



# standothek

**Helpful tips for your health and safety.**



**The Art of Refinishing.**



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## Working safely.

**Dangers can only be properly assessed and removed if they are known in detail. Work in body shops and paint shops is extremely complex. Safety at work and health protection are particularly important when handling many different tools, machines and potentially hazardous materials every day.**

Good working conditions are very important for the health, safety and well-being of everyone concerned. All employees should therefore be able to use protective equipment, hearing protection and extractor systems. Care must similarly be taken to ensure that all activities can be undertaken with as little ecological impact as possible. Only if everyone – including your colleagues – can work safely in a safe environment will they keep fit and well.

Help to establish and maintain safe, healthy and eco-friendly working conditions for yourself and your colleagues or employees. Look out for any problems and take steps to remedy them – for your own safety and that of your colleagues.

There are so many laws and directives, bans and regulations that entire volumes could be written on the subject of working conditions and the environment. This brochure sets out some of the most important details on safety at work, health protection and environmental protection in a clearly understandable form. It contains important tips for everyone working in body shops and paint shops – from trainees to the boss!



### **Important tips:**

The “thumbs-up” sign highlights important safety tips. These sections contain a concise description of the best way to protect yourself and your colleagues.

# Eco-friendly products are the first step to working safely.

**Choosing the right products is the key to a successful repair. But a product's effect on health and the environment needs to be considered carefully too.**



The ecological effect of a specific paint material or complex refinishing system depends very largely on the amount and quality of the solvents used. It is therefore important today to minimise the use of solvents or to replace them with less harmful alternatives.

Standox supplies complete low-solvent product systems – from primer to clearcoat – for refinishing both passenger cars and commercial vehicles.

The complete range of VOC-compatible products can be identified by the ProFuture symbol.

## Car refinishing systems

Modern paint systems offer refinishers several advantages. They are not only low in solvent content and save resources, but also give advantages which go far beyond an eco-friendly repair.

Standohyd is an economical waterborne paint system for refinishers with several advantages to conventional technologies. It is easy to use, has a high colour accuracy, ensures good coverage and is eco-friendly. Most importantly, the entire range of refinishing jobs can be handled with a single paint system. Moreover, Standohyd has fulfilled the present and future requirements of VOC legislation ever since it was introduced as a waterborne paint system.

Rounding off the picture, Standox VOC clears create a perfect finish. They contain distinctly less solvent, dry more rapidly than conventional materials and helps refinishers reduce their material consumption.



### Refinishing systems for commercial vehicles

Standofleet is an adaptable paint system for the eco-friendly finishing and refinishing of commercial vehicles. Most of the Standofleet system components are based on modern high-solid technology.

A high solid content guarantees high opacity and good coverage. In this way, Standofleet ensures that the statutory VOC requirements are met and saves valuable resources by reducing materials consumption.

Standofleet is a modular system allowing for different combinations of mixing pastes and binders. This makes it easy to create specific topcoat grades for numerous areas of use.

Despite this multitude of possibilities, Standofleet comprises only a small number of components to cover the entire range of colours for refinishing commercial vehicles.



### Even eco-friendly paint systems must be handled with care

- The same precautions should be taken when handling these paint materials as with conventional materials.
- Use suitable protective equipment.
- Follow the instructions in the technical data sheets.
- Note the warnings on labels and in safety data sheets.

Pay attention to your own safety as outlined on the following pages.



### EU Directive 2004/42/EC

Product subcategory	Coatings (example)	Material	VOC g/l (*)
a Preparatory and cleaning products	Preparatory products	Tool cleaners	850
	Pre-cleaners	Pre-cleaning medium	200
b Fillers, surfacers and stoppers	All types	Stoppers	250
c Primers	Preliminary coats and (metal) primer coats	Primer surfacers, fillers	540
	Wash primers	Wash primers	780
d Topcoats	All types	Solid topcoat, basecoat, topcoat, clearcoat	420
e Special paints	All types	Special products	840

(\*) g/l of product ready for use. The water content of the finished product when ready for use should be deducted in all except sub-category a. Valid as per 10/2005

# Hazardous substances.

**Hazardous substances are those which:**

- may have an unpleasant smell or irritate the eyes,
- endanger people's health, or
- entail a higher risk of fire or explosion.

Great care must be taken when handling these substances. Contact with a hazardous substance can lead to a whole variety of effects. Irritation of the skin or respiratory organs can arise quickly and major exposure can even lead to unconsciousness. The later consequences can be even more serious: allergies and hypersensitivity or even infertility, cancer, nervous disorders or chronic impairment of consciousness and derangement (organic psycho-syndrome).

If proper care is taken, however, even hazardous substances can be handled without harm. Hazardous substances are identified by a symbol on their packaging.



2.

Hazardous substances are subdivided into 15 categories in accordance with their properties:

Category	Symbol	R-phrases	Examples
Explosive		R1 to R6	Dynamite, fire works
Oxidising		R8	Hydrogen peroxide; activator for fillers
Very highly inflammable		R12	Petrol, thinner
Highly inflammable		R11	Methylated spirit, thinner
Inflammable		R10	Turpentine
Highly toxic		R26 to R28	Pesticides
Toxic		R23 to R25	Various pigments contained in paint
Harmful to health		R20 to R22	Phenyl methane
Caustic		R34 or R35	Battery acid, phosphoric acid (contained in some primers), dichloromethane (in paint stripper)
Irritant		R36 to R38	Ammonia, some hardeners
Sensitising (leads to hypersensitivity)		R42 or R43	Isocyanates (contained in some sealants)
Carcinogenic		R40, R45 or R49	Benzene, asbestos, zinc chromate
Reprotoxic		R60 to R63	
Mutagenic		R46 or R48	
Environmentally harmful		R50 to R59	Copper salts

R and S phrases (R = Risk/S = Safety)

If a product entails a specific risk, this must be stated accordingly. The R and S phrases draw attention to the specific hazards associated with the respective substance.

R (= risk) phrases designate the specific risk associated with a (paint) product that is harmful to health.

S (= safety) phrases contain recommendations on the safest way to handle the product.

P = Special warnings.

# Emergencies: fire and explosion.



## What can you yourself do?

Note the following points when handling hazardous substances:

- Do not eat, drink or smoke when working with hazardous substances. These activities would constitute an additional hazard, as the dangerous substance could enter your mouth.
- Always wear a work suit and other protective equipment, such as a respiratory mask, gloves, goggles and a safety hood.
- Ensure that the extractor is running when working with dangerous spray materials, gases or substances. Ensure that the workplace is well ventilated whenever possible.
- Always read the label before working with a hazardous substance. Read the safety data sheets if in doubt.
- Hazardous substances must be stored in a fire and explosion proof room when not in use.
- Hazardous substances should not be liberated unnecessarily. Canisters and other containers must be re-closed immediately after use.
- Spillages of hazardous substances must be wiped away immediately.
- Use the emergency douche or the special eye douche if the skin or eyes have come into contact with a hazardous substance.

Every business is obliged to draw up an emergency plan with escape routes and the necessary action to be taken. Ensure that you are fully familiar with this plan. Remember exactly what must be done in the event of a fire or accident.

## The safety officer

Every company should have a safety officer\* who has attended the courses on safety at work, as well as health and fire protection which are organised by the employers' liability insurance associations, and others. Knowledge of artificial resuscitation techniques and First Aid is also useful. The safety officer is responsible for organising accident prevention, fire fighting, First Aid treatment, evacuation in an emergency and coordination with the rescue services. In the event of a fire or accident, his or her instructions must be obeyed unconditionally. It goes without saying that every member of staff is expected to make an active contribution to overcoming every emergency.

\* Companies with more than 20 employees must have a safety officer.



## What can you do to prevent or contain a fire?

- Ensure that you are fully familiar with the emergency plan and the location of the emergency exits.
- Make a note of where to find water hoses and fire extinguishers.
- Ensure that extinguishing agents, extinguishing paths and rescue paths as well as emergency exits are always clear and accessible.
- Always call the fire brigade immediately if a fire breaks out.



3.



# Personal protection.

**“Good health is priceless.” Although this should really be a matter of course, we are all too often very careless in the way we treat our health.**

4.

Be honest: how often do you forget about personal protection because it is too much bother or you haven't the time? Often enough, no doubt. This is a point worth reconsidering, for accidents happen very quickly and their consequences can often be permanent. That is why you should protect your most valuable asset: your health.

## Head

Risk of injury due to impacts and falling objects.

## Eyes

Risk of injury due to dust, splinters, caustic vapours and liquids, bright light (welding).

## Ears

Risk of injury due to noise.

## Respiratory organs

Particularly exposed to injury by dust, caustic vapours and liquids, poisons.

## Back

Risk of injury due to working in the wrong position.

## Hands

Our “gripping tools” are particularly exposed to mechanical influences, as well as to caustic liquids and electricity.

## Exposed areas of skin

Risk of injury due to mechanical, chemical, physical and biological influences.

## Feet

Risk of injury due to falling objects or tripping over objects on the ground, through impact or electrostatic charge.



Always wear goggles to protect your eyes. Goggles should be resistant to splashes of thinner and closed at the sides. A respiratory protection hood with integrated visor is ideal when working in the spray booth. Ear plugs or hearing defenders should also be worn.

Wear a suitable mask with filter to prevent respiratory disorders.

Protect your hands with suitable gloves.

Always wear suitable protective clothing that is dense, light yet breathable. The fabric should never contain a high proportion of easily molten manmade fibres, otherwise these may fuse onto the skin in the event of fire.

Always wear safety boots. They should be robust, firm and should protect against electrostatic charge.



# Respiratory protection.

Paints, pigments, dusts and organic solvents can be dangerous. Hazardous substances can enter the body with every breath. The biggest problem here is that, as a rule, the damage to health only becomes evident after about 10 to 15 years, by

which time it is far too late to "repair" the damage.

That is why correct respiratory protection is so important.



5.

## Respiratory protection masks

Respiratory protection masks are normally half-masks which cover the wearer's mouth, nose and chin. Provided that the filter cartridges are replaced regularly, masks with filters effectively protect refinishers against dusts and organic vapours.



### Good to know:

- At least a filter mask for fine dust should be worn when sanding or grinding.
- Waterborne paints must be applied with effective respiratory protection.
- Unlike simple filter masks, assisted fresh air respiratory protection systems do not display any inhalation resistance and are therefore particularly comfortable.
- The permanent supply of fresh air ensures that the air inhaled is always clean.

Assisted fresh air half-masks supply the refinisher in the spray booth with breathing air independently of the room air via compressed air hoses. These masks are additionally equipped with activated carbon filters.

Because these masks do not protect the eyes, they are unsuitable when processing materials with a strong irritant effect on the mucous membranes in the eyes. Goggles are needed to protect the eyes against spray mist.

## Full-face masks

Full-face masks enclose the entire face and therefore also protect the eyes during work. They frequently also have an additional inner mask with special routing of the air to prevent the visor misting up.

## Respiratory protection hoods

Respiratory protection hoods enclose the entire head and neck. They consequently ensure the most extensive protection of the respiratory organs and protect the eyes, head and hair from contamination with spray mist. The hoods have a large field of vision and are ideal even for people with glasses.

Breathing air is supplied via compressed air hoses independently of the room air.

# Noise.

**High noise levels can damage your health. They may lead to a temporary loss of hearing in the short term and even to total deafness in the long term. Stress and impaired concentration may also be attributable to excessive noise.**

Precautions must be taken, at the latest, when the noise level rises above 80 dB(A) (e.g. when sanding with a sanding wheel).

The following table lists the various noise levels encountered when working in a car repair shop. Anyone who is exposed to noise levels of more than 80 dB(A) for eight hours daily or 40 hours a week may lose their hearing completely.

The risk of hearing damage rises with increasing noise level, for every rise of 3 dB(A) means a twofold increase in sound energy.

It is therefore important to protect your hearing. Draw the attention of colleagues and employees to the problem of noise before it is too late.



6.

Department	Source	Noise level dB(A)
Body shop	Sanding with a right-angle sander	90 - 100
	Pneumatic metal-cutting/ machining	110 - 115
	Tightening and unscrewing nuts with an impact wrench	85 - 90
	Blows of a hammer	85 - 90
	Sanding with a large sander	95 - 100
	Sanding with sanding wheels	90 - 95
	Sanding with paper wheels	80 - 85
	Blowing off with an air gun	80 - 95
	Refinishing shop and preparations	Spray refinishing
Blowing off		80 - 95
Washing station	Cleaning with a cleaning gun	75 - 85

85 – 90 dB(A)



95 – 100 dB(A)



75 – 80 dB(A)





### **What can you yourself do?**

- Wear hearing protection (plugs, muffs or ear defenders). An employer must provide workers with hearing protection if they have to work in noise levels of more than 80 dB(A).
- Make as little noise as possible. Be sure not to use noisy tools and machines unnecessarily.
- Retreat to an insulated area when carrying out noisy work.
- Pay attention not only to protecting your own hearing – ensure that colleagues or visitors nearby also wear hearing protection. Warn them before starting to make a noise.
- If you are regularly exposed to noise levels of more than 80 dB(A), you can ask for an audiometric test to be carried out. This test will be performed during the occupational health checkup undertaken at your request.

## Skin care.

**Your skin can look after itself under normal conditions, but that does not mean that it is indestructible.**

Protect your skin with a grease and silicone-free barrier cream before you start work. This will prevent a firm bond arising between resins, dirt and your skin from the very outset. And your skin will be easier to clean afterwards.

Despite these precautions, your skin is robbed of its natural protective substances in the course of a working day. Appropriate skin care after work is therefore particularly important. After thoroughly cleaning your hands, your skin must be dried carefully, including between the fingers.

After cleaning your hands massage a silicone-free, moderately nourishing cream into all exposed areas of skin. Ensure that the cream is absorbed quickly and effectively.

Although the skin must be cleaned thoroughly, it must also be cleaned gently. Ensure that gentle hand and skin cleaners are available. Preference should be given to effective, bio-degradable hand cleansers.

## Hygiene.

Eating, drinking or smoking while working with hazardous substances can seriously endanger your health.

It is therefore absolutely essential to follow certain hygiene rules. These reduce the risk of potentially harmful substances entering the body (e.g. if soiled hands come into contact with food). Wash your hands regularly with a suitable hand cleaner; never use solvent (such as turpentine) to clean your skin.

7.  
8.



# Tobacco, alcohol and drugs.

You can only work properly and safely if your head is clear. It is therefore prohibited to drink alcohol and consume any substances capable of impairing your perception (e.g. strong medication or narcotics) during working hours. Smoking is permitted to a limited extent in specially designated areas. However, the non-smokers should always be remembered and care taken to ensure that they do not suffer.

## Three good reasons to give up smoking:

- Lower risk of heart failure and lung cancer.
- More money for holidays and leisure activities.
- More intensive sense of taste and smell.



## What can you yourself do?

- Always wash your hands with (warm) water and soap before eating.
- Do not eat and drink while working.
- Keep all wounds clean, no matter how small.
- Do not roll or smoke cigarettes with dirty hands.
- When at work always wear working clothes.
- Wash your working clothes regularly. Severely soiled clothing should immediately be removed and replaced with clean clothes.
- Make sure that social rooms or the canteen are not soiled by excessively dirty working clothes.
- Protect your skin with cream to keep out hazardous substances, but remember: it is no substitute for gloves!
- Do not use compressed air to clean your body.

# Posture and loads.

## Lifting loads

You may overtax your body by lifting heavy loads or working in the wrong position. This can then cause physical problems, such as backache, a stiff neck or problems in the arms, shoulders or elbows ("tennis elbow"), as well as inflamed tendons in the hands or wrists.



### What can you yourself do?

- Use the right technique to prevent injury when lifting loads: squat down and keep your back straight, rising from your knees as you lift the load. Hold the load as close to your body as possible.
- Ensure that you have a firm grasp of the load as you lift it and it cannot slip.
- Avoid excessively heavy loads. Never lift more than 20 kg. Use whatever aids are available, especially if the load weighs more than 20 kg. A lifting table, hoisting gear or lift truck are ideal for this job.
- It is also important to change your position regularly.
- The following positions should be avoided whenever possible: twisted back and/or neck, an arched back and/or neck, a bent-over position, a squatting position.
- Use knee pads if you have to work in a kneeling position.
- Try to work without bending over. Use a lifting platform, for instance, when sanding a vehicle.
- A lifting platform should also be used when working underneath a vehicle.
- If you have to use a jack, make sure that the vehicle is supported on blocks.
- Use a stool when working near ground level.

10.



### Visual display units

Your job may also involve working with a personal computer. Here too, correct posture is of decisive importance. RSI syndrome (RSI = Repetitive Strain Injury) is one of the commonest complications of working with a visual display unit. This syndrome encompasses symptoms affecting the hands, wrists, arms, neck and shoulders (e.g. mouse arm) that can sometimes cause serious problems.



#### What can you yourself do?

- Change between working at the personal computer and other activities as often as possible.
- Do not spend more than two consecutive hours at the computer, then turn to other activities or take a short break.
- Speak to your supervisor if problems develop due to unsuitable furniture. He/she will then ensure that your workplace is modified accordingly.
- Get up and move around during breaks in work.
- Do not work for more than six hours at a visual display unit.

## A tidy workplace.

It is much safer and also more pleasant to work at a tidy workplace than surrounded by chaos. Since you share your workplace

with others, you are not just tidying up for yourself, but also for your colleagues.



#### What can you yourself do?

- Keep your workplace clean. Put tools and materials away as soon as you are finished with them – even when working on an urgent job! Remember: tidying up is part of your daily work and not an extra job.
- After use, put hazardous substances away in the special cabinet provided for this purpose.
- Do not leave any materials or tools lying about on the floor.
- Wipe up any spilled liquids without delay (e.g. oil and coolant).



11.

## Tools, machines and equipment.

The wide variety of tools and machines used in your workplace are only matched by the variety of hazard that can occur when using them.

Dangers associated with the use of machines:

- risk of being trapped by moving parts.
- risk of injury due to cuts, being trapped or crushed (e.g. under a lifting platform).
- risk of being struck by flying objects.
- dangers due to electricity, hydraulic or pneumatic systems.



#### What can you yourself do?

- Make sure you are fully familiar with the equipment's function and mode of operation before starting work.
- Wear your personal protective equipment.
- When working underneath a car, make sure that it is properly supported (blocks) and not simply resting on the hydraulic jack.
- Inform your supervisor if you feel that a machine is not working properly or should be serviced.

12.

# General precautions.

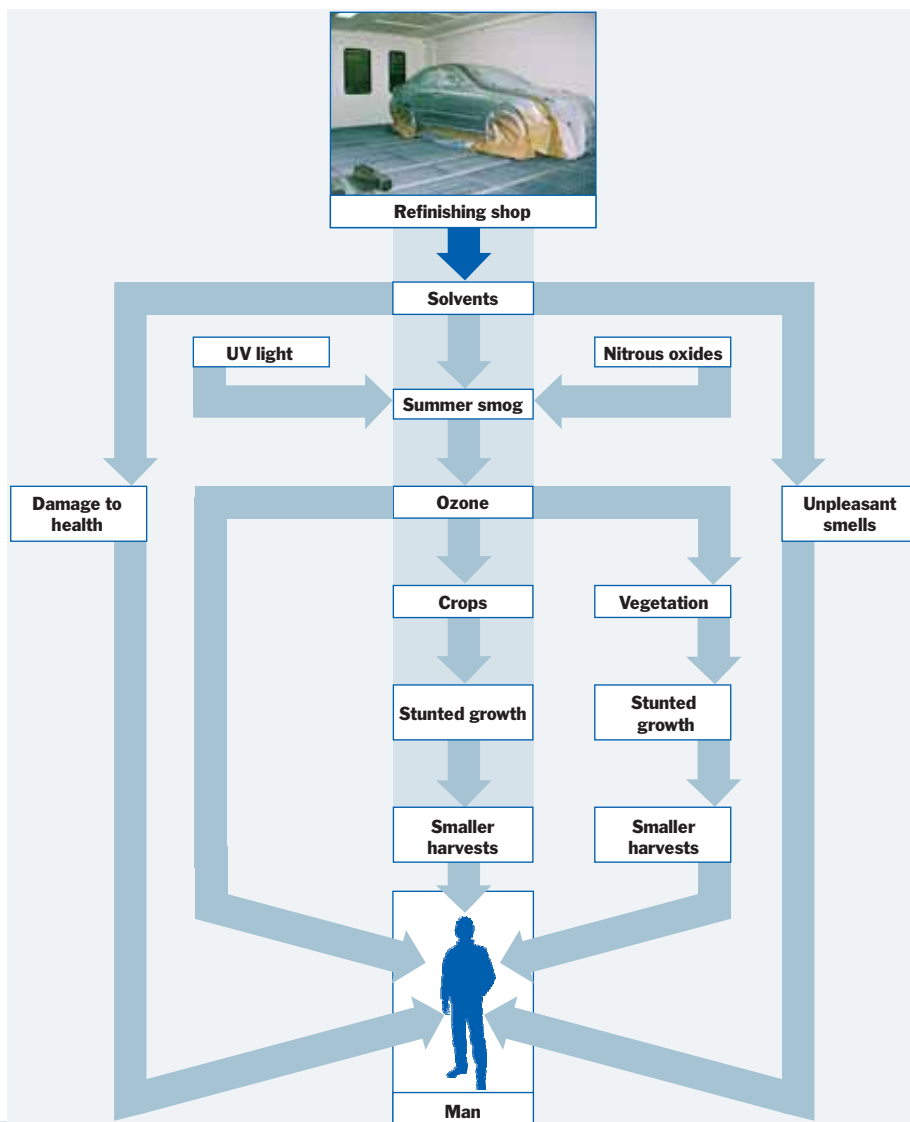
## Environment

A refinishing shop should operate with as little environmental impact as possible. That is why it is so important to use VOC-compatible paint systems, such as Standohyd from Standox.

Correct waste disposal is equally important. This is where you can help: make sure that the different kinds of waste are sorted correctly. Contact the specialist for environmental matters if you have any queries on this subject.

## Air

The volatile organic compounds evaporate and pollute the environment when working with materials containing solvents. Make sure that as little solvent as possible escapes, for instance by closing thinner containers immediately after use.



13.



## How can you help to prevent pollution?

- Avoid unnecessary waste; use all materials as efficiently as possible.
- Sort the waste carefully and make sure that it is stored safely.
- Do not pour liquid waste down the drain.
- Work on the sealed floor to prevent contamination of the soil. If not, use a suitable collecting trough to collect any escaping liquid.





**Water**

It is generally prohibited to dispose of waste liquid down the sink or drain. Always ensure that the various materials are disposed of separately. The sludge trap and separator for light liquids are intended exclusively for the discharge of wash water. All other liquids must be collected separately in the area provided for this purpose and correctly stored until collected by a duly authorised waste disposal firm.

**Soil**

The floors in refinishing shops are sealed to prevent liquids seeping through and contaminating the soil. If you have to work with liquids, make sure that such jobs are always carried out in an area with such a floor, otherwise use a suitable collecting trough to collect any spilled liquid.

**Waste**

Accumulated waste must be stored separately. Consistent sorting cuts costs for waste disposal and helps to protect the environment. Many "waste" materials can be recycled if they have been sorted correctly. The waste is collected by firms that specialise in eco-friendly disposal.



# Useful precautionary tips.



14.



In addition to your working clothes, always wear your personal protective equipment and goggles. This will ensure more effective protection.



Put tools and materials away immediately after use – that is part of your job and makes life easier and more pleasant for all concerned.



Do not eat and drink while working and do not smoke in the refinishing shop. Proper hygiene will minimise the risk of contaminants entering your body.



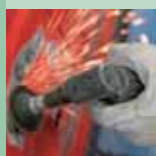
If you have to lift loads weighing more than 20 kg, ask someone to help or use a suitable aid, otherwise you will overtax yourself.



If a fire breaks out, follow the instructions in the emergency plan and call the fire brigade in order to avoid direct danger to yourself and your colleagues.



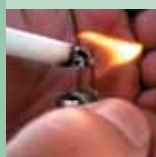
Change position frequently and do not work in unnaturally twisted or bent-over positions. This will help to prevent discomfort or pain in the neck, shoulders, back, arms and tendons.



Make sure you are familiar with your equipment's function and mode of operation before starting work. That is the best way to protect yourself and your colleagues from accidents.



Be alert and look out for potentially dangerous situations. If you help to protect your colleagues from accidents, they will do the same for you.



Alcohol and drugs must never be consumed while working. You are a danger to yourself and your colleagues when under the influence of alcohol and/or drugs.



Avoid spilling liquids and other fuels. Make sure that waste is always properly sorted. This not only saves money, but also protects the environment.

# Be alert!

There are dangers everywhere. Often, it is something small that can rapidly lead to a major problem. Keep your eyes open.

For further advice please refer to the table below and to our safety video, which is shown at Standox trainings.

Activity	Hazard	Risk	PPE	Additional measures
<b>Handling metal panels</b>	Sharp edges, excessive weight	Cuts and abrasions, physical strain	Kevlar gloves, eye protection, overalls, safety shoes	Ensure heavy objects are handled by more than one person
<b>Dry sanding</b>	Dust and sharp panel edges	Dust inhalation, skin and eye irritation, cuts to hands/fingers	Kevlar gloves, eye protection, overalls, safety shoes, particle mask	Local dust extraction must be used
<b>Cleaning panel surfaces</b>	Solvent or waterborne cleaning agents	Skin and eye contact	Nitril or rubber gloves, eye protection, overalls, safety shoes	
<b>Mixing of paint products</b>	Paint products in liquid or paste form	Inhalation of vapors causing nausea	Nitril or rubber gloves, eye protection, overalls, safety shoes, A2P2 respirator	Must be done in designated area and with correct equipment with fume extraction
<b>Spraying paints</b>	Atomised toxic paint compounds	Inhalation of toxic substances, eye irritation	Nitril or rubber gloves, eye protection, Tyvek or specialist spraying suit, safety shoes, air fed or A2P2 respirator	Must only be sprayed in designated spraying area
<b>Cleaning of equipment</b>	Toxic and highly flammable solvents	Skin and eye contact, fire, slipping	Nitril or rubber gloves, eye protection, overalls, safety shoes, A2P2 respirator	Must be done in designated cleaning and with correct equipment with vapor extraction



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