

FILE



COVENTRY CITY COUNCIL

ENVIRONMENTAL PROTECTION ACT 1990, SECTIONS 8(8), 12

NOTICE OF REVOCATION



To: *Bhanjan Singh Bhatia*
50 Harold Road
Stoke
Coventry

Coventry City Council ("the Council"), in exercise of the powers conferred on it by section 8(8), 12 of the Environmental Protection Act ("the Act"), hereby gives you notice as follows:

1. The authorisation reference **030** to operate an aluminium melting and casting operation at Unit 4, Marshbrook Close, Aldermans Green Industrial Estate, Coventry, is hereby revoked with effect from **1st October 1996**.

Signed on behalf of Coventry City Council



.....
City Environment Officer
The officer appointed for that purpose

Date: *3rd October 1996*

NOTICE OF VARIATION OF AUTHORISATION

To **Bhajan Singh Bhatoa**
Of **50 Harold Road, Lower Stoke, Coventry**

The **Coventry City Council**
(the Authority) has decided that the authorisation to carry out a prescribed process, namely:

aluminium melting and casting with ancillary foundry processes

at the premises known as **Unit 4, Marshbrook Close, Aldermans Green Industrial Estate, Coventry.**

granted to you by the Council on the **5th day of December 1992** under the reference number **030** should be varied in the following manner*

1. Clause 1.1 shall be deleted and replaced by:
"1.1 This authorisation is for melting of virgin aluminium ingots and returned castings, runners and risers, with the addition of flux, in two 175 kg capacity furnaces heated via gas oil atomiser burners; the production of moulds using greensand and untreated Bromsgrove red clay and silica sand with cold setting resins; core making with the use of silica sand and carbon dioxide hardened resins; casting and fettling within the process boundary outlined in red on the attached plan numbered 1. The emissions from the above activities shall be discharged through stack A as marked on the attached plan."

(PLEASE SEE ATTACHED)

The date(s) on which the variation(s) are to take effect are†

1. Immediately
2. Immediately
3. Immediately
4. Immediately
5. Immediately
6. Immediately

continued overleaf

Delete any words in square brackets which do not apply

* Specify the variation(s) to the authorisation.

† Specify the effective dates for each variation.

YOU ARE REQUIRED, within a period of 28 days from the date of service on you of this Notice, to notify the Authority of the action (if any) which you propose to take to ensure that the process is carried on in accordance with the authorisation as varied by this Notice.

Dated

(Signed).....

(Designation).....
(the Officer appointed for this purpose)

Address for all communications:

Housing and Environmental Services Directorate
Broadgate House
Broadgate
COVENTRY
CV1 1NH

Delete any words in square brackets which do not apply

NOTE

You have a right of appeal against this Notice to the Secretary of State for [the Environment] [Wales]. If you wish to appeal you must do so in writing within a period of two months beginning with the date of this Notice. You must set out the grounds for your appeal and send to the Secretary of State a copy of this Notice, together with copies of all relevant documents and correspondence. You should also indicate whether you wish the appeal to be dealt with at a hearing or on the basis of written representations. A copy of your Notice of Appeal must also be sent to the Council.

** "Substantial change" is defined in Section 10(7) of the Environmental Protection Act 1990 as "a substantial change in the substances released from the process or in the amount or any other characteristic of any substance so released"; and the Secretary of State may give directions to enforcing authorities as to what does or does not constitute a substantial change in relation to processes generally, any description of process or any particular process.

pol/st/ic15121tw



City of
Coventry

ENVIRONMENTAL SERVICES DEPARTMENT

Howard T. Farrand,
Director of Environmental Services.
Broadgate House,
Broadgate,
Coventry, CV1 1NH.

Telephone : 0203 83 33 33
Telex : 265451 (MONREF G)
Attention END042
Telecom Gold Mailbox: 76 : END042
Fax : 0203 831831

Your Reference :
Our Reference : **CI/IP/DP**
Please ask for : **D Packard**
Direct Dialling No: **831856**
Date : **4 December 1992**

ENVIRONMENTAL PROTECTION ACT 1990

**THE ENVIRONMENTAL PROTECTION (PRESCRIBED PROCESSES
AND SUBSTANCES) REGULATIONS 1991 (AS AMENDED)**

**THE ENVIRONMENTAL PROTECTION (APPLICATIONS APPEALS
AND REGISTERS) REGULATIONS 1991 (AS AMENDED)**

**AUTHORISATION NO 030
APPLICATION RECEIVED 7/8/92**

Notice is hereby given that under Section 6 of the Environmental Protection Act 1990, Coventry City Council (hereafter called the Authority) gives authorisation to:

**Bhajan Singh Bhatoa
50 Harold Road
Stoke
Coventry**

To operate an aluminium melting and casting operation at:

**Unit 4 Marshbrook Close
Aldermans Green Industrial Estate
Coventry**

subject to the conditions on the attached pages numbers 1 to 6 and within the process boundary as outlined in Red on the attached plan No. 1.

Signed Dated day of 1992

Director of Environmental Services

**BHATOA CASTINGS
AUTHORISATION NO 030**

Page 1 of 6

Protecting Our City

1. PROCESS DESCRIPTION

- 1.1. This authorisation is for melting of virgin aluminium ingots with the addition of flux in one 175kg capacity furnace heated via a gas oil atomiser burner; the production of moulds using untreated Bromsgrove red clay and silica sand with the use of resins; core making with the use of carbon dioxide, casting and fettling within the process boundary outlined in red on the attached plan number 1; the emissions from such activities shall be discharged through stack A as marked on the attached plan.
- 1.2. Change to the above process must not take place without the prior written consent of the authority.

2. EMISSION LIMITS AND CONTROLS

- 2.1. All emissions to air from the stack marked A on the attached plan No 1 shall be colourless and free from persistent mist and free from fume or droplets.
- 2.2. All emissions to air shall be free from offensive odour outside the process boundary as perceived by the Local Authority Inspector.
- 2.3. Emissions from the stack marked A on the attached plan No 1 shall be free from visible smoke during normal operation and in any case shall not exceed the equivalent of Ringleman shade 1 as described in British Standard BS2742:1969.
- 2.4. The following concentrations of emissions to air, as expressed as 15 minute mean concentrations, shall not be exceeded:
- | | |
|--|---------------------|
| (a) Total Particulates | 50mg/m ³ |
| (b) Fluoride (expressed as Hydrogen Fluoride) | 5mg/m ³ |
| (c) Inorganic Chloride (expressed as Hydrogen Chloride) | 30mg/m ³ |
| (d) Copper and its compounds (as copper) | 20mg/m ³ |
| (e) Volatile organic compounds (measured as total carbon excluding particulate matter) | 50mg/m ³ |
- 2.5. All pollutant concentrations shall be expressed at reference conditions, 273k, 101.3kPa without correction for water vapour content.
- 2.6. The introduction of dilution air to achieve the emission concentrations limits in this authorisation is not permitted. Exhaust flow rates should be consistent with efficient capture of emissions.

3. MONITORING SAMPLING AND MEASUREMENT OF EMISSION

- 3.1. Stack monitoring for the parameters in 2.4 a, b, c, d, shall be undertaken at least twice during the commissioning of the plant and thereafter at a frequency of no less than once per year unless otherwise specified by the Authority.
- 3.2. The monitoring of particulate matter shall be undertaken in accordance with the US Environmental Protection Agency (EPA) Method 5 Sampling System or as otherwise previously agreed in writing with the inspector.
- 3.3. Stack monitoring of fluoride, chloride and copper shall be undertaken by a method agreed in writing with the authority. Commissioning of the equipment shall not take place until such methods of monitoring have been approved.
- 3.4. At least fourteen days notice of stack monitoring, to comply with Section 3.1, shall be given to the authority.
- 3.5. The results of stack monitoring shall be submitted to the authority within six weeks of the date of the monitoring.
- 3.6. A visual assessment of emissions from the stack marked A on the attached plan shall be undertaken at least once during each time the furnace is in operation.
- 3.7. An olfactory assessment of stack and fugitive emissions shall be made at least once during the melting and casting operation from outside the front of the unit.
- 3.8. The results of monitoring to comply with 3.6 and 3.7 shall be recorded in a log book which shall include details of: the date, time, wind strength and direction the name of the observer and an assessment as to the severity of emissions. The log book shall be retained at the premises for a minimum of four years since the last entry. The log book shall be made available to the inspector of the authority for examination on demand.
- 3.9. Any adverse results from monitoring of 3.6 or 3.7 shall be followed up immediately by the investigation of the cause of the emission and corrective action taken.
- 3.10. A detailed inventory of all organic solvent usage shall be kept for at least four years. This shall include details of all solvent cleaners, organic resins and degreasants used. The inventory of the retrospective six monthly solvent usage shall be forwarded to the local authority every six months commencing at six months from the date of this authorisation. The inventory shall be forwarded within six weeks of the due date.

4. MATERIALS HANDLING

- 4.1. Stocks of sand and clay shall be stored in designated areas within the confines of the building and shall be suitably banded or contained.
- 4.2. Containers of flux or resin shall be kept sealed when not being discharged in order to minimise potential spillage.
- 4.3. Any spillage of liquid or solid shall be cleared as soon as possible.
- 4.4. Spillages of flux material shall be cleared up using vacuum methods.
- 4.5. Waste dross shall be stored in steel drums which shall be kept covered/sealed.
- 4.6. All residues produced including those produced by arrestment plant shall be stored in covered containers.

5. FURNACE AND MELTING OPERATION

- 5.1. Only virgin aluminium (alloy) ingots and clean runners and risers from previous casting operation on the site shall be melted in the furnace.
- 5.2. The furnace shall only be heated by the use of gas oil via the atomiser burner.
- 5.3. Emissions to air from the melting furnace shall be contained by the use of an extraction hood which shall be exhausted to the atmosphere via the stack marked A on the attached plan No. 1.
- 5.4. The use of flux shall not exceed the manufacturers recommended dose. For FOSECO coverall 11, no more than 1.0kg coverall per 100kg of aluminium alloy shall be used.
- 5.5. Casting shall only take place in the casting area marked 'casting area' on the attached plan No. 1.
- 5.6. The casting area as indicated in 5.5 shall be vented by local air extract ventilation which shall discharge to atmosphere via the stack marked A on the attached plan No.1.
- 5.7. The Bifurcated fan serving the canopy over the casting area shall be in operation whenever casting takes place.

6. FETTLING

- 6.1. Fettling shall only take place in the area marked fettling area on the attached plan No. 1.
- 6.2. The fettling area shall be served with local extract ventilation via a hood linked to a fabric filter collection system.

6.3. The residue from the filter system shall be stored in sealed containers pending disposal.

7. CHIMNEY

7.1. The chimney marked A on the attached plan serving the furnace and casting areas shall extend to 3m above the roof ridge.

7.2. The chimney shall not be fitted with a restriction at its final opening such as a plate cap or cowl.

7.3. Chimney flues and ductwork shall be insulated to prevent cooling of waste gases.

7.4. Chimney flues and ductwork shall be cleaned thoroughly at least once every four months. This act shall be recorded in the process log book as in 3.8.

7.5. Chimney flues and ducts shall as far as is possible, be maintained airtight.

7.6. Two 50mm BSP monitoring sockets conforming with the principles of BS1740 Part 1 shall be installed in the stack at least 4 stack diameters above the inlet of the extraction from the casting area and at least one stack diameter below the top of the stack. The sockets shall be installed on the same plane and at right angles to each other.

7.7. A 50mm BSP plug shall be fitted within the 50mm BSP socket at all times other than when monitoring is taking place.

7.8. Adequate safe access facilities to the monitoring point shall be provided either permanently or by the use of a temporary platform when monitoring is to take place.

8. GENERAL OPERATION

8.1. Any mechanical malfunction or spillage of material shall be attended to and remedied as soon as possible. Any incident likely to give rise to abnormal emissions shall be noted in detail in the process log book as in 3.8.

8.2. Any incident likely to give rise to emissions which may have an impact on neighbouring occupants shall be reported immediately to this authority. (see note 2).

SUPPLEMENTARY NOTES

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.

epa_B_auth/st/em1811dp



City of Coventry

PROPERTY SERVICES DEPARTMENT.

A. W. Lomas, Director of Property Services.

Mandela House,
Bayley Lane,
Coventry, CV1 5RN.
Telephone: 0203 833333.

MARSHBROOK CLOSE
ALDERMANS GREEN

scale N.T.S. job
drawn P.A.L. drawing
a.s. Ref. No SP3782NW
2-5-1990
LPR-247-77A

City Estates Officer, R.A.F. Rugman - Jones.

FOR IDENTIFICATION PURPOSES ONLY.

Car Parking

KEY

1 2 FEB 1992
VALID FROM

RECEIVED

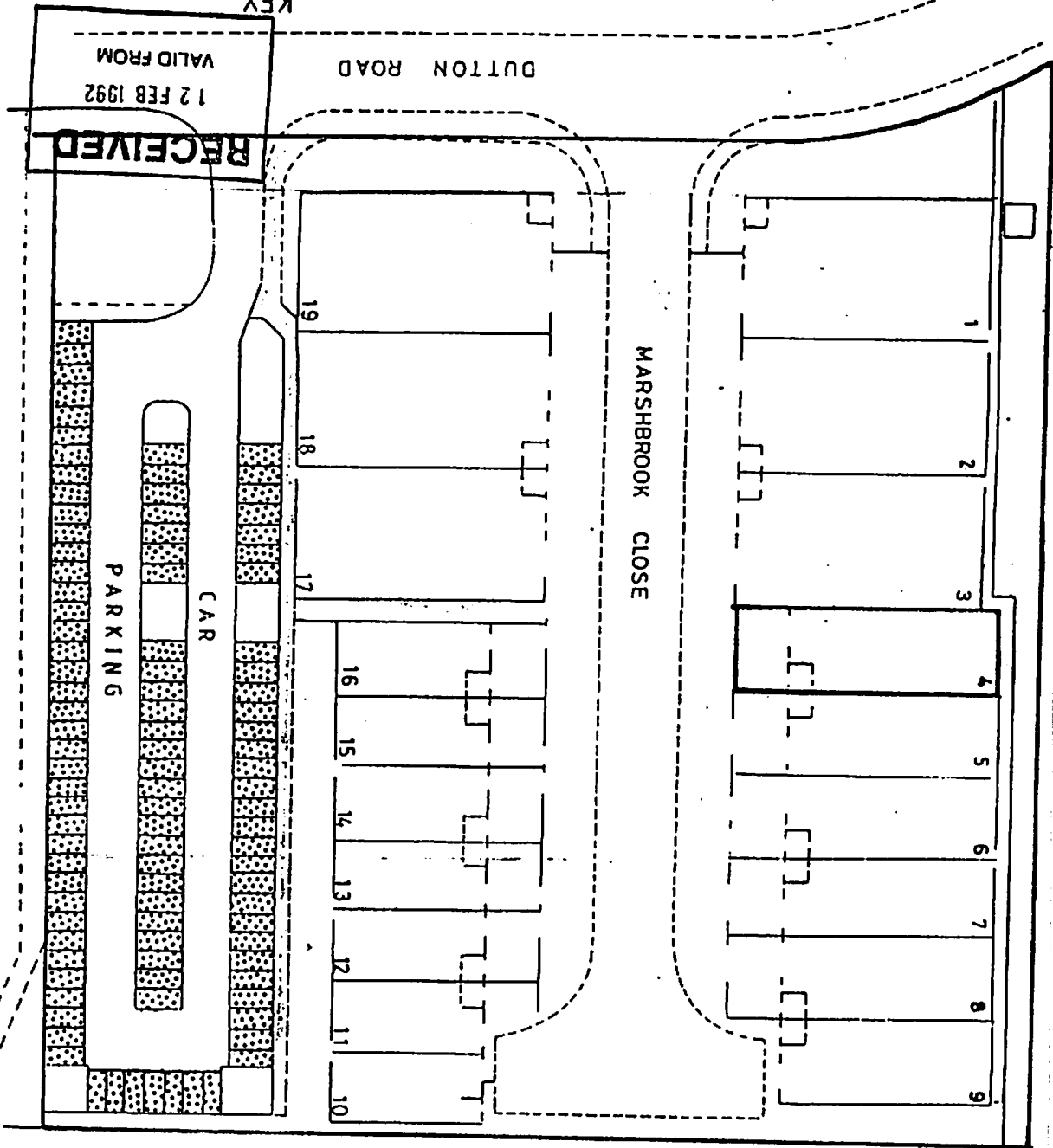
DUTTON ROAD

MARSHBROOK CLOSE

CAR

PARKING

N
+



305 Personal

ANY SUMMERS party seeking... Tel Coventry 424384

DATEWISE... Tel Coventry 424384

DOCTOR SAVID... Tel Coventry 424384

IT'S NOT TOO LATE... Tel Coventry 424384

BURIAL... Tel Coventry 424384

401 Public Notices

Environmental Protection Act 1990 Part 1

NOTIFICATION OF APPLICATION UNDER SECTION 6

BUXTON CASTINGS... Tel Coventry 424384

402 Auctions

LUTTERWORTH AUCTIONS... Tel: (0533) 553008

403 Situations Vacant

SHOWCASE CINEMAS... MANAGER... An outstanding opportunity to join an exciting and expanding company.

GABRIEL FASHION JEWELLERY... Respire PERSON... Working in a pleasant environment.

POSITION FILLED... NELSON BURGESS... QUALITY ENGINEER TECHNICIAN

We would like to take this opportunity to thank all applicants who applied for the above position which has now successfully been filled.

BRICKLAYERS required for 4 weeks local work... Tel: (0203) 301313

CANVASSERS/TEAM LEADERS... Tel: (0203) 231184

CANVASSERS WANTED... Tel: (0203) 301313

CLEANER required... Tel: (0203) 301313

ESTABLISHED company... Tel: (0203) 301313

EXPERIENCED... Tel: (0203) 301313

HAIRDRESSER... Tel: (0203) 301313

HAIRTYLANT required... Tel: (0203) 301313

HGV class 1 driver... Tel: (0203) 301313

KITCHEN fitter... Tel: (0203) 301313

ONLY jobs are redundant... Tel: (0203) 301313

POST TIME Care Staff... Tel: (0203) 301313

TEN WEEK INTRODUCTION TO COUNSELLING... STOKE PARK COMMUNITY COLLEGE

501 Houses and Flats For Sale

ALFLEY 10th Rd, large terrace... Tel: (0203) 301313

ASH About our special low... Tel: (0203) 301313

COUNDRY three bedroom... Tel: (0203) 301313

PARMULATRE four bedroom... Tel: (0203) 301313

WORKING for a House in Coventry... Tel: (0203) 301313

MOBILE Home, office included... Tel: (0203) 301313

PART EXCHANGE large house... Tel: (0203) 301313

WHORLEBY Ave, 3 bed... Tel: (0203) 301313

502 Houses and Flats Wanted

"A QUICK Sale" We pay cash for houses up to 145,000... Tel: (0203) 301313

503 Removals and Storage

REMOVALS... Tel: (0203) 301313

10203 ASKEE... Tel: (0203) 301313

MOVING HOUSES... Tel: (0203) 301313

TW GOULDI... Tel: (0203) 301313

504 Houses and Flats To let

"PROPERTIES" to let/wanted... Tel: (0203) 301313

504 Houses and Flats To let

ARABIAN... Tel: (0203) 301313

BUNGALOW 3 bed, gch, all mod... Tel: (0203) 301313

CHELSEA... Tel: (0203) 301313

COUNDRY 3 bed house... Tel: (0203) 301313

FLAT in Radford... Tel: (0203) 301313

FOLKLYN... Tel: (0203) 301313

FOUR bedroom detached... Tel: (0203) 301313

FURNISHED three bedroom... Tel: (0203) 301313

GARAGE with gas heat... Tel: (0203) 301313

HALL Green... Tel: (0203) 301313

LUXURY 5 bed detached... Tel: (0203) 301313

PROPERTIES TO LET... Tel: (0203) 301313

RADFORD... Tel: (0203) 301313

SOUTH side, 7 bed semi... Tel: (0203) 301313

STUDENTS... Tel: (0203) 301313

THIRD person wanted... Tel: (0203) 301313

WALSLEY... Tel: (0203) 301313

WYKEN 3 bed semi... Tel: (0203) 301313

505 Apartments Vacant

"AAH!" Flatlets... Tel: (0203) 301313

A PRIVATE... Tel: (0203) 301313

BIDDIS TO Let... Tel: (0203) 301313

BIDDIS TO Let... Tel: (0203) 301313

BUNLEY Area... Tel: (0203) 301313

CENTRAL... Tel: (0203) 301313

CLEAN self contained flat... Tel: (0203) 301313



WEEKLY Tribune

AVON calling, earn extra money... Tel: (0203) 301313

405 Employment Wanted

BRICKLAYERS... Tel: (0203) 301313

DOMESTIC help... Tel: (0203) 301313

GARDENER... Tel: (0203) 301313

406 Training

HGV 10 class... Tel: (0203) 301313

To Environmental Services - Admin.



City of
Coventry

From D Packard - Pollution

Ext 1856 Date 26th August 1992

memo

Our Ref CI/IP/DP Your Ref

ENVIRONMENTAL PROTECTION ACT 1990

ADDRESS : 45 Wareham Green, Clifford Park, Coventry

I refer to the above and Cheque No. 100959 received by this Department in conjunction with the application.

This application is now deemed to be correct and I can now authorise you to process this cheque accordingly.

If you have any queries regarding this please do not hesitate to contact me.

D Packard

wed/ac26083dp

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*

.....
MR. BHAJAN SINGH BHATOA
.....
50, HAROLD ROAD,
.....
STOKE,
.....
COVENTRY, CV2 5LG
.....

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

.....
.....
.....
.....

* 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)

.....
UNIT 4, MARSHBROOK CLOSE
.....
ALDERMANS GREEN INDUST.ESTATE,
.....
COVENTRY.
.....
.....

3. Address for correspondence if different from 1

.....
MRS. P.A. KENNEL
.....
45, WAREHAM GREEN,
.....
CLIFFORD PARK,
.....
COVENTRY, CV2 2JL
.....

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.

① LOCATION PLAN ISSUED BY.....
 CITY OF COV. PROPERTY SERVICES.....

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.

..... AS ABOVE ONLY.....

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

- 2a, b, c: ... DESCRIPTIONS OF PRESCRIBED PROCESSES.
- ③ COPY OF ANALYST'S REPORT + RECOMMENDATIONS. (See ⑧)
 - ④ GAS OIL SPECIFICATIONS
 - ⑤ CASTING ALLOYS DATA
 - ⑥ FLUX (COVERAL 11) DATA (USED IN CASTING PROCESS)
 - ⑦ RESIN (CARBIL) DATA (USED IN CORE MAKING PROCESS)
 - ⑧ ANALYST'S METHODS REPORT
 - ⑨ ANNUAL THROUGHPUT OF MATERIALS, ETC.
 - ⑩ PROPOSED LAYOUTS.. INTERNAL..EXTERNAL ③

(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):-

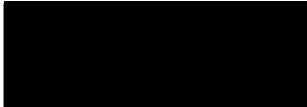
- description of the prescribed process

- 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)
 £ 900.00.....

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

PROPRIETOR :  (Signature)

.....7.8.92..... (Date)

BHATOA CASTINGS

Proprietor: B. S. BHATOA

Engineering Castings Manufacturers

**Unit 5C, ARLEY INDUSTRIAL ESTATE
SPRING HILL, ARLEY, Nr. COVENTRY CV7 8HN**

Tel:- Foundry, Fillongley (0676) 42226 Office, Coventry (0203) 611951
Facsimile, Coventry (0203) 622357

City of Coventry Environmental
Services Dept.,

Broadgate House,
Broadgate,
Coventry,
CV1 1NH

Our Ref: BSB/PAK

7th. August, 1992.

F.A.O. Mr. D. Packard.

Dear Sir,

Re: Unit 4, Marshbrook Close, Aldermans Green I/E., Coventry.
Environmental Protection Act 1990

BHATOA CASTINGS is a sole trader business started in November 1988 by BHAJAN SINGH BHATOA, universally known as Jim Bhatoa. Mr. Bhatoa is a very experienced and widely respected man in his field, and has earned the reputation of turning out high quality aluminium castings. This fact is borne out by the fact that the turnover has increased in each year of trading.

The business has been operating at Arley, under the auspices of the North Warwickshire County Council, for the three and a half years of trading. Regular inspections by their Environmental Dept., and the Health & Safety Inspectorate, have always proved satisfactory.

Since the business has the opportunity and interest to expand further, larger premises have been sought and since Mr. Bhatoa is a resident of Coventry, it is his wish to locate his business here in the expectation of bringing business and employment to the area. We have settled on premises with the City Estates Department at the above address. We have acquired the necessary planning permission and only now require a licence to operate in accordance with the above Act, for which our application is enclosed.

Our customers are of the highest calibre. Amongst them we can name the Judd and Jaguar racing engine companies, to whom we supply component castings, where only the highest quality is acceptable.

This company only produces aluminium castings which is a relatively clean operation, and Mr. Bhatoa insists on having the foundry as well turned out as his castings for the benefit of his employees as well as visitors.

Continued Page 2.....

BHATOA CASTINGS

Proprietor: B. S. BHATOA

Engineering Castings Manufacturers

**Unit 5C, ARLEY INDUSTRIAL ESTATE
SPRING HILL, ARLEY, Nr. COVENTRY CV7 8HN**

Tel:- Foundry, Fillongley (0676) 42226 Office, Coventry (0203) 611951
Facsimile, Coventry (0203) 622357

Continuation Page 2.....

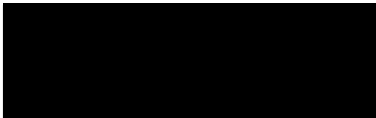
7th. August, 1992.

To maintain the goodwill and interest expressed by potential clients, it is essential that the proposed move is effected as soon as possible otherwise we risk losing much business.

This expansion not only bodes well for this company but also for the City of Coventry in the acquisition of a quality production company and additional employment prospects.

We trust that the enclosed information is sufficient to your requirements, and look forward to hearing from you at the earliest possible moment.

Yours faithfully,
for BHATOA CASTINGS.



pp. B.S. BHATOA
Proprietor.

1

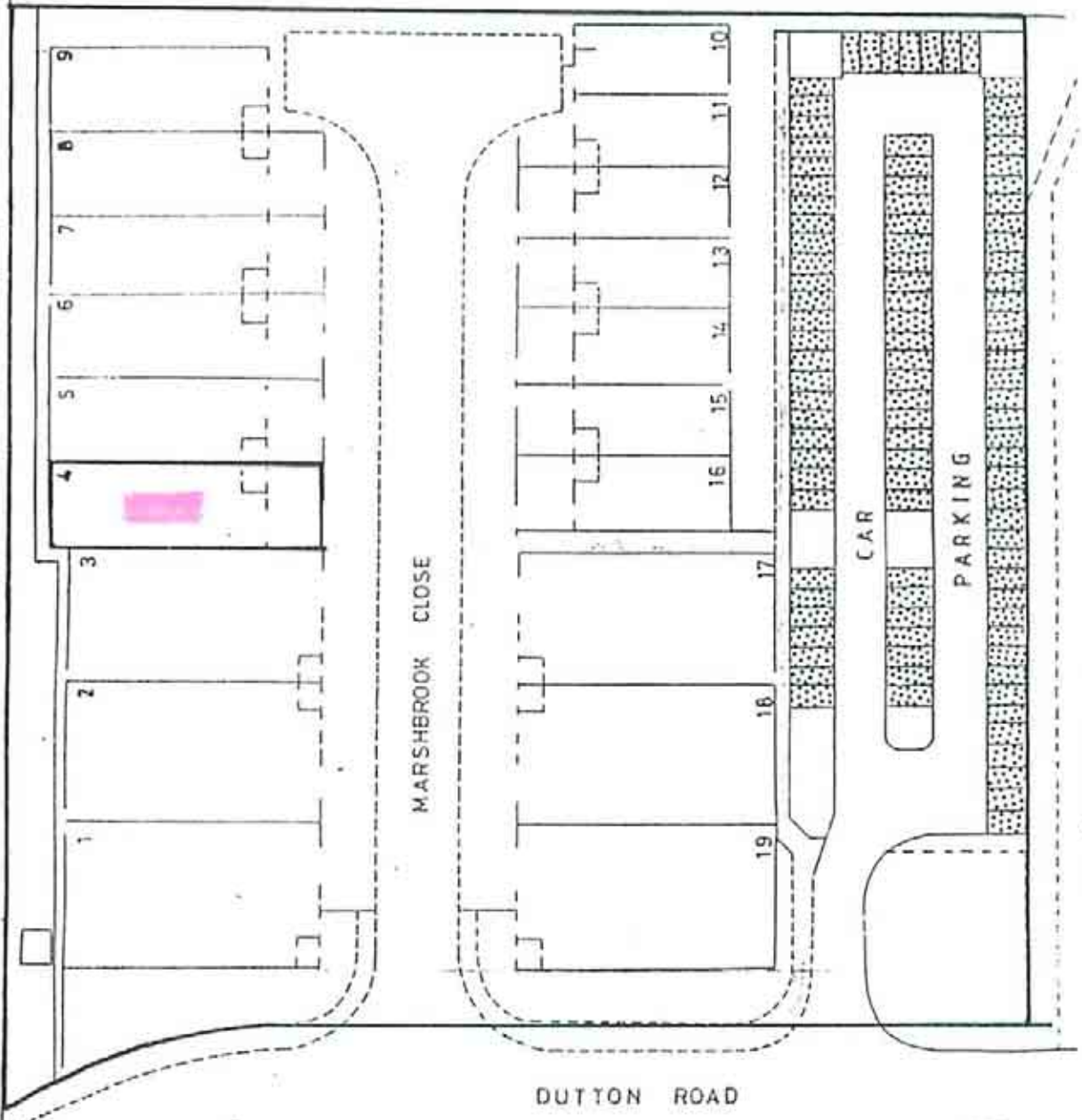
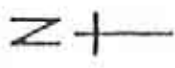
1

Mandela House,
Bayley Lane,
Coventry, CV1 5RN.
Telephone: 0203 833333.

N. W. Lomas, Director of Property Services.

PROPERTY SERVICES DEPARTMENT.

I I I I I W I I I I I



MARSHBROOK CLOSE

DUTTON ROAD

CAR
PARKING

KEY
 Car Parking

FOR IDENTIFICATION PURPOSES ONLY.

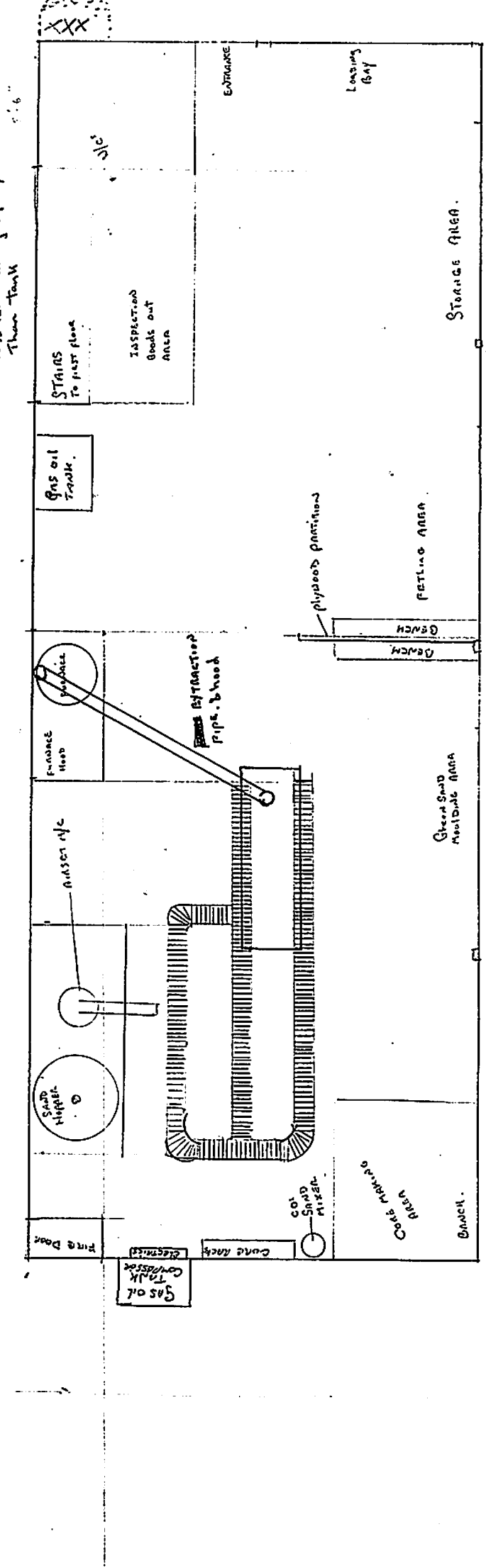
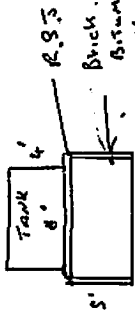
City Estates Officer, R. A. F. Rugman - Jones.

MARSHBROOK CLOSE
 ALDERMANS GREEN

scale N.T.S. job
 drawn PAL drawing
 O. S. Ref. No SP3782NW LPR - 247 - 77A
 2-5-1990

2

Would prefer to site tank on front MARKED YAX.

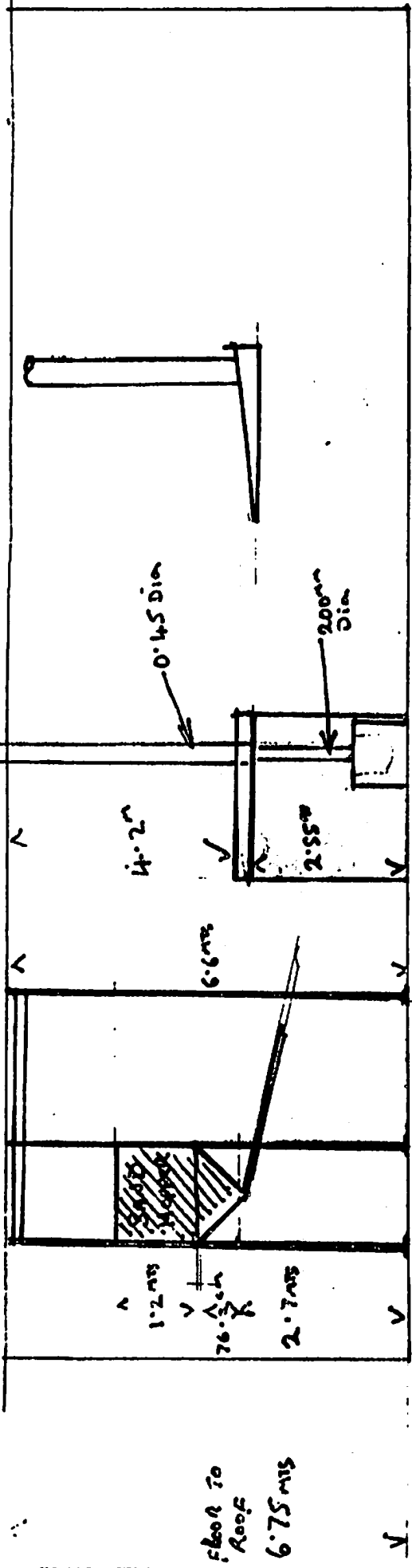


3

Pipe used sitting of Sand Hopper
& furnace heated castings.

Chimney extended
1.8 mts outside

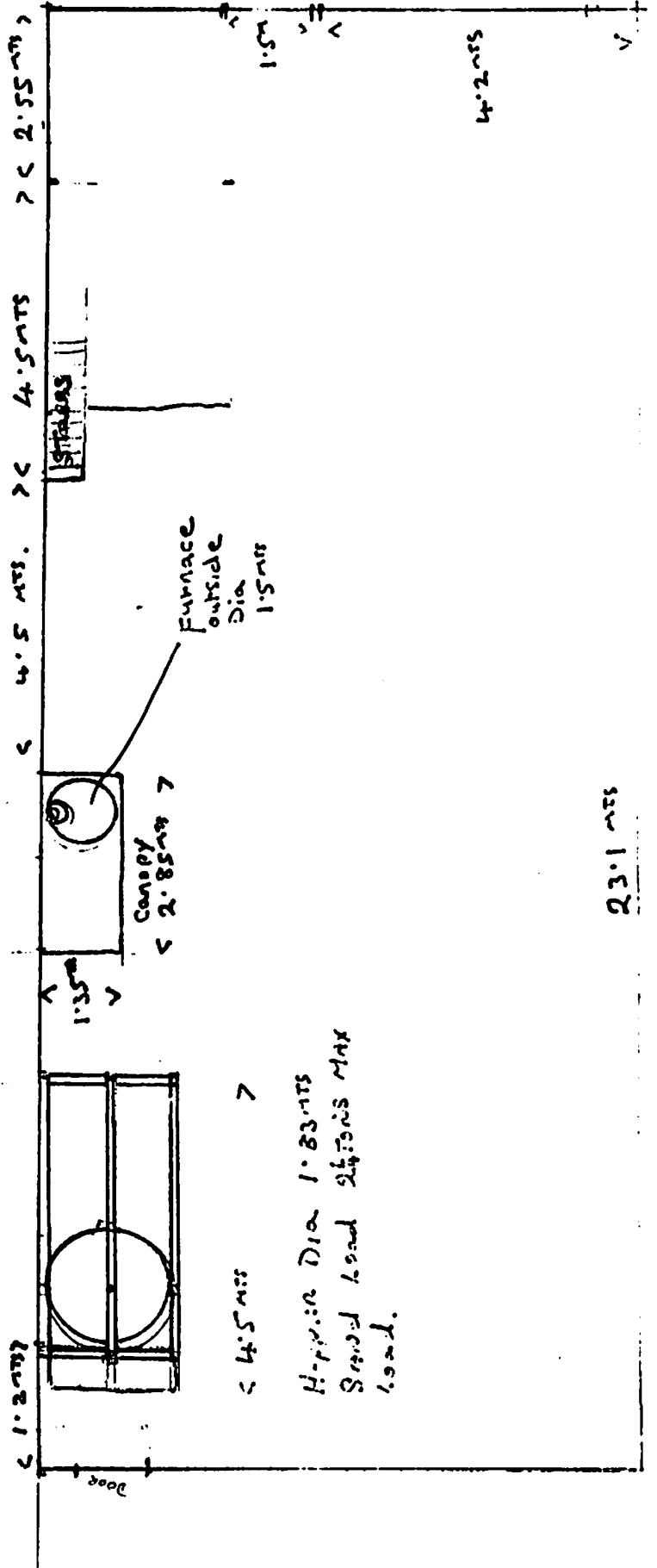
Roof Eaves



030x030x8mm STEEL
PLATES BOLTED TO
Floor

Floor to
Roof
6.75 mts

3



< 4.5 mts >

Hopper Dia 1.83 mts
Sand load slightly MAX
load.

23.1 mts

BHATOA CASTINGS - PRESCRIBED PROCESS FOR ALUMINIUM CASTING.

- 1) Raw materials delivered by suppliers or collected in our own diesel-fuelled Astra van. Heavy deliveries are off-loaded by use of 1 ton Electric Forklift Truck. All materials arrive in enclosed containers or prescribed methods of carriage, Materials to be kept in a bonded store within unit.
- 2) Furnace turned on - Gas oil fired using an atomiser vapour unit(not burner) - this is very clean running giving off no fumes or smoke during operation.
- 3) Furnace loaded to required capacity(maximum capacity of furnace is 175kgs.) - only virgin ingots are used.
- 4) The only addition to the molten metal is approx.2ozs. of Coverall 11 (flux), which covers the surface of the molten metal to form a crust which enables us to skim and remove any impurities from metal before casting. The Coverall used is non-burn or fume.
- 5) The dross that is skimmed off the metal amounts to approx. 2kgs. per day. This is placed in steel drums and returned to smelters to be re-processed.
- 6) When ready the metal is cast into sand moulds of which two types are used:-
 - a) Bromsgrove Red which is a clay-based sand with no additives other than water to keep it moist. No excessive use of water, no surplus run-off
 - b) Silica Sand which is mixed with a small amount of resin sufficient to bind sand grains. We use one of the new resins for use in foundries which is non-fume, or smoke. We endeavour to keep abreast of new products and materials always with anti-pollution in mind.
- 7) All other functions in the process, i.e. core-making, fettling, etc., are 'cold' activities and are equally harmless to the environment.
- 8) Apart from the dross the only other waste product is the used sand. This will be stored in a covered skip in the front enclosed area and collected by the skip supplier.

This process is the sole activity of this company. At no time do we release into the environment by air, water or land any substance in any quantity likely to pollute the atmosphere or surrounding environment.

BHATOA CASTINGS

26

Proprietor: B. S. BHATOA

Engineering Castings Manufacturers

**Unit 5C, ARLEY INDUSTRIAL ESTATE
SPRING HILL, ARLEY, Nr. COVENTRY CV7 8HN**

Tel:- Foundry, Fillongley (0676) 42226 Office, Coventry (0203) 611951
Facsimile, Coventry (0203) 622357

CO2 COREMAKING process for small batch coremaking for use in moulds producing aluminium sand castings.

1. 1cwt. bag of Silica Sand Grade type S0 or 95 depending on finish required emptied in Mill(Sandmixer).
2. 1000m/litres of Resin(Carsil 1) measured into pouring jug from 250kg. drum.
3. Mill started and Resin added to Sand. Mill allowed to run for two minutes as this is sufficient to coat the sand grains with the resin.
4. Sand emptied from Mill via slide door on bottom of Mill into plastic bag(sand is now in what is known as 'green' state).
5. Sand rammed or tamped into Corebox until full then gassed with CO2 Gas(gassing time varies depending on size of core, between 30 seconds and 5 minutes) by which time the core will be hard and can be removed from corebox, at which stage it is ready for use in mould and cast.
6. Once cast the breakdown process starts and when casting is cold is completely knocked out and sand disposed of into skip.

MOULD AND CORE COATING.

1. CO2 Moulds and Cores are not coated.
2. Moulds of the blacksand(clay bonded sand) are sometimes lightly sprayed with white paraffin before casting and finish to casting .

BHATOA CASTINGS

2c

Proprietor: B. S. BHATOA

Engineering Castings Manufacturers

**Unit 5C, ARLEY INDUSTRIAL ESTATE
SPRING HILL, ARLEY, Nr. COVENTRY CV7 8HN**

Tel:- Foundry, Fillongley (0676) 42226 Office, Coventry (0203) 611951
Facsimile, Coventry (0203) 622357

FETTLING

Fettling is the process of removing runners, risers and flash from castings.

1. The removal of runners, risers and any large pieces of flash is effected with the aid of a bandsaw.
1. Flash and joint lines are removed with the aid of an angle-grinder and hand files as this is only cosmetic to the castings since nearly all castings produced are machined to finish required by the customers themselves.

The use of the hand-held angle-grinder produces slight dust and a canopy and extractor is being made for use over the fettling bench. The extractor is the filter collector type unit which is emptied when full into sealed containers for disposal.



Bhatoa Castings
Unit 5C
Arley Industrial Estate
Spring Hill
Arley
Nr Coventry

10th July 1992

FAO Mrs P Kennell

Dear Mrs Kennell

Environmental Protection Act 1990, Part 1

We have now completed our investigations into the emissions to atmosphere from the existing foundry in Arley and I believe that we now have sufficient information to present to the council.

The proposed process falls within the definition given in Schedule 1, Chapter 2, Section 2.2, Part B (a) of the Environmental Protection (Prescribed Processes and Substances) Regulations 1991. As such, authorisation to carry on the process is required from the local authority, Coventry City Council.

In order to determine the application the local authority will required the following information:-

1. Description of process
2. List of prescribed substances which might cause harm if released into the air used in connection with the process.
3. Description of proposed methods for preventing the release of such substances into the air.
4. Details of the release of any such substances into the air and its effect on the environment.
5. Proposals for monitoring such releases.

The first point is a simple description of the factory processes which has already been carried out (copy attached).

The second point relates to the emission to atmosphere of substances listed in Schedule 4 of the Environmental Protection (Prescribed Processes and Substances) Regulations 1991. In the case of the proposed process the relevant substances are oxides of sulphur, oxides of nitrogen, oxides of carbon, halogens and their compounds, metals and particulate matter.

These substances would arise from the fuel used to heat the furnace, metal fume from the molten metal, and gases evolved from the flux.

Oxides of nitrogen, carbon and sulphur will be evolved during the combustion of gas oil used to heat the furnace. Fuel usage is approximately 350 litres per week and a specification sheet is attached. It is submitted that this forms part of a normal combustion process and should therefore be excluded from the application. Halogen compounds (principally fluorides) will be generated by the decomposition of the flux used on the molten metal. Both this and the metal fume will be discharged via a stack at a height of 2 metres above the roof. The metals used in the process are aluminium alloys containing varying proportions of other metals such as copper, silicon, iron etc. (see attached sheet). A measurement has been taken of the aluminium content of the fume and the total particulate concentration and the levels obtained were:-

aluminium	0.27 mg/M ³
total particulate	0.67 mg/M ³

No tests were carried out for alloying metals as these are present in very small quantities in the metal ingots (see specification sheet attached).

Part 3 is not applicable as no arrestment or treatment plant is proposed.

Point 4 is dealt with above in terms of details of releases to atmosphere. In my opinion there will be no harmful effect to the environment from such releases.

Part 5 is largely a matter for negotiation with the local authority. I would suggest that annual monitoring will be adequate.

I trust you will find this satisfactory but should you have any queries please do not hesitate to contact me.

I enclose the various documents which you provided.

Yours sincerely



/J A Pickard

Enc

BHATOA CASTINGS

3/3

Proprietor: B. S. BHATOA

Engineering Castings Manufacturers

Unit 5C, ARLEY INDUSTRIAL ESTATE

SPRING HILL, ARLEY, Nr. COVENTRY CV7 8HN

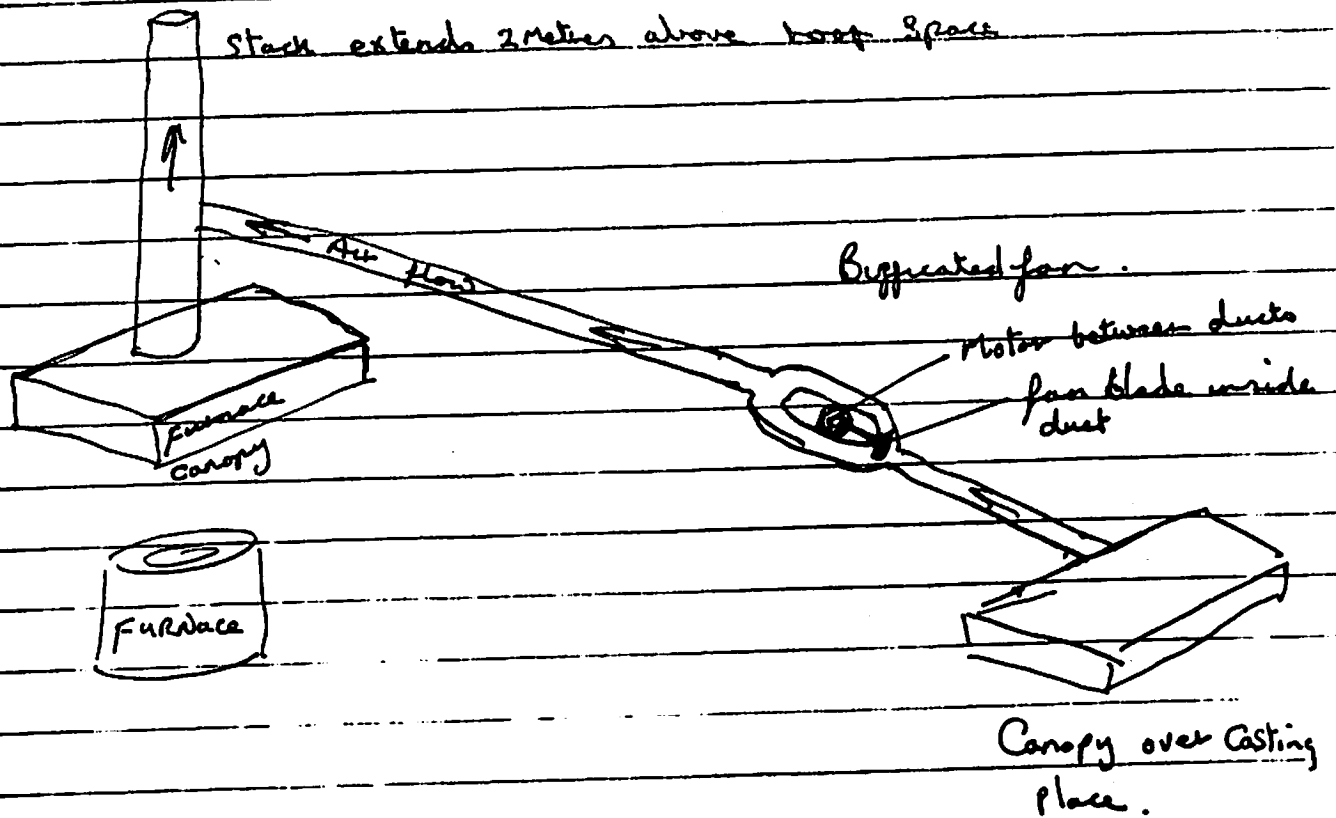
Tel:- Foundry, Fillongley (0676) 42226 Office, Coventry (0203) 611951

Facsimile, Coventry (0203) 622357

EXTRACTOR UNIT.

The main extraction proposed is one canopy over the furnace to help remove excess heat and slight fume from burner, connected via duct to another canopy over casting area in line to this. It is proposed to fit a Bifficated Fan, which directs the air around the motor so aiding motor life, and dust build up, as on conventional type fans, is reduced. (See drawing enclosed)

3/-



4

UK PETROLEUM PRODUCTS LIMITED
MARKETING SPECIFICATION

Product: GASOIL			
BS.2869: Part 2: 1988		Classes A2 & D	
	Min.	Max.	Typical
Density @ 15°C (kg/litre)	0.820	0.870	0.850
Flash point (°C) (1)	56	-	65
Kinematic Viscosity @ 40°C (cSt)	1.50	5.00	3.0
CFPP (°C) - Summer (2)	-	-4	-6
- Winter (2)	-	-12	-14
Sulphur (% mass)	-	0.30	0.25
Water (% volume)	-	0.05	<0.01
Ash (% mass)	-	0.01	neg1
Sediment by extraction (% mass)	-	0.01	neg1
Carbon Residue (3)	-	0.20	<0.1
Copper Corrosion, 3h @ 100 Deg.C	-	1	<1
Cetane Number	45	-	48
Distillation (°C)			
50% Volume Recovery	240	310	275
85% Volume Recovery	-	350	330
ADDITIONAL DATA			
Calculated Gross CV (MJ/Kg) (4)	45.0	-	45.7
Calculated Net CV (MJ/Kg) (4)	42.2	-	42.9

- NOTES: (1) Pensky - Martens (closed)
- (2) Cold Filter Plugging Point:
Summer: (16 March to 30 Sept. incl)
Winter: (1 Oct to 15 March incl)
- (3) Ramsbottom Carbon Residue % mass
- (4) To convert MJ/Kg to Btu/lb multiply by 429.932

SCP/JM 7th July 1989

FAX TRANSMISSION
Runs safely through FAX machines.

To: Pek

Company: _____

From: Sudi UKPP

Company: _____

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son Alumi

SUMMARY OF BRITISH CASTING ALLOYS

ALLOY DESIGNATION	OTHERS											Tensile Strength Min.		Elongation Min.		CASTING CHARACTERISTICS	
	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Sand Cast	Chill Cast	Sand Cast	Chill Cast	SAND PERM MOLD

BS 1490 GENERAL PURPOSE ALLOYS

ALLOY DESIGNATION	OTHERS											Tensile Strength Min.		Elongation Min.		CASTING CHARACTERISTICS			
	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Sand Cast	Chill Cast	Sand Cast	Chill Cast	SAND PERM MOLD	DIECAST	
LM2	MIN 0.7 MAX 2.5	-	9.0	-	-	-	-	-	-	-	-	-	150	-	-	-	GOOD	GOOD	EXCEL
LM4	MIN 2.0 MAX 4.0	0.20	6.0	0.8	0.6	0.3	0.5	0.1	0.1	0.2	-	-	140	160	2	2	GOOD	GOOD	GOOD
LM6	MIN - MAX 0.1	0.10	13.0	0.6	0.5	0.1	0.1	0.1	0.05	0.2	-	-	160	190	5	7	EXCEL	EXCEL	EXCEL
LM20	MIN - MAX 0.4	0.2	13.0	1.0	0.5	0.1	0.2	0.1	0.1	0.2	-	-	190	-	-	5	GOOD	GOOD	EXCEL
LM24	MIN 3.0 MAX 4.0	0.30	9.5	1.3	0.5	0.5	3.0	0.3	0.2	0.2	-	-	180	-	-	1.5	GOOD	GOOD	EXCEL
LM25	MIN - MAX 0.20	0.6	7.5	0.5	0.3	0.1	0.1	0.1	0.05	0.2	-	-	130	160	2	3	GOOD	EXCEL	GOOD
LM27	MIN 1.5 MAX 2.5	0.35	8.0	0.8	0.6	0.3	1.0	0.2	0.1	0.2	-	-	140	160	1	2	GOOD	GOOD	GOOD

*IF TI ALONE IS USED FOR GRAIN REFINING
THE AMOUNT PRESENT SHALL BE NOT LESS
THAN 0.05%

Products used in Perless

5



Foseco

6

FOSECO PRODUCT DEFINITION

FY5B

COVERAL 11 (FLUX)

COVERAL 11 is a pink powdered cleansing and drossing flux specially for ingot and clean scrap melted for sand and diecastings. It is recommended for the following typical alloys: BS1490, LM0, LM2, LM4, LM9, LM12, LM22, LM24, LM25 etc.

PHYSICAL PROPERTIES:

COVERAL 11 forms a protective layer over the melt reducing both surface oxidation and hydrogen pick-up. A thorough exothermic cleansing action removes oxides and non-metallic impurities leaving a dry dross low in metal content. It is available in 100 gm. and 250 gm. packets and in bulk.

Full application details are given in Foseco Product Data Sheet NFMT.3/3.

ANALYSIS:

Sodium	25 - 35%
Calcium	1 - 3%
Sulphate	11 - 16%
Chloride	21 - 28%
Potassium	2 - 6%
Fluoride	13 - 18%
Carbonate	4 - 8%
Silicon	2 - 4%

FIRST ISSUE AUGUST 1988

R.C.F. Pinkney.



A BURMAH CASTROL COMPANY



Registered Firm of Assessed Capability.
(BSI 5750 Part 2/ISO 9002)
Registered No. Q5249



FOSECO (F.S.) LIMITED

Tamworth Telephone: 0827 289999
Staffordshire Telex: 34357 Foseco G
England B78 3TL Fax: 0827 250806

**NON FERROUS METAL TREATMENT****COVERAL 11 FLUX**

A salmon pink, powdered exothermic dressing flux for aluminium alloys

RECOMMENDED USE:

Most aluminium alloys melted in crucible furnaces: **COVERAL**[®] 11 flux is a cleansing and dressing off medium specially for ingot and clean scrap melted for sand or diecastings. It is recommended for the following typical alloys:

BS.1490, LM.O, LM.2, LM.4, LM.8, LM.9, LM.12, LM.22, LM.24, LM.25, etc., also for most of the aerospace alloys.

Alternative types of **COVERAL** are recommended for aluminium-magnesium alloys or where even a slight sodium pick-up must be avoided.

While the principal recommendation is for crucible furnaces, **COVERAL** 11 is also extremely useful as a general dressing and cleansing flux for side-well, sloping hearth and similar melting units where a rapid and effective treatment at average metal temperatures is required.

PURPOSE:

COVERAL 11 forms a protective layer over the melt reducing both surface oxidation and hydrogen pick-up. A thorough, exothermic cleansing action removes oxide and non-metallic impurities leaving a dry dross exceptionally low in metal content.

With regular use a marked reduction in the amount of oxide build-up on the crucible walls will be observed, due to the strong solvent action of **COVERAL** 11.

INSTRUCTIONS FOR USE:

How to use: Add sufficient **COVERAL** to form a layer, usually 0.5 - 1.0 kg. per 100 kg. is required ($\frac{1}{2}$ -1 lb. per 100 lb). The cover should be present during the early stages of melting and should be maintained intact as far as possible.

FOSECO (FS) LIMITED

TAMWORTH - STAFFORDSHIRE - ENGLAND - B78 3TL

Telephone: Tamworth 269999

Telex: 34357 Foseco G

All goods are supplied subject to our Standard Conditions of Sale
copies of which are available upon request.

After degassing and grain refining a further small quantity of flux should be added and well rabbled into the immediate surface of the melt until a red glowing dross is obtained. Allow the melt to stand quietly for 2-3 minutes. Finally the dross should be removed from the melt, preferably with a perforated ladle or a skimmer, before pouring.

ADVANTAGES:

COVERAL 11 is a quality dressing flux suitable for a very wide range of aluminium alloys. Still the standard flux of this type and still made to the same high quality, it is specially recommended for ingot and clean scrap charges where metal losses must be kept low and requirements in terms of metal cleanliness are highest.

PRECAUTION:

COVERAL 11 is packed in containers with moisture-resistant liners to ensure that it arrives in perfect condition. Care should be taken to prevent moisture pick-up during storage and especially after containers have been opened.

STANDARD PACKING:

U.K:	100 gm. and 250 gm. packets in 25 kg. cartons. Bulk in 25 kg. sacks and 50 kg. drums.
Overseas:	250g. packets in 25 kg. cartons. Bulk in 50 kg. fibreboard or steel drums.

February 1986.

HEALTH AND SAFETY PRECAUTIONS**

There is no hazard to health associated with the normal storing and handling of **COVERAL 11**. The product does contain inorganic fluoride compounds and may give rise to potentially harmful fume in use on molten metal. Avoid inhalation of excessive amounts of fume or convected dust. Normal furnace exhaust ventilation should maintain any evolved gases at safe concentrations. Ensure normal levels of personal hygiene. Barrier cream or glove protection is advisable if the powdered flux is in contact with skin for lengthy periods.

There are no special handling or storage requirements associated with **COVERAL 11** except that it should be kept dry. Small spillages may be collected by suction cleaner or any method that does not raise excessive dust. Larger quantities for disposal should be referred to the Local Authority for instructions or to a specialist disposal company.

** Extracted from Health and Safety Bulletin No.4 copies of which are available on request.



Foseco

Material Safety Data Sheet

BULLETIN NO.34

Issue No. 3 - October 1990

1. **PRODUCT NAME:**

CARSIL (RESIN FOR CORES)

1, 100, 230, 260.

EXPERIMENTAL PRODUCTS

9170, 9187, 9152

GASBINDA

500, 507, 508, 513, 515, 520,

540, 542, 560, 567, T12 and T25

DYCOTE HARDENER

PROSIL

433

SILTEK

2000

SOLOSIL

123, 433

2. **PURPOSE:**

All above listed products belong to a silicate based group of sand binders for moulds and cores. Recommended methods of use are given in the individual Product Data Sheets for each product and these should be consulted to ensure correct implementation of the application procedure.

3. **CHEMICAL COMPOSITION:**

CARSIL 1 and CARSIL 100

Sodium Silicate

$Na_2O.XSiO_2$

CARSIL 230 and CARSIL 260

Sodium Silicate

$Na_2O.XSiO_2$

Borax

$Na_2B_4O_7$

EXPERIMENTAL PRODUCT 9170

Sodium Silicate

$Na_2O.XSiO_2$

EXPERIMENTAL PRODUCT 9187

Sodium Silicate

$Na_2O.XSiO_2$

Sugar

EXPERIMENTAL PRODUCT 9152

Sodium Silicate

$Na_2O.XSiO_2$

Sugar

4. **PHYSICAL DATA:**

Pale straw opaque liquid.

Pale straw opaque liquid.

Pale straw opaque liquid.

Pale straw opaque liquid.

Pale straw opaque liquid.

® Registered Trade Mark

™ Trade Mark



A BURMAH CASTROL COMPANY



Registered Firm of Assessed Capability.
(BSI 5750 Part 2/ISO 9002)
Registered No. Q5249



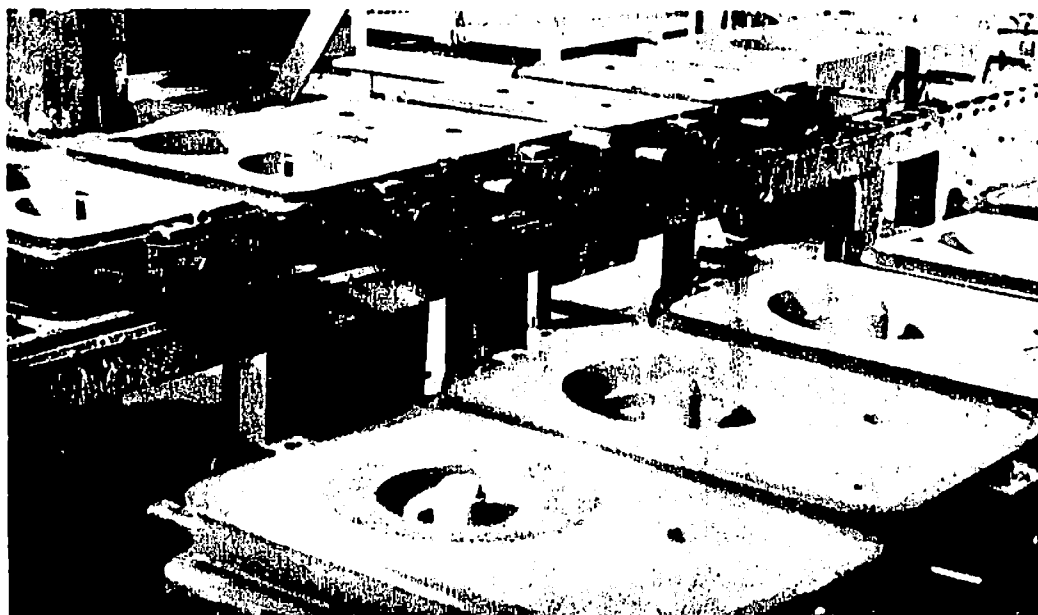
FOSECO (F.S.) LIMITED

Tamworth Telephone: 0827 269999
Staffordshire Telex: 34357 Foseco G
England B78 3TL Fax: 0827 250806

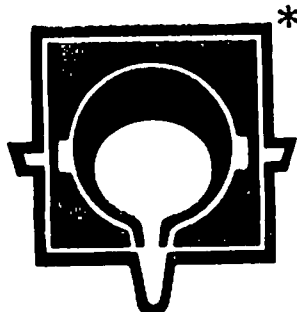
CARSIL

MM 4

CARSIL (CO₂ SET) – BINDERS FOR THE CARBON DIOXIDE AND SELF SETTING SILICATE SAND PROCESSES



CARSIL DATA CARSIL



FOSECO (F.S.) LIMITED

METALLURGICAL DIVISION
TAMWORTH-STAFFORDSHIRE-ENGLAND-B78 3TL
Telephone (0827) 289999. Telex 34357 Foseco G.

*Registered Trade Mark

WHAT IS CARSIL?

CARSIL* is the name given to the range of binders used for silicate bonded sand. The binder is mixed with clean dry sand (usually silica sand but zircon, chromite, magnesite, olivine, etc. can all be used satisfactorily) in a mixer and moulded up. Hardening of the compact can be accomplished by passing carbon dioxide gas, by stoving or by adding the appropriate CARSET*, SILISET or VELOSET setting agent at the mixing stage.

TYPES AVAILABLE

CARSIL 1

The basic grade for coremaking. Contains additions to assist core shake-out but some sand mixtures containing CARSIL 1 may require further additions of material to obtain a good casting finish and core breakdown. DEXIL* is admirable for this purpose. It is a clear viscous liquid.

CARSIL 2

This type of CARSIL contains small quantities of material intended to improve the surface finish on light alloy castings and also on thin sectioned non-ferrous and iron castings. A black liquid.

CARSIL M

This is the basic grade for moulding; it has a high green strength which permits the removal of the pattern before gassing; the green compression strength is from 0.2 – 0.4 kg per cm² (2 – 5 lb per sq in). To ensure good surface finish and breakdown use DEXIL †. An opaque white liquid.

CARSIL 7

Similar to CARSIL 1 but containing less breakdown additives. A recommended binder for the self setting process where silicate ratios of 2.0:1 are required a slightly pink liquid but the depth of colour may vary.

CARSIL 9

A higher ratio silicate (2.33:1), very sensitive to carbon dioxide. Achieves good set strength with low consumption of carbon dioxide gas. A separate breakdown addition is usually required. It is a clear viscous liquid.

CARSIL 100

A high ratio silicate specially formulated for the CARSET and SILISET self setting silicate processes. Excellent moulding and breakdown properties, consistent and reproducible response to the setting agents. A clear brown viscous liquid.

NOTE:

SOLOSIL 123 and 433 SILICATE BINDERS

In addition to the CARSIL series as described above two other silicate based binders are available. These represent a new approach to silicate technology and show a number of advantages over the more conventional materials especially in the mass production field. SOLOSIL* 123, and the most recent SOLOSIL 433, are low viscosity, high performance binders and are described in separate leaflets numbered MM18 and MM18/1 copies of which are available on request. They are not suitable for any of the self setting systems, are complex organic/inorganic binders and should be CO₂ gas hardened.

AMOUNT OF BINDER REQUIRED

TYPE	Coarse Sand	Medium Sand	Fine Sand
CARSIL 1, 2, 7 and 9	2.5 to 3.0%	4.0%	5.0 to 6.0%
CARSIL 100	2.0 to 3.0%	3.0 to 3.5%	3.5 to 6.0%
CARSIL M	3.5 to 4.0%	5.5%	6.0 to 7.0%

†NOTE: DEXIL breakdown additives also act as binder extenders and when using them it may be possible to reduce the above quantities by up to 30%.

PREPARING THE MIX – THE CARBON DIOXIDE PROCESS

CARSIL is supplied as a viscous liquid. Most normal sand mixers are satisfactory for preparing CARSIL and the procedure is as follows:

Charge the sand, which must be clean and dry, into the mixer. Add the required amount of breakdown material if this is to be used; DEXIL, a material compounded specially for the purpose is recommended. The usual addition of breakdown agent varies between 0.5 and 2%. Mix the dry sand and the breakdown agent together in the mixer for 1 to 3 minutes and then add the CARSIL in the correct proportion shown in the table. Mix for a further 1 to 3 minutes and the sand is then ready for moulding. Take care not to over-mix or allow the mixture to heat up unduly during the mixing cycle.

Storage of mixed sand – Because of the presence in the atmosphere of small quantities of carbon dioxide, surface hardening of the mixed sand can occur. To avoid this, all mixed sands should be stored either in airtight containers or in a storage bin covered with a slightly damp cloth or a sheet of polythene.

PREPARING THE MIX – THE SELF SETTING PROCESSES – CARSET, SILISET and VELOSET

(a) Using the CARSET 1 powder setting agent

Instead of mixing the sand with silicate and then hardening with carbon dioxide gas as described above, it is also possible, using CARSET 1 and CARSIL 7, to produce a self setting material. Approximately 1½% of CARSET 1 is mixed with the clean, dry, cold sand for 1 – 2 minutes followed by the addition of the normal quantity of silicate (usually about 3½%). Continue mixing for a further 1 – 2 minutes. CARSET 1 induces a chemical set starting about 30 minutes after discharge. The time taken to harden completely depends on the size of the mould or core but is usually 3 – 4 hours. Gassing with carbon dioxide gas is eliminated and knock-out after casting is so good that a separate breakdown addition is usually unnecessary. Once mixed, sand containing CARSET 1 cannot be stored and should be used right away. Used mainly for large moulds and other applications where the relatively slow setting time is not a disadvantage.

(b) Using CARSET 500 and 600 Series or SILISET S and T Series liquid setting agents.

These agents initiate a chemical reaction with the silicate binder resulting in a chemically induced set. The speed of reaction is therefore dependent on temperature and the choice of the type of agent to be used will in turn be dependent on the mix temperature and the required bench life of the sand. The properties of the individual products in these ranges should be consulted before deciding which to use. There are five distinct products in each range giving setting times from a few minutes to over an hour. Information sheet No. 62, copies available on request, should be consulted for details.

(i) Batch mixing

Add the correct amount of the selected hardener to the sand and mill until evenly dispersed – usually 30 – 90 seconds. Then add the CARSIL silicate binder and continue mixing until homogeneous. This usually takes 1 – 2 minutes. Do not over-mill as this raises mix temperature and interferes with the calculated bench life. All additions of sand, binder and setting agent must be accurately measured.

(ii) Continuous screw type mixers

If possible the setting agent should be introduced to the sand in the trough before the CARSIL binder. Mix temperature and additions required are calculated as for batch mixing.

Whichever method of mixing is used all prepared sand should be placed in position without delay as the hardening process will proceed independently of all external factors except temperature.

(c) Using VELOSET 1, 2 and 3

These are the newest, very high speed agents giving setting speeds and strengths comparable to some of the resin systems of between 2 and 11 minutes when used with the recommended silicate binder. Information is available in Product Data Sheet MM22/1, on request. Because of the very high setting speeds that are possible batch mixing is normally precluded and continuous or on-demand mixers are preferred.

SUITABLE SANDS

CARSIL should be mixed with clean, dry, cold, silica sand free from clay and excessive fines. Even small amounts of water (0.25% to 1%) in the sand lead to a rapid loss of strength after standing and a slight reduction in initial strength after gassing. It is important, therefore, to ensure that the sand is dry and cold. Sands should also be free from clay. Very small quantities, of the order of 1%, will affect the strength of cores after standing for a short while.

SURFACE FINISH AND COLLAPSIBILITY

Light Alloys

CARSIL undergoes only slight chemical changes at the pouring temperature of light alloys and the knock-out properties are usually adequate. If in difficulty over collapsibility, small additions (up to 1%) of DEXIL are beneficial; alternatively CARSIL 2 can be used. Surface finish basically depends upon the type of sand used; a coarse sand gives a rough finish and a fine sand a smooth finish. Improved surface finishes can be obtained by using MOLDCOTE 9 flash dressing.

With magnesium alloy castings, conventional inhibitors such as ammonium bifluoride and boric acid must NOT be employed with CARSIL bonded sands since they decompose the binder in the mix before hardening. Sulphur can be used if necessary and the normal addition is about 5%. Alternatively an inhibited dressing such as MOLDCOTE 40 or 41 can be used.

Non-Ferrous Alloys

A chemical change resulting in hardening takes place in the binder at the pouring temperature of non-ferrous alloys, and it is therefore, essential to use a breakdown additive. The most effective material is DEXIL.

For improved surface finish use MOLDCOTE 6 or 11 for dressing the mould or core.

Iron

With iron it is usually essential to use a breakdown additive in the mix, the most effective being DEXIL. It also reduces the incidence of burning-on and metal penetration.

In order to obtain the best possible surface finish, cores and moulds for iron should be coated with either MOLDCOTE 6 or 11.

Steel

Difficulties may be experienced with certain types of steel castings making it essential to use a breakdown agent.

Coatings for steel castings are always based on finely divided highly refractory materials such as zircon. The appropriate dressings to improve surface finish are MOLDCOTE 33, CERAMOL[®] 65 or 256 or ISOMOL 100.

The problem of obtaining good surface finish is particularly acute with manganese steels. For this type of steel ISOMOL 100 is recommended to overcome the problem of a typical slag/oxidation reaction between the metal and the mould or core.

NOTE: It is always preferable to use a mould or core dressing having a flammable spirit base rather than one based on water, as water tends to weaken the bond between the sand grains and produce a friable surface with consequent poor finish to the casting.

ADVANTAGES OF SILICATE BONDING

No drying ovens required – No core carriers required – No blowing from properly hardened moulds and cores – Reduced core making costs – Lower handling costs – Easy sand control – Dimensional accuracy – No distortion of sand whilst casting – Core and mould reinforcing bars are eliminated or reduced in number – Little fuming – Cores can be stored almost indefinitely – CARSIL bonded sands are less expensive than those bonded with conventional oils or resins – Environmentally acceptable – Few disposal problems – No health hazard.

STANDARD PACKING

U.K.:	CARSIL 1, 7 and 9	–	50 kg and 325 kg steel drums
	CARSIL M and 2	–	50 kg and 125 kg steel drums
	CARSIL 100	–	325 kg steel drums
Overseas:	CARSIL 1, 7 and 9	–	50 kg and 300 kg steel drums

HEALTH AND SAFETY PRECAUTIONS

CARSIL

All CARSIL products are water dispersible, non-flammable and contain no resinous material. Precautions required are essentially only those relating to a slightly alkaline substance. Avoid prolonged skin contact and wear protective clothing or barrier cream if necessary, including eye protection if there is danger of splashing. Maintain normal standards of personal hygiene.

Store products in original or alkali resistant containers at normal indoor temperatures. Keep from freezing. Spillages or larger amounts for disposal may be hosed away with excess water or tipped over waste ground and allowed to weather.

CARSET

CARSET 1 is a non-hazardous powder with no toxic properties and no special precautions or handling instructions are necessary.

CARSET and SILISET series and VELOSET 1, 2 and 3 are all flammable organic liquids with high flash points. 47°C in the case of CARSET 600 and SILISET S series, 133°C for CARSET 500 and SILISET T series and 135°C for the VELOSET series. Products should be stored and used in safe locations away from possible sources of ignition. Avoid ingestion and excessive skin contact do not continue to wear contaminated clothing. Product for disposal may be incinerated using a safe system or the Local Authority or a specialist waste removal firm approached.

* Registered Trade Mark



Bhatoa Castings
Unit 5C
Arley Industrial Estate
Spring Hill
Arley
Nr Coventry

3rd August 1992

FAO Mrs P Kennell

Dear Mrs Kennell

I refer to our meeting on Friday July 31st 1992 to discuss the additional information required by Coventry City Council in respect of your application for authorisation under the Environmental Protection Act.

Isokinetic sampling to meet the requirements of BS3405: 1983 was not possible in this instance due to the small size of the ducting used. Having seen the equipment used for these measurements I am sure that you can appreciate that isokinetic can only be carried out where the exhaust ducting is substantial in size (more than 2 feet in diameter). Both the existing installation at Arley and the proposed installation in Coventry are very small and isokinetic sampling is not physically possible.

The actual measurement of the dust burden were carried out by placing a battery operated pump connected to a 0.45 micrometre membrane filter at various position within the premises whilst the factory was in normal operation. The filters were then examined for total particulate and aluminium content.

Similarly no measurements of the efflux velocity were carried out as the existing installation acts primarily as a chimney to remove excess heat. The proposed installation does include a bifurcated fan and we will measure the efflux velocity from the stack as part of the annual monitoring programme.

I trust you will find this satisfactory but should you have any queries please do not hesitate to contact me.

Yours faithfully

J A Pickard

3 Fairfield Court
Wheler Road, Whitley, Coventry CV3 4LA
Tel: 0203 639012 Fax: 0203 639710
Registered in Great Britain 2050581

BHATOA CASTINGS

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Proprietor: B. S. BHATOA

Engineering Castings Manufacturers

**Unit 5C, ARLEY INDUSTRIAL ESTATE
SPRING HILL, ARLEY, Nr. COVENTRY CV7 8HN**

Tel:- Foundry, Fillongley (0676) 42226 Office, Coventry (0203) 611951
Facsimile, Coventry (0203) 622357

ANNUAL THROUGHPUT OF MATERIAL (APPROX.)

ALUMINIUM ALLOY.	9000 Kilos.
COVERAL(Flux)	100 Kgs.
CARSIL(Core Resin)	300 Kgs.
GAS OIL	1000 Litres per month.
FURNACE CAPACITY:	440 Lbs.
AVERAGE MELT LOAD:	150 Lbs. (Max. to date 280 Lbs.)

To melt 150 lbs takes approx. 2hrs. from lighting furnace to casting temperature - re-heating to maintain temperature as required.

Burning time per 8hrs. day approx 5½hrs.