

PROMP256

Use ink drying equipment



Overview

This standard is for people who use ink drying or ink curing equipment associated with printing machinery. Common ink drying/curing equipment includes: Ultra Violet (UV), Infra Red (IR) and hot air.

Ink curing and ink drying are not the same: ink curing is a process in which light causes a chemical reaction within the ink causing it to 'cure'. Ink drying is a process where heat is applied to the printed substrate (often at very high temperature) in order to cause the ink to dry quickly or more quickly than it otherwise would.

Correct operation of ink drying equipment is critically important in printing processes that depend on ink 'curing' or assisted / accelerated drying. For example, insufficient energy applied via UV may lead to ink not curing properly, whilst excessive heat applied using IR driers can result in ink melting and sticking an entire stack of printed paper together.

Ink drying equipment is also associated with risk of fire, which is a not uncommon occurrence in printing machine drying units.

Some types of dryers also produce emissions that are harmful to health and to the environment, such as ozone and solvent emissions. Depending on the volume of solvent emissions, a permit may be necessary for the use of such equipment, and it is therefore important to check that equipment for limiting emissions to atmosphere are working correctly.

This standard requires you to understand the operation and risks associated with drying equipment on printing machines, and to be able to use the equipment safely and ensure that the equipment is doing its job correctly.

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Performance criteria

Set up ink drying equipment

You must be able to:

- P1 check that the drying equipment is safe and fit for production
- P2 check that any coolant reservoirs contain sufficient liquid
- P3 set the drying equipment to operate at the temperature or intensity required
- P4 where relevant, set the printing machine and drying equipment to run at compatible speeds
- P5 check that there is no build up of material or combustible matter in or around the dryer
- P6 check that the work area is safe and ready for production
- P7 where relevant, check that the drying equipment has reached operating temperature and that all lamps or elements are functioning.

Maintain the quality of output from ink drying equipment

You must be able to:

- P8 check regularly that the output meets the required quality
- P9 inspect output regularly to check that
 - P9.1 ink setting and hardening rates meet production requirements
 - P9.2 the correct temperature is maintained throughout the run
 - P9.3 the quality of the image is maintained during drying activities
- P10 continuously monitor the safe and efficient operation of drying equipment
- P11 identify and correct drying equipment faults which it is your job to rectify
- P12 identify and promptly report drying equipment faults, which it is not your job to correct
- P13 regularly check that there is no build-up of paper or other residues that may give rise to a risk of fire.
- P14 immediately switch off the drying equipment if there is a risk of fire
- P15 follow the correct procedures for the removal of waste
- P16 stack work safely, using the approved method
- P17 where appropriate, check that the internal temperature of the stack is within the accepted range after drying
- P18 accurately record the production and quality assurance details.

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Knowledge and understanding

You need to know and understand:

Health and safety

- K1 your duties and responsibilities for health and safety as defined by any specific legislation covering your job role
- K2 manufacturer's health and safety requirements relevant to your job
- K3 how to stop a machine in the event of an emergency

You need to know and understand:

Communication

- K4 with colleagues

You need to know and understand:

Workplace policy and practice

- K5 workplace objectives, priorities, standards and procedures
- K6 the range of work carried out in the workplace

You need to know and understand:

Time and resources

- K7 how to maximise productivity

You need to know and understand:

The operation of equipment

- K8 the principles of ink curing and drying
- K9 the risks associated with ink drying units and how to avoid them
- K10 your company's safety procedures for operating ink drying equipment
- K11 common faults which can occur when operating ink drying equipment, what causes them and how to correct them

You need to know and understand:

The causes and treatment of common faults

- K12 raw material faults
- K13 processing faults
- K14 machine faults

You need to know and understand:

Administrative procedures

- K15 recording and reporting
- K16 product labelling

You need to know and understand:

Environmental

- K17 any specific environmental legislation that covers processes in your company
- K18 control of pollution

You need to know and understand:

Quality assurance and control

- K19 techniques for controlling quality

You need to know and understand:

Problem solving

- K20 sources of information
- K21 techniques for assessing machine faults

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You need to know and understand:

Materials

- K22 the types and characteristics of paper, board and other commonly used substrates
- K23 the types and characteristics of inks and coatings
- K24 maintaining the quality of materials during storage and handling

You need to know and understand:

Cleaning, lubrication and maintenance

- K25 the principal activities involved with machine cleaning, lubrication and maintenance
- K26 roles and responsibilities for cleaning, lubrication and maintenance
- K27 machine faults and how they can be rectified
- K28 the maintenance plans for machines which you operate
- K29 which components wear or become degraded over time
- K30 the choice and use of suitable cleaning agents and lubricants
- K31 what parts of the machine you are allowed to clean, lubricate and maintain

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Validity	Current
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Originating organisation	Proskills
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Relevant occupations	Originators compositors and print preps; Printers; Screen printers; Printing machine minders and assistants; Bookbinders and print finishers; Graphic designers
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Suite	Machine Printing
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Key words	machines; printing; lithographic; equipment; flexographic; operate; maintain; inks; coatings;
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