

ADOPTING STRUCTURAL ERUOCODES – EFFECTIVE DESIGN TO EN 1993-1-1 USING EQUIVALENT STEEL MATERIALS AND STRUCTURAL STEELWORK

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ABSTRACT

With the imminent adoption of the Structural Eurocodes in Hong Kong and a number of Asian countries, it is highly desirable to facilitate design and construction engineers in Hong Kong to work effectively to Structural Eurocodes using Chinese steel materials. With the support of the Chinese National Engineering Research Centre for Steel Construction and other leading industrial and professional organizations in China and overseas, a Professional Guide entitled “***Selection of Equivalent Steel Materials to European Steel Materials Specifications***” was prepared to provide technical guidance on the use of steel materials manufactured to national materials specifications of Australia / New Zealand, China, Japan and U.S.A.. Moreover, with the support of the Construction Industry Council, Hong Kong Special Administrative Region (SAR), a Technical Guide entitled “***Effective Design and Construction to Structural Eurocodes: EN 1993-1-1 Design of Steel Structures***” has been compiled to provide technical guidance on designing and constructing structural steelwork to Structural Eurocodes using equivalent steel materials, especially when welded steel sections such as I-sections, H-sections and cold-formed welded hollow sections are used.

This paper presents an overview on various opportunities on steel construction offered by steel materials and structural steelwork equivalent to those manufactured to European steel materials specifications. Key features of the two documents including the equivalence of steel materials as well as the use of European steel materials and their equivalent in structural design are thoroughly presented.

Keywords: Structural Eurocodes, steel design, equivalent steel materials, material performance, quality assurance systems.