Guidance Note 2 –

European Standard for industrial floor regularity

Guidance Notes

● This is the second Guidance Note from The Concrete Society's Industrial Floors Group.

This guidance note is intended to provide additional information relating to a forthcoming Standard on industrial floor regularity and the impact on Concrete Society Technical Report 34 Third Edition 2003[1] (TR34).

This guidance note is intended to provide information on the current status of a new European Standard relating to defined movement surface regularity within very narrow aisles (VNA) in warehouses. Once published, it is assumed that the method of characterising the floor's running surface will be adopted throughout the UK. In this respect the relevant sections in Concrete Society Technical Report 34[1] will be revised.

Guidance Note 1, *CONCRETE*, September 2006[2], provided the background to the current defined movement specifications methods, ie, the original Chapter 4 method and the alternative Appendix C method.

European Standard

Consultation within the truck supply sector identified the following requirements for defined movement:

- Suitable cross-aisle tolerances are critical to safe operating tolerances between trucks and racking and affect ride quality.
- Down-aisle tolerances have limited effect on safety clearances but also affect ride quality.

These requirements have been considered by a European Standard Working Group dealing with all aspects of the construction and operation of pallet racking in warehouses.

A draft Standard, pr EN 15620[3] has recently completed its consultation stage. This European Standard specifies tolerances, deformations and clearances that pertain to the production, assembly and erection of pallet racking, including the interaction with floors. The draft gives guidance on the control of tolerances in the truck running areas of floors so as to provide safe and efficient interaction between all components of the racking system – floors, trucks and racking. For wide-aisle racking, the methods used in TR34 Chapter 4 have been broadly adopted. For VNA racking, TR34 Appendix C has been broadly followed.

The draft Standard was recently endorsed, with comments for consideration by the CEN committee, by the BSI Mirror Committee MHE 8. The BSI committee comprises representation from ACIFC (Association of Concrete Industrial Flooring Contractors), UKWA (UK Warehousing Association), BITA (British Industrial Truck Association), ICE (Institution of Civil Engineers) and IStructE (Institution of Structural Engineers).

Application to new floors

It has been recognised for some time that specialist contractors installing concrete ground floors to TR34 Appendix C criteria, using appropriate methods to control surface regularity during the construction and finishing operations, produce floors with little, if any, requirement for surface correction in aisles.

It is noticeable in newly constructed floors that where such methods are applied, the requirement to grind the centre rear wheel path is much less common than the front outer wheel paths. This is not surprising as the control of the cross-aisle surface regularity is generally the more difficult aspect of the construction operation.

Where floors are laid without care and attention to a defined movement surface regularity characteristic, the floor can have adverse profiles in the form of random contours in all directions. Floors laid in this way are more difficult to rectify, by grinding, to the Appendix C and pr EN methodologies in that an additional wheel track must now be considered.

Application to existing floors

When existing floors are assessed for the installation of a VNA system or change of mechanical handling equipment (MHE), the proposed European Standard survey methodology will give the required data to understand the implications on truck performance and to establish the extent of any grinding that may be required. The results can then be discussed between the floor user and truck supplier.

The draft BS EN 15620 sensibly allows the specifier to prescribe a lower floor classification in the down-aisle direction to that to be applied to the cross-aisle direction. This allows floor users the option to accept a lower ride quality or lower operating speeds caused by adverse centre track profiles if they wish to avoid some expenditure on corrective grinding. ■

References:

1. CONCRETE SOCIETY. *Concrete industrial ground floors – a guide to their design and construction,* Technical Report 34, Third edition, The Concrete Society, Camberley, 2003.
2. Guidance Note 1 – Use of Chapter 4 and Appendix C for defined movement regularity specification. *CONCRETE*, Vol. 40, No. 8, pp 22-23, September 2006.
3. pr EN 15620. *Steel Static Storage Systems – Adjustable Pallet Racking – Tolerances, Deformations and Clearances.* BSI, 2007.