Berekening balklaag uitbouw:

Lsyst. = 2.30m
balklaag 50x150 h.o.h. 600mm

q e.g. = 0.6 x 0.56 = 0.34 kN/m
q n.b. = 0.6 x 0.61 = 0.37 "

qd = 1.2 x 0.34 + 1.5 x 0.37 = 1.0 kN/m

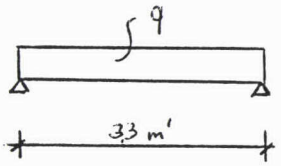
$\sigma m;d = \frac{1/8 \times 1.0 \times 2.3^2 \times 10^{*}6}{1/6 \times 50 \times 150^2} = 3.53 \text{ N/mm}^2 \leq \frac{17.0 \times 0.85}{1.2}$ =12.04 N/mm²

$\delta = \frac{5}{384} \times \frac{(2 \times 0.34 + 0.37) \times 2300^{*}4}{10000 \times 1/12 \times 50 \times 150^3} = 2.7 \text{ mm}$

underlayment 19mm

Berekening ligger bouwmuur:

schema:



Grep
eg dak 3.0m x 0.65 kN/m² = 2.0 kN/m
eg 1e verd / 2e verd 2 x 3.0m x 0.40 kN/m² = 2.4 "
eg bouwmuur (gem.) 4.0m x 2.0 kN/m² = 8.0 "
12.4 kN/m

Qrep
nb 1e verd / 2e verd (1.0 + 0.4) x 3.0m x 1.75 kN/m² = 7.4 kN/m

qd 1.2 x 12.4 + 1.5 x 7.4 = 26.0 kN/m

$Wben. = \frac{1/8 \times 26.0 \times 3.3^2 \times 10^{*}6}{235} = 150.6 \times 10^3 \text{ mm}^3$

$\delta = 0.003 \times 3300 = 1.0 \text{ cm}$

Iben. = 0.62 x (12.4 + 7.4) x 3.3*4 / 1.0 = 1455.8x10*4 mm*4

Toepassen HE 180A

kipcontrole:

$\lambda \text{ rel;kip} = 1.23 \times 1.21 \sqrt{\left(\frac{3300 \times 171}{180 \times 9.5} \times \frac{235}{1.2 \times 10^{*}5}\right)} = 0.90 \Rightarrow \omega \text{ kip} = 0.73$

$\frac{M \text{ y;max;s;d}}{\omega \text{ kip} \times My;u;d;} = \frac{1/8 \times 26.0 \times 3.3^2 \times 10^{*}6}{0.73 \times 294 \times 10^3 \times 235} = 0.70 \leq 1.0$ akkoord