

FSS 5 Attachment 3: Preventing the manipulation of guards and safety devices

"Principles for Implementing the Prohibition on Manipulation"

1st Principle

At Freudenberg, any machine with defective guards or safety devices must be removed from service immediately. Employees are required to stop operation of such defective machines and to report this defect to their supervisor instantly. Machines should only be operated in production mode if all guards and safety devices are fully functional!

2nd Principle

Manipulation of guards and safety devices is prohibited at FREUDENBERG and will be considered a disciplinary matter which may result in dismissal.
(definition of "manipulation" see **Page 2**)

3rd Principle

Exceptions to Principles 1 and 2 must be approved by the SEO in writing on a case-by-case basis.
In the interests of absolute clarity, the objective must be to dispense with exceptions as soon as possible.
(a proposal for a detailed ruling is laid down, please see **Page 3**)

The Business Groups are requested to draw up and implement programs in their organizations prohibiting the manipulation of safety devices and setting out the procedure for implementation.

The objective is to bring about a change in the behavior of superiors and employees in the spirit of the above-mentioned principles.

In individual cases, this interpretation of "best practice" may exceed local legislative requirements without infringing on them. Minimum requirements must confirm to local legislative regulations.

Local procedure must be coordinated with labor representatives.

Definition Manipulation:

To establish a common and reliable basis for the management processes to implement Principles 1 – 3, F&Co.- HSE proposes to define “manipulation” as relating to the Freudenberg Business Groups and their sites as follows:

1. "Manipulation" is:

a. Consciously rendering technical safety devices ineffective

- e.g. deliberately blocking, clamping (actuating) limit switches
- e.g. using a substitute limit switch actuator (switching reed)
- e.g. short-circuiting limit switches and unlocking tumblers

b. Consciously changing the method of operation or function of the safety device and / or feigning an operating mode that is not in accordance with the intended operating function.

- e.g. changing the switching function - normally open / normally closed
- e.g. simulating a safe operating state - e.g. zero speed / zero rotation, final position reached,
- e.g. simulating a step enabling condition (technological prerequisite) that bypasses the safety requirement in order to gain access to the machine / part of a machine

c. Consciously removing guards and safety devices, including jumpering watchdog elements (hardware and software) with the intention of operating the machine in this state

- e.g. enabling / disabling safety sensing elements
- e.g. short-circuiting limit switches and unlocking tumblers
- e.g. removing guards or safety mechanisms

d. Conscious use of passwords by unauthorized personnel and negligent communication of passwords.

- If machine safety functions (realized by means of safety PLC, for example) and machine operating modes are password-protected, then the negligent handling of passwords (password = key that protects the machine) must be regarded as being equivalent to a "manipulation" ((a) to (c)).

e. Circumvention of or failure to comply with safety measures designated at organizational level must be regarded as being "manipulation" equivalent to cases (a) to (d) above whereby the staff member concerned has been explicitly and verifiably advised of the disciplinary consequences of the circumvention / failure to comply.

2. If a supervisor issues instructions to the effect that a technical system is to be operated in accordance with (1a) to (1e) above, or allows a system to be operated under such conditions, he is just as guilty of "manipulation" as a staff member who may be held responsible for "manipulation" and shall be treated accordingly.

Proposal for a detailed ruling:

To establish a common and reliable basis for the management processes to implement Principles 1 – 3, F&Co.- HSE proposes to clearly define exceptions to the prohibition on manipulation as relating to the Freudenberg Business Groups and their sites and to only permit such exceptions for a defined period only under clear boundary conditions.

Exceptions and boundary conditions:

Every single exception to the prohibition on manipulation during the production process - and only for a defined period - requires the written permission of the SEO, who must clearly define the pertinent boundary conditions (e.g. equivalent safety measures).

- (a) Guards and safety devices may only be removed and/or bypassed where commissioning work, tests, setting or repair work has to be performed and the removal and/or bypassing is explicitly laid down in the work instruction (e.g. in accordance with FSS 1). This state is always of a provisional, short-term nature and the guards and safety devices must be replaced / reactivated immediately following completion of the work, returning the system to its normal safe state. This must also be documented in the work instruction.
- (b) Guards and safety devices that have been rendered ineffective must be marked clearly and in a manner that cannot be misunderstood by other people. This marking requirement is no substitute for the lock-out / tag-out function (FSS 1).
- (c) Guards and safety devices may only be removed or rendered ineffective during the activities outlined above by authorized personnel, who explicitly have the qualifications and training required to perform this work.
- (d) The following steps must be observed when rendering guards or safety devices ineffective:
 - Decision made by authorized person with documentation
 - Informing the personnel concerned (operator(s) of the related machine, ...)
 - Marking the guard or safety device to be rendered ineffective
 - Rendering the guard or safety device ineffective
 - Checking and monitoring of the blocked function
 - Performing the work (commissioning, testing, adjustment, repairs)
 - Restoring the safety function
 - Removing the marking
 - Informing the personnel concerned (operator(s) of the related machine, ...)

We recommend that the machine should be marked as an "**Unsafe machine**". The nature of the identification marking should be such as to indicate the guard or safety device that is out of service and describe the potential hazard(s). Furthermore, the area around the machine should be marked as being a no-go area, wherever possible, with access restricted to personnel with appropriate authorization.