



CEN/STAR TRENDS ANALYSIS WORKSHOPS

WORKSHOPS OBJECTIVES

CEN/STAR is an action group of CEN (European Committee for Standardization) dealing with Standardization and Research.

CEN/STAR establishes needs for conormative and pre-normative research in support to CEN standardization.

CEN/STAR interfaces with the European Commission and bodies funding research in Europe in order to ensure that research is used for the benefit of standardization.

CEN/STAR encourages the organization of Trend Analysis Workshops, dedicated to an analysis of current and expected trends for both **R&D** and standardization.

This Trend Analysis Workshop concerns the **Development and the Best Use of STEEL for Safe Structures under Fire Conditions**. It provides an overview of the **Trends of Research and Future Standardization for Metallic Structures exposed to Fire Hazards**.

Several standards have been or are being produced by CEN Technical Committees involved in steel for metallic structures, and more particularly by Committee ECISS TC10 "Structural Steels - Grades and Qualities". As far as the Construction Product Directive is of application, they are covered by a mandate from European Commission. Work of Committee CEN/TC127 "Fire safety in buildings" is obviously widely concerned too.

An aim of this Workshop is to define the **Needs for Pre-Normative or Co-Normative Research and Interaction with Standardization Works**.

The number of participants is limited to 50.

CEN is presenting the FINAL PROGRAMME of

**STEEL for SAFE STRUCTURES
under FIRE CONDITIONS**

thematic day organised by **CRM** on
25 April 2003 in Liège, Belgium



Final Programme

Thematic Day

STEEL for SAFE STRUCTURES

under FIRE CONDITIONS

25 April 2003, Liège, Belgium

Organised by CRM

CONTEXT

Fire resistance of metal structures is a strategic issue for the use of steel in construction and an essential criterion of competitiveness in this market segment. Significant progress was accomplished these last years thanks to the experimental monitoring of real fires and the development of simulation models of fire behaviour. This led to the concept of "fire engineering", which takes the environmental conditions into account (fire load, ventilation) that induce the variation of the effective temperature according to time. The application of passive protections (insulating or water containing materials) and active protections ("sprinklers") brought additional possibilities to ensure a total and reliable safety. A concrete and significant application of the concept of fire engineering is illustrated by the automobile open car parks for which it is now demonstrated that the protection of the structures is useless because the fire load is limited and the probability of propagation of the fire from one car to another becomes negligible beyond three vehicles. Nevertheless, in many circumstances the engineering departments are confronted with great limitations of use of steel owing to the facts that:

- the regulations impose a fire resistance beyond half an hour according to the curve defined by the ISO standard,
- the fire loads may be hardly estimated,
- the application of passive protections cause aesthetic or economic injuries to the project.

Interesting solutions are however considered seriously by the design departments, such as the use of steels having a better structural strength at high temperature.

The implementation of those grades is faced among others with a lack of standardized data allowing a correct calculation of the fire resistance.

Standardization work for the future should therefore identify the significant issues linked with fire hazards.

PROGRAMME

- **09.30**
 - Welcome of the Delegates (S. WILMOTTE, CRM)
 - Presentation of CRM and of the Programme (V. TUSSET, CRM)
- **09.45**
 - Response of Multi-Storey Steel Framed Buildings under Fire Attack
 - (D. MARTIN, CORUS group)
- **10.05**
 - Design of Steel Structures according to the General Model of Eurocode 3
 - (J. M. FRANSSSEN, University of Liège)
- **10.25**
 - Fire Engineering: From Theory to Practice
 - (J. L. CAJOT, ProfilArbed-ARCELOR Group)
- **10.45**
 - New Steel Grades with Improved Fire Resistance Properties
 - (A. De RO, CRM)
- **11.05**
 - Respect (of Materials)
 - (Chris POULISSEN, POULISSEN & Partners Architectenbureau)
- **11.25**
 - Prenormative Actions
 - (A. PIRLET, CEN ; J. DEFOURNY, CEQMAS)
- **11.45**
 - Panel over the Industrial and Research Needs in this Field
- **13.00**
 - Lunch

USEFUL INFORMATION

- The Workshop will be held at CRM, in the city of LIEGE (Belgium).
- The participation is free.
- The official language of the Workshop is English.
- The Workshop is organized by **CRM** (Centre de Recherches Métallurgiques / Centrum voor Research in de Metallurgie www.crm-eur.com) in co-operation with **CEN/STAR** (www.cenorm.be/standardization/sectors/star.htm).
- Programme is established in co-operation with the Steel Industry, the Designers of Steel structures, the Contractors and the Building Certification Authorities.
- Participants are Steel Producers, Engineering and Design Departments, Manufacturers of steel structures, Contractors, Certifying Authorities, Research Institutes, Universities, Standardization Bodies, ...

CONTACT

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