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Elastic-Plastic Behaviour and Design of Beam-to-Column Connections Reinforced by Increasing Thickness of Columns

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Synopsis :

With regard to connections of cold-formed square tube and beam, behavior and design of the connection reinforced by increasing thickness of column have been investigated. Sub-assembly tests were carried out under cyclic loadings. Test results show that the connection can absorb sufficient seismic energy and that yield strengths predicted by yield line theory agree well with experimentals. Parametric study using FE method succeeded in obtaining empirical formulae and made it possible to estimate rotational rigidity of the connection.

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## 要旨

冷間成形角形鋼管柱とH形鋼梁接合部において、水平ダイアフラ

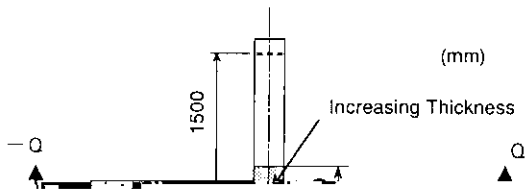
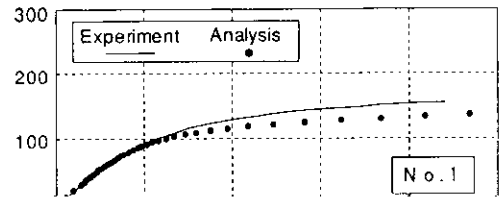
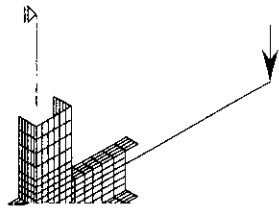


Table 3 Results of sub-assembly test and analysis (kN)

	Experimental strength				Analytical	
	$P_y$	$P_G$	$P_{py}$	$P_{ny}$	${}_iP_{ny}$	$P_{ny}/{}_iP_{ny}$
No. 1	106	158	107	109	110	0.97



← Position of yield line  $K_{\alpha} = V_u \cdot G \dots\dots\dots (1)$