II.2 Why opto-electronic guarding?

Generally speaking, when an operator has to use a machine frequently, and in doing so he is exposed to risk, it may be advisable to use a system of opto-electronic protection in preference to the protection offered by mechanical safety devices (fixed guarding, two-hand controls, screens etc.). This reduces access time (the operator does not have to wait for the guard to open), raises productivity (time saved in loading the machine) and improves the ergonomics of the workplace. Furthermore, it provides the operator and third parties the same protection.

Warning: An opto-electronic safety device can only be used if the operator is not exposed to any risk of being hit by splashes (e.g. molten materials) or flying materials. Also, the access time must be greater than the time needed to stop the hazard.

II.3 Choosing an opto-electronic guard

The principal criteria for choosing an opto-electronic guarding system are defined below. They are interdependent and call for an iterative approach:

- Define the zone to be guarded
- Define the safety function to be performed
  - Detection of finger or hand
  - Detection of passage of a body
  - Presence detection inside the danger zone
- Conform to the category of the parts of the safety related control system
- Calculate the safety distance