TECHNICALLY SPEAKING

ISSUE NO 5

NASC
NATIONAL ACCESS & SCAFFOLDING CONFEDERATION

The introduction of BS EN 12811-1

June 2004 saw the introduction of the new European Standard BS EN 12811-1, and the subsequent withdrawal of the familiar BS5973, which has been used satisfactorily for the past 25 years. BS5973 was withdrawn because it was no longer compatible with the new document.

Although this may not appear to be a momentous event, in practice it could radically change the way scaffolders and scaffold engineers work in the future.

The fundamental difference between the two standards is that in the past the majority of UK scaffold engineers have carried out their calculations using the permissible stress method of design. The introduction of the new Eurocode requires that scaffolds are calculated using the limit state method of design.
(For a more detailed explanation of the two methods, see key differences.)

As there are no plans to rewrite BS5973 in the near future, the NASC has produced a user-friendly guide that complies with BS EN 12811-1 ***(NASC Guide to good practice for scaffolding with tubes and fittings)***, and will ensure that the normal working practices of the UK's scaffolding contractors would remain unaffected. It will provide appropriate solutions for generic scaffolds, which the scaffolder may erect in a similar manner to BS5973, without any further structural assessment. The guide will still focus on scaffolding with tubes and fittings, as this was the area covered by BS5973. The NASC anticipates that the guide will be available from the end of September, and will follow a similar format to BS5973.

As with BS5973, BS EN 12811-1 is not law and its introduction will principally be the decision of clients who specify the standards they require within their contract documents. There will be a small delay between the formal withdrawal of BS5973 and the availability of the new ***NASC Guide***. The NASC therefore recommends that its members should continue to use BS 5973 only until the ***NASC Guide*** is published.

Key differences of BS EN 12811 / BS5973

- **Calculation Method:** The new directive will require that engineers use the limit state method for engineering rather than the permissible stress method (see definition below). *The NASC Guide allows for the limit state approach to analysis of access scaffolds and provides solutions, which do not need further design.*

- **Ties:** There will be an increase in the number of ties for particular heights used in traditional tube and fitting scaffolds. This could slow down the erection process.
The NASC Guide provides details of the minimum ties required to satisfy BS EN 12811-1.

- **Ledger bracing:** BS EN12811-1 requires that unimpeded access be provided in the immediate vicinity of a pair of standards, at each working area. This means that on the working lifts, the ledger bracing must be removed to provide clear access for people within the working area. *The NASC Guide allows for the removal of the ledger bracing from two levels at any one time. These are normally two adjacent levels, but ledger bracing can be used elsewhere within the structure. The ledger braces must be reinstated once the working lift is taken out of use and before ledger braces are removed in the next nominated working lift.*

- **Plan Bracing:** To achieve safe heights for Basic Scaffolds in excess of 8m high, Plan Bracing shall be fitted in addition to Façade Bracing. *The NASC Guide provides details for these situations.*

- **Changed basis for wind calculations:** BS5973 concerned itself with sheeted scaffolds built generally in major built up areas. It did not allow for applications in exposed environments. *The NASC Guide provides information and solutions for use with wind loads in accordance with BS6399.*

Definitions

- **The permissible stress method:** The loading on a scaffold is calculated based on the working loads. This is the dead weight plus an allowance for live loads depending on the class rating of the scaffold plus wind loads. The load and stresses calculated are then based on 'permissible' or allowable loads and stresses, which are a safe value of stress for the steel to reach.

- **The limit state method:** Under this method the loadings are calculated by multiplying the working loads by load factors to obtain the 'ultimate loads'. The loads calculated are then based on 'ultimate stress or the yield stress' of the steel, which is the actual point at which the material is becoming plastic in behaviour and close to failure.

NASC Technical Innovation Awards

The deadline for entries in the Scaffold and Product categories of the Technical awards is drawing near. This is an excellent opportunity to promote your company and gain the recognition and publicity for being an industry leader. You have until the 31 August to submit your company's entry; do not let this opportunity pass you by.

SCAFFOLD ☐

Scaffold category - For scaffolds constructed & completed in 2003

PRODUCT ☐

Product category - For original innovations which will benefit the scaffolding industry as a whole.

Entry Rules & Conditions

(i) Submissions for the scaffold category must be for a scaffold constructed and completed during Calendar Year 2003.

(ii) Describe (using up to a maximum of 500 words, 3 photographs, 1 drawing), the innovative qualities, what makes the scaffold technically superior or unusual, the problems or challenges to be overcome.

(iii) Product submissions should be for new inventions which will benefit the scaffolding industry as a whole.

(iv) Entrants must be willing to permit the NASC to publicise the submission. However, any photographs used will be accompanied by the competitor's name.

(v) NASC members can enter this competition free of charge.

Non NASC members may enter the competition, however a cheque for £250 must accompany each submission.

(vi) Photographs of the scaffold or product are required and must be supported with written descriptions.

(vii) Entries should be addressed to David Chapman at the NASC, Carthusian Court, 12 Carthusian Street, London EC1M 6EZ and must be received by 31 August 2004.

Finalists will be selected by a Judging Panel, chaired by the NASC Director + 2 Independent Technical & Safety experts. Winners will be announced at the NASC AGM on 26 November 2004. Decisions will be final.

Entry Form

Company Name _____

Company Address _____

_____

_____

_____

Contact Name _____

Confirmation that design is original _____

Telephone _____

Facsimile _____

Email _____

If you are submitting more than one entry
Please complete a separate form

Carthusian Court, 12 Carthusian Street, London EC1M 6EZ
Tel 020 7397 8120 Fax 020 7397 8121

enquiries@nasc.org.uk
www.nasc.org.uk

Anchorage Systems for Scaffolding

The NASC have recently revised Technical Guidance note **TG4:04 – Anchorage Systems**, which will soon be available to members. The guidance covers the use of drilled in anchors to tie scaffolding to building structures.

The stability of a scaffold structure is dependent, among other things, on the security of the anchors used to tie it back. That security depends on the anchors being correctly ***selected*** and ***installed*** and, where necessary, ***tested***.

The guidance note sets out the factors to be considered to achieve this. Guidance is given primarily for the designers of scaffold structures, in order that they can specify anchors and testing regimes correctly, but it also a guide for installers to help them install and test anchors correctly.