PLAINTIFF'S EXHIBIT

ASA-678

The Asbestosis Research Council

Recommended Code of Practice

For Handling Asbestos Products Used in Thermal Insulation

The Asbestosis Research Council

Present factory regulations recognise asbestosis as an industrial disease which could arise from the inhalation of asbestos dust, and stipulate rules for the protection of work people engaged in the manufacture of certain types of asbestos products. No regulations have yet been introduced relating to the handling of asbestos products for thermal insulation, although it is accepted that to eliminate the risk of asbestosis all practical steps should be taken to minimise the inhalation of asbestos dust. For this reason The Asbestosis Research Council set up a committee of doctors and engineers to consider what steps should be taken for the protection of workers in this branch of the asbestos industry.

As a result of its work, the Committee has recommended that the industry should adopt the following code of practice.

Recommended Code of Practice

Where asbestos products are used the following procedures should be adopted:

(1) Wherever possible preformed material rather than site mixed material should be used.

(2) Working with loose lagging material should be done in the wet state wherever practicable, rather than in the dry. Methods of transporting premixed wet compounds from segregated mixing areas should be used wherever possible.

(3) When dry mixing is being done respirators should be worn unless a machine with a properly designed ventilation system is available. Portable exhaust ventilation systems are already in use in certain shipyards. This procedure should be extended.

(4) Where the cutting of material containing asbestos takes place it should be done whenever possible in a segregated area where there is a free circulation of air. If continuous cutting of insulation materials is being carried out a portable hopper should be used for the collection of fall-out waste. Machines are available for ensuring dust exhaust at a cutting bench.

(5) In the case of spraying asbestos, the practice to be adopted will depend on the type of equipment used. The various types are defined in the Appendix. In all cases the asbestos fibre must not be removed from the dust-proof sacks

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in which it is supplied until it is fed into the machines in the prescribed manner. Care should be exercised in handling the sacks in order not to damage them.

(a) The use of effective pre-treatment reduces the concentration of dust to the level obtainable by an efficient exhaust ventilation system. Where pre-treated fibre is used, spraying with any type of machine may proceed without limitations save that the operators must, during spraying operations and for a short period thereafter, wear approved masks.

(b) Self-ventilating machines without pre-treatment equipment may be used in spaces where the volume of air per spray gun in action is not less than 25,000 cu ft provided that operators use approved masks during spraying and for 30 minutes thereafter. Other tradesmen not supplied with masks may not enter the room until 30 minutes after spraying has ceased. Normal ventilation by open windows is permitted.

Where rooms are below 25,000 cu ft volume per gun mechanical ventilation must be provided to give two air changes per hour, and operators must wear approved masks during spraying and for at least 30 minutes thereafter. Other trades must not enter whilst spraying is in progress and for one hour thereafter.

(c) Non-ventilated machines without pre-treatment equipment should only be used in spaces exceeding 50,000 cu ft volume per gun; operators and other workers approaching within 50 ft of the machine and/or the gun must wear approved masks during spraying and for 15 minutes afterwards. Normal ventilation by open windows is permitted.

(6) Stripping of Materials Containing Asbestos

The area in which stripping takes place should be classified as a segregated location and operatives engaged on such work should wear approved type respirators.

(a) Where site location permits, protective sheeting (dust sheets/polythene shrouding etc.) should be used to localise or isolate the working area.

(b) Wherever conditions permit i.e. on inside work – power stations, ships' engine rooms, piping and ducting inside buildings, portable industrial vacuum cleaners should be used during stripping operations and for cleaning-up purposes in the working area.

(c) Where the lagging is receptive to such treatment, wetting prior to and during the removal of the material should be carried out.

(7) Where operations covering mixing, cutting and spraying are carried out and wherever dust can be inhaled, approved respirators should be used and maintained as set out below.

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Use and Care of Respirators

Respirators should be worn by all employees at all times when:

(1) Spraying asbestos and feeding hoppers on sprayed asbestos work. Respirators should be worn by both operator and attendant during the full period that work is being carried out and by any employee remaining in the dusty atmosphere for a limited period after spraying operations have terminated.

(2) Carrying out the following operations which, wherever possible, should be carried out in open spaces where there is a free circulation of air:
   (a) The mixing of any material containing asbestos. (This operation must be carried out in segregated areas if possible.)
   (b) The mixing of compositions and self-setting cements which have an asbestos content.
   (c) The cleaning and emptying of sacks or other containers which contain asbestos or an admixture of asbestos.

   Where the above operations are being carried out in confined spaces adequate arrangements must be made for ventilation.

(3) Carrying out the following operations:
   (a) The cutting of all insulation materials containing asbestos or an admixture of asbestos by hand in confined spaces.
   (b) The cutting of materials containing asbestos or an admixture of asbestos by portable or other power-driven saws or similar tools.
   (c) The breaking down for removal of lagging containing asbestos or an admixture of asbestos.

The approved respirator should be carefully maintained and adequate servicing arrangements should be made to ensure that this is done and that employees are not without respirators during maintenance.

Medical Supervision of Workers

(1) All employees should be examined clinically and radiologically before employment or as soon as possible afterwards, certainly within three months, to avoid the employment of men who may be particularly susceptible to the hazard.

(2) Periodic examinations should be made thereafter, annually if possible.

(3) Notes on the Medical Examination of Workers in the Asbestos Industry are available as a guide to doctors concerned.

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(4) New employees should be advised of the precautions necessary in the industry.

(5) A system of recording the employment history of workers entering the Thermal Insulation Industry or who have been employed in the insulation contracting industry would be beneficial.

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Appendix

Definitions

(a) Pre-treatment Equipment

The pre-treatment equipment and media should be capable of restricting the amount of dust in the atmosphere during spraying to a level approximating to that achieved in a modern asbestos textile plant.

Pre-treatment should be carried out in a segregated area, the operator wearing an approved mask.

The equipment may consist of a closed rotating drum which throws a measured quantity of fibre across a finely atomised water spray which is projected along the axis of the drum. The action, which is improved by the addition of a wetting agent to the water, takes place over a period of time sufficient to produce a uniform dampening of the asbestos fibres to which the finer particles of asbestos adhere, even when passed through the spray machine and ejected from the gun. Spraying is carried out immediately after the dampening cycle is completed.

(b) Self-ventilating Machine

One in which the fan providing the air stream in which the fibre is conveyed through the hose to the gun draws its air supply via a path from the fibre hopper charging aperture, the charging of the hopper being carried out only whilst the spray machine fan is operating.

(c) Non-ventilated Machine

A machine in which the air stream for conveying the fibre is induced from a source outside the machine and which provides no air movement away from the operator's face when the machine is being charged with fibre.

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