

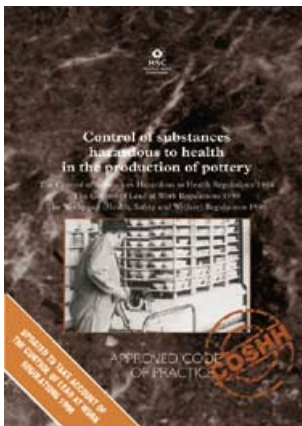
Control of substances hazardous to health in the production of pottery

The Control of Substances Hazardous to Health Regulations 1994

The Control of Lead at Work Regulations 1998

The Workplace (Health, Safety and Welfare) Regulations 1992

Approved Code of Practice and guidance



This is a free-to-download, web-friendly version of L60, (First edition, published 1995). This version has been adapted for online use from HSE's current printed version.

You can buy the book at www.hsebooks.co.uk and most good bookshops.

ISBN 978 0 7176 0849 2
Price £5.00

This Approved Code of Practice – also known as the ‘Potteries ACOP’ – looks at aspects of health and safety in the production of pottery bodies, glazes and colours, and the manufacture of lithographic and other transfers for use in the decoration of pottery.

It is aimed at all people who work in pottery production who are exposed, or who might be exposed, to substances hazardous to health.

© *Crown copyright 1995*

First published 1995
Reprinted with amendments 1998

ISBN 978 0 7176 0849 2

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without the prior written permission of the copyright owner.

Applications for reproduction should be made in writing to:
The Office of Public Sector Information, Information Policy Team,
Kew, Richmond, Surrey TW9 4DU or e-mail: licensing@opsi.gov.uk

This Code has been approved by the Health and Safety Executive and gives advice on how to comply with the law. This Code has a special legal status. If you are prosecuted for breach of health and safety law, and it is proved that you have not followed the relevant provisions of the Code, a court will find you at fault, unless you can show that you have complied with the law in some other way.

Contents

Notice of Approval 4

Introduction 5

Scope of this Code 5

Application 5

Duties under the Regulations 5

Prohibitions 6

Assessment 7

Control measures 9

Use of control measures 20

Maintenance of control measures 21

Monitoring exposure 22

Health surveillance 23

Information, instruction and training 24

Appendix 1 Definitions 25

Appendix 2 Extracts from COSHH general ACOP records to be kept for thorough examinations and tests of local exhaust ventilation plant and respiratory protective equipment and for monitoring of exposure and health surveillance 26

Appendix 3 Further information 28

Appendix 4 Approved method for determining low solubility glaze 30

Appendix 5 Leadless glaze and the definition of a low solubility inorganic lead compound (Reproduced from Appendix 1 of the CLAW ACOP) 31

Notice of Approval

By virtue of Section 16(4) of the Health and Safety at Work etc Act 1974 (the 1974 Act), and with the consent of the Secretary of State for the Environment, Transport and the Regions pursuant to section 16(2) of the 1974 Act, the Health and Safety Commission has on 6 March 1998 approved the revision of the Code of Practice entitled *Control of substances hazardous to health in the production of pottery* (Second Edition).

The revised Code of Practice entitled *Control of substances hazardous to health in the production of pottery* (Third Edition) (L60(rev), ISBN 0 7176 0849 2) comes into effect on 1 April 1998.

The revised Code of Practice gives practical guidance with respect to the Control of Substances Hazardous to Health Regulations 1994 (as amended by the Mines (Substances Hazardous to Health) Regulations 1996, the Control of Substances Hazardous to Health (Amendment) Regulations 1996 and the Control of Substances Hazardous to Health (Amendment) Regulations 1997) and the Control of Lead at Work Regulations 1998.

By virtue of section 16(5) of the 1974 Act and with the consent of the Secretary of State under that paragraph the Health and Safety Commission has withdrawn the Code of Practice entitled *Control of substances hazardous to health in the production of pottery* (Second Edition) (L60, ISBN 0 7176 0849 2) which shall cease to have effect on 1 April 1998.

Signed

ROSEMARY BANNER
Secretary to the Health and Safety Commission

6 March 1998

Introduction

Scope of this Code

1 This Approved Code of Practice (known as the 'Potteries ACOP') applies where persons are exposed, or are liable to be exposed, to substances hazardous to health in the production of pottery, the preparation of raw materials for use in, and production of, pottery bodies, glazes and colours, and the manufacture of lithographic and other transfers for use in the decoration of pottery.

2 This Code is intended as an amplification of certain aspects of the Health and Safety at Work etc Act 1974, the Approved Codes of Practice (ACOPs) under the Control of Substances Hazardous to Health Regulations 1994 as amended (COSHH), the Control of Lead at Work Regulations 1998 (CLAW) and the Workplace (Health, Safety and Welfare) Regulations 1992. All four codes are concerned with the correct matching of the precautions to the risk and should be treated as complementary.

Application

3 This Code of Practice applies to all premises where there is carried on:

- (a) the manufacture, making or decoration of pottery;
- (b) the preparation of pottery bodies and the calcining, crushing, grinding or sieving of flint or quartz and the mixing of flint or quartz with clay or other material;
- (c) the manufacture of lithographic and other transfers, frits, colours or glazes for use in the manufacture, making or decoration of pottery.

4 The term 'pottery' includes china, earthenware and any article made from clay or from a mixture containing clay and other materials.

5 It does not apply to:

- (a) the manufacture of unglazed or salt glazed ware made from natural clay in the plastic state, to which no flint or quartz or other form of free silica is or has been added, including roof tiles, vitrified clay pipes, clay land drains, floor quarries and similar heavy clay products;
- (b) the manufacture of glazed or unglazed bricks;
- (c) architectural terracotta made from plastic clay and either unglazed or glazed with leadless glaze only;
- (d) the manufacture of potter's colours and transfers, other than lithographic transfers, where pottery is not manufactured, made or decorated;
- (e) the manufacture of refractory articles;
- (f) the extraction and primary processing of raw materials prior to the activities in 3(b) above.

Regulations

Duties under the Regulations

COSHH regulation 3 and General ACOP paragraphs 5–8

CLAW regulation 3 and ACOP paragraph 29

ACOP

6 In pottery production and associated processes, the employer has duties to all his employees under the Regulations. He also has like duties so far as is reasonably practicable to persons who are not his employees when they are on his premises with the exception of health surveillance. For other persons, such as members of the public not on the premises who could be affected by his work, he should, so far as is reasonably practicable, assess the risk and prevent or adequately control exposure to substances hazardous to health by the provision and maintenance of control measures.

7 The work is unlikely to affect members of the public visiting the premises for example for sight-seeing and purchase of pottery, but there could be limited risks to some students in educational establishments and risks to outside contractors, especially when engaged on maintenance and cleaning of plant, machinery and parts of buildings where there may be contamination by, for example, silica or lead. The spread of contamination on clothing, especially of lead, outside the premises to homes for example, has also to be considered.

Regulations

Prohibitions relating to certain substances and COSHH General ACOP paragraph 9

COSHH regulation 4 and Schedule 2

CLAW regulation 4(1)

ACOP

Aims

- 8(a) to prohibit the introduction of flint or quartz in dry powdered form at certain operations and to control its introduction at other operations;
- (b) to thus reduce exposure to free silica;
- (c) to prohibit the use of glazes other than leadless or low solubility glazes. (For the definition of leadless and low solubility glazes see CLAW regulation 2(1).)

9 This means that:

- (a) no person should use ground or powdered flint or quartz, other than natural sand for:
 - (i) placing of ware for biscuit firing;
 - (ii) polishing of ware;
 - (iii) as an ingredient of a wash for saggars, trucks, bats, cranks, or other articles used in supporting ware during firing;
 - (iv) as a dusting or supporting powder in potters' shops;
- (b) where natural sand is used the work should always be assessed to establish levels of exposure to free silica;
- (c) ground or powdered flint or quartz should never be introduced or used in premises unless it is in the form of a slop or paste except where it is used in separate rooms or buildings for the manufacture of ground or powdered flint or quartz or for the making of frits, glazes, colours or coloured slips for use in the decoration of pottery;
- (d) dry ground, or powdered flint or quartz may be introduced or used for the manufacture of pottery bodies provided it is used only in an enclosure in which no person is employed and which is constructed and ventilated to prevent the escape of dust. This will not preclude entry into such plant for maintenance and cleaning purposes provided measures to secure adequate control are adopted to protect persons engaged in such work. Where dry ground or powdered flint

ACOP

or quartz is introduced or used for the above purpose, it should be brought into, kept and moved in the premises in bags or other containers which are sealed or closed to prevent the escape of dust;

- (e) only leadless or low solubility glazes, as defined in regulation 2 of The Control of Lead at Work Regulations 1998 (and Appendix 1 of the CLAW ACOP), may be used in the manufacture of pottery. It should be noted that this prohibition does not apply to colours containing lead (Appendix 1 of the CLAW ACOP is reproduced as Appendix 5 of this ACOP).

Regulations

Assessment

COSHH regulation 6 and General ACOP paragraphs 12–27

CLAW regulation 5 and ACOP paragraphs 34, 35, 40, 41, 50–52, 54 and 55

See also relevant HSE guidance on assessment. (See list of References in Appendix 3 of this Code.)

ACOP

Aims

- 10(a) to assess the nature and extent of the risks to health from work with substances hazardous to health;
- (b) to establish what needs to be done to meet the requirements of the COSHH and CLAW Regulations.

11 The assessment should be carried out by a competent person who has sufficient technical knowledge of pottery and allied processes to be able to identify the risks arising from the work and the precautions necessary, and it should be reviewed regularly.

12 For assessment purposes it can be accepted that the principal substances hazardous to health are likely to include:

- (a) free silica in pottery bodies and materials for use in pottery bodies;
- (b) lead and its compounds in frits, glazes and colours;
- (c) corrosive acids used in cleaning and etching of ware;
- (d) solvents used in the manufacture and application of transfers, printing inks and colours;
- (e) biocides in slips and glazes.

13 The nature and extent of the risk arising from working with these and also other substances may be determined by identifying:

- (a) which of the substances employees are liable to be exposed to using information such as that found on package/container labels and in safety data sheets provided by suppliers of, for example, raw materials, prepared pottery bodies, glazes and colours;
- (b) how the substance can get into or come into contact with the body and its effects, for example inhaling silica dust especially from secondary shaping processes, ingesting lead from skin contaminated by dipping in low-solubility glazes;
- (c) which persons/groups are liable to be exposed, in particular persons employed in sliphouses, making shops, glazing and decorating processes, cleaners, maintenance workers, contractors, pottery teachers etc;
- (d) previous experience and knowledge of pottery processes including previous records of exposure such as mineral dust sampling results and medical surveillance data, for example on certain clay shop workers;

ACOP

(e) reasonably foreseeable deterioration in or failure of measures provided to control exposure, such as the drying out of materials, including bodies, glazes and colours used in wet methods of production, and reduction in the efficiency or failure of exhaust ventilation systems provided to control dust.

14 The assessment should establish whether exposure to substances hazardous to health has been prevented or the steps which need to be taken to achieve and sustain adequate control. In practice for inhalable substances, this will mean establishing that:

- (a) for substances for which a maximum exposure limit (MEL) is specified, such as silica, man-made mineral fibres and colours containing cadmium, the exposure is reduced to the lowest level reasonably practicable and in any case below that limit;
- (b) for a substance with an occupational exposure standard (OES), the exposure does not exceed the occupational exposure standard or if the standard is exceeded the reasons have been identified and appropriate action is taken to remedy the situation as soon as is reasonably practicable;
- (c) for substances for which neither a maximum exposure limit nor occupational exposure standard has been specified, the exposure is adequately controlled. (See COSHH General ACOP, paragraph 38.)

15 Where there is risk from ingestion or absorption of hazardous substances or from skin contact the assessment should identify the control measures necessary to adequately control exposure by such routes. (See COSHH General ACOP, paragraph 39.)

16 In the case of lead, the person carrying out the assessment will need to establish whether persons are liable to be significantly exposed to lead (see paragraphs 19 and 20 and CLAW regulation 2 and CLAW ACOP paragraphs 23, 24, 34 and 35).

17 From previous experience, it can be assumed that risks will inevitably arise from the processes specified in paragraphs 23–27 below, and measures to achieve and sustain adequate control of exposure need to be taken.

18 In the following cases experience has shown that in normal circumstances exposures will be adequately controlled:

- (a) in relation to lead risks:
 - (i) work with leadless glazes;
 - (ii) decoration of pottery with transfers;
 - (iii) hand painting of pottery and the mixing of dry colours in small quantities by painters for their immediate use as long as personal hygiene is satisfactory and brushes are not wetted by mouth;
- (b) in relation to educational establishments, any pottery processes, provided that these are of a limited nature, manufacturers' and suppliers' instructions are followed and personal hygiene is satisfactory.

Air sampling not normally required for assessment purposes

19 In the cases in paragraphs 18, 23, 24, 26 and 27 of this ACOP, experience has shown that atmospheric sampling will not normally be required to determine the nature and extent of the risks to health for the purposes of assessment, as these are usually immediately obvious and require appropriate control measures to be taken.

ACOP

Air sampling normally required for assessment purposes

20 In the case of the lead processes in paragraph 25 below, including work with low solubility glazes, experience has shown that the nature and degree of exposure is not necessarily readily obvious even between apparently similar work situations. Exposure may vary greatly depending not only on the materials used, but also their methods of use and the particular control measures applied. Therefore, atmospheric sampling is required for the assessment unless there are valid and sufficient grounds for concluding, without sampling, that exposure is either significant or not significant. An example might be where measurements have been taken previously and still provide relevant, valid and sufficient information about the work under consideration.

21 For any other airborne substance, sampling will be required where there is insufficient information to be confident about the degree and nature of exposure, where comparison with occupational exposure limits is necessary or otherwise where there are doubts about the level of risk.

Regulations

Control measures

COSHH regulation 7 and General ACOP paragraphs 28–49

CLAW regulation 6 and ACOP paragraphs 56, 57, 64 and 65

Workplace Regulations regulations 9 and 21 and ACOP paragraph 211

See also any relevant technical literature including HSE guidance listed in the references at Appendix 3 of this Code.

ACOP

Aims

- 22(a) To control silica in air to or below the occupational exposure limit;
- (b) to control lead in air to or below the lead in air standard and to prevent the ingestion of lead;
- (c) to prevent exposure, or, where this is not reasonably practicable, ensure adequate control of any other substance in use in the industry assessed as being hazardous to health.

Measures to achieve and sustain adequate control should be provided in particular for the following:

Silica risk

Body preparation

- 23(a) The manipulation of calcined flint or dry quartz and the sieving of material from the calcining kiln;
- (b) operation of screens, sieves, chutes, conveyors, elevators, mixers and similar plant used for manipulating materials containing flint or quartz;
- (c) the dry crushing and grinding of flint or quartz and the dry grinding of any material for a pottery body;
- (d) the loading or unloading of calcined flint or of quartz or clay granulate into or from any container or machine;
- (e) the transfer or handling of dry materials in sacks or other containers;
- (f) the sifting of clay granulate for making tiles or other pottery articles by pressure;
- (g) the conveyance of clay granulate to presses and other processing plant by conveyors and other plant;

ACOP

- (h) spray drying of clay granulate and other materials for the production of pottery articles.

Shaping, ancillary processes and glazing

- 24(a) Fettling, towing and other methods for removing faults from ware before firing;
- (b) the pressing of tiles and other articles from clay granulate;
- (c) the cleaning of earthenware biscuit articles, for example by brushing and vibrating;
- (d) the mixing and spraying of an engobe or slip which contains flint or quartz;
- (e) the mixing and spraying of glaze.

Lead risk

Glazing and decorating

- 25(a) The manufacture of frits, glazes or colours;
- (b) colour spraying or the wiping off of colour after that process;
- (c) glaze spraying or glaze blowing (other than of a leadless glaze);
- (d) colour grinding, sieving or mixing of dry colours (except mixing of small quantities of colours by painters for their own immediate use);
- (e) lithographic transfer making;
- (f) laboratory work connected with any manufacture of frits, glazes, colours or transfers;
- (g) the mixing of dry powdered glaze with water in the place of use;
- (h) dipping or other work carried on in the dipping house including the work of dippers' assistants;
- (i) drying after the application of glaze by dipping, spraying or any other process;
- (j) ware cleaning after the application of glaze by dipping, spraying or any other process;
- (k) glost placing;
- (l) ground laying or colour dusting.

Maintenance and cleaning risks

- 26(a) Maintenance of plant which may be contaminated by lead, silica and other substances hazardous to health, particularly dust extraction systems and frit kilns;
- (b) cleaning of plant and workrooms, with particular reference to those areas referred to in paragraphs 54-78 below.

Other risks

- 27(a) The removal of dirt and imperfections from earthenware and china articles by enclosed machine methods such as vibromilling, rumbling etc where placing powders have been used;
- (b) the placing of ware using alumina or other powdered placing materials and the emptying of saggars, if such materials are used;
- (c) the sieving of alumina or other powdered placing materials;
- (d) the polishing of ware;
- (e) rectification of defects in glost ware by dry grinding, abrading and similar processes using a power driven tool.

ACOP

Specific control measures required for certain substances

Hydrofluoric acid

28 The acid should be kept in closable non-spill vessels and separated from other chemicals. It should only be used in a well ventilated area. Except where the quantity in use is so small that there is no risk from skin contact by splashing or spillage, for example in ware repair, suitable protective clothing including protective gauntlets/gloves, aprons and eye protection, as appropriate should be provided at the site where the acid is used. Implements for dispensing acid should be designed to prevent the acid running or creeping up the handle onto the fingers of the user. Spillages should immediately be neutralised by sodium bicarbonate solution or powdered sodium bicarbonate, soda ash or slaked lime, depending on the scale of the spillage, and contaminated surfaces thoroughly washed with water. In the event of contact with the acid, special first-aid measures and medical help should be obtained immediately.

Solvents and biocides

29 Solvents and biocides should be used and applied in accordance with the manufacturers' or suppliers' instructions as indicated on labels and in safety data sheets, and in accordance with the control measures indicated as necessary for the process by the assessment.

Dusts

Wet methods

30 Dust from silica or lead bearing materials or articles can be prevented if the materials or articles are thoroughly wetted and kept wet.

31 As far as reasonably practicable, wet methods should be used, in particular for:

- (a) the milling and mixing of materials in the preparation of pottery bodies;
- (b) sliphouse work where ground or powdered flint or quartz can be used in the form of a slop or paste.

32 Raw lead compounds should not be handled except with at least 5% moisture content.

33 Where wet methods are used, including the damp fettling of green ware, it is essential that the material should be kept sufficiently wet/damp to prevent dust being given off. Particular care should be taken when ware is not fettled on the same day as it is formed, a problem which is particularly acute after weekends.

34 Suitable containers should be provided for scraps, and in particular:

- (a) scrap returns to the sliphouse from making processes should be returned direct to the blunger and not tipped onto the floor for subsequent shovelling into the blunger except where this is not reasonably practicable, in which case they should be kept sufficiently damp to prevent dust being given off during transfer and handling;
- (b) suitable containers and properly designed work benches should be provided for damp fettling to prevent scraps falling on the floor;
- (c) for ware cleaning, trays or other receptacles containing water should be provided to collect glaze dust and scraps not controlled by exhaust ventilation;

ACOP

- (d) belts of ware cleaning machines and similar apparatus should not be allowed to become contaminated with dried glaze.

Enclosure of plant and exhaust ventilation

35 Totally enclosed plant, processes and handling systems provided with effective exhaust ventilation to prevent the escape of dust should be provided unless wet methods can be used to prevent dust being given off. Where inlets in enclosures are necessary, for example hoods or partial enclosures at working positions, effective local exhaust ventilation should be provided. Air removed by exhaust ventilation should pass through a dust collector or other suitable filtration before being discharged to the open air. Where filtered or otherwise cleaned air is to be recirculated back to the work area an assessment should be made to determine the measures necessary to ensure adequate control of substances hazardous to health including lead.

36 The processes listed in paragraphs 23–27 above will need careful assessment to determine the type of engineering, process and procedural controls, including systems of work, which need to be adopted to ensure adequate control of exposure to substances hazardous to health.

37 Respiratory protective equipment will be required for those operations, for example, maintenance, where the application of engineering, process and procedural controls, including systems of work, so far as is reasonably practicable, cannot achieve adequate control. (See paragraphs 50 and 51 below.)

Colours

38 Colours must not be blown by mouth.

Regulations

Prevention of contamination and disposal of waste

COSHH regulation 7 and General ACOP paragraphs 28–44

CLAW regulation 3 and ACOP paragraph 29

ACOP

Aim

39 To prevent the spread of silica, lead and other hazardous substances from areas where specific control measures have been adopted to protect employees engaged in other work and other persons, such as members of the public and families of employees.

40 In pottery work the spread of contamination can arise from:

- (a) accumulation of clay on the floors of sliphouses and making shops;
- (b) spillage of slip or the leakage of dust from containment;
- (c) contaminated protective clothing;
- (d) in lead processes, the hands of workers, boards, baskets and other containers contaminated with glaze or other lead bearing materials.

41 Steps to prevent the spread of contamination should include specifically:

- (a) the regular cleaning of the floors and benches in working areas which are, or are liable to be contaminated by substances hazardous to health, including lead (see paragraphs 53–72 below);
- (b) prompt cleaning up of any spillages, and in any case before they give rise to a

ACOP

- risk to health, for example, by drying out;
- (c) prohibition on taking protective clothing home and of the wearing of protective clothing in messrooms and outside premises to which this Code applies and, as far as reasonably practicable, outside working areas where it is required to be worn to achieve adequate control of exposure to substances hazardous to health including lead;
- (d) maintenance of a high standard of personal hygiene by employees;
- (e) for lead, the regular cleaning of boards or other containers contaminated by lead;
- (f) marking of the above boards and containers to indicate that contamination by lead is possible, for example by marking boards red at each end (see paragraph 78 below).

42 To reduce the spread of contamination by lead, work in areas where there is significant risk of lead contamination should be carried out in a separate room from other work. Where, however, this is not feasible, lead processes, for example dipping with low solubility glazes, should be clearly separated from other non-lead processes either by separating into clearly defined departments or by clearly indicating the areas of lead usage by demarcation marks on the floor, or otherwise.

43 Steps should be taken to ensure the safe disposal of contaminated plant, articles and equipment used in the work and all waste materials. In particular:

- (a) contaminated bags, shrink wrappings and other containers should not be allowed to accumulate in working areas but should be disposed of regularly;
- (b) pieces of cotton wool and similar materials used in ground laying, colour dusting or the manufacture of lithographic transfers should, after use, be kept in suitable closed receptacles until such time as they can be disposed of safely.

44 Action should be taken to dispose of all hazardous substances safely and in particular:

- (a) hazardous waste materials should be kept in suitable containment until such time as they can be disposed of safely. The dust from dust collectors should be kept in sealed bags or similar containers;
- (b) care should be taken to ensure that bags do not burst or perforate and that any spillages are cleaned up promptly.

Protective clothing

45 Suitable protective clothing should be provided for work with any substances which may cause risks to health by contamination of workers' clothing.

46 The fabric should have a high resistance to the passage of dust and be of a continuous filament yarn, or other suitable material, giving it a smooth surface, be easy to maintain and be comfortable to wear.

47 Suitable washable protective clothing should be provided for all employees engaged in the processes specified at paragraphs 23–27 above and for the following:

- (a) maintenance, cleaning and similar work where contamination of workers' clothing is likely;
- (b) all work in the sliphouse;
- (c) all work in potters' shops including fettling of any kind;
- (d) biscuit placing and work in the biscuit warehouse.

ACOP

Such protective clothing should include washable head coverings unless these are not necessary to prevent contamination of the hair or head.

The protective clothing should be renewed or washed at least once a week. The washing should be carried out at the factory or at a laundry equipped to handle contaminated clothing without risk to health.

48 Unless the protective clothing is renewed or washed sufficiently frequently to prevent contamination accumulating on it, waterproof aprons, in addition to the protective clothing, should be provided for:

- (a) work in sliphouses;
- (b) casting;
- (c) fettling;
- (d) application of engobe or slip;
- (e) application of glaze, including dipping and spraying, and ware cleaning.

Employees should be required to clean the aprons by sponging or other wet methods regularly, and in any case at least once a day.

49 Waterproof boots should be provided for employees engaged in hosing or swilling the floors of sliphouses, potters' shops and other parts of potteries where this type of cleaning is used.

Regulations

Respiratory protective equipment

COSHH regulation 7(2)(4)(5) and (8) and General ACOP paragraphs 41–45

CLAW regulation 6(4) and ACOP paragraphs 72–78 and 92

ACOP

See also relevant HSE guidance on respiratory protective equipment (RPE) listed in the References in Appendix 3 of this Code.

50 Respiratory protective equipment should not be relied upon as a primary control measure and should be provided only when it is not reasonably practicable to rely solely on engineering or other control methods.

51 RPE conforming to a standard approved, and bearing a CE mark (see COSHH General ACOP paragraph 44) should be provided in particular for the following unless the assessment has shown that there will be adequate control of substances hazardous to health including lead:

- (a) cleaning of plant contaminated with substances hazardous to health including:
 - (i) dust collectors;
 - (ii) duct work;
 - (iii) spray dryers;
 - (iv) conveyor systems;
 - (v) clay granulate storage silos and hoppers;
 - (vi) plant contaminated with dry glaze or colour or other lead bearing materials;
 - (vii) lithographic transfer and associated machinery when contaminated with lead;
- (b) entry into contaminated enclosed plant, for example for maintenance or other purposes;

ACOP

- (c) work in mould stores;
- (d) transport of clay granulate;
- (e) the periodic cleaning of beams, ledges and fixtures.

Regulations

Cleaning

COSHH regulation 7 and General ACOP paragraph 33

CLAW regulation 6 and 8(1) and ACOP paragraphs 111 and 125–127

ACOP

Aim

52 To control exposure to silica, lead and other substances assessed as being hazardous to health by cleaning any surface contamination from any plant used in the process and parts of buildings.

53 Cleaning should be carried on in such a way as to minimise the release of dust into the air of any workplace.

Cleaning of workrooms and fixtures

Methods of cleaning

54 In no circumstances should dry sweeping of floors, benches and other surfaces liable to be contaminated with substances hazardous to health be carried out.

55 The release of dust will be minimised by:

- (a) use of wet methods, ie swilling, mopping, wet scrubbing;
- (b) use of efficient and suitable vacuum cleaning apparatus.

56 Where the use of the above methods is not practicable, cleaning with the aid of damp sawdust or other material so damp as to reduce the creation of dust may be permissible but only if this does not result in exposure of persons to substances hazardous to health. Where this method of cleaning is used, it should only be carried out when work in the area has ceased for the day. This method will not be suitable for cleaning:

- (a) the floors of places where sieving, crushing and grinding of flint or quartz is carried on;
- (b) the floors of sliphouses;
- (c) the floors of potters' shops unless these are thoroughly washed or mopped at least once a week. Weekly washing or mopping will not be required for sanitary fireclay casting shops when this is impracticable due to the methods of ware drying adopted;
- (d) floors, work benches and other surfaces in areas, other than decorating shops, where there is liable to be exposure to lead.

Frequency of cleaning

57 The following parts of premises should be cleaned daily using the appropriate methods:

- (a) floors of places where sieving, crushing and grinding of flint or quartz is carried on;
- (b) floors of sliphouses;

ACOP

- (c) floors of potters' shops;
- (d) floors of glazing departments and associated areas where the application of glaze (other than leadless glaze), drying after application of glaze, or ware cleaning is carried on;
- (e) walls and other surfaces liable to be splashed with glaze other than leadless glaze.

58 The floors of other parts of premises should be cleaned with sufficient frequency to avoid the accumulation of substances hazardous to health.

59 Irrespective of the requirements in paragraphs 53–58 above general cleaning of all workrooms should be undertaken as follows:

- (a) of potters' shops and any place where clay is dried or clay granulate is prepared:
 - (i) beams, ledges, fixtures, shelving and furniture up to 2.3 metres above floor level – at least once in every period of three months;
 - (ii) beams, ledges, fixtures, shelving and furniture more than 2.3 metres above floor level – at least once in every period of 14 months;
- (b) inside walls, ceilings, overhead ledges, fixtures and other surfaces of all workplaces as frequently as necessary to remove contamination by substances hazardous to health.

Cleaning of plant and equipment

Methods of cleaning

60 Methods of cleaning plant and equipment should be such as to minimise exposure of persons to substances hazardous to health.

61 This can be achieved by use of the cleaning methods described in paragraphs 55 and 56 above.

62 Boards, shelves, stillages and other containers on which dipped ware has been placed should be washed.

63 Hoods used for glaze spraying and colour blowing should be cleaned by a wet method.

64 Sponges and fettling equipment used for damp fettling should be properly cleaned after use.

Frequency of cleaning

65 Boards and other containers onto which dipped ware has been placed, should, after each occasion on which they have been used for one set of articles, and before they are used for another set, be thoroughly washed.

66 Work benches should be kept clean. Benches for work other than with lead should be cleaned daily. Benches for work with lead may require more frequent cleaning to prevent excessive contamination but in any case should be cleaned at least once a day.

67 Shelves and stillages should be cleaned at least once a week.

68 Hoods used for glaze spraying and colour blowing should be cleaned daily.

Regulations

Collection of scraps

COSHH regulation 7 and General ACOP paragraph 33

CLAW regulations 6 and 8 and ACOP paragraphs 111 and 125–127

Workplace Regulations regulation 9 and ACOP paragraph 72

ACOP

69 To prevent the accumulation of scraps on floors and to facilitate cleaning, suitable arrangements should be made for the collection and removal of scraps and spillages.

70 Scraps and spillages should be cleaned regularly from the floors of potters' shops. Particular attention should be paid to the removal of scraps to prevent build up on parts of the floors where persons are liable to tread and this should be done at a time when the least number of persons are present.

71 Boxes or other suitable containers should be provided for the collection of clay scraps, broken ware etc.

72 Floors should be kept free of obstructions such as moulds and stillages, and shelving should be arranged so as not to interfere with the thorough cleaning of floors. This will not require the removal of moulds from making shop floors for sanitaryware and large electrical porcelain insulators where it is not practicable to do so.

Regulations

Construction of buildings and floors

COSHH regulation 7 and General ACOP paragraph 33

Workplace Regulations regulation 9

ACOP

73 The floors of all parts of premises where there is liable to be exposure to silica or lead should always have a smooth and sound surface capable of being easily cleaned by vacuum or moist methods.

74 Where wet methods of cleaning, ie swilling, washing or hosing down, are relied upon, floors should be impervious to water and provided with suitable drainage arrangements. The floors of potters' shops should be even and impervious to water and, where moist methods are relied on for cleaning, capable of being washed or mopped.

75 Rough concrete or indented bitumastic flooring make cleaning difficult. Means for treating floors to render them impervious or coatings to provide a smooth impervious surface with good wearing qualities are available and will facilitate cleaning and minimise water absorption.

76 Tiles, painted or suitably treated walls, partitions and ceilings capable of being thoroughly cleaned should be provided in particular:

- (a) near to dipping tubs;
- (b) other areas likely to be splashed by glaze (other than leadless glaze).

Regulations

Construction of benches, equipment etc

COSHH regulation 7 and General ACOP paragraph 33

CLAW regulation 6

Workplace Regulations regulation 23 and ACOP paragraphs 218–220

ACOP

77 Smooth impervious benches should be provided in particular for use in:

- (a) dipping houses or other places where glaze is applied;
- (b) any other process where lead dust is liable to accumulate.

78 Boards, shelves and stillages should be made with a smooth impervious surface. All boards used in connection with glazing or any other process where they may be contaminated by lead should be identified, for example by painting the boards red on both sides for a distance of at least 150 mm from each end.

Regulations

Clothing accommodation

COSHH regulation 7 and General ACOP paragraph 47

CLAW regulation 6 and ACOP paragraphs 64 and 65

ACOP

Aim

79 To prevent contamination of clothing put off during working hours and of food and drink by hazardous materials and contaminated protective clothing.

80 Accommodation should be provided for clothing put off during working hours and for protective clothing where required. Separate accommodation should be provided for both types of clothing. The accommodation should be outside any room or place provided for the taking of meals.

81 The accommodation for clothing put off during working hours should be separated from the air of any room or area where control measures are required and where protective clothing has to be worn (see paragraphs 23–27, 47 and 48 above).

82 The accommodation should take the form of lockers, cupboards or cloakrooms. Where cloakrooms are provided the arrangements should be such that protective clothing can be kept in such a way, for example in separate cupboards or lockers, so that it cannot contaminate any other clothing.

Regulations

Washing facilities

COSHH regulation 7 and General ACOP paragraph 46

CLAW regulations 6 and 8 and ACOP paragraphs 80, 86 and 87

Workplace Regulations regulation 21 and ACOP paragraphs 192–211

ACOP

83 A sufficient number of wash basins or troughs with a constant supply of hot and cold or warm running water, soap and other cleaning materials and adequate means for drying should be provided, separated from any room or place provided for taking meals.

ACOP

84 Communal towels should not be used. Drying machines, disposable towels or roller towels dispensed from a machine in a way that affords a clean drying surface for each person should be provided.

85 Where there is significant exposure to lead, there should be provided for every five persons one wash basin or 600 mm of trough and also a sufficient supply of nail brushes. These facilities should be separate from those provided for other workers and from those used for the washing of boards and other contaminated articles.

86 Where work is carried out in dusty conditions which could result in whole body contamination by lead, for example in certain maintenance work and certain manufacture of frits, glazes and colours, showers or baths should be provided on the scale of one shower or bath for every five persons who may be expected to shower or bath daily at any one time.

87 For pottery making and decoration departments, whole body contamination by lead is unlikely to occur and the provision of showers or baths will not normally be required.

88 For persons liable to be significantly exposed to lead in potteries, at least 5 minutes should be allowed for washing before each meal and before the end of the shift or day's work to remove contamination.

Regulations

Eating, drinking etc

COSHH regulation 7 and General ACOP paragraphs 48 and 49

CLAW regulation 7 and ACOP paragraphs 101, 103, 104, 106 and 107

Workplace Regulations regulation 25 and ACOP paragraphs 231–233

ACOP

Aim

89 The aim is to provide facilities which enable employees to eat, drink etc in non-contaminated areas and to prevent the ingestion of hazardous materials.

90 Suitable facilities for eating, drinking etc, should be provided in accordance with the above Approved Codes of Practice paragraphs.

91 The facilities should be in the form of a messroom or canteen which should be:

- (a) adequately ventilated, lit and heated;
- (b) provided with sufficient tables and chairs or benches with back rests;
- (c) provided with adequate means of heating food and boiling water to enable hot drinks and hot food to be taken. The provision of properly maintained vending apparatus will be satisfactory;
- (d) completely separated from any workroom;
- (e) under the charge of a responsible person to ensure that it is kept clean and tidy.

92 Food and drink should not be stored in such a way or in places where they are liable to be contaminated by substances hazardous to health. Food and drink should be kept in the messroom or canteen, or in suitable cupboards so arranged as to prevent contamination of the food and drink.

ACOP

93 Eating, drinking and smoking should not be permitted in any place which is, or is liable to be, contaminated by lead. In any other case, workers should not be allowed to remain in work areas which are, or are liable to be, contaminated by substances hazardous to health during intervals allowed for meals. This includes all places where protective clothing is required to be worn.

Regulations

Use of control measures

COSHH regulation 8 and General ACOP paragraphs 50 and 51

CLAW regulation 6 and ACOP paragraphs 92 and 96

ACOP

Aim

94 To ensure the correct and proper use of the control measures provided under paragraphs 22–93 above.

95 There should be procedures for ensuring that the control measures including personal protective equipment and any other thing or facility are properly used or applied. These should be part of the normal supervisory function and line managers and supervisors should carry out a visual check at least once a shift and where the control measures etc are not being properly used or applied should institute prompt remedial action.

96 Except where the size of the premises or the limited nature of the processes make it unnecessary, the employer should specifically appoint in writing a person to ensure that control measures adopted after assessment are properly maintained and used. It may be appropriate to assign different parts or departments to different persons.

97 The person appointed should have received information, instruction and training in the requirements of the Control of Substances Hazardous to Health Regulations, the Control of Lead at Work Regulations and associated Approved Codes of Practice and Guidance. In all but the simplest premises, structured off-the-job training is desirable.

98 The appointed person should carry out systematic inspections of the premises or those areas assigned to them. They should keep appropriate written records of failure of control measures noted by them or reported to them. Information should also be included on steps taken to remedy any failure or to prevent a recurrence.

99 The appointment of such a person should not be taken as in any way detracting from duties placed upon employers, supervisors or employed persons by these Regulations or the Health and Safety at Work etc Act 1974 and the Management of Health and Safety at Work Regulations 1992.

100 Where wet methods are used it is essential that the materials are kept sufficiently wet or damp to prevent dust being given off and that materials, ware, spillages and scraps are not allowed to dry out.

101 Where engineering controls, such as enclosure of plant or exhaust ventilation, are provided it is essential that checks be made that the equipment is being properly used. In particular, supervisors and managers should check that the ware is located inside the exhaust hoods, for example, for fettling, glaze spraying, colour blowing and similar operations, and that where practicable the operator's breathing zone is outside the hood. Where viewing panels are provided these should be kept clean and free from obstruction. Lighting should be provided where necessary to

ACOP

illuminate the workpiece, so that the operator does not have to lean into the hood.

102 Hoods should be kept free from items of ware, cleaning equipment and other obstructions which will interfere with the flow of air.

103 The discharge from compressed air used in connection with operations such as fettling should be directed to a safe position inside the hood in order to maintain control over the dust.

104 Hoods and other points at which dust extraction is provided should always be properly adjusted to control the dust.

105 All employees should make proper use of the control measures. In particular they should:

- (a) use correctly all exhaust hoods, booths and other engineering controls;
- (b) use the boxes and other means provided for the collection of scraps to prevent accumulations on floors and store all materials correctly;
- (c) carry out all cleaning operations, particularly of floors and benches, in accordance with the employer's instructions and in any case in such a way as to prevent dust being given off;
- (d) wear and store in the proper manner, any protective clothing and respiratory protective equipment provided for their use and in particular in the case of protective clothing, ensure that it is worn in such a way that it covers their personal clothing and hair as appropriate;
- (e) keep their protective clothing and respiratory protective equipment, when not in use, in the accommodation provided. They should report any defects in, or damage to, such clothing and equipment;
- (f) not eat, drink, smoke etc nor take food and drink into areas which are, or are liable to be, contaminated by lead;
- (g) not store food and drink in such a way or in places where it is liable to be contaminated by substances hazardous to health, but keep it in the messroom, canteen or cupboards provided;
- (h) refrain from taking meal breaks in workrooms if this would expose them to substances hazardous to health;
- (i) practise a high standard of personal hygiene, including removing protective clothing and equipment before entering any messroom or canteen and, if exposed to lead, washing their hands before eating, drinking etc;
- (j) report any defect in any control measures especially exhaust ventilation and personal protective equipment.

Regulations

Maintenance of control measures

COSHH regulation 9 and General ACOP paragraphs 52–70

CLAW regulation 8 and ACOP paragraphs 108 and 111–115

See also any relevant technical literature including HSE guidance listed in the references in Appendix 3 of this Code.

ACOP

Aims

- 106(a) To ensure that such measures continue to provide adequate control of exposure of persons to silica, lead and other substances hazardous to health;
- (b) to ensure that any defect which could result in a loss of efficiency of the controls is detected and remedied as soon as possible.

ACOP

107 Full guidance is given in the above references, but for pottery work special attention should be paid to ensuring that:

- (a) bins or other receptacles for collecting scraps are maintained in good condition and free from holes;
- (b) troughs and other means in casting shops for containing spillages of slip are maintained in a good condition and kept free from blockages to prevent overflowing. Particular attention should be paid to drainage points, and piping systems for the delivery of slip should be properly maintained to prevent leakages;
- (c) all enclosures for plant, processing and handling systems are kept dust tight and free from leaks;
- (d) all enclosures and exhaust ventilation are checked visually at least once a week by a responsible person for obvious defects such as damage, wear, malfunctioning etc;
- (e) preventative servicing procedures pay particular attention to the following:
 - (i) enclosures should be checked for dust tightness;
 - (ii) ducts should be inspected for build-up of dust and tightness of the joints;
 - (iii) dust collectors should be checked for efficiency in collecting the dust. Filter bags should be properly maintained without perforations and not clogged with dust and the mechanisms for filter shaking should be checked for malfunction. The use of automatic filter cleaning devices is preferred. Cyclones should be inspected for dust build-up and the discharge point should be checked for air tightness;
 - (iv) fans and motors should be checked for speed, lubrication and cleanliness and belts should be checked for slackness;
 - (v) wet collectors should be inspected for structural integrity, correct water level and water supply, correct maintenance of the water level control valve, spray nozzles and sludge discharge valves;
- (f) where local exhaust ventilation is provided it should be thoroughly examined and tested at least once in every 14 months and the examination and test should provide the particulars listed in paragraph 66 of the COSHH General ACOP (reproduced in Appendix 2 of this Code);
- (g) respiratory protective equipment other than one shift disposable respirators should be examined at regular intervals and a record of examination and test kept as set out in paras 67–69 of the COSHH General ACOP (reproduced in Appendix 2 of this Code).

Regulations

Monitoring exposure

COSHH regulation 10 and General ACOP paragraphs 71–81

CLAW regulation 9 and ACOP paragraphs 137, 139, 143, 158, 167, 169 and 178

See also relevant HSE Guidance Notes in Appendix 3 of this Code (eg EH40 *Occupational exposure limits* and HSG173 *Monitoring strategies for toxic substances*).

ACOP

Aims

- 108(a) To establish the levels of exposure to silica and other substances hazardous to health where monitoring is requisite (see COSHH General ACOP, paragraph 71);

ACOP

- (b) to determine whether there is compliance with the lead-in-aid standard and the relevant occupational exposure limits.

109 For lead, routine air monitoring will only be required under regulation 9 of the CLAW Regulations when there is significant lead exposure. Air monitoring should be carried out in accordance with paragraphs 137, 139, 143, 158, 167, 169 and 178 of the CLAW ACOP and at least once in every period of 12 months. See also the relevant HSE publication in the series Methods for the Determination of Hazardous Substances (MDHS).

110 In the case of silica where reliance is placed solely upon the effectiveness of wet methods to control exposure, for example in body preparation, casting shops and making shops, air monitoring should not normally be required.

111 For the work mentioned at paragraphs 23, 24 and 27 of this Approved Code of Practice, unless it is immediately obvious that exposure is adequately controlled by engineering, process and procedural controls including systems of work, air monitoring should normally be carried out at least once in every 12 months in order to check that adequate control is being maintained. Personal air sampling will usually be necessary as exposure to silica is associated with an individual's system of work.

112 Air monitoring for substances other than lead should be carried out by a competent person in accordance with paragraphs 75-78 of the COSHH General ACOP (See also relevant technical literature including HSE Guidance Notes).

113 Records of air monitoring for lead should be kept in accordance with CLAW regulation 9(5) and paragraph 178 of the CLAW ACOP and kept available for inspection for at least 5 years but longer if this is possible.

114 For substances other than lead, records should be kept in accordance with COSHH regulation 10(3) and paragraphs 79-81 of the COSHH General ACOP.

115 It should be remembered that where groups of employees are performing identical or similar tasks, it is permissible to carry out personal sampling on a group or activity basis, provided that the samples are representative of each individual within the group.

Regulations

Health surveillance

COSHH regulation 11 and General ACOP paragraphs 82-97

CLAW regulation 10 and ACOP paragraphs 179, 182-186, 188-193, 195-202, 210, 211, 213-218, 221 and 223

See also any relevant technical literature including HSE Guidance Notes, for example those in Appendix 3 of this Code.

ACOP

Aim

116 To carry out health surveillance where it is appropriate for the protection of the health of employees.

117 Health surveillance should be provided for employees whose work exposes them to silica and any other substance hazardous to health (other than lead), in which that exposure may result in the reasonable likelihood of an identifiable disease or adverse health effect, unless valid techniques do not exist or the assessment

ACOP

shows that exposure is not significant (see COSHH General ACOP paragraphs 83 and 86).

118 Health surveillance may be restricted to the keeping of individual health records in accordance with the appendix to the COSHH General ACOP (paragraph 96) (reproduced here in Appendix 2) except in the case of circumstances such as those indicated in paragraph 86 of the COSHH General ACOP, for which some additional form of health surveillance should be provided.

119 The records should be kept for at least 40 years from the date of the last entry. This is particularly important for silica and other substances which have long term effects.

120 Where there is significant exposure to lead (as indicated in the CLAW Approved Code of Practice paragraphs 23 and 24) including exposure to over half the lead-in-air standard, medical surveillance and biological monitoring should be carried out as laid down in regulation 10 of the Control of Lead at Work Regulations and paragraphs 179, 182–186, 188–193, 195–202, 210, 211, 213–218, 221 and 223 of the CLAW Approved Code of Practice and records should be kept in accordance with paragraphs 216–218 of the CLAW Approved Code of Practice and Appendix 6 of that Approved Code of Practice.

Regulations

Information, instruction and training

COSHH regulation 12 and General ACOP paragraphs 98–102

CLAW regulation 11 and ACOP paragraphs 227, 228, 233 and 234

ACOP

Aim

121 To make employees aware and train them in the risk from, and control measures to be adopted against, substances hazardous to health.

122 Employees should be given information, instruction and training on the risks, the control measures and the reasons for these and why it is essential that they should use the control measures with specific reference to their duties under paragraph 105 above.

123 The reason for and significance of monitoring procedures and health surveillance should also be explained.

Appendix 1 Definitions

Damp fettling	Fettling done either: <ul style="list-style-type: none">(a) wholly with a wet sponge or other wet material; or(b) while the ware being fettled is still so damp that no dust is given off.
Fettling	Includes scalloping, towing, sand-papering, sand-sticking and any other process of fettling.
Glost placing	Includes: <ul style="list-style-type: none">(a) placing of ware coated with unfired glaze onto cranks and other items of kiln furniture used to support the ware during glost firing;(b) the placing of cranks and other items of kiln furniture used for the support of unfired glazed ware into kilns or onto kiln trucks;(c) the removal of these items from the kiln or kiln truck after glost firing except in the case of tunnel kilns.
Ground laying	The application of a uniform coating of colour to ware by applying an oil or similar substance to the area to be decorated, dusting powdered colour over the item the colour sticking to those areas where the oil has been applied.
Leadless glaze	A glaze with equal to or greater than 0.5% (calculated as the percentage of the element lead in the total weight of the preparation). See CLAW regulation 2 and CLAW ACOP Appendix 1 (reproduced as Appendix 5 of this ACOP).
Lithographic transfer making	Includes the wiping of colour from and the subsequent brushing of the transfer sheets.
Low solubility glaze	A glaze which does not yield to dilute hydrochloric acid more than 5% of its dry weight of a soluble lead compound when determined in accordance with a method approved in writing for the time being by the Health and Safety Commission. (See CLAW regulation 2 and CLAW Appendix 1 reproduced as Appendix 5 of this ACOP and the 'Approved method for determining low solubility glaze' reproduced as Appendix 4 of this ACOP.)
Polishing	The removal of small surface blemishes from the face of glazed ware using a power driven mop and abrasive powder.
Potters' shop	Includes all places where pottery is formed by casting, pressing or any other process and all places where shaping, fettling or other treatment of pottery prior to placing for the biscuit fire is carried on.
Pottery	Includes china, earthenware and any article made from clay or from a mixture containing clay and other materials.
Sliphouse	Includes any place where machinery is used for mixing clay and/or other materials to form slip.
Ware cleaning	The removal of surplus glaze from ware after the application of the glaze but before glost firing.

Appendix 2 Records

Extracts from COSHH General ACOP. Records to be kept for thorough examinations and tests of local exhaust ventilation plant and respiratory protective equipment and for monitoring of exposure and health surveillance.

Local exhaust ventilation (LEV) plant

66 A suitable record, containing at least the following particulars, should be kept in respect of each thorough examination and test of LEV plant:

- (a) name and address of employer responsible for the plant;
- (b) identification and location of the LEV plant, process, and hazardous substance concerned;
- (c) date of last thorough examination and test;
- (d) conditions at time of test: normal production or special conditions (eg maximum use, stood down);
- (e) information about the LEV plant which shows:
 - (i) its intended operating performance for controlling the hazardous substance for the purposes of regulation 7 – see notes (1) and (2) below;
 - (ii) whether the plant now still achieves the same performance;
 - (iii) if not, the repairs required to achieve that performance;
- (f) methods used to make judgement at (e)(ii) and (e)(iii) above (eg visual, pressure measurements, air flow measurements, dust lamp, air sampling, filter integrity tests);
- (g) date of examination and test;
- (h) name, designation and employer of person carrying out examination and test;
- (i) signature or unique authentication of person carrying out examination and test;
- (j) details of repairs carried out – see note (3) below.

Notes

(1) If there is no information available for item (e)(i), this will indicate a need for the employer to make a further assessment in accordance with regulation 6 to show compliance with regulation 7.

(2) Examples of the details which should be available in respect of the main components of the LEV system are as follows:

Enclosure/hoods – maximum number to be in use at any one time; location or position; static pressure behind each hood or extraction point; face velocity.

Ducting - dimensions; transport velocity; volume flow.

Filter/collector – specification; volume flow; static pressures at inlet, outlet and across filter.

Fan or air mover – specification; volume flow; static pressure at inlet; direction of rotation.

Systems which return exhaust air to the workplace – filter efficiency; concentration of contaminant in returned air.

(3) Details to be completed by the employer responsible for the LEV plant. The effectiveness of the repairs should be proved by a re-test.

Respiratory protective equipment (RPE)

- 69 The record of each thorough examination and test carried out should include:
- (a) name and address of employer responsible for the RPE;
 - (b) particulars of the equipment and of the distinguishing number or mark, together with a description sufficient to identify it, and the name of the maker;
 - (c) date of examination and name and signature or unique authentication of person carrying out examination and test;
 - (d) condition of the equipment and particulars of any defect found, including in the cases of canister or filter respirators, the state of the canister and of the integrity of the filter;
 - (e) in the case of compressed oxygen or air apparatus, the pressure of oxygen or air, as the case may be, in the supply cylinder;
 - (f) in the case of airline-fed apparatus, the volume, flow and quality of the supplied air. See also note (1) below.

Notes

- (1) Where the air supply is from mobile compressors, this test should be made immediately prior to the first use in any new location.
- (2) In the case of half-mask respirators used occasionally against dusts or fumes of relatively low toxicity, it will be sufficient for the record to be restricted to the particulars at (a), (c) and (d), provided that it can otherwise be readily established to which item of RPE the record relates.

Monitoring exposure at the workplace

Records

- 79 To be regarded as suitable, a record should provide sufficient information to determine:
- (a) when the monitoring was done and what the results were;
 - (b) what monitoring procedures were adopted, including the duration; and
 - (c) the locations where samples were taken, the operations in progress at the time and, in the case of personal samples, the names of the individuals concerned.

Health records

Regulation 11(3) (General COSHH ACOP paragraphs 92, 96 and 97 and Appendix)

Particulars approved by the Health and Safety Executive

- 1 A record containing the following particulars should be kept for every employee undergoing health surveillance:
- (a) surname, forenames, sex, date of birth, permanent address, post code, National Insurance Number, date of commencement of present employment and a historical record of jobs involving exposure to substances requiring health surveillance in this employment;
 - (b) conclusions of all other health surveillance procedures and the date on which and by whom they were carried out. The conclusions should be expressed

in terms of the employee's fitness for his work and will include, where appropriate, a record of the decisions of the employment medical adviser or appointed doctor, or conclusions of the medical practitioner, occupational health nurse or other suitably qualified or responsible person, but not confidential clinical data.

2 Where health surveillance consists only of keeping an individual health record the particulars required are those at 1(a) above.

Appendix 3 Further information

Note

Reference to a document in this Appendix does not necessarily imply that the document has been approved by the Health and Safety Commission.

Relevant HSE publications

L5 *General COSHH ACOP and Carcinogens ACOP and Biological Agents ACOP. Control of Substances Hazardous to Health Regulations 1994* HSE Books 1997 ISBN 0 7176 1308 9

COP2 *Control of lead at work. Control of Lead at Work Regulations 1998. Approved Code of Practice, Regulations and Guidance* HSE Books 1998 ISBN 0 7176 1506 5

HSG97 *A step by step guide to COSHH assessment* HSE Books 1993 ISBN 0 11 886379 7

INDG136(rev) *COSHH: A new brief guide for employers* HSE Books. Single copies free, multiple copies in priced packs ISBN 0 7176 1189 2

IAC L62 *COSHH: a guide to assessment* HSE Books Ceramics Industry Advisory Committee booklet

IAC L63 *Lead: a guide to assessment* HSE Books Ceramics Industry Advisory Committee booklet (Revised version due in autumn 1998)

Silica and lead: control of exposure in the pottery industry Ceramics Industry Advisory Committee guidance HSE Books 1992 ISBN 0 11 882044 3 (Currently under revision)

HSG72 *Control of respirable silica dust in heavy clay and refractory processes* HSE Books 1992 ISBN 0 11 885679 0

Guidance Note EH59 *Respirable crystalline silica* (Second edition) HSE Books 1997 ISBN 0 7176 1432 8

MS(A)15 *Silica dust and you* HSE Books 1992 Free leaflet

MS(A)1(rev) *Lead and you* HSE Books 1998 Single copies free, multiple copies in priced packs ISBN 0 7176 1523 5

IAC L55 *Workplace inspection* HSE Books Ceramics Industry Advisory Committee booklet

IAC L56 *Personal protective equipment* HSE Books Ceramics Industry Advisory Committee booklet

IAC L65 *Cleaning workrooms* Ceramics Industry Advisory Committee booklet.
Available from HSE Marches House, Newcastle under Lyme, Staffordshire ST5 1DT

Guidance Note EH40/98 *Occupational exposure limits* HSE Books 1998
ISBN 0 7176 1474 3

Health surveillance under COSHH: guidance for employers HSE Books 1990
ISBN 0 7176 0491 8

Respiratory protective equipment (RPE) Legislative requirements and lists of HSE approved standards and type approved equipment (Fourth edition) HSE Books 1995
ISBN 0 7176 1036 5

HSG37 *An introduction to local exhaust ventilation* 1993 HSE Books
ISBN 0 7176 1001 2

HSG54 *The maintenance, examination and testing of local exhaust ventilation* HSE Books 1990 ISBN 0 11 885438 0

HSE Video: *Shaping a healthy future – COSHH and the production of pottery*
On sale or hire from CFL Vision, PO Box 356, Wetherby, West Yorkshire, LS23 7EX

Methods for the Determination of Hazardous Substances

MDHS 6/3 *Lead and inorganic compounds of lead in air: laboratory methods using flame or electro-thermal atomic absorption spectrometry*
HSE Books 1998 ISBN 0 7176 1517 0

MDHS 14/2 *General methods for sampling and gravimetric analysis of respirable and total inhalable dust* HSE Books 1997 ISBN 0 7176 1295 3

MDHS 38 *Quartz in respirable airborne dusts: laboratory method using infra-red spectroscopy (KBr disc technique)* HSE Books 1984
ISBN 0 11 885629 4

MDHS 91 *Metals and metalloids in workplace air by X-ray fluorescence spectrometry* HSE Books 1998 ISBN 0 7176 1557 X
(Publication due in summer 1998)

The future availability and accuracy of the references listed in this publication cannot be guaranteed.

**EXTRACT FROM SCHEDULE 3 OF THE CONTROL OF LEAD AT
WORK REGULATIONS 1998**

Revocations
Regulation 14(2) and (3)

Column 1 <i>Instrument</i>	Column 2 <i>Reference</i>	Column 3 <i>Extent of revocation</i>
The Pottery (Health and Welfare) Special Regulations 1950	S.I. 1950/65	Regulation 6 and the First Schedule.
The Potteries etc (Modifications) Regulations 1990	S.I. 1990/305	The whole Regulations.

**Appendix 4 THE HEALTH AND SAFETY AT WORK
ETC ACT 1974 THE CONTROL OF LEAD AT WORK
REGULATIONS 1998**

Approved method for determining low solubility glaze

The Health and Safety Commission has on 10 March 1998 approved the method set out in the Schedule to this Notice for the purpose of determining a low solubility glaze as specified in the definition of 'low solubility glaze' in regulation 2(1) of the Control of Lead at Work Regulations 1998.

This approval shall have effect from 1 April 1998, the date of the coming into force of the said Regulations, from which date the Notice of Approval of the method of determining low solubility glaze dated 18 December 1989 shall cease to have effect.

Signed

ROSEMARY BANNER
Secretary to the Health and Safety Commission
10 March 1998

1 A weighted quantity of the material in the form in which it is used or processed which has been dried at $105 \pm 2^\circ\text{C}$ thoroughly mixed and completely passed through a sieve of $500 \mu\text{m}$ aperture size with a minimum of force is to be continuously stirred for 60 ± 1 minutes at $23 \pm 2^\circ\text{C}$ with 1000 times its mass of 0.07M hydrochloric acid. The pH of the hydrochloric acid should be monitored and maintained at its starting value by the addition of (1 + 1)* hydrochloric acid. The solution should thereafter be allowed to stand for 60 ± 1 minutes at $23 \pm 2^\circ\text{C}$ and then filtered before being analysed for lead by means of a suitable analytical technique such as atomic absorption spectrometry. This analysis should be carried out as soon as possible after the preparation of the extract and in any case within 4 hours.

2 Where the lead compound is dispersed in liquid, then the solid matter should be separated out by a suitable method before applying the standard test and the results should be reported as a percentage of soluble lead, as lead monoxide, in the solid material.

* Hydrochloric acid (1 + 1) is prepared by diluting 1 part by volume of hydrochloric acid, about 36% (m/m), density approximately 1.18 g/ml, with 1 part by volume of water. In preparing the mixture, the acid should be added to the water (not the water to the acid) to help prevent the mixture producing a violent reaction.

Appendix 5 Leadless glaze and the definition of a low solubility inorganic lead compound (reproduced from Appendix 1 of the CLAW ACOP)

Leadless glaze

1 The definition of a 'leadless glaze' was introduced into regulation 3 of the Control of Lead at Work Regulations 1980 (CLAW 1980) by the Potteries etc (Modifications) Regulations 1990 as:

“‘leadless glaze’ means a glaze which does not contain more than one per cent of its dry weight of a lead compound calculated as lead monoxide’.

2 However, the subsequently introduced Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 – CHIP 2 (as amended) - require that lead compounds and preparations containing lead compounds, which themselves contain 0.5 per cent or more of lead calculated as the percentage of the element lead in the total weight of the compound or preparation, be classified and labelled as toxic for reproduction. This variance between the two definitions meant that it was possible for a glaze to qualify for definition as leadless under CLAW 1980 but that it could be classified and labelled as toxic for reproduction under CHIP 2. To avoid possible conflict, regulation 2 of CLAW 1998 brings the definition of a 'leadless glaze' into line with the provisions of CHIP 2. It should be noted, however, that lead frits used in glazes are substances in their own right, and do not come under the generic Approved Supply List entry for 'lead compounds not otherwise specified' and may therefore be classified differently.

Definition of a low solubility inorganic lead compound

3 A low solubility inorganic lead compound is a compound which does not yield to dilute hydrochloric acid more than 5% of its dry weight as soluble lead compound, calculated as lead monoxide, when determined in the manner described in the standard test below. If a lead compound is dispersed in a liquid, eg pottery glaze, then the solid matter should be separated out by a suitable method, eg

centrifuging, before applying the standard test and the results should be reported as a percentage of soluble lead, as lead monoxide, in the solid material. The standard test is as follows.

4 A weighed quantity of the material in the form in which it is used or processed which has been dried at $105 \pm 2^\circ\text{C}$ thoroughly mixed and completely passed through a sieve of $500 \mu\text{m}$ aperture size with a minimum of force is to be continuously stirred for 60 ± 1 minutes at $23 \pm 2^\circ\text{C}$ with 1000 times its mass of 0.07 M hydrochloric acid. The pH of the hydrochloric acid should be monitored and maintained at its starting value by the addition of (1 + 1) hydrochloric acid. The solution should thereafter be allowed to stand for 60 ± 1 minutes at $23 \pm 2^\circ\text{C}$ and then filtered before being analysed for lead by means of a suitable analytical technique such as atomic absorption spectrometry. This analysis should be carried out as soon as possible after the preparation of the extract and in any case within 4 hours.

5 In the case of liquid paint analysis it is required to follow the procedure which is described in more detail in BS 3900: Part B3:1983 *Methods of test for paints. Determination of soluble lead in the solid matter in liquid paints: methods for use in conjunction with the Control of Lead at Work Regulations 1980* (SI 1980/1248). (Note: BSI will amend the title in due course.) This may also be referred to for general guidance on methodology for the analysis of materials other than liquid paints.

Further information

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055
Fax: 0845 408 9566 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com or
write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

HSE priced and free publications can be viewed online or ordered from
www.hse.gov.uk or contact HSE Books, PO Box 1999, Sudbury, Suffolk
CO10 2WA Tel: 01787 881165 Fax: 01787 313995. HSE priced publications
are also available from bookshops.