

## EUROCODE 5 TIMBER CONNECTIONS

### SUGGESTED CODE WORDING

Typical Code wording might be as follows: ( Format from Eurocode 5 ).

#### 5.2.1.1 Wood-to-wood and board-to wood joints

The characteristic load carrying capacity of a single dowel fastener in  $N$  per member in a wood-to-wood joint under short term lateral load may be taken as the lower value of  $R_K$  for each of the members in the connection.

$$R_K = 0.53\sqrt{f_y f_b} \times d^2 \times r \quad 5.2.1.1a$$

In which  $f_y$  = fastener yield stress  $N/mm^2$

$f_b$  = wood crushing stress  $N/mm^2$

$d$  = fastener diameter  $mm$ .

$r$  = embedment factor

Actual embedment length in member =  $L$

$$\text{Critical embedment length in member} = l = 2.12\sqrt{\frac{f_y}{f_b}} \times d \quad 5.2.1.1b$$

## Single shear connection

Embedment factor :  $r$

$$L > l \quad 1.0$$

$$L < l \quad \frac{L}{l} \quad \text{main member}$$

$$L < l \quad \sqrt{\frac{L}{l}} \quad \text{side member}$$

## Double shear connection

Embedment factor :  $r$

$$2.0 \frac{L}{l} \quad \text{centre member}$$

$$\text{Case 1} \quad \sqrt{\frac{L}{l}} \quad \text{side member (thin)}$$

$$\text{Case 2} \quad \frac{L}{l} \quad \text{side member (thick)}$$

In no case can  $\frac{L}{l}$  exceed 1.0

### 5.2.1.2 Steel-to-wood joints

The recommendations for wood-to-wood connections may be used.

The use of steel side plates thick enough to generate fixity may double the resistance of a member in a connection.

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