INDUSTRY AGREEMENT

FOR PROVISION OF SAFEGUARDS TO PREVENT GRAVITY FALL OF RAISED MACHINE PARTS

ON

THERMOFORMING MACHINES.

INDUSTRY AGREEMENT FOR PROVISION OF SAFEGUARDS TO PREVENT GRAVITY FALL OF RAISED MACHINE PARTS ON THERMOFORMING MACHINES

Introduction

The UK thermoforming industry and the Health & Safety Executive (HSE) have agreed a course of action to ensure that the risks of gravity descent of raised machine parts on thermoforming machines are properly controlled. This follows a number of serious accidents that have led to serious, including fatal, injuries to employees.

This document sets out the agreement reached between HSE and the thermoforming industry at an open meeting hosted by Faraday Plastics on 27th November 2002 and following consultation with the BPF. Manufacturers and suppliers of original equipment, refurbishers and suppliers of second-hand equipment, thermoforming machine user companies, representatives from PMMDA, PIFA, Polymer Training Ltd, RAPRA Technology Ltd and the Technical Committee of the European Thermoforming Division of the Society of Plastics Engineers, attended the meeting.

The agreement was endorsed/supported by the Plastics Processors Health and Safety Liaison Committee (PPHSLC) on 23 January 2003. .

Scope

The agreement applies to plastics thermoforming machines as defined by clause 3.1 of BS EN 12409:1999 "Rubber and Plastics machines – Thermoforming machines – Safety Requirements".

The agreement is limited to the provision of safeguards for preventing the gravity fall of moving parts.

Actions agreed

All thermoforming machines in use, or intended for use, in the UK shall be checked and, where necessary, modified to ensure that in the event of a failure of an energy supply or unintended loss of hydraulic or pneumatic fluid, there are no dangers resulting from raised machine parts that could descend under gravity. In the case of machines in use the checks shall be performed by the user companies. In the case of new and refurbished machines to be supplied for use in the UK the checks shall be performed by the supplier before the machines are supplied. Protection against gravity descent may be achieved, for example, by one or a combination of the following.

- Use of restraint valves fitted in hydraulic and pneumatic systems. Restraint valves should give adequate protection against hose/pipe failure and control valve leakage.

- Use of self-locking irreversible transmission with a mechanical drive.

- Use of spring-applied brakes with motors fitted to mechanical drives.

- Use of mechanical devices such as clamping devices, holding latches, spring-loaded brakes or latches acting in both directions on rotating parts. Where holding latches are used a guard of adequate dimensions must prevent access to the danger zone whenever the latches are physically held out during intended machine movement. This should be achieved by ensuring that the guard is fitted with guard-locking and that the latches are interlocked with the guard such that the guard remains locked in the closed position unless the latches are fully engaged.

In the case of existing hydraulic or pneumatically-operated machines the requirement will be met where the machine is fitted with restraint valves mounted directly on, or fitted in the fluid lines as close as practicable to, the actuating cylinders. Where, on multi-cylinder applications, there is reliance on restraint valves alone, the number of cylinders protected should be sufficient to support the load that could cause gravity descent.

Where it is impractical to mount restraint valves directly on hydraulic or pneumatic actuating cylinders they should be fitted as close as practicable to the cylinders and the hydraulic or pneumatic line between each restraint valve and the relevant actuating cylinder should be of rigid construction with flanged or welded connections and should incorporate a suitable factor of safety.

An effective safe system of work must be provided and maintained to protect against accidental gravity descent of raised machine parts during tool changing, setting and maintenance if the aforementioned precautions are ineffective (eg when hydraulic systems or interlock devices have been disconnected or overridden). The system of work must ensure that raised machine parts are positively mechanically supported (eg by means of a support block) before anybody is allowed to enter, or reach into, the danger area. See also the advice regarding safe systems of work under "important note" below.

Timescales agreed

All thermoforming machines shall be fitted with gravity descent prevention safeguards to the standards detailed above as soon as possible and by 31 December 2004 at the latest. This date has been agreed to allow employers with many thermoforming machines sufficient time to upgrade them as necessary according to a risk-based priority improvement programme. It also gives employers time to resolve any complex technical problems or to phase out and replace any machines for which it would not be cost-effective to make the modifications needed to achieve the required standards.

It was agreed that priority attention should be given to machines built on or before 31 December 1992, as these are more likely to fall short of the required standards. However, machines built on or after 1st January 1993 should be checked to confirm that they meet the required standards. Where they do not they should be brought up to the required standards as soon as possible and by 31 December 2004 at the latest.

The 31 December 2004 deadline applies to the whole population of thermoforming machines in the UK. Individual employers should plan and implement any work needed to achieve the required standards as soon as possible within this overall time frame.

Important note

Nothing in this agreement relieves employers of their duties under the Health and Safety at Work etc Act 1974 or any of its relevant statutory provisions. In the period to 31 December 2004 employers will need to have in place effective arrangements for ensuring that the risks to employees or others from gravity fall of raised machine parts are properly controlled.

During this period it is particularly important that employers have in place, and maintain, safe systems of work that are effective to prevent the risk of injury from the gravity descent of raised machine parts. Safe systems of work need to be designed such that they do not rely on the actions of a single individual to prevent danger. Systems of work should be designed to take account of the potential for humans to make errors and violate rules. The principles are set out in HSE publication HSG 48 “Reducing error and influencing behaviour”. Chapters 2 and 3 are particularly relevant.

Effective arrangements for management control (including monitoring performance), supervision and the training of staff in the safe systems of work are also vital.

Safety representatives will often be able and willing to help you develop measures for improving health and safety to ensure the risks to employees are properly controlled. So it makes sense to consult them and find ways you can co-operate on this important issue.