

<b>Health and Safety Executive</b>		<b>Sector Information Minute</b>	
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Target Audience  
 AFQ Inspectors for the food industry  
 SG Mechanical and Electrical Specialist Inspectors

### **SAFETY AT DERINDERS AND MEMBRANE SKINNERS**

This SIM has been prepared to inform field inspectors of the latest developments in regard to the proposed new EN standard for derinders/membrane skimmers and to alert inspectors to the situation regarding the use of 'touch-stop' or 'disconnect' safety devices.

#### **BACKGROUND**

1 Derinding machines were originally used in pork processing but the principle of removing meat product from its skin/fat covering has been extended to include the removal of membranes from many types of meat and the removal of skin from fish. The machines can be divided into two types: those which process flat product, usually conveyor-fed and having tunnel guards or hoods with reach distances that comply with EN 294, and hand-fed, open-topped machines which are used for round product like hams.

#### **DESCRIPTION**

2 The basic parts of the machine consist of a toothed roller set below a sharp blade. When product is supplied, skin down, on to the table of the machine, the roller grips the skin, drawing it against the blade and separating meat from skin or membrane.

#### **HAZARDS**

3 The hazards are mainly found on the hand-fed, open-topped machines and are the obvious ones of coming into contact with the blade and separating the operator's or others' skin from flesh. There have been quite serious accidents on these machines and there have been over twenty investigated accidents since 1996. The most serious accidents have occurred when the injured person has been wearing chain mail gloves and has had their hand drawn in by the roller. This has caused crushing injuries requiring fingers to be amputated. Chain mail gloves must not be worn when using the machine either by the operator or by those who are assisting by taking off product. Most injuries however are cuts to finger ends.

## STANDARDS

4 The Formal Vote on the European CEN 'C' standard, *Derinding, Skinning and Membrane Removal Machines*, prEN 12355 has just ended positively and the standard will be published in the Official Journal during 2003.

5 HSE had reservations about the decision to increase the permissible blade gap between the roller and the blade to 5 mm. For many years HSE has been advising a maximum 3 mm gap but could not persuade the European committee to adopt this. However users should still be advised to limit the blade gap to 3 mm where practicable.

6 The standard lays down some important rules. Most importantly it states that open-topped derinders must only be used on round product and that flat product must be processed on conveyor-fed, tunnel-guarded automatic machines.

7 For the protection of third parties, open-topped machines must either be placed so as to prevent access from the rear or have guards that fulfil that function.

## PERSONAL PROTECTIVE EQUIPMENT

8 HSE advice has previously been that no gloves should be worn when operating these machines. The standard refers to wire mesh type gloves and prohibits their use. However, the use of machine manufacturer approved gloves is permitted.

9 In essence this means that thick rubber gloves, sometimes with specially thickened fingertips, can be worn. The evidence both anecdotally and from accident statistics appears to show that these gloves do offer some measure of protection or at least do not present an extra hazard. The principle is that if the operator's hand should come into contact with the blade the cutting action will take a slice from the glove and not from the fingers.

10 The Sector view is that the prEN advice on wearing manufacturer-approved gloves should be followed.

## SAFETY DEVICES

11 A safety device known as a 'touch-stop' device or a 'disconnect' is available for these machines. At present only one manufacturer, the Italian firm Grasselli, offers it to the market.

12 It works by including the operator in an electrical circuit that is an integral part of the machine's control circuit. The operator wears thin conductive gloves that are connected to a harness ending in plugs inserted into two sockets on the machine.

13 Over these gloves the operator will have the same type of thick rubber insulating glove already described. When this glove touches the blade and is cut by it, and one or both of the inner conducting gloves make contact with the blade or other earthed metal part of the machine, current will pass through the operator to earth. By sensing changes in the current when this happens, the device stops the machine in milliseconds then contra-rotates the roller for part of its circumference. There are different versions of the device but they work on the same general principle.

14 HSE has since 1989 been asked to comment on the use of this device. Our view has been that we have no objection to its use but that it must not be seen as the principal safeguard. In particular, it must not be used to substitute for properly guarded machines processing flat product. That must be processed on conveyor fed, tunnel-guarded automatic machines. Training and supervision remain key to operator safety whether the safety device is fitted or not.

#### ACTION

15 Inspectors are asked to continue to advise users that the blade gap on open topped derinders be restricted to 3 mm. The wearing of chain mail gloves should not be permitted for operators or others who might be at risk and the wearing of manufacturer recommended gloves should be encouraged.

16 Inspectors must be careful of being drawn into discussions on the relative merits of machines and the use of safety devices. The European standard does not require the installation of additional safety devices for these machines.

17 If Inspectors are asked their view on whether a user should purchase machines with safety devices they should be careful to give the HSE view as stated above or pass the request to the Sector.

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