



BISON PRECAST

a Forterra brand

TECHNICAL GUIDANCE NOTE

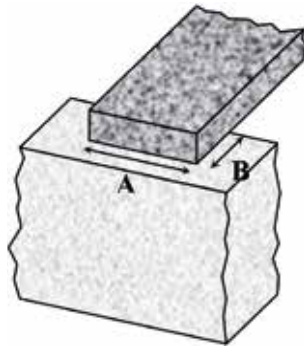
Bearing requirements - 20 November 2017

The effective bearing is the lesser of:

- a) The actual bearing length
- b) Half the bearing length + 100mm
- c) 600mm

A = Bearing length

B = Bearing width



$$\begin{aligned} \text{Nominal bearing width} &= \begin{aligned} &+ \text{Net bearing width} \\ &+ \text{Spalling allowance} \\ &+ \text{Construction tolerances allowance} \\ &+ \text{Manufacturing tolerances} \end{aligned} \\ \text{Net bearing width} &= \frac{\text{Ultimate support reaction}}{\text{Bearing length} \times \text{ultimate bearing stress}} \\ \text{Minimum net bearing width} &= \begin{aligned} &40\text{mm for slabs (non-isolated members)} \\ &60\text{mm for beams (isolated members)} \end{aligned} \end{aligned}$$

The ultimate bearing stress is based on the weaker of the bearing surfaces

- Dry Bearing on concrete	$0.4 \times f_{cu}$
- Bedded bearing on concrete	$0.6 \times f_{cu}$
- Cast in steel bearing plate	$0.8 \times f_{cu}$
- Bearing on masonry	$0.36 \times f_k$

For masonry:
$f_k = 3.5 \text{ N/mm}^2$ (Crushing strength of 3.5 N/mm^2)
$f_k = 6.4 \text{ N/mm}^2$ (Crushing strength of 7.0 N/mm^2)
$f_k = 8.2 \text{ N/mm}^2$ (Crushing strength of 10 N/mm^2)



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Allowances for spalling at support:

- Steel	0 mm
- Concrete grade 30 or over	15 mm
- Concrete below grade 30	25 mm
- Brick/masonry	25 mm
- RC <300 mm deep at outer edge	Not less than cover to reinforcement at outer face of support
- RC where vertical loop reinforcement > 12 mm Ø	Cover plus radius of bend.

Allowances for construction tolerances:

up to 3m length ± 6mm
up to 4.5m length ± 9mm
up to 6m length ± 12mm
additional deviation for every subsequent 6m ± 6mm

For masonry buildings over 4 storeys bedded bearing should be used.