

# OCE24

## Offshore COSHH essentials



This information will help offshore dutyholders (owners, operators and contractors) to comply with the Control of Substances Hazardous to Health Regulations 2002 (COSHH), as amended, to protect workers' health.

This guidance consolidates good control practice and reinforces existing knowledge with additional information.

It will help you carry out COSHH assessments, review existing assessments, deliver training and in supervising activities involving substances hazardous to health.

It is aimed at staff whose responsibilities include the management of substances hazardous to health on offshore installations (eg occupational health specialists, COSHH assessors, supervisors etc). It is also useful for trade union and employee safety representatives.

Following this guidance is not compulsory and you are free to take other action. But if you do follow this guidance, you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

Also see essential information on the back of the sheet.

# Cementing

## Control approach 3 Containment

### What this sheet covers

This sheet describes good practice for well cementing operations – pumping of cement mixtures and other fluid systems, such as spacers. It covers the key points you need to follow to help reduce exposure to an acceptable level, as part of your COSHH assessment.

### Hazards

- ✓ Cement and additive dusts are irritating to the respiratory system. Dry cement must contain less than 2 ppm soluble chromate.
- ✓ Wet cement can cause severe skin burns and cause dermatitis. Lubricants and residual calcium chloride brine are also harmful to skin.
- ✓ Skin exposure can arise from handling additives, in sample collection and in cleaning up.
- ✓ The workplace exposure limits for Portland cement dust are total inhalable dust at 10 mg/m<sup>3</sup> and respirable dust at 4 mg/m<sup>3</sup> (8-hour time-weighted average (TWA)).
- ✓ Class G cements contain silica. The workplace exposure limit for respirable crystalline silica is 0.1 mg/m<sup>3</sup> (8-hour TWA).
- ✓ All containers for hazardous substances must be clearly labeled for chemical identity and have hazard warning labels.

### Access

- ✓ Erect barriers and notices whenever pumping or pressure testing operations are ongoing.
- ✓ Establish radio contact between drilling, cementing and well service crews.

### Storage

- ✓ Restrict access to hazardous materials storage areas, no unauthorised staff.
- ✓ Provide a store with sufficient space, well organised, well lit and well ventilated.
- ✓ Store all hazardous substances in secondary containment.
- ✓ Make sure incompatible substances are separated.
- ✓ Provide eyewash equipment and an emergency shower close to the work site. Both should be tested at regular intervals and, in particular, before chemical handling and mixing.
- ✓ Safety shower and eyewash stations must be signposted.
- ✓ Provide spill control equipment (spill kits) and absorbent mats in risk areas.

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- ✓ Segregate clean and contaminated equipment.
  - ✓ Never store chemicals or industrial fluids in food containers, eg plastic bottles.

## Control and procedures

### *Substitution*

- ✓ Where possible use less harmful products.

### *Planning*

- ✓ Ensure that cementing and pumping operations are conducted and supervised by competent personnel.
- ✓ Follow a documented job programme.
- ✓ Make contingency plans for common problems, such as bursting hoses, overflowing wet or dry cement and equipment failures.
- ✓ Hold a pre-job meeting to confirm procedures, control measures and contingencies. Review the risk assessment. Check that the cement recipe is compatible with seals and gaskets.

**Caution:** Specific hazards such as acids and other harmful chemicals require individual assessment and emergency control procedures.

## Control procedures

- ✓ Check that the cement unit, injection system, certified balance and recorder are all working properly.
- ✓ Use a checklist to document key equipment checks.

### *Respiratory protective equipment (RPE) – see OCM4*

- ✓ Provide RPE for dusty operations.
- ✓ Where necessary, provide CE-marked RPE with an assigned protection factor of at least 20 for particulates.

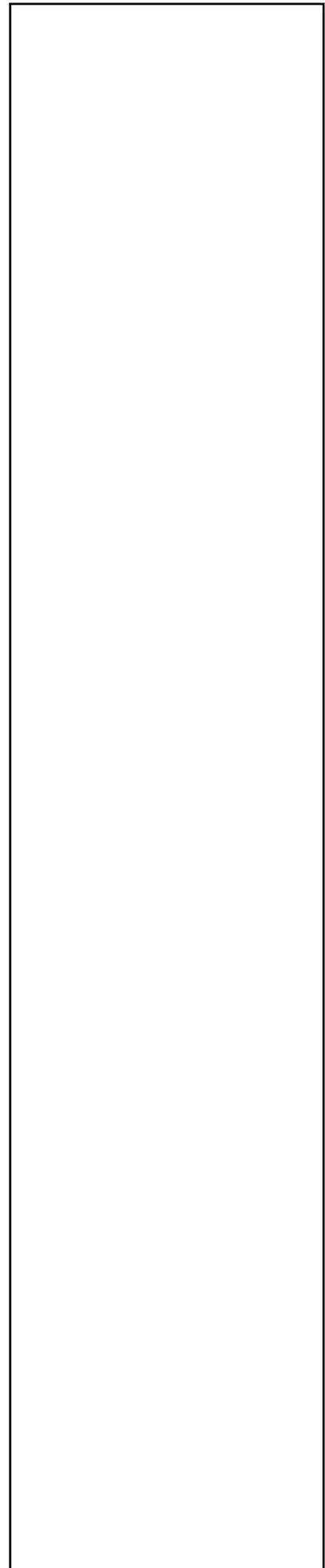
### *Other protective equipment*

- ✓ Provide eye protection – goggles or safety glasses.
- ✓ Provide standard or disposable coveralls.
- ✓ Provide lace-up boots.
- ✓ Provide clean chemical-resistant gloves, eg nitrile, and new gloves when these are damaged.

## Maintenance, examination and testing

### *Checking and maintenance*

- ✓ Check for signs of damage.
- ✓ The cementing engineer must check the unit and equipment before every job. Ensure whip checks are fitted and hoppers, connections and hoses are in good condition.
- ✓ Flush the low and high pressure mixing systems with water before and after cementing. Check for leaks in the process.
- ✓ Pressure test: ensure lines and connections are free from leaks.
- ✓ If used ensure that the cement batch mixer is operating correctly.
- ✓ Keep this information in your testing logbook.



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### *RPE*

- ✓ Examine and test RPE thoroughly at least monthly and infrequently used RPE at least three monthly. Replace worn parts.
- ✓ Ensure RPE is clean, fully functional and that the cartridge is within the expiry date.

### *Exposure monitoring*

- ✓ Prove that you are using the right level and type of RPE – use monitoring records or do personal air monitoring.

### *Records*

- ✓ Keep records of all examinations and tests for at least five years.

### **Cleaning and housekeeping**

- ✓ Clean the area after the task, or as specified in working procedures.
- ✓ Place a temporary bund to contain any spillage.
- ✓ Prevent spills entering the drainage system.
- ✓ Clear up spills immediately. Use protective gloves. You may also need RPE.

### *Waste*

- ✓ Waste chemicals and residues are 'hazardous waste'. Label containers clearly – include a UN number where appropriate. Store and dispose of waste safely.

### *Personal decontamination and skin care*

- ✓ Remove contaminated clothing immediately. Wash off all contamination.
- ✓ Eye contact: use eyewash for at least 15 minutes, holding open the eyelid. Contact the offshore medic.
- ✓ Provide warm water, mild skin cleansers, nailbrushes, and soft paper, fabric towels or hot air for drying. Avoid abrasive cleansers.
- ✓ Provide pre-work skin creams, which will make it easier to wash dirt from the skin, and after-work creams to replace skin oils.

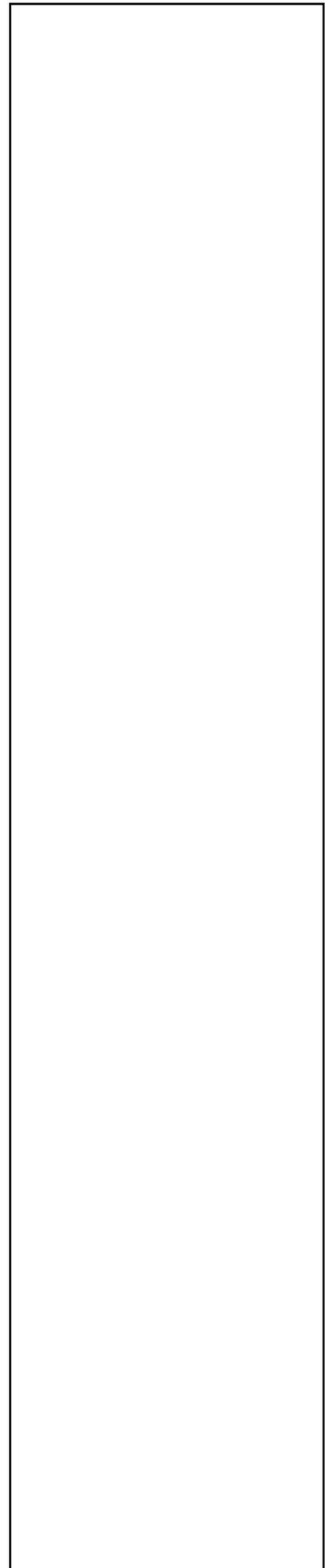
**Caution:** 'Barrier creams' or 'liquid gloves' do not provide a full barrier.

### **Health surveillance**

- ✓ Conduct low-level health surveillance for dermatitis involving skin checks by suitably trained responsible person.

### **Training and supervision**

- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Tell workers, including maintenance workers, what the hazards and risks are.
- ✓ Explain the early signs of dermatitis.
- ✓ Training includes tool-box talks on:
  - following safe working procedures;
  - review the relevant risk assessments for the job;
  - how to use equipment properly;
  - how to check that the equipment is working properly;



- checking for damage;
  - emergency procedures and contingency plans;
  - how to use RPE and check that it is working;
  - personal hygiene;
  - how to clean up spills correctly;
  - how to decontaminate effectively; and
  - what to do if something goes wrong.
- ✓ Involve managers and supervisors in health and safety training.

### Essential information

OCE0 *Advice for managers*

OCM3 *Personal protective equipment (PPE)*

OCM5 *Emergency planning*

OCM7 *Health surveillance*

### Employee checklist

- Are you clear about the procedures for doing the job?
- Is your respirator working properly? Check it every time.
- Look for signs of leaks, wear and damage before every job.
- Clean up leaks and spills immediately.
- If you find any problem, get it fixed. Don't just carry on working.
- Co-operate with health surveillance.
- Use, look after and store your PPE in accordance with instructions.
- Wash hands before eating, drinking or using the lavatory.

### Other hazards

- Slips, trips and falls
- Manual handling
- Stress and fatigue
- Noise
- Flammability
- Hydrogen sulphide (H<sub>2</sub>S)
- Substances harmful to the marine environment

### Further information

You can find the full Offshore COSHH essentials series at [www.hse.gov.uk/coshh/index.htm](http://www.hse.gov.uk/coshh/index.htm)

**This guidance was developed by representatives from the UK offshore oil and gas industry and trade unions, with HSE.**