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1:6 Health and safety precautions (part 2)

It is the purpose of this note to establish the minimum standards of hygiene and protection for personnel applying paints in the surface coatings industry. It must be recognised that in a progressive society, improvements in the quality and application of paints are inevitable, resulting in the better protection of steel. Older slower methods of paint application are giving way to modern, faster techniques, and it is important to carefully study and overcome any health hazards, which may result from these newer methods. It is not the purpose of this manual to spread alarm to the industry. We are well aware that vast quantities of paint have been, and are being applied to steel without any serious harm occurring to painters, who often have very rudimentary or no protection at all. We do, however, recommend that our advice be carefully studied as it is intended to improve the hygiene and in some cases, the safety of painters using older conventional paints as well as the more modern coatings. These recommendations are meant to supplement and not replace any special legal regulations in any country regarding the application of surface coatings.

Airless spray

Application of paint by airless spray is becoming increasingly popular. This rapid method of paint application produces fine paint mists which in addition to having a nuisance value to workers, may in the case of some paints present a respiratory health hazard. Laboratory and field trials have shown that the mist, other than isocyanate based, is essentially a dust problem that can be satisfactorily overcome by the use of a suitable respirator with a dust cartridge to British Standard Specification 2091 (type B) and pre-filter, or similar national standard specification. Other protective equipment necessary includes eyeshields, head cover, rubber gloves and overalls.

Earthing

High velocity flow rates of paint and cleaning solvents in airless spray application will cause a buildup of static electricity, particularly in dry weather, resulting in a high voltage spark discharge. To eliminate fire risk from this cause, earthing of the airless spray gun and unit is essential. While they hold the gun, this will also help to earth the painter's protective clothing, which can also build up electrical charge. Rubber and plastic garments are particularly prone to this effect.

Brush and roller

With brush or roller application, the precautions required are minimal, there being no respiratory hazard associated with these traditional methods. Discomfort due to eye splashes is perhaps the most important mishap that can occur, this discomfort can be eliminated by the use of inexpensive eye shields. Hand protection is also desirable, plastic or rubber gloves being suitable for this purpose.

Barrier creams

Some of these are miscible with some paint solvents and it is possible that they may assist organic poison absorption through the skin and for this reason most authorities are against their use. However it is difficult to remove dried paint from the skin using only soap and water without the prior use of barrier creams, and to leave paint on the skin also cannot be considered satisfactory. The use of a proprietary industrial skin cleanser followed by a skin conditioner (to replace lost natural oils) is often the best way of overcoming these skin cleaning difficulties. If painters insist on pre-treating their skin before spraying then a non-greasy barrier cream should be supplied. Greasy substances such as vaseline or petroleum jelly should not be used.

General precautions

- Do not smoke while stirring, handling and applying compositions.
- Always wash hands before smoking and eating.
- In case of splashing, wash skin immediately with soap and water.
- If splashes get into eyes, flood copiously with water at once and obtain medical attention.

The foregoing recommendations can be considered as the minimum standards consistent with hygiene and safety. However, more sophisticated but expensive equipment is available in the field of respiratory protection, and there are other protective measures which can add to the comfort of the painter. The following are a few examples:

Air line respirators

Although expensive, the advantages of an air line respirator are obvious. Clean fresh air is supplied to workpeople through an air hose, making them independent of any polluted atmosphere in which they may have to work.

Solvent fumes

In situations where solvent odour becomes objectionable, a "light fume" cartridge can be added to the respirator in a duplex arrangement. This arrangement is intended for outdoor use and it must always be remembered that cartridge respirators must never be used in atmospheres deficient in oxygen.

Disposable overalls and head cowls

The overalls are available as coats to be worn over normal overalls - the head cowls cover the whole of the head apart from a 15cm diameter circle for the face. Both are made of a fibre composition, which affords excellent protection against spray and splashes.