EN ISO 12100 Risk assessment and risk reduction

**1. Risk assessment based on the following risk parameters for each danger zone**

- **Risk** is a function of...
  - **Severity** (D - danger, M - medium, L - slight)
  - **Probability of occurrence**
  - **Frequency and/or duration of exposure**

**Probability of occurrence**

- **Low**
- **Medium**
- **High**

**Frequency and/or duration**

- **Low**
- **Medium**
- **High**

**2. PL and SIL determination for each safety function**

- **Determination of the required performance level (PL)**
  - SIL 1
  - SIL 2
  - SIL 3
  - SIL 4

- **Determination of the required Safety Integrity Level (SIL)**
  - SIL 1
  - SIL 2
  - SIL 3
  - SIL 4

**3. Calculation of the safety function (e.g. with PAScal®)**

- **Necessary safety performance data**
  - **Unit type**
  - **PL**
  - **SIL**

- **PAScal® calculation tool**

**Specification of categories – examples of solutions**

- **Category 0**
- **Category A**
- **Category B**
- **Category C**

**Probability of a dangerous failure per hour – comparison PL/SIL**

- **SIL 1**
- **SIL 2**
- **SIL 3**
- **SIL 4**

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**Glossary of terms**

- **Hazard**
- **Functional safety**
- **Risk assessment**
- **SIL**
- **PL**

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**PAScal® Safety Calculator – Calculation software for verifying functional safety**

- **Risk assessment**
- **Safety integrity level**
- **Performance level**

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**Range of plant and machinery lifecycle services**

- **Design and lifecycle services**
- **Project management**
- **Commissioning**

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**EN ISO 12100, EN ISO 13849 and EN/IEC 62061**

**The SPIRIT of SAFETY**

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**PILZ**

- **TUEV SUD**
- **KEMA**
- **Bureau Veritas**

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