

Health and Safety Executive Operational Circular

Field Operations Directorate

OC 447/4

To

Agricultural, Factory and Quarries Inspectors (Bands 0-4)

RSG Specialist Inspectors (Occ Hyg and Process Safety) (Bands 0-3)

RSG Medical Staff

All CHID Inspectors (Bands 0-3)

**GUIDES ON COST-EFFECTIVE PAINT AND POWDER COATING:
ENVIRONMENTAL TECHNOLOGY BEST PRACTICE PROGRAMME (ETBPP)**

Four complementary good practice guides and an environmental performance guide have been published by the Environmental Technology Best Practice Programme (ETBPP) to help paint and powder coating managers on materials management issues. Although primarily aimed at environmental control by suitable choice of materials, waste minimisation and good housekeeping, the principles put forward offer many health and safety advantages.

BACKGROUND

1 The Environmental Technology Best Practice Programme (ETBPP) is a joint DTI and DoE initiative managed by AEA Technology plc through the Energy Technology Support Unit (ETSU) and the National Environmental Technology Centre.

2 The Programme offers free advice, guidance booklets and other information for UK businesses, and promotes environmental practices that aim to:

(1) increase profits for UK industry and commerce; and

(2) reduce waste and pollution at source.

3 More detailed information is available through the Environmental Helpline on freephone 0800 585794, e-mail:etbppenvhelp@aeat.co.uk and World wide web <http://www.etsu.com/ETBPP/>. Copies of the free guides may also be obtained by the appropriate order form faxed to 01235 433066.

GOOD PRACTICE GUIDES ON PAINT AND POWDER COATING

4 The 4 complementary good practice guides are:

- (1) GG50 *Cost-effective paint and powder coating: Materials management;*
- (2) GG51 *Cost-effective paint and powder coating: Surface preparation;*
- (3) GG52 *Cost-effective paint and powder coating: Coating materials;* and
- (4) GG53 *Cost-effective paint and powder coating: Application technology.*

5 The guides have been issued to file 447 and copies have also been sent to regional specialist groups (RSGs) for information.

6 The guides aim to help managers steer clearly through the range of material choices now available and find out how equipment, coating type and management practice can make industry's use of paint and solvents more efficient, saving time and money. Each guide gives industry examples to illustrate how savings can be made.

7 The guides are intended to help a range of companies including metal finishers, fabricators, component and assembly firms and plant or equipment manufacturers. They are applicable to all using paint and powders to coat metals whether predominantly in manual operations, eg hand-spray booths, or by partially and fully automated systems.

8 Guide GG50 shows how paint and solvent consumption can be readily reduced by no-cost and low-cost good housekeeping measures and a structured approach to waste minimisation. It looks at paintshop layout, delivery systems, workpiece handling, process efficiency and workload scheduling to achieve effective control.

9 Guide GG51 describes how companies can improve their efficiency and reduce costs by adopting good practice in surface preparation. It is aimed at paintshop and production managers who need to prepare metallic surfaces prior to coating. Avoiding or reducing the need for surface preparation may be one of the best ways of saving money, time and materials. The guide covers mechanical (abrasive) cleaning methods, chemical cleaning (degreasing) and alternative cleaning agents and methods. It also considers conversion coatings, ie phosphating and chromating, combined cleaning and conversion, and design, operational and management aspects of good practice in surface cleaning.

10 Guide GG52 explains how to reduce both costs and emissions by changing from conventional coatings to 'compliant coatings', ie coatings that apply the same coating load with less solvent. Significant reductions in costs and volatile organic compounds (VOC) emissions can be achieved in this way. Alternative coatings

containing less organic solvents and VOCs in general include water-based paints, high-solids paints, powder coatings and organic solvent free liquid coatings. Factors to be taken into account when switching to a compliant coating system and good practice for drying or stoving are also considered along with waste solvent recovery and abatement.

11 Guide GG53 outlines how costs and VOC emissions can be reduced by maximising transfer efficiency - the percentage of coating that actually ends up on the workpiece. Efficient methods of application to save costs and reduce emissions are examined. It covers dipping, spraying, powder coating, spray-gun techniques, equipment cleaning and automation.

ENVIRONMENT PERFORMANCE GUIDE - EG72

12 In addition to the 4 good practice guides, EG72 *Paint and powder coating use in the metal finishing industry* (issued to file 447 and RSGs) provides further data and advice to help optimise paint and powder consumption. Means for calculating current consumption are provided together with an action plan to reduce usage in the future.

ADVICE TO INSPECTORS

13 Where appropriate during visits or other contacts with the metal finishing industry the opportunity should be taken to draw these guides to management's attention. Significant health and safety gains can result from adoption of the recommended practices as well as substantial environmental benefits.

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ASI headings

Coatings: environmental management: paint(s): powder coatings: spraying; solvent(s).