

CERTIFIED PRODUCT DATA SETS AND CERTIFIED PRODUCTS, WITH RESPECT TO IEC61508.

In order to demonstrate compliance to IEC61508 for the implementation of a safety function, the safety function designer has to have access to information about the components and sub-systems which permit judgements to be made about

- failure rates in all modes which affect the integrity of the design
- the extent to which those failures are automatically detectable
- the extent to which those failures are predictable
- the extent to which the available data is representative of the intended application context
- the extent to which the criteria defined in the standard for control of systematic failures, and for avoidance of systematic failures, have already been addressed at the component/ subsystem design.

The last item is the only area which is directly addressed by IEC61508 within the context of constraints placed upon individual subsystems with respect to their use at a specified Safety Integrity Level (SIL).

To identify the constraints placed on the subsystem SIL by the subsystem architecture, and by the PFDavg for demand mode applications, requires a knowledge of the full context of the safety function, the component or subsystem features being employed for the safety function, of the diagnostic functions actually being implemented, the operation philosophy and test regime, and the constraints imposed by the other subsystems involved in the implementation of the safety function.

Consequently, the essential requirement is to establish the fundamental failure rate and failure mode characteristics, and the available external diagnosable failure modes, and to make that available along with the supporting evidence for the robustness of the component or subsystem design. That information is considered to be a Base Data Set for any component or subsystem.

There are no IEC61508 compliance criteria associated with a Base Data Set other than those associated with systematic robustness. There will be degrees of rigour with which the validity of the information has been deemed to have been established, the highest of which is likely to involve independent assessment by bodies accredited as competent to undertake such activities.