

**BUSINESS PLAN**  
**CEN/TC 339**  
**SLIP RESISTANCE OF PEDESTRIAN SURFACES - METHODS OF EVALUATION**

**EXECUTIVE SUMMARY**

**Business environment**

- As this is an item concerning occupational health and safety, all trade and industry sectors are affected;
- costs of liability insurance rates are affected;
- costs related to medical rehabilitation and pension payments are affected;
- interested parties are trade, industry, public authorities, employees, flooring producers, insurance's.

**Benefits**

The intended benefits are

- to harmonise quality evaluation and thus remove trade obstacles;
- to establish a standardised test method covering all types of floorings irrespective of material and market aspects;
- to improve protection against accidents and enhance prevention.

**Priorities**

The priorities are

- to satisfy the need for safety;
- to establish a standardised test method covering all types of floorings irrespective of material and market aspects;
- to prevent serious injuries often caused by slipping accidents in working environments;
- to comply with existing regulation.

## **1 BUSINESS ENVIRONMENT OF THE CEN/TC**

### **1.1 Description of the Business Environment**

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this CEN/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

#### **a) „Political Factors“**

The standardisation project seeks to

- harmonise quality evaluation and thus remove trade obstacles;
- satisfy the increasing need for safety; and
- minimise the risks related to the use of floorings with insufficient anti-slip properties. Existing test methods, which cannot be compared, lead to misinterpretation of anti-slip properties of floorings.

#### **b) „Economic Factors“**

The standardisation project seeks to

- establish a standardised test method covering all types of floorings irrespective of material and market aspects;
- remove national trade barriers
- avoid misinterpretation of flooring-specific properties;
- optimise quality in production by a standardised test method;
- minimise costs related to certification by harmonising the test method; so far, certification criteria vary from member state to member state;
- reduce the costs of liability insurance rates;
- save costs related to medical rehabilitation and pension payments.

#### **c) „Social Factors“**

The standardisation project seeks to

- satisfy the need for safety felt by the citizens;
- prevent serious injuries often caused by slipping accidents in working places in Germany as an example (Figure 1);

- avoid irreversible health damage - especially in older persons - as a result of slipping accidents and the consequences such damage may have on the victims' participation in social life;
- improve protection against accidents and enhance prevention.

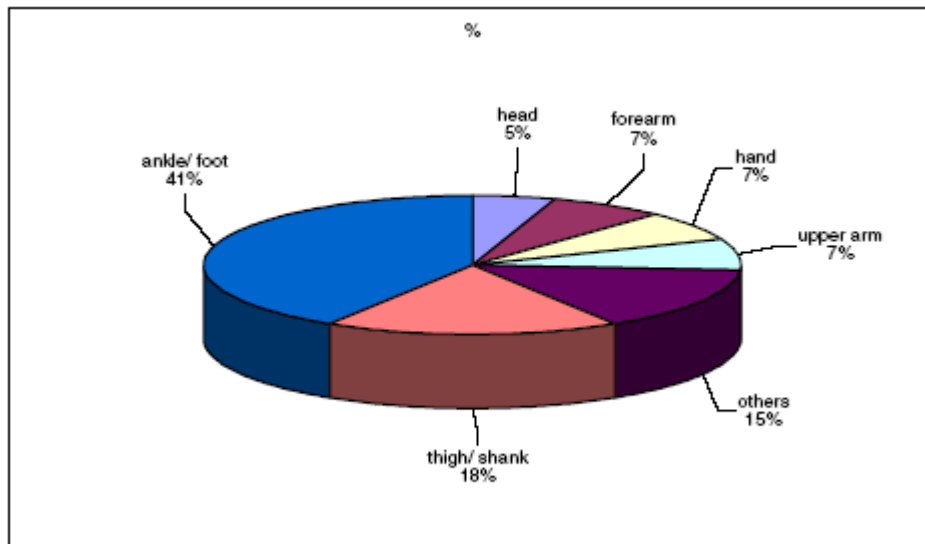


Figure 1 — Injured parts of the body

#### d) „Technical Factors“

The standardisation project seeks to

- achieve comparability of anti-slip properties for the entire product range of floorings;
- establish a standardised test method for all types of floorings;
- optimise the quality of anti-slip properties in production;
- define objective criteria;
- establish a standardised risk classification base (in equivalence, e.g. fire protection levels).

#### e) „Legal Factors“

The standardisation project seeks to comply with the following regulations:

- Council Directive 89/106/EEC „Construction Products“, Essential Requirements, No. 4 „Safety in Use“ (amended by Council Directive 94/C62/106/EEC);
- Council Directive 98/37/EC (89/392/EEC) „Machinery“, Annex I, 1.5.15;
- Council Directive 89/654/EEC „Minimum Safety and Health Requirements for the Workplace“, Annex I, 9.1;

- legal provisions in some European countries.

f) „International trade and standardisation aspects“

- If corresponding standardisation activities are planned by ISO, a Cupertino should be aimed at in accordance with the Vienna Agreement under „CEN lead“.

## **1.2 Quantitative Indicators of the Business Environment**

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the CEN /TC:

### **Statistics on slipping accidents**

- Great Britain (Manning et al. 1988)
  - 2,9 M slipping accidents per year, 1,2 M of them among the working population;
  - approx. 1 M in-patient treatments per year of persons injured in slipping accidents.
- Nordic countries: DK, FIN, N and S (Lund 1984)
  - Costs due to slipping accidents are in the same order of magnitude than costs related to traffic accidents;
  - approx. 43 % of all falling accidents and about 16 % of all occupational accidents are due to slipping.
- Finland (Grönqvist and Roine 1993)

approx. 3 % to 5 % of all accidents resulting in serious injuries are accidents due to slipping. Considering the totality of accidents caused by slipping, the portion of falls from a higher to a lower level is ca. 55 %, that of same level falls comes to approx. 25 % and the number of tripping accidents amounts to 20 %.
- Finland (national study „Accidents and violence“ 1988/Grönqvist 1995)

With a total population of 5 M, Finland reports of approx. 130.000 days of in-patient treatment and direct and indirect costs of about 84 M EURO per year as a result of slipping accidents.
- Germany (German Berufsgenossenschaften 4/1999)

Trade and industry in Germany count approx. 30 M full-time workers insured with the German Berufsgenossenschaften; in 1998 1,16 M reportable occupational accidents (occupational accidents leading to an absenteeism of more than three days) were registered for this group. Approx. 315.000 accidents, 5.700 of which resulted in new pension payments, were caused by „tripping, slipping and falling“ while moving on a plane surface. Depending on the branch of industry, the portion of accidents due to slipping varies between 40 % and 55 %. Average costs are estimated at approx. 7.000 EURO per slipping accident.
- European Union (eurostat, Health and safety at work in Europe, 2010)

In 2005, about 650 000 slipping accidents which caused more than 3 days of absence from work were reported in the whole European Union and about 1 700 fatal accidents. Fatal accidents due to slippage causes in European countries show a 4 % to 5 % incidence, most affecting aged (senior) people (age above 60).

## **2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC**

- Due to the nature of measuring slip resistance, the use of slip resistance test methods and the wide variation of floor coverings it is an important element to be able to make reference to an appropriate standard.
- In this respect the work of CEN/TC 339 can be of help for those committees preparing standards for floor coverings or floorings surfaces. It is not necessary to repeat all constructional, functional and classification requirements for slip resistance test methods in the appliance standard.
- Standard(s) produced by CEN/TC 339 are expected to be cited as normative references in the standards of : CEN/TC 67 Ceramic tiles, CEN/TC 112 Wood-based panels, CEN/TC 129 Glass in building, CEN/TC 134 Resilient and textile floor coverings, CEN/TC 175 Round and sawn timber, CEN/TC 178 Paving units and herbs, CEN/TC 229 Precats concrete products, CEN/TC 246 Natural stones, CEN/TC 303 Floor screeds and in-situ floorings in buildings.

## **3 PARTICIPATION IN THE CEN/TC**

All the CEN national members are entitled to nominate delegates to CEN Technical Committees and experts to Working Groups, ensuring a balance of all interested parties. Participation as observers of recognized European or international organizations is also possible under certain conditions. To participate in the activities of this CEN/TC, please contact the national standards organization in your country.

## **4 OBJECTIVES OF THE CEN/TC AND STRATEGIES FOR THEIR ACHIEVEMENT**

### **4.1 Defined objectives of the CEN/TC**

Elaboration of European Standards for test methods which will be applicable to all types offloorings in a laboratory and in the field.

### **4.2 Identified strategies to achieve the CEN/TC.s defined objectives.**

Presently, CEN/TCs dealing with flooring products made of different materials have developed various test methods appropriate to the individual products.

The mandate M/119 on floorings calls for a single and unique test method that could be applicable to all sorts of flooring product surfaces.

The aim of CEN/TC 339 is to identify the appropriate criteria applicable to all the flooring surfaces and use this information to develop the unique test method.

The following technical committees of CEN/TC 67 Ceramic tiles, CEN/TC 112 Wood-based panels, CEN/TC 129 Glass in building, CEN/TC 134 Resilient and textile floor coverings, CEN/TC 175 Round and sawn timber, CEN/TC 178 Paving units and herbs, CEN/TC 229 Precast concrete products, CEN/TC 246 Natural stones, CEN/TC 303 Floor screeds and in-situ floorings in buildings, should be invited to establish a liaison with CEN/TC 339 and should be informed of the work progress of CEN/TC 339.

#### **4.3 Environmental aspects**

As every product and every test method has an impact on the environment during all stages of its life-cycle, there is a need to reduce any potential adverse impact by taking into account environmental issues in standards. It is therefore necessary to understand how the product interacts with the environment during its life-cycle, including emissions to air, discharges to water and soil.

CEN/TC 339 should take into consideration:

- the precautionary principle and
- environmental and human health protection and safety aspects

whenever a new standard is drafted or an existing product standard is revised or intended to be revised. Furthermore, at any stage in the standard development process, experts are encouraged to include environmental issues in their comments.

The use of Good Laboratory Practice (GLP) will prevent of pollution when drafting analytical test methods.

Standards should include processes, practices, techniques, materials and products to avoid, reduce or at least control the creation, emission or discharge of any type of pollutant, or waste, in order to reduce adverse environmental impact.

For example, hazardous, toxic or otherwise harmful substances and materials prescribed in standards should be substituted by other less harmful substances and materials, whenever possible and feasible.

Developing standards the precautionary principle will be taken into account by focusing on options and solutions rather than on risk.

The integration of environmental aspects into product development can also be considered involving material reuse, recycling and recovery at end-of-life.

CEN/TC 339 should develop robust and properly validated standards, while recognising the limitations of existing scientific capacity and knowledge to identify potential impacts. In order to take account of the diversity of products and their specific environmental impacts, as well as the need for relevant environmental knowledge, CEN/TC 339 should try to make every reasonable effort to invite environmental experts to participate in the work.

## **5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK PROGRAMME**

The following risk factors can be identified:

- large number of individual aspects upon which pedestrian slipping is critically dependent;

- large number of existing test methods likely to impede the elaboration of a unique European Standard;
- it can generally be stated that the lack of a harmonised, Europe-wide applicable test standard covering all types of floorings represents an increased risk both for the safety in pedestrian traffic and for the free circulation of goods within Europe. The longer CEN hesitates to elaborate such test standard, the more the risk increases;
- the timely preparation of the unique test standard could especially depend on the financing of further research.