



Working safely with coating powders



INTRODUCTION

What are coating powders?

Coating powders are mixtures of pigments, resins, curing agents and other additives. They give a durable finish and are used to coat metal window frames, many car components and most 'white goods' such as fridge freezers and washing machines.

How are coating powders applied?

As the coating powder is sprayed through the nozzle of the spray gun, it becomes electrostatically charged. The work-piece to be sprayed is earthed so the powder particles are attracted to the work-piece and deposited on it. This gives a fairly uniform thickness of coating.

How can coating powders affect my health?

Different coating powders may affect your health in different ways. Some of the effects are:

- irritation of lungs;
- irritation of eyes and skin;
- allergic skin reactions.

Some components of coating powders can also cause long-term health effects. Some agents may cause asthma. Other curing agents may damage genetic material, which could cause some diseases including cancer and impaired fertility.



BAD PRACTICE

Figure 1

Worker with coating powder on face and overalls

How can coating powders get into my body?

- If you breathe in the dust.
- If you swallow the dust. This can be transferred from face and hands covered in powder coating. This can easily happen if you eat, drink or smoke without washing your hands and face.
- Some powders can cause direct damage to your skin causing dermatitis.

WHAT PRECAUTIONS SHOULD I TAKE?

Ask your employer for details of the hazards of the particular coating powders you use, the precautions to take when you use them and the procedures to follow in an emergency. Make sure you follow them.

Read the supplier's safety data sheet and container labels and follow the advice on them. Ask your employer for clarification if you need to.

Controlling dust

You may breathe in dust when it becomes airborne eg when spraying powders and during cleaning activities. Below is a list of precautions to take to minimise your exposure.

Spraying

- Do not lean into spray booths when spraying powders; there is no need to be close to the work-piece to ensure coverage.

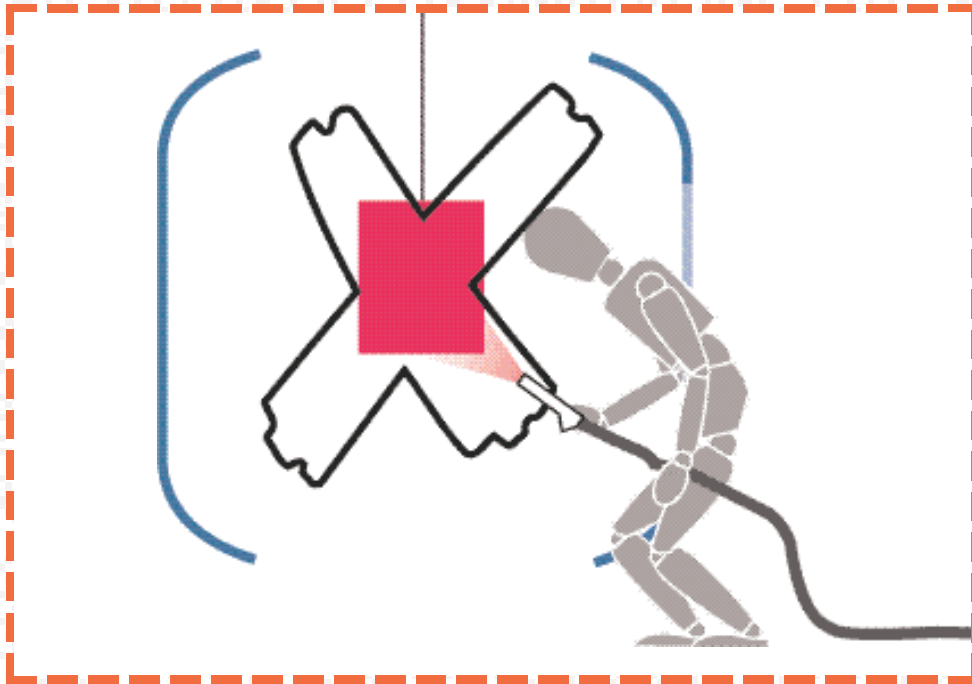


Figure 2 Worker leaning too far into spray booth

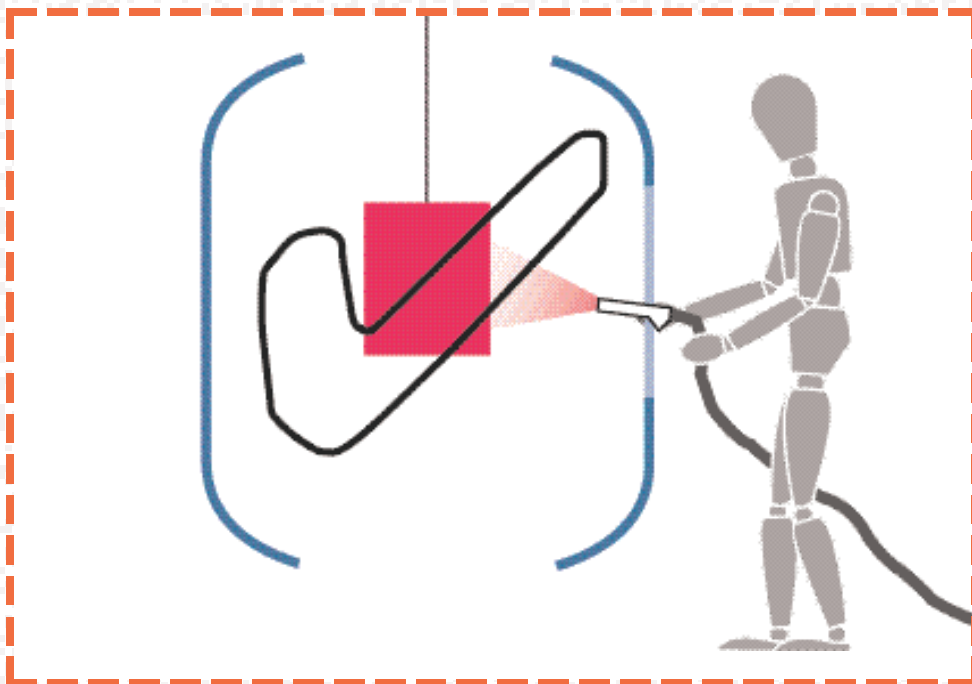


Figure 3 Worker correctly standing outside booth to spray

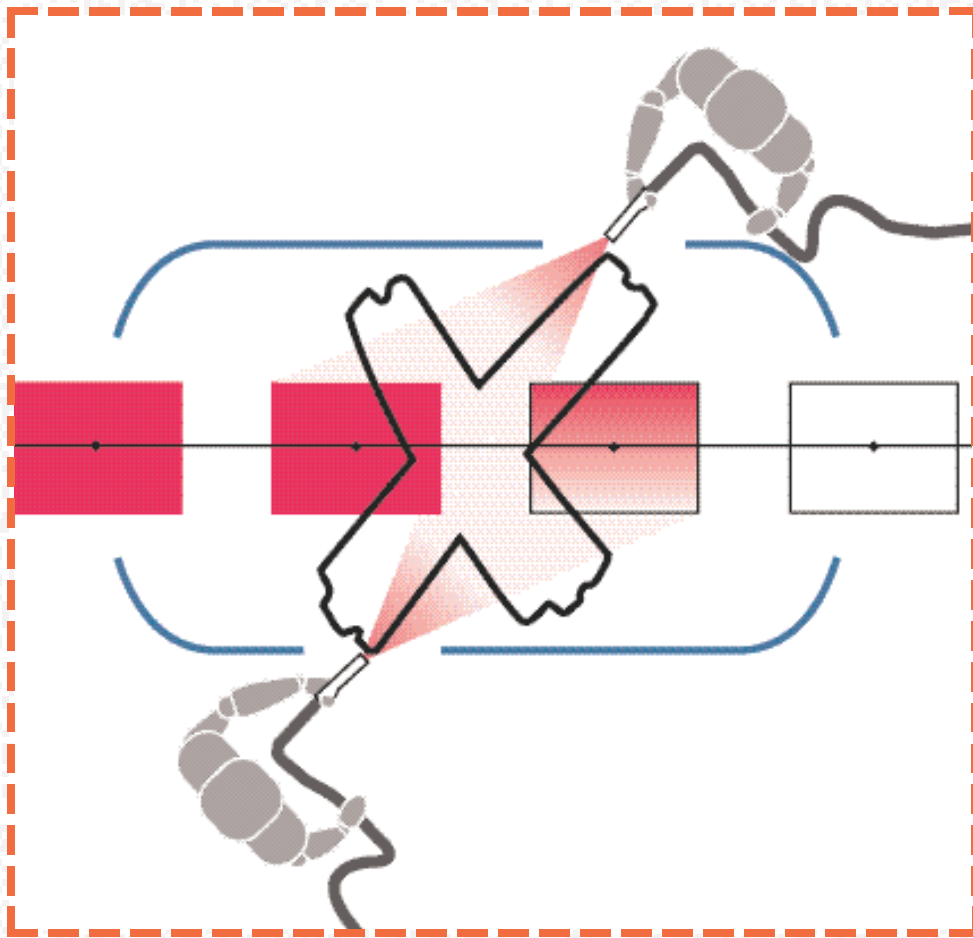


Figure 4 Workers incorrectly spraying towards one another

- Do not spray towards a work colleague spraying from the opposite side of the booth.
- When you are working at a traditional open fronted spray booth, always spray into the booth. Never stand between the work-piece and the booth.

Equipment

Make sure your spray gun is set up correctly. Ask your employer or supervisor for information.

- Do not increase the powder delivery rate beyond what is needed. It does not improve the finish but wastes powder and may mean you breathe in more dust.
- Do not increase the corona voltage unnecessarily. This may stop the powder coating the work-piece properly, lead to more powder being sprayed and may mean you breathe in more dust.
- Report any damaged or defective ventilation plant or protective equipment to your supervisor or employer.

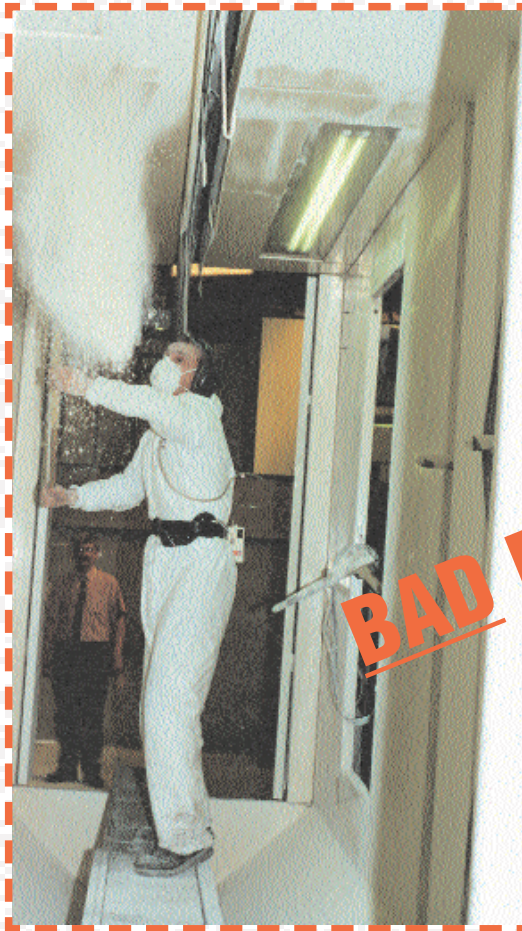


Figure 5

Worker incorrectly cleaning spray booth from inside

Cleaning spray booths

Stand outside the spray booth to clean it. Use equipment with long handles to enable you to reach inside.

- ▶ **Make sure** that the ventilation system is running.
- ▶ **Minimise** the use of compressed air.
- ▶ **Avoid** using brushes. Ask your employer for rubber scrapers and a vacuum cleaner.

Respiratory Protective Equipment

- ▶ Wear the respiratory protective equipment provided for use. Keep it in a clean place, and make sure it is kept clean.
- ▶ Disposable respirators should be thrown away after each use.

Skin contact

- ▶ Avoid skin contact with coating powders by following the guidelines above and by wearing suitable protective clothing (gloves, overalls) where necessary.

Other precautions

- ▶ Do not eat, drink or smoke in areas where coating powders are being used.
- ▶ Wash thoroughly after working with coating powders, especially before eating, drinking or smoking.

What should I do if I think my health might be affected?

If you believe that your health is being affected through work with coating powders, or if you are concerned that adequate precautions are not being taken, you should approach your manager. You may do this through your supervisor or safety representative. Tell your doctor about the substances that you are working with.

Show them this leaflet.

CHECKLIST

What does my employer have to do?	What should you do?
<ul style="list-style-type: none"> assess the risks to your health from your use of coating powders and the precautions necessary to protect your health; avoid using powders containing hazardous substances like TGIC, where it is reasonably practicable to do so; introduce measures to prevent you from being exposed to coating powders or, where this is not reasonably practicable, to ensure that your exposure is adequately controlled; ensure that control measures are used, equipment is properly maintained and checked and procedures are followed; where necessary, monitor your exposure and carry out appropriate health surveillance; inform you about the risks and the precautions necessary to protect your health; and train you in the use of control measures and any protective equipment which is required. 	<ul style="list-style-type: none"> avoid breathing in dust; avoid skin contact; make full use of any control measures; use the protective equipment provided; if you have a respirator make sure: <ul style="list-style-type: none"> - it fits properly - it is clean - the filter is changed regularly; if you use disposable respirators make sure they are thrown away at the end of the shift; report any defective equipment; do not eat, drink or smoke in the spray coating areas; and where appropriate, attend health surveillance procedures at your workplace.

FURTHER INFORMATION

If you need further advice you should contact HSE's Infoline (Tel: 08701 545500).

More detailed advice is given in the guidance book, aimed at employers, which accompanies this leaflet: *Controlling exposure to coating powders* (including free training CD) HSE Books 2000 ISBN 0 7176 1761 0

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This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you may need to do.

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*This booklet is aimed
at employees who use
coating powders.*

*It contains information
on the health issues and
recommends precautions to
safeguard health.*

*It accompanies a guidance
book for employers.*