ.
Tel: Coventry (0203) 364655 Fax: 365636

DATE : APRIL 1988

SUBJECT: LONGFORD CONCRETE LTD HEALTH & SAFETY POLICY (continued)

2/5 To insist that health and safety instructions are carried out and that health and safety systems and procedures are followed.

2/6 To maintain proper measures for fire prevention, fire protection and fire fighting, and systems of evacuation in the event of an emergency.

2/7 To provide appropriate medical and first-aid facilities to safeguard the health and welfare of all our employees.

2/8 To maintain records in order to monitor and analyse safety performance within the Company.

2/9 To maintain an information service on legislation, codes of practice and technical developments in connection with our operations and our health and safety policy objectives.

2/10 To achieve by joint consultation the effective co-operation and involvement of all employees in attaining our health and safety objectives.

QUALITY CONTROL INSPECTION AND REPORTING PROCEDURES FOR REINFORCING STEEL.

1. On receipt all incoming reinforcement will be checked to ensure exact correlation between Bundle Identity, Advice Details and Works Test Certificates. Receipt paperwork will then be filed in the head office for future reference.

2. During off loading material will be visually inspected to ensure its general fitness for purpose. Should there be any doubt as to the quality or identity of any incoming material the material concerned will be suitably identified and segregated until the necessary investigations have been completed.

3. Material will be put into stock or returned to the supplier whichever is the case. Where material has been returned records will be kept of all details involved.

4. Material will be loaded into stock such that original cast and supplier identity is maintained.

P01/1-90 [redacted]

PROCEDURE FOR THE BENDING OF REINFORCING STEEL.

Bending will be on specialized bending fixtures, or on Kennedy Model 2125 machines to suit 4,6,8mm diameter bars and will be to details as specified on the bending dimension chart- shape codes B.S.4466. and within the required tolerances.

Procedure:

1) By reference to the Works Order and cropped bar identity label select correct bars for processing.

2) Ensure that all relevant cast numbers have been recorded onto the labels provided.

3) Select appropriate bending jig appertaining to shape code, diameter and length of material.

4) Ensure that correct bending formers/pins are to be used.

5) Proceed to bend in accordance with B.S. 4466. or customer requirements.

6) Inform a member of Quality Control to check the first off to ensure that all specified requirements have been met.

7) Continue to bend making periodic checks at regular intervals to ensure conformance to specified requirements.

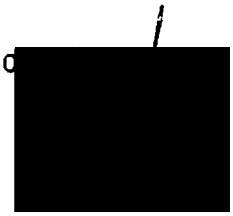
8) Re-bundle all the material processed and label accordingly.
Labels should have the following information identifying the material attached:-

a) TYPE. e.g. R12

b) QUANTITY.

c) SHAPE CODE.

d) WORKS ORDER NUMBER. (To enable traceability)



PROCEDURE FOR THE BENDING OF REINFORCING STEELS

Alternatively:

Using adapted Kennedy Bending Machine:

1) Set degree of bend stop on the bender (if necessary check position by bending a piece of scrap offcut).

2) Place bar into bender and position bar end to pre-determined 1st mark and proceed with first bend.

3) Reposition link to second mark and proceed with second bend and so on for third, fourth, fifth bend if so required.

4) A member of Quality Control will then check that all dimensions are within a tolerance of ±5mm. A second check on the specific test jig may also be carried out. All links will receive 100% inspection.

5) All material will then be bundled and ladled accordingly.

This procedure will apply equally to high yield mild steel or stainless steel reinforcement.

Responsibility: Quality Manager.

P03/1-90

PROCEDURE FOR THE CUTTING OF REINFORCING STEEL.

Bars will be cut on powered croppers to a tolerance of within ±25mm of the required length, as specified in the bending schedule.

Procedure.

1) Refer to Works Order and select bar of correct diameter and specification.

2) Record cast numbers of bars selected onto the labels provided by the Quality controller.

3) After splitting a bundle of steel replace original label to maintain its identity.

4) Measure 1no. required length with a steel tape and cut bar with the bar end touching the end stop.

5) Inspect length and if correct firmly secure the end stop at this position.

6) When cut inform a member of Quality Control to check sample before proceeding with the rest of that batch.

7) Proceed to cut bar(s) to required length checking second cut bar conforms to tolerance.

8) Periodic checks throughout each batch will be made.

AGGREGATE PROCEDURE.

1. Provide for approval the details of proposed type/size and source of aggregates to be used before ordering.

2. Obtain each type of aggregate from one source and ensure that adequate supplies can be maintained throughout the contract.

3. MARINE (SEA DREDGED) AGGREGATES: do not use if non-marine aggregates are available locally.

4. If single sized coarse aggregates are used, combine two or more aggregates in the proportions necessary to produce a final grading within the limits of B.S. 812 as applicable for graded coarse aggregate of the appropriate size.

5. All CEMENT to be used must be manufactured by a BSI registered firm:-

   LOW HEAT PORTLAND CEMENT : TO B.S. 1370
   SULPHATE RESISTING PORTLAND CEMENT : TO BS 4027
   LOW HEAT PORTLAND (BLASTFURNACE) CEMENT : TO BS 4246
   OTHER CEMENTITIOUS MATERIALS : DO NOT USE PULVERIZED ASH, GROUND GRANULATED SLAG OR ANY OTHER CEMENTITIOUS MATERIAL UNLESS APPROVED.

6. DELIVERY AND STORAGE. Deliver cement in sealed containers or bags or in purpose made delivery vehicles. Store different types of cement separately and in dry weather-tight structures with a raised floor or in suitable silos. Use in order of delivery. All aggregates will be stored on concrete self-drained areas. Aggregates will be protected from extreme weather conditions and prevented from freezing in cold weather.

7. ADMIXTURES will only be purchased from approved firms and only used where specified by the customer.

8. WATER will be stored pending use at 20C ± 2C. The water tank will be calibrated at regular six monthly intervals and records maintained to confirm this.

Responsibility: Quality Manager.
Technical Manager.

PO5/1-90 [redacted]

PROCEDURE FOR MIXING CONCRETE.

Only a trained operative may use the Batching Plant.

1. Weigh batch fine and course aggregate according to the adjusted mix proportions.

2. Weigh batch cement and empty into hopper ensuring that no cement remains in the weighing bucket.

3. Fill water tank to the limit stated on the Mix Proportion Sheet.

4. Start Mixer.

5. Empty dry materials into mixer and add water simultaneously.

   IMPORTANT remember all the water may not be required DO NOT proceed any further if the mix starts to look too wet.

6. Mix for two minutes minimum.

7. Discharge mixer into the bucket of the Bob-cat or other.

8. Clean mixer thoroughly.

9. Samples of the first batch from every mix will be taken and analyzed by a member of Quality Control.

Signed _____

Quality Manager.

P06/1-90 

PROCEDURE FOR STORAGE OF TEST CUBES.

1. Immediately after making specimens, store them in a place free from vibration, and in conditions which will prevent loss of moisture. If it is necessary to move the specimens to the place of storage, move them in their moulds ensuring no loss of concrete. Store the specimens either:-

   a) In an atmosphere with a relative humidity of not less than 90% in a moist curing room or cabinet.
   b) Under damp matting or any other suitable damp material wrapped completely with polythene or other impervious sheeting.

2. Whichever method of moist storage is used, maintain the temperature of the specimens ~~at 20 ± 2~~ deg.C.

3. Demould specimens after at least 24hrs. and mark each cube clearly and indelibly with an identification number and date of casting. Unless required for test at 24hrs, either submerge the specimens immediately in the curing tank or immediately prepare them for transporting to another location. Keep all specimens which are immediately transferred to the curing tank submerged and remove them just before testing unless it is necessary to transport them to another location for testing.

4. Immediately after removal from the moulds or from the curing tank, pack specimens in such a way as to prevent any significant moisture loss.

~~5. Record the daily maximum and minimum moist air and water curing temperatures, using either maximum and minimum thermometers or continuous recording instruments.~~

RESPONSIBILITY: Quality Manager.

PROCEDURE FOR MAKING GOOD DAMAGE TO CONCRETE UNITS.

A) Small blow holes in concrete are made good by rubbing the concrete face at an early stage.

B) Small damaged areas and large exposed blow holes in concrete units can be made good. The procedure for this is as follows:-

1. Damaged area is cleaned and loose material removed. A good mechanical key should be formed if not already present.

2. Dust should be removed.

3. Concrete substrata should be thoroughly dampened with water. Excess water should be removed.

4. A mixture in the same proportions as the parent concrete, excluding course aggregate, varied by experience to obtain the correct colour, is blended with a bonding agent (Nitro-bond SBR or similar)where necessary to form a slurry paste.

5. The paste is rubbed into the damaged area and trowelled where necessary to required contours.

6. The area is protected and cured by means of plastic sheeting for a minimum of three days.

7. When sufficiently hard (usually 24hrs.) the area is rubbed down with an abrasive material to achieve a uniform surface.

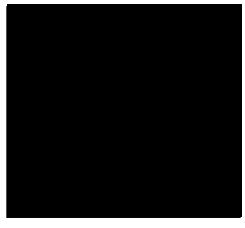
8. Where required additional surface treatment (grit blasting, acid etching etc.) is under taken locally.

C) Large damaged areas are subject to a quality inspection and specific procedures.

RESPONSIBILITY: TECHNICAL MANAGER.

QUALITY MANAGER.

P08/1-90



PROCEDURE FOR MAKING GOOD DAMAGE TO BRICK-FACED CONCRETE UNITS.

Brick-faced concrete units may also be repaired the procedure for this is as follows:-

1 Chisel out the damaged brick ensuring that no further damage occurs to surrounding bricks.

2 Using a disc cutter groove the exposed face to form an adequate key for bonding.

3 Select the appropriate replacement brick from stock and cut to size, Ensuring that a near perfect match is formed with the prepared key.

4 Using an approved bonding agent carefully stick the brick into position. Using ties and clamps hold the brick such that its position is maintained during initial set.

5 Leave for a minimum 24 hours.

6 Remove all ties and fixings and clean off all surfaces.

7 If necessary, point up to match existing brickwork using the same mortor mix.

8 Ensure that the unit is covered for a further 48 hours to facilitate curing.

Responsibility: Quality Manager.

TRAINING PROCEDURE

Longford Concrete Ltd. will ensure that all personnel which may affect product quality are subject to formal training. This will be as follows:

Operatives- No formal qualifications are required training will take the form of :

1) A brief introduction to company practice which will include quality procedures.

2) A period with a skilled operative until the Foreman or Quality Manager are confident that the recruit is able to carry out work to the standard required. At this point skilled status will be given and recorded on a matrix chart.

Any other training requirements for personnel which could affect the quality of the product will take the form of experience. Where there is a lack of experience work will be monitored by experienced personnel until the required skills and competence meet the level required for that position.

Records of all training will be maintained by the Personnel Department.

TRAINING MATRIX

A copy of the Training Matrix will be ~~on display to all personnel~~. held by the Quality Manager.

Responsibility: Personnel

P14/1-90 [redacted]

PROCEDURE FOR THE PLACEMENT OF REINFORCEMENT IN MOULDS

1/ Check steel cage to ensure dimensional accuracy and correct fabrication.

2/ Lift cage into mould and position ensuring that correct cover is achieved using spacers and fixing ties/clips. It is important that spacers are not used on face sides as this will distort the appearance of the finished unit.

3/ A member of Quality Control will then check all placed steel.

4/ When checked the mould inspection ticket will be signed or stamped as evidence that this procedure has been carried and is correct.

5/ Filling may only commence when all checks have been carried out, and the mould inspection ticket is complete.

6/ If there is any doubt as to the readyness of a mould for filling then DO NOT PROCEED WITH FILLING, notify a member of Quality Control immediately.

P15/1-90

PROCEDURE FOR FILLING MOULDS

1/ Check mould tickets for evidence of all necessary pre-fill checks.

2/ Mix will be batched and tests taken according to their relevant procedures.

3/ Fill moulds and vibrate simultaneously using pokers, bo-mags or the vibrating table. Care must be taken with the poker not to touch the face sides of the mould or the reinforcement. Over vibration may cause seggregation. As a rule vibrate until air bubbles cease rising to the surface or the surface glazes over.

4/ When mould is sufficiently full trowell surface to required contours and finish.

5/ Moulds must be covered within one hour of filling before the surface has been dried out. Care must be taken not to allow sheeting to touch wet concrete. The covering should be positioned such that excess drying of the concrete surface does not occur.

6/ Leave moulds until sufficient strength has been achieved for stripping and de-moulding the unit. this is not normally less than 12 hours.

[redacted]

PROCEDURE FOR STRIPPING AND SETTING MOULDS

1/ Do not touch mould until concrete units have achieved sufficient strength.

2/ Loosen mould bolts and remove scotches and clamps.

3/ Carefully remove mould sides and shuttering.

4/ Turn out unit onto rubber matting or polystyrene foam carefully avoiding any damage to the "green" unit.

5/ In the case of larger units, lifting by overhead crane may be used as a means to de-mould a unit, care must be taken to use the appropriate lifting loops and correct slings. Do not use chains around the unit as damage will be inevitable.

6/ Mark up unit with date cast and unit type using appropriate stamps and indellable ink.

7/ Pending finishing - see relevant procedures... units are then to be palletized or stored carefully on bearers. The units must also be covered to maximise curing process.

8/ Moulds should be scraped clean and reassembled.

9/ Alterations and dimensional checks will be carried out by authorised personnel only.

10/ Special attention must be paid to face sides of the moulds. Smoothness and adequate varnish finish are important. If damage has occured notify a member of Quality Control before re-assembly.

11/ Oil mould using a brush or sponge. Remove any surplus oil as this will affect the finish of the next unit cast.

12/ Attatch mould inspection ticket ready for pre-fill checks to be carried out.

P17/1-90 [redacted]

PROCEDURE FOR CHECKING MOULDS AND CAST UNITS.

All moulds will be checked prior to pouring of concrete. Inspection will be as follows:-

1. Attach a mould check ticket to the side of each mould to be cast.

2. Mould is clean of dust and rogue particles.

3. Mould is lightly oiled with release agent and any surplus soaked up.

4. Dimensions are correct and do not exceed the tolerances specified.

5. All fixings are correctly located and checked according to the procedure below.

6. All reinforcement steel is checked according to the appropriate proceedure and placed as specified.

7. All mould joints and possible leaks are sealed and excess sealant removed.

8. When all of the above checks have been completed then the mould ticket is signed by the authority responsible for inspection. On no account will a mould be filled unless the mould ticket has been completed.

PROCEDURE FOR CHECKING FIXINGS.

1. Aquire drawing or specification from Head Office.

2. Check for correct size, type, and quantity to finish job.

3. Ensure that all fixings are located correctly to the tolerances specified.

4. Sign the mould ticket to confirm the above checks.

TOLERANCES.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS WILL BE +0 mm AND -4mm WHEN STRUCK. ALL MOULD DIMENSIONS WILL BE +0mm AND -2mm.

213/9-90 [redacted]

Storage Of Raw Materials.

1. Aggregates (Sand & Stone).

a. Delivery. All aggregates are delivered in bilk tipper vehicles. Typical deliveries are in the order of 4 - 10 tonnes in any single load. Where necessary ie in the case of pre-dried aggregates deliveries are covered to prevent particles becoming air borne. At present approximately 3 deliveries are made each week.

b. Storage of aggregates - aggregates delivered by bulk tipper are stored in individual 10 tonne capacity aggregate bays. In the case of very fine grade aggregates these bays are covered with a heavy duty tarpaulin to prevent any particles becoming airborne.

2. Cements

a. White cement is delivered on a flat vehicle in bagged form. This type of cement is palletized and shrink-wrapped. It is stored undercover in dry conditions.

b Grey cement is delivered in a special vehicle (tanker). The cement is pumped into our silo (approx 9 tonne capacity) where it is kept dry and undisturbed. When grey cement is discharged into the silo filters ensure that no particles become airborne.

3. Acid Hydrochloric
Acid is delivered in small consignments typically 200 lts. It is delivered and stored in heavy duty plastic drums. These drums are stored in an enclosed cubical which features excellent fresh air ventilation a clean water supply is close to hand to dilute any spillage should they occur. All personnel using acid are required to wear protective clothing including goggles, face masks, gloves and wellingtons

4. Other Chemicals.
Concrete additives, hydraulic oil, engine oil release agent.
All the above items are delivered in drums, storage area's are away form where operatives are working. All substances are discharged from their containers by use of special manufacture pumps.

5. Process Details.
See Working Instructions.

6. Substances Used.
See data sheets.

Waste Arising

1. Concrete Waste
IE : over-mixed concrete is cast in to steel slabs moulds. The following day, when the concrete has cured, the steel moulds are turned out and the subsequent slab palletized. Such slabs are then used by employees and friends for gardens, patios etc.

2. Disposal Of Moulds.
Moulds are returned to the supplier to be stripped down and timber to be reclaimed. Timber which cannot be reclaimed is cut down and used as fuel. Sawdust and shavings are used by local farmers for animal bedding.