

Opbouw woning
aan Het Elshof 2
te Dorden

Opdrachtgever

Fam. Hiddink

Het Elshof 2
7251 CB Dorden

Berekening Constructie

sept. 2018

Wat Elshof 2 Dorden

C_1 veiligheidscoëff. eigen gewicht 1,08
variabel 1,35

Belastingaannames

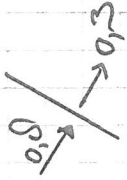
Platdak

Dakbedekking, dakbeschot... plafond 0,7 kWh/m²
variabel / sneeuw 1,0 kWh/m²

Schuin dak $\varphi = 75^\circ$ 0,75 / cos $\varphi = 3,0$ kWh/m²

Wind

$h = 6$ $S_w = 0,6$ kWh/m²



Diepingen

houten vloer + plafond
separatie

1,0 kWh/m²
0,5 "
1,5 kWh/m²

variabel

1,75 kWh/m²

Balklaag platdak

59/146 hoh 600



$$q_g = 0,6 \times 700 = 420 \text{ N/m}$$

$$q_{\text{g}} = 0,6 \times 1000 = 600 \text{ N/m}$$

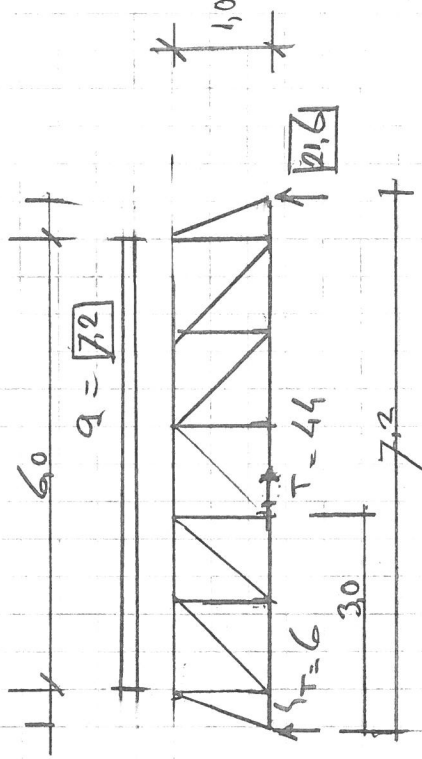
$$q_{\text{r}} = 1,08 \quad 420 + 1,35 \times 600 = 1264 \text{ N/m}$$

$$M = \frac{1}{8} \times 1264 \times 2,5^2 = 988 \text{ Nm}$$

$$\sigma_b = 988 / 209 = 4,7 \text{ N/mm}^2$$

$$\text{doorbuiging: } f_g = 120 \times 0,42 \times 2,5^2 / 1530 = 1,3 \text{ m} \\ f_g = 1,3 \text{ m} \\ \text{kruip } 0,6 \times 1,3 = 0,8 \text{ m}$$

dragend knieschot



$$q_{\text{plattendak}} q_{\text{r}} = 0,7 = 0,5 \text{ kN/m}$$

pannendak

$$27/1975 \times 30 = 37 \text{ kN/m} \\ \frac{37}{4,2} = 8,8 \text{ kN/m}$$

$$q_{\text{plattendak / vord. vloer}} = 2,0 \times 1,0 = 2,0 \text{ kN/m}$$

$$q_{\text{r}} = 1,08 \times 4,2 + 1,35 \times 2 = 7,2$$

$$T = (21,6 \times 30 - \frac{1}{2} \times 7,2 \times 2,4^2) \times 1,0 \\ = 44 \text{ kN}$$

$$71/196 \quad T = \frac{4000}{71 \times 196} = 32 \text{ N/mm}^2$$

koppeling multiplex / balk
lijm
schroeven

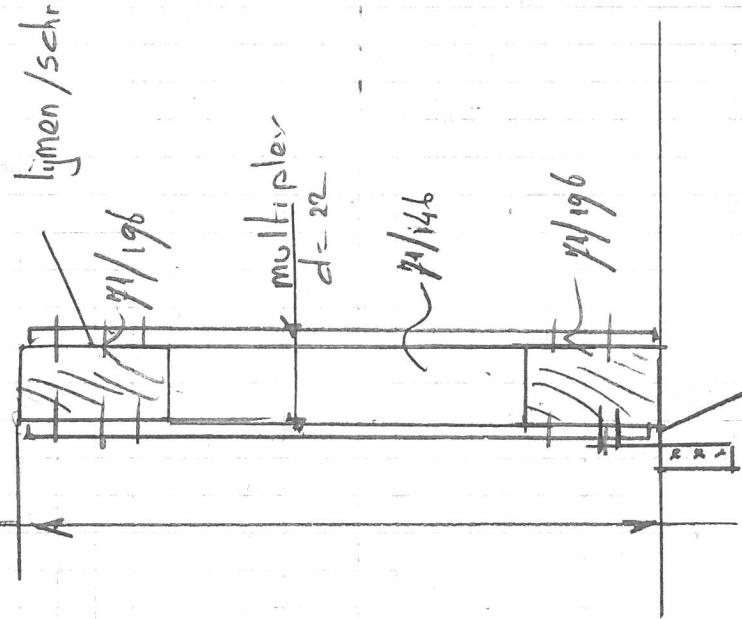
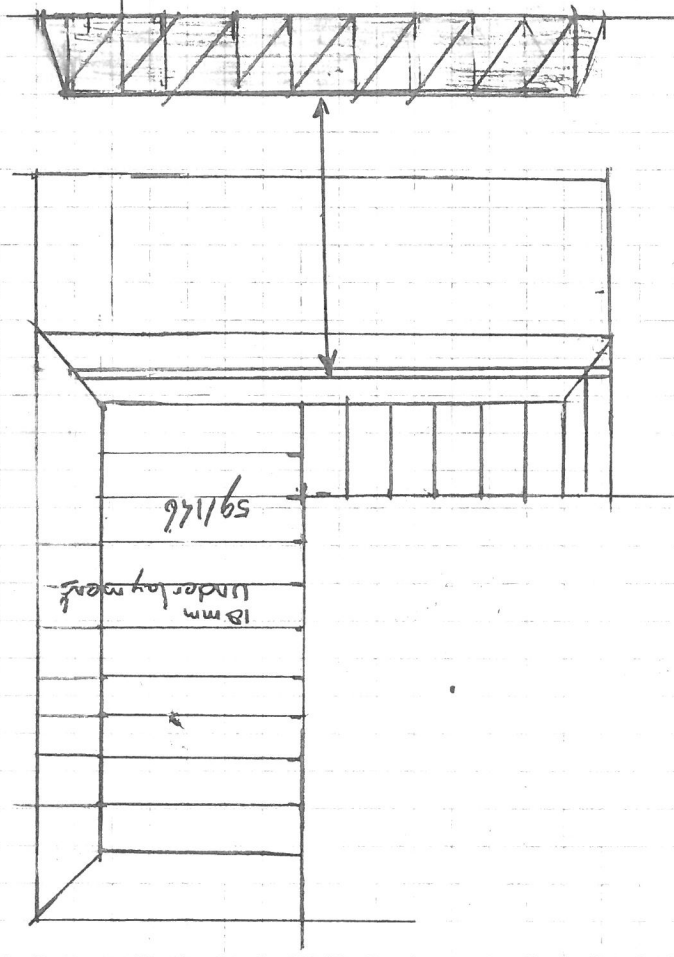
$$\text{op te nemen } 44 / 3,6 = 12 \text{ kN/m}$$

d = 42 mm per schroef 0,4 kN
2 zijden is schroeven / m
= hoh = 70 mm

$$\text{doorbuiging: } I = 2 \times (1,1 \times 19,6)^2 \times 50 = 695800 \text{ cm}^4 \\ \text{Samenwerkingsfactor} \geq 0,33 \rightarrow I_{\text{r}} = 230.000$$

$$f_g = 120 \times \frac{4,2 \times 7,2^2}{2,0 \times 230.000} = 6 \text{ mm} \\ \text{kruip } 0,6 \times 6 = 3,6 \text{ mm} \\ \frac{3,6}{12,6} = 0,28$$

Pat Elshof 2 Vorden



vloer koppelen
aan kozerlijgen

diagonalen / verticalaal 74/146

ddaplaak
met kruisplaat
stijlen 59/146
hoh 600