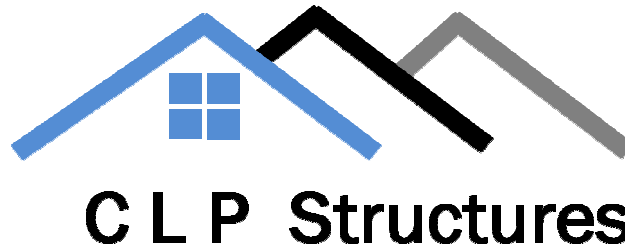




Job ref : 302
Sheet : 1
Made By : CEL
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Checked : NML
Approved :



STRUCTURAL CALCULATIONS

JANUARY 2015

Shear Transfer between Legato Blocks

Client:-



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Standard 1600mm long by 800mm wide Elite Precast Legato Blocks have 8 No. projecting concrete 'nipples' at the top of the block, and corresponding recesses cast into the bottom of the block.

This creates an 'interlock' which is capable of transferring a horizontal shear force between blocks.

Each 'nipple' has a base size of 195mm x 195mm.

For dimension tolerances we will take a size of 180mm x 180mm.

Area per 'nipple' = $180 \times 180 = 32400 \text{mm}^2$

Allowable shear in concrete taken as $0.7 \times 0.15 \times \text{Sqrt } f_{cu}$ where $f_{cu} = 40 \text{N/mm}^2$ min.

Therefore allowable shear = 0.66 N/mm^2

Allowing 0.66 N/mm^2 of shear through concrete - allowable shear per 'nipple' =

$32400 \times 0.66 = 21384 \text{ N} = 21.4 \text{ kN}$

Due to dimensional tolerances assume only half of the 'nipples' act together at the same time, therefore maximum allowable shear transfer between two blocks =

$21.4 \times 4 = \underline{\underline{85.5 \text{ kN}}}$

