General ergonomic standards face international impact and overlapping concerns

CEN/TC 122 set up Working Group 12 specifically to draft standard EN 13861: Safety of machinery-Guidance for the application of ergonomics standards in the design of machinery and for drafting of ergonomic clauses in standards. The clear lack of ergonomics in the C standards[1] made the need to develop such a standard increasingly urgent. The TUTB and Paul Makin, CEN consultant in the Machinery Sector, had initiated and supported the process.

The standard in its current form has been submitted for 2nd TC enquiry to CEN/ TC 122 and CEN/TC 114 before circulation for formal vote. Even though the outcome of the first enquiry was positive, it was decided to amend the standard in line with various comments received, namely the possible overlap with other standards, its complicated scope, and the status of the standard itself[2]. So far, the standard remains just that, because it is an important document that will plug an existing loophole in the application of ergonomic standards. Apart from a step model on how to apply ergonomic standards, it contains a useful table and a short abstract of all the ergonomic standards for the relevant hazards mentioned in EN 1050[3]. To address the comments received, the working group amended the scope and cut out all references to drafting C-type standards. The title[4] and content were revised accordingly. It was also agreed to follow closely the work of WG 2 on EN 614-1 amendment on general ergonomic principles to avoid possible overlap.

The basic ergonomic standard EN 614-1:1995: Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles, is currently under revision. ISO 6385: 1981- Ergonomic principles in the design of work systems is being amended at the same time. The two revisions will be carried out in conjunction so as to achieve a consistent terminology and avoid overlapping provisions. The revision of ISO 6385 started out life as an ENV document intended to be the basic standard in the field of ergonomics that would incorporate EN 614-1. It is now being developed as an ISO DIS document. The last meeting of TC 122 Working Group 2 discussed whether EN 614-1 should be kept as the basic mandated ergonomic standard since its scope is not covered by ISO 6385. Also, a new revision of ISO 6385 is planned sometime in the future, also to review the standard' user-group and expand it from just workers to include consumers.

TC 122 proposed that ISO 6385 should deal mostly with general definitions, ergonomics principles and human interaction with the work process, while EN 614-1 will stick to machinery-related issues.

The international version of the ergonomic standard will impact its European counterpart, in some cases negatively. Although EN 614 is clearly focused on machinery, when applying ergonomics to working equipment design it is difficult to perform the evaluation without factoring in interactions with the work environment and work organization. Moreover, machines sometimes dictate work organization aspects, which prevents a clear separation and allocation of ergonomic issues - i.e., design of machinery and design of work process to different standards - from being made. The result would be incomplete ergonomic standards. The second part of EN 614[5], which particularly addresses task design interaction issues, has recently been adopted as a European standard, in the face of immense pressure not to have it published separately.

Furthermore, ergonomics is a much broader concept in the international than New Approach Directives context. For example: the international standard's definition and concept of ergonomics is focused on optimizing system performance and productivity, whereas the Machinery Directive addresses only the health and safety aspects. The evaluation chapter of the ISO standard includes performance among the categories to be evaluated for application of ergonomics. Between the different parameters and criteria, unsafe behaviour is cited in the safety category, and quality and quantity in the performance category. In the Machinery Directive and the harmonized standards, evaluation is carried out against the ergonomic requirements. The ultimate aim is to produce inherently safe machinery which embodies the ergonomic concept of fitting the design to the human being, to promote operators' health, safety and well-being. It is true that ergonomics can also improve performance in a work system but the Machinery Directive has a totally different focus. But, the process of increasing performance may also have adverse effects on workers' health and safety. Also, the context of worker participation here differs from European practice. To quote from the draft ISO 6385 standard *"Workers shall be involved and should participate in the design of work systems during the process in an effective and efficient manner"*. This wording calls to mind concerns about imposed participation in Total Quality Systems in USA and Japanese industry which has come under heavy fire in recent decades.

So it is hard to define distinct areas of standardization for the two bodies (CEN and ISO) and avoid all overlap. In some cases, overlap may be positive in emphasizing similar principles with a different focus. ■

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[1] These standards address requirements for specific classes of machinery like woodworking machines.

[2] Finland and Germany wanted it published as a guideline or Technical Report.

[3] EN 1050: Safety of machinery-Principles of risk assessment, 1996.

[4] New title of prEN 13861: Safety of machinery-Guidance for the application of ergonomics standards in the design of machinery.

[5] EN 614-2:2000: Safety of machinery-Ergonomic design principles-Part 2: Interactions between the design of machinery and work tasks.