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Modelling of Semirigid RHS Connections Behaviour

All civil engineering structures involve connections between structural components The semirigid and nonlinear behaviour of these connections in engineering structures is now well recognised. Therefore, it is necessary to have mathematical models in order to allow exact frame analysis with computer program. This paper deals with modelling of non-linear moment-rotation behaviour of the semi rigid steel beam-to-column connections with rectangular hollow sections. A procedure has been presented for expressing the moment-rotation behaviour steel beam-to-column connections in terms of standardised Ramberg-Osgood function. The method involves an examination of experimental information on the moment rotation behaviour of T type connection with rectangular hollow section to determine the influence of various size limits such as beam to column width ratio, slenderness of column flange, etc. It has bean used to generate standardised moment-rotation function for three basic response groups e.g. pinned, fixed and semirigid connections.

The examples of such functions is presented.

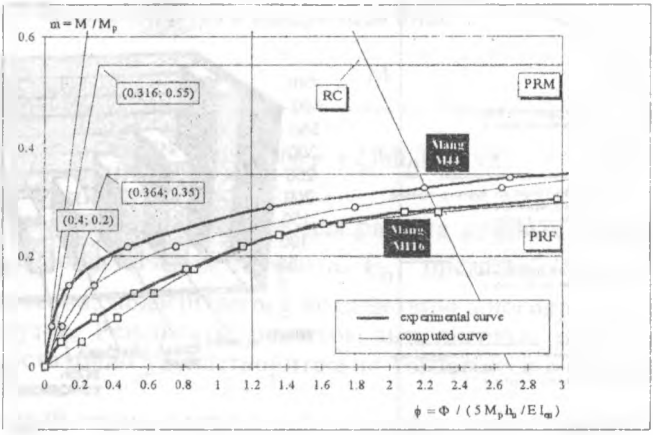

Fig. 3 Comparison of moment rotation curves for PRF T-type connection with rectangular hollow sections