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Structural Behavior of Super HISLEND-H

Junji Hashimoto, Kazuyoshi Fujisawa, Noboru Yamamoto

Synopsis:

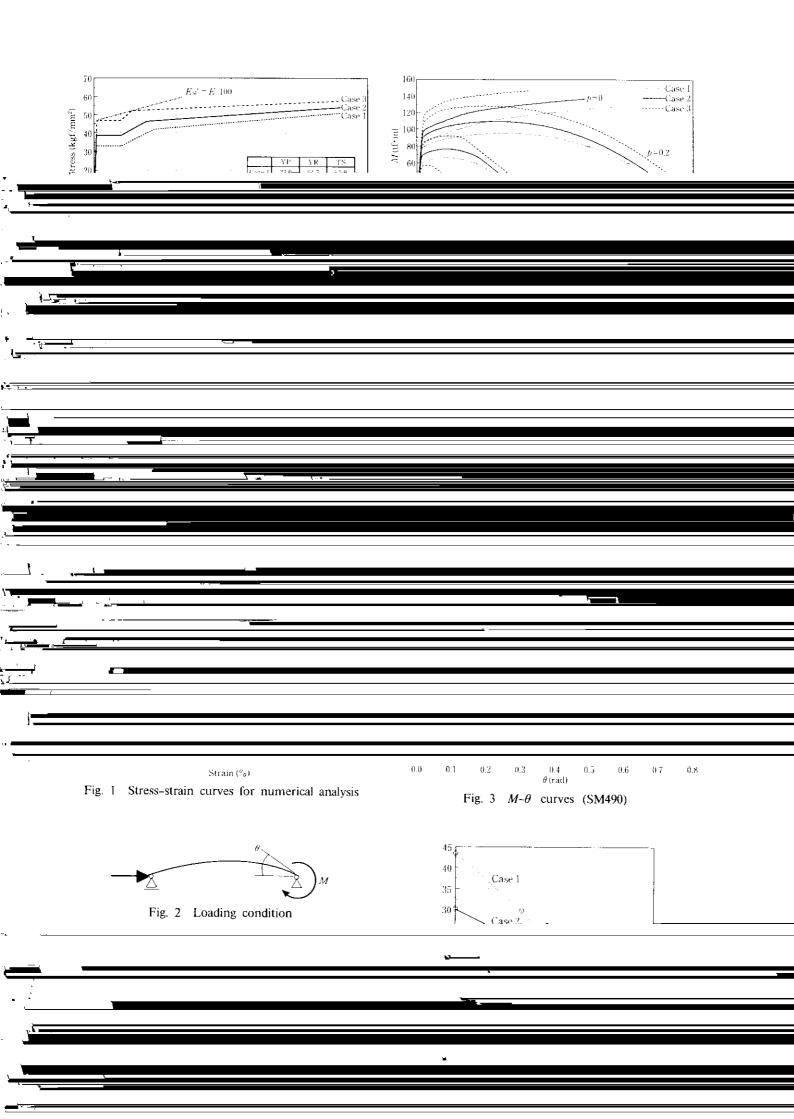
The sufficient ductility of Super HISLEND-H for practical construction use was confirmed by an in-plane elasto-plastic behavior analysis of H-shape steels, by taking into consideration variations of mechanical properties obtained from actual results of Super HISLEND-H manufacture. In addition, experimental studies were performed on steel-reinforced concrete (SRC) structures which used Super HISLEND-H; wherein, vertical stiffener type SRC column and steel (S) beam joints were subjected to a partial tensile test by using the column steel cross section shape, and the ratio between column flange width and beam flange width as test variables. Thus, yield mode of each joint was investigated, leading to the finding of a formula for evaluating total plastic ductility, which permits accurate estimation of the yield strength of joints.

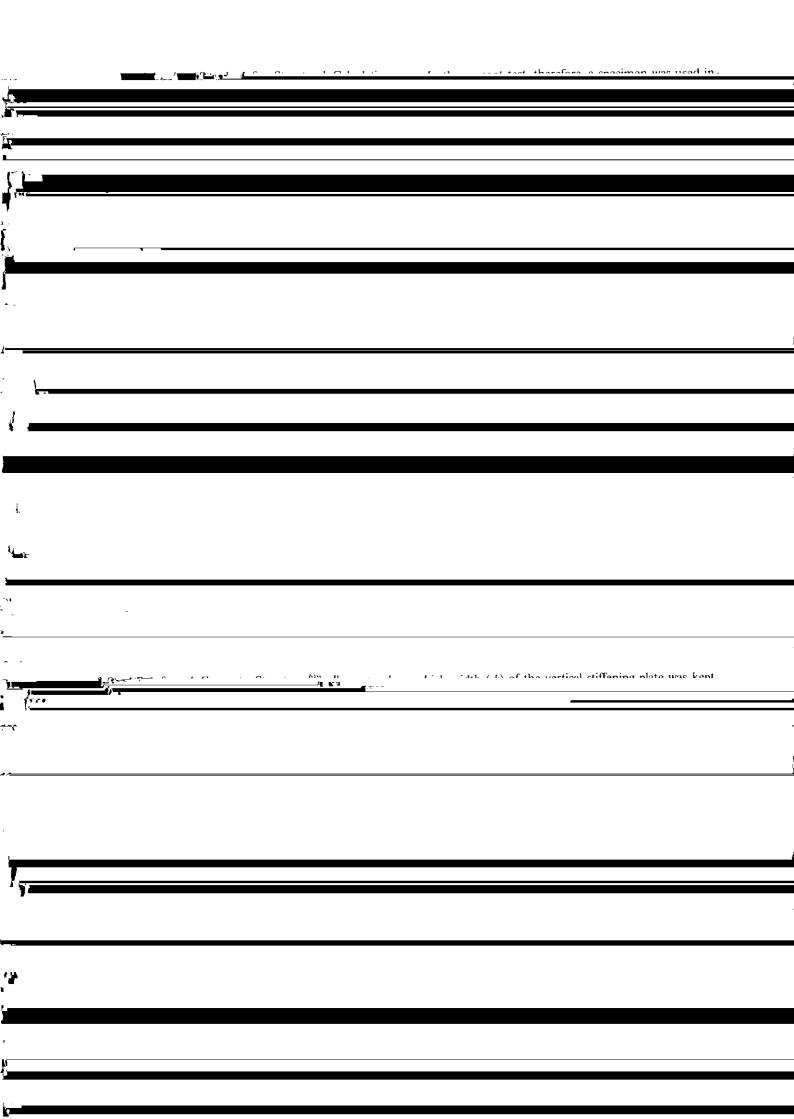
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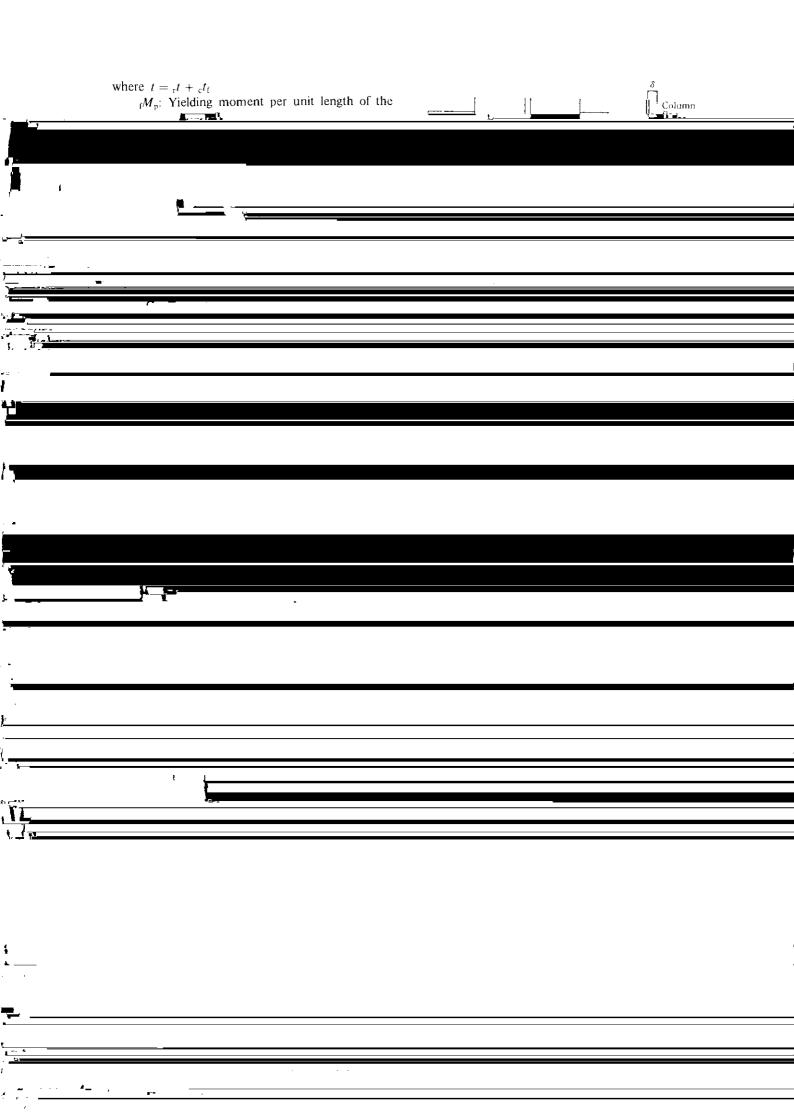
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Structural Behavior of Super HISLEND- \mathbf{H}^*









$$s_{C}P_{p} = 4\sqrt{f_{p}M_{p} \cdot c_{b}(s_{1}T_{y}\cos\alpha_{1} + s_{2}T_{y}\cos\alpha_{2} + wT_{y})} + (s_{1}T_{y}\cos\alpha_{1} + s_{2}T_{y}\cos\alpha_{2} + wT_{y})t$$

$$\cdots \cdot s_{h} \ge 4\sqrt{\frac{f_{p}M_{p} \cdot c_{b}}{s_{1}T_{y}\cos\alpha_{1} + s_{2}T_{y}\cos\alpha_{2} + wT_{y}}} + t$$

$$s_{C}P_{p} = \frac{41\sqrt{f_{p}M_{p} \cdot c_{p}M_{p} \cdot c_{p}M_{p} \cdot c_{p}M_{p} \cdot c_{p}M_{p}}}{s_{1}T_{y}\cos\alpha_{1} + s_{2}T_{y}\cos\alpha_{2})(s_{p}M_{p} - t_{p}M_{p})} T_{p}M_{p} \cdot c_{p}M_{p}}$$

Table 2 General yield strength of B-series and T-series specimens

Specimen	Experimental Pp (tf)	Analytical scPp (tf)	eP _p /scP _p
C-B1	111.3	106.8	1.04
C-B2	106.7	97.0	1.10
C-B3	91.3	91.3	1.00
C-B4	74.2	72.7	1.02
C T1	100 7		1

