

ABSTRACT

WELDED STEEL H-SECTION AND METHOD OF MANUFACTURING SAME

A welded steel H-section having a high buckling proof stress and high vertical supporting force with a smaller amount of steel materials, taking
5 advantage of the high degree of freedom in cross-sectional design thereof, the welded steel H-section having a steel material having a yield point strength of 325 N/mm² or more, a longitudinal length L, a web height H, a flange width B, a flange thickness tf, a web thickness tw, α defined as $L/(H-tf)$, β defined as $B/(H-tf)$, γ defined as tf/B , and δ defined as tw/tf satisfying the following
10 formulas: $H \geq 400$ mm, $B \geq 400$ mm, $H \leq B$, $\alpha \geq 10$, $B/16 \leq tf \leq H/4$, $\max[tf/3, H/37] \leq tw \leq \min[tf, tf \times \delta_{req}(\gamma=1/16)]$, $1.0 \leq \beta \leq 1.6$, $\delta \geq \delta_{req}$, where δ_{req} is defined by the formula below and $\delta_{req}(\gamma=1/16)$ refers to a value of δ_{req} when 1/16 is substituted for γ :

$$\delta_{req} = (2.58\beta - 1.12) + (17.2\beta^2 - 52.8\beta + 18.0) \times \gamma.$$

(FIG. 7)