

Alkmaar, 20 oktober 2015

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STATISCHE BEREKENING

Opdrachtgever : Wooncompagnie
Postbus 160
1620 AD Hoorn

Architect : AWG Architecten
Paardenmarkt 85
b-2000 Antwerpen

Constructeur : ing. C.F.K. Slijkerman

Algemene informatie

| | |
|---------------------------------------|--|
| Projectomschrijving: Projectplaats | Nieuwbouw 19 woningen Hofstraat Schagen |
| Gebuiksfunctie / type bouwwerk: | wonen |
| Gevolgklasse: | CC1 |
| Betrouwbaarheidsklasse: | RC1 |
| Ontwerplevensduur: | 50 jaar |
| Locatie: | gebied 1, terreincategorie 3 (bebouwd) |

Project : Nieuwbouw 19 woningen Hofstraat te Schagen
Projectnummer : **2014.230**

Onderdeel : **Statische berekening**

Van toepassing zijnde voorschriften:

Eurocode - Grondslagen

- EN 1990 Grondslagen van het constructief ontwerp
- EN 1990/A.1 Bijlage A.1: Toepassing voor gebouwen (opgenomen in EN 1990)
- EN 1990/A.2 Bijlage A.2: Toepassing voor bruggen

Eurocode 1 - Belastingen op constructies

- EN 1991-1-1 Deel 1-1: Algemene belastingen - Volumieke gewichten, eigen gewicht, opgelegde belastingen voor gebouwen
- EN 1991-1-2 Deel 1-2: Algemene belastingen - Belasting bij brand
- EN 1991-1-3 Deel 1-3: Algemene belastingen - Sneeuwbelasting
- EN 1991-1-4 Deel 1-4: Algemene belastingen - Windbelasting
- EN 1991-1-5 Deel 1-5: Algemene belastingen - Thermische belasting
- EN 1991-1-6 Deel 1-6: Algemene belastingen - Belasting tijdens uitvoering
- EN 1991-1-7 Deel 1-7: Algemene belastingen - Buitengewone belastingen : stootbelastingen en ontploffingen

Eurocode 2 - Ontwerp en berekening van betonconstructies

- EN 1992-1-1 Deel 1-1: Algemene regels en regels voor gebouwen
- EN 1992-1-2 Deel 1-2: Algemene regels - Ontwerp en berekening van constructies bij brand

Eurocode 3 - Ontwerp en berekening van staalconstructies

- EN 1993-1-1 Deel 1-1: Algemene regels en regels voor gebouwen
- EN 1993-1-2 Deel 1-2: Algemene regels - Ontwerp en berekening van constructies bij brand
- EN 1993-1-8 Deel 1-8: Algemene regels - Ontwerp en berekening van verbindingen
- EN 1993-1-9 Deel 1-9: Algemene regels - Vermoeiing

Eurocode 4 - Ontwerp en berekening van staal-betonconstructies

- EN 1994-1-2 Deel 1-1: Algemene regels en regels voor gebouwen
- EN 1994-1-2 Deel 1-2: Algemene regels - Ontwerp en berekening van constructies bij brand

Eurocode 5 - Ontwerp en berekening van houtconstructies

- EN 1995-1-1 Deel 1-1: Algemene regels en regels voor gebouwen
- EN 1995-1-2 Deel 1-2: Algemene regels - Ontwerp en berekening van constructies bij brand

Eurocode 6 - Ontwerp en berekening van constructies van metselwerk

- EN 1996-1-1 Deel 1-1: Algemene regels voor constructies van gewapend en ongewapend metselwerk
- EN 1996-1-2 Deel 1-2: Algemene regels - Ontwerp en berekening van constructies bij brand
- EN 1996-2 Deel 2: Ontwerp, materiaalkeuze en uitvoering van constructies van metselwerk
- EN 1996-3 Deel 3: Vereenvoudigde berekeningsmethoden voor constructies van ongewapend metselwerk

Eurocode 7 - Geotechnisch ontwerp

- EN 1997-1 Deel 1: Algemene regels
- EN 1997-2 Deel 2: Grondonderzoek en beproeving

Constructeur

| | |
|----------------|--------------------------------|
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| Telefoonnummer | : 072 – 527 0090 |
| E-mail | : k.slijkerman@berkhouttros.nl |

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| 3.12 Bouwmuurbalk as 7, 15 en 17 | 109 |
| 3.13 Bouwmuurbalk as 13 | 116 |

1 Aanname belastingen

1.1 Aanname permanente belastingen

| | | |
|---|--|--|
| Dak | pannendak : 0,65/cos32,0 : | 0,77 kN/m ² |
| 1 ^e +2 ^e verdieping : | leidingplaatvloer 200 mm: afwerking 50 mm : | 3,80 kN/m ² <u>1,00 kN/m²</u> 4,80 kN/m ² |
| B.g.g.-vloer | rib-cassettevloer : afwerking 70 mm : | 2,50 kN/m ² <u>1,40 kN/m²</u> 3,90 kN/m ² |
| kopgevel : | kzs 120 mm + 100 mm m.w. | 4,40 kN/m ² |
| langsgevel : | kzs 100 mm + 100 mm m.w. | 4,00 kN/m ² |
| bouwmuur : | 2x kzs 120 mm : | 4,80 kN/m ² |
| fundering : | betonbalk 400x500 mm : | 4.80 kN/m |

1.2 Aanname veranderlijke belastingen

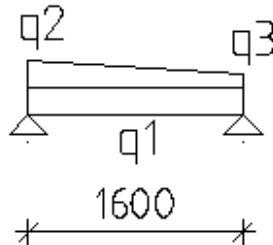
| | | |
|----------------|--|--|
| Dak : | sneeuw : ($\Psi_0=0$; $\Psi_1=0$; $\Psi_2=0$) | 0,56 kN/m ² |
| Verdiepingen : | personen : ($\Psi_0=0,4$; $\Psi_1=0,5$; $\Psi_2=0,3$) wandentoeslag | 1,75 kN/m ² <u>0,80 kN/m²</u> 2,55 kN/m ² |
| Begane-grond : | personen : ($\Psi_0=0,4$; $\Psi_1=0,5$; $\Psi_2=0,3$) wandentoeslag | 1,75 kN/m ² <u>0,80 kN/m²</u> 2,55 kN/m ² |

2

Diversen

2.1

Stalen latei 2^e verdieping blok 2 + blok 4

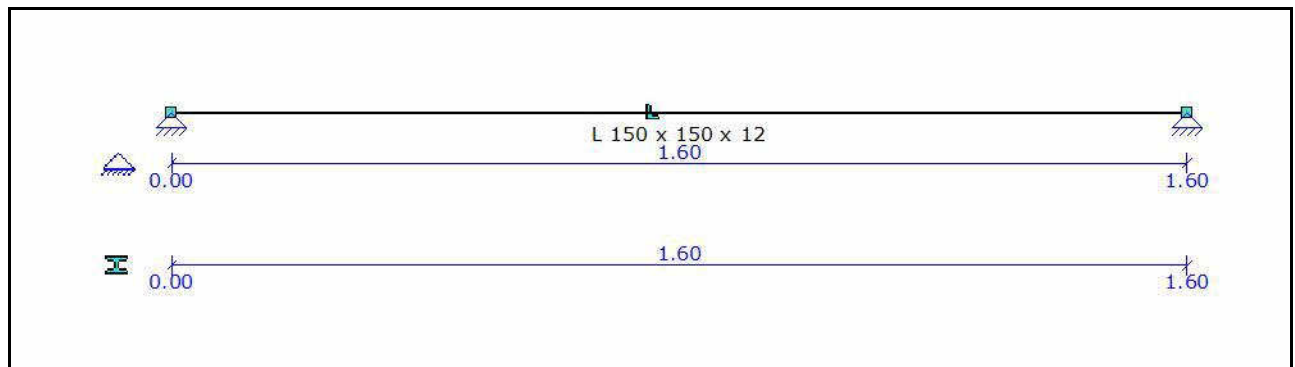


| | | | |
|------------|-----------------------------|----------------|------------------|
| q1p.rep. : | dak : | $0,77 * 2,7 :$ | 2,1 kN/m |
| | 2 ^e verdieping : | $4,8 * 2,7 :$ | <u>13,0 kN/m</u> |
| | | | 15,1 kN/m |
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| q2p.rep. : | kopgevel : | $2,4 * 1,5 :$ | 3,6 kN/m |
| q3p.rep. : | kopgevel : | $2,4 * 0,6 :$ | 1,4 kN/m |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingsen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 2 | 1 | 2 | 9 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|------------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(1,600) | L 150 x 150 x 12 | 0 | 7.3692e-06 | S235 | 2.1000e+08 | 12.0000e-06 | 0.27 |
| m - | | ° | m4 - | | kN/m2 | C°m | kN/m |

OPLEGGINGEN

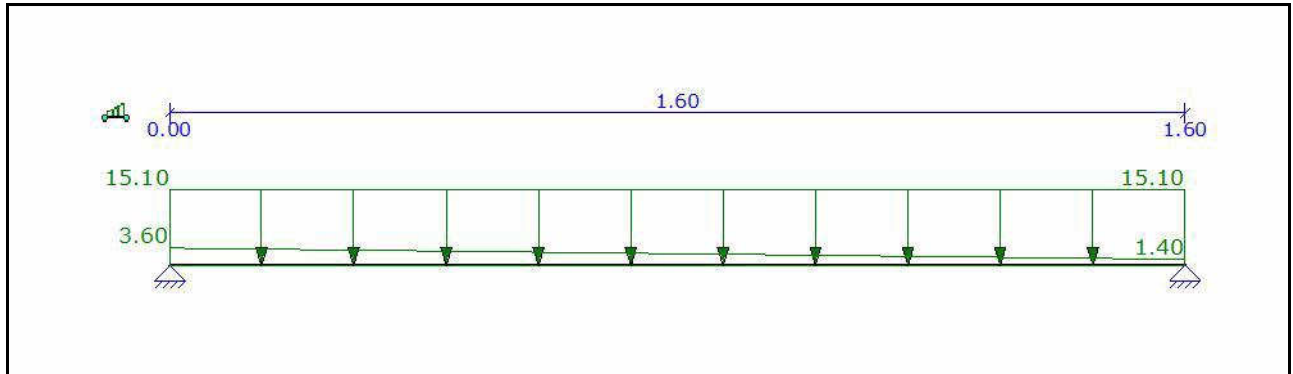
| Oplegging | Positie | Z | Yr |
|-----------|----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | L(1,600) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 15,10 | 15,10 | 0,000 | 1,600(L) | Z S1 |

| | | | | | |
|------------|---------|-------------|-------|----------|------|
| q | 3,60 | 1,40 | 0,000 | 1,600(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 28,16 | kN | | |
| - | - | - | m | m | - - |

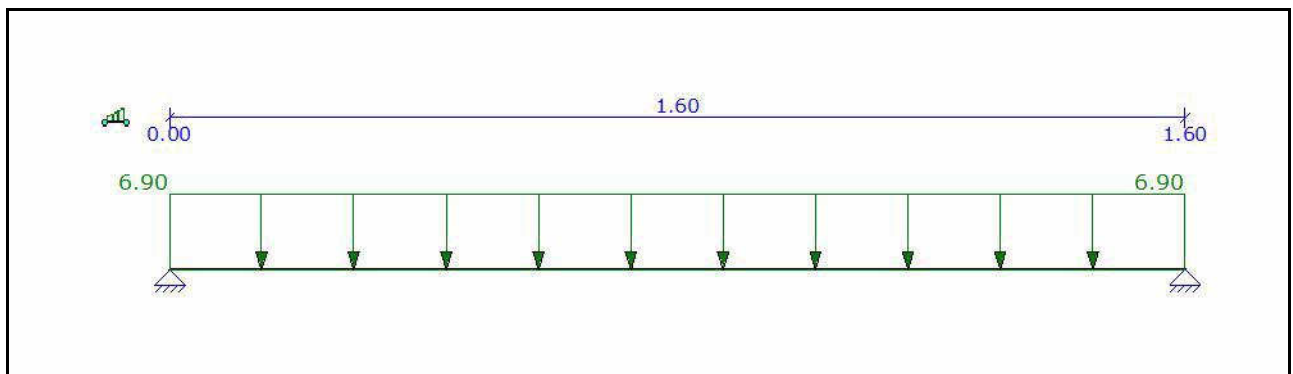
B.G.1: PERMANENT



B.G.2: VERDEELDE VERANDERLIJKE BELASTING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|--|-------------|-------------|--------------|-------------|-------------------------|
| B.G.2: Verdeelde veranderlijke belasting | | | | | |
| q | 6,90 | 6,90 | 0,000 | 1,600(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 11,04 | kN | | |
| - | - | - | m | m | - - |

B.G.2: VERDEELDE VERANDERLIJKE BELASTING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 |
|-------|-----------------------------------|--------|--------|
| B.G.1 | Permanent | 1.08 | 1.22 |
| B.G.2 | Verdeelde veranderlijke belasting | 1.35 | 0.54 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 |
|-------|-----------------------------------|-----------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 |
| B.G.2 | Verdeelde veranderlijke belasting | - | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 |
|-------|-----------------------------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |
| B.G.2 | Verdeelde veranderlijke belasting | - | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|-----------------------------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | Verdeelde veranderlijke belasting | 0.30 |

B.G. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|-----------|---------|------|------|--------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -14.37 | 0.00 |

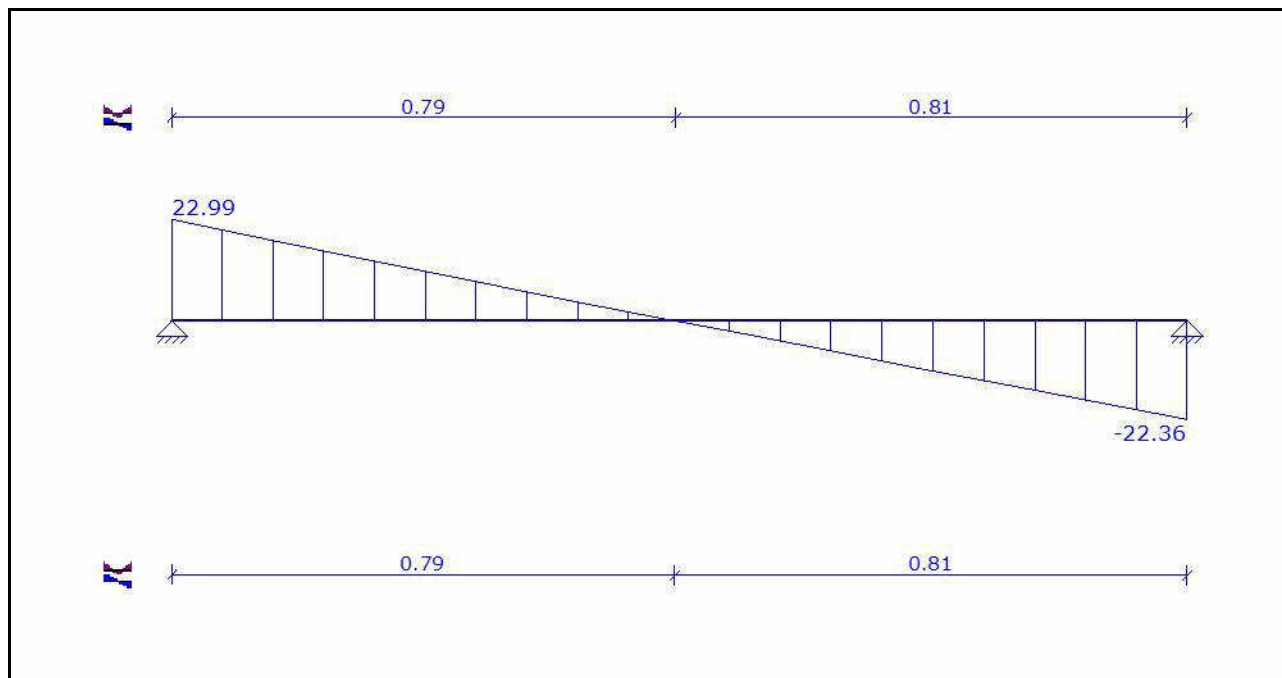
| | | | | | | |
|-------|---------------------|-------|------|--------|---------------|------|
| B.G.1 | O2 | 0.000 | vast | vrij | -13.79 | 0.00 |
| | Som Reacties | | | | -28.16 | |
| | Som Lasten | | | | 28.16 | |
| B.G.2 | O1 | 0.000 | vast | vrij | -5.52 | 0.00 |
| B.G.2 | O2 | 0.000 | vast | vrij | -5.52 | 0.00 |
| | Som Reacties | | | | -11.04 | |
| | Som Lasten | | | | 11.04 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|---------------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -22.99 | 0.00 |
| Fu.C.1 | O2 | 0.000 | vast | vrij | -22.36 | 0.00 |
| | Som Reacties | | | | -45.35 | |
| | Som Lasten | | | | 45.35 | |
| Fu.C.2 | O1 | 0.000 | vast | vrij | -20.44 | 0.00 |
| Fu.C.2 | O2 | 0.000 | vast | vrij | -19.73 | 0.00 |
| | Som Reacties | | | | -40.18 | |
| | Som Lasten | | | | 40.18 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

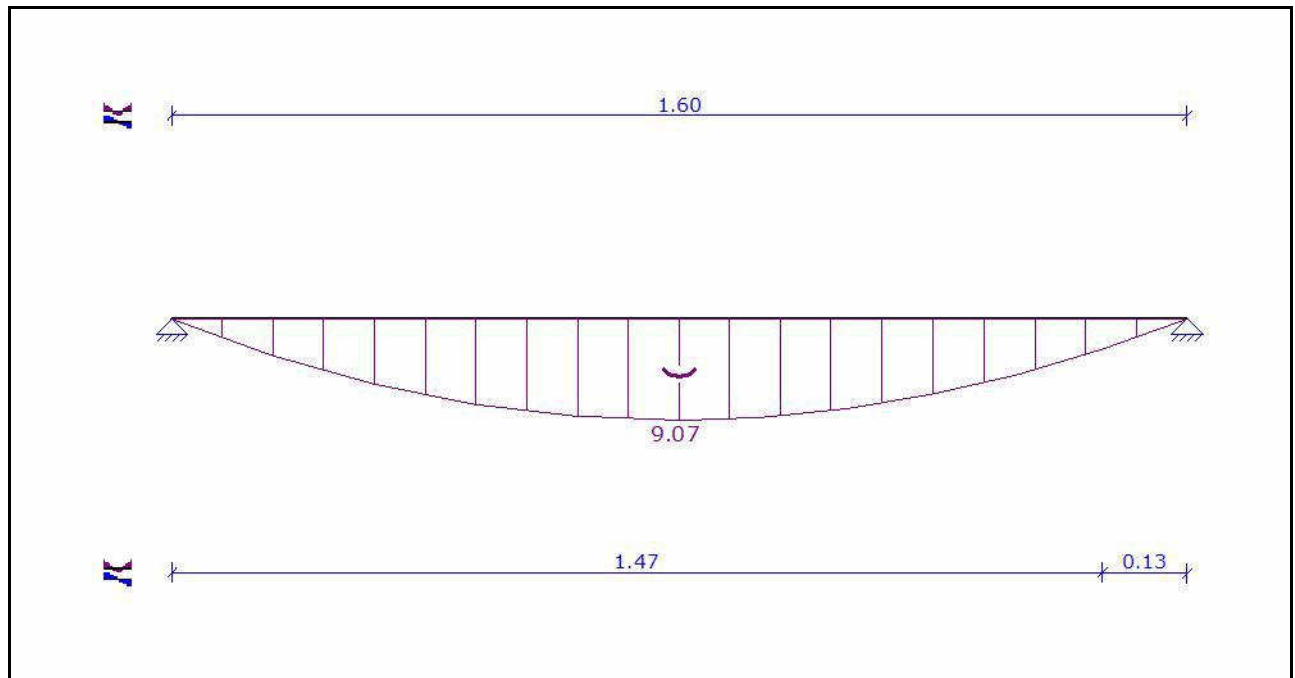
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



STAALTOETS RESULTATEN NEN-EN1993-1-1:2009/NB:2011

Doorsnedetoetsing C1-V1 (0.000-1.600)

Maatgevende combinatie: Fu.C.1 op 0,800 m

N;Ed = 0,0 kN

Vy;Ed = 0,0 kN

Vz;Ed = -0,2 kN

N;Rd = 818,6 kN

Vy;Rd = 247,9 kN

Vz;Rd = 251,2 kN

Profielklasse = 1

My;Ed = 9,1 kNm

Mz;Ed = 0,0 kNm

MyRd = 29,0 kNm

MzRd = 29,0 kNm

NEN-EN1993-1-1(6.12): UC = 0,31 < 1

Kiptoetsing C1-V1 (0.000-1.600)

Equi. profiel: U75x150x12x12

Maatgevende combinatie: Fu.C.1

Aangrijphoogte van de last: -0,069 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund

Tabel gebruikt NB 6.2

Bovenflens maatgevend

Lsys = 1,600 m

C1 = 1,13

Mcr = 153,5 kNm

Lamda;M = 0,51

Chi;LT(Fu.C.1) = 0,47

Chi;LT,Z = 1,00

My;begin = 0,0 kNm

Beperk. eind: Gesteund

q = 28,3kN/m

Xb;lst = 0,000 m

Lg = 1,600 m

C2 = 0,45 (tabel)

kred = 1,0

Lamda;T = 0,49

M;Ed = 9,1 kNm

lkip = 1,600 m

My;eind = 0,0 kNm

Instab. curve Kip:d

b-eff(Begin) = 0,000

= 0,0

Xe;lst = 1,600 m

S = 0,000 m

C2(toegepast) = 0,00

Lamda;MT = 1,00

b-eff(Eind) = 0,000

lst = 1,600 m

Iwa = 0.0000e+00 m6

C = 3,55

Profielklasse 1

UC(y) = 0,48

UC(z) = 0,00

Controle op Alfa;cr kan worden genegeerd omdat er geen drukspanning optreedt

NEN-EN1993-1-1(6.54): UC = 0,48 < 1

Doorbuigingstoetsing Z' C1-V1 (0.000-1.600)

Constructietype : Vloer

w;c = 0,0 mm

w;1 = 1,0 mm (x = 0,798 mm; Fr.C.(w1))

w;3 = 0,1 mm (x = 0,798 mm; Qu.C.1)

w;tot; = 1,1 mm

w;max = 1,1 mm

Toets type: Algemeen

Zeegvorm Parabolisch

w;2 = 0.0 mm

w;3 = 0,2 mm (x = 0,800 mm; Fr.C.1)

Limiet $w; \max = L/250 = 6,4 \text{ mm}$

$UC(w; \max) = 0,2$

NEN-EN|NEN-EN1990/NB A1.4.2: $UC = 0,17 < 1$

Limiet $(w; 2+w; 3) = L/333 = 4,8 \text{ mm}$

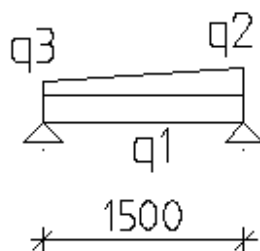
$UC(w; 2+w; 3) = 0,0$

UNITY CHECK NEN-EN1993-1-1:2009/NB:2011

| Veld | Toetsing | Combinatie | Artikel | UC max |
|---------------------|----------------------|------------|-----------------------------|--------|
| C1-V1 (0.000-1.600) | Doorsnede | Fu.C.1 | NEN-EN1993-1-1(6.12) | 0,31 |
| C1-V1 (0.000-1.600) | Kiptoetsing | Fu.C.1 | NEN-EN1993-1-1(6.54) | 0,48 |
| C1-V1 (0.000-1.600) | Doorbuigingstoetsing | Qu.C.1 | NEN-EN NEN-EN1990/NB A1.4.2 | 0,17 |

2.2

Stalen latei 1^e verdieping blok 2

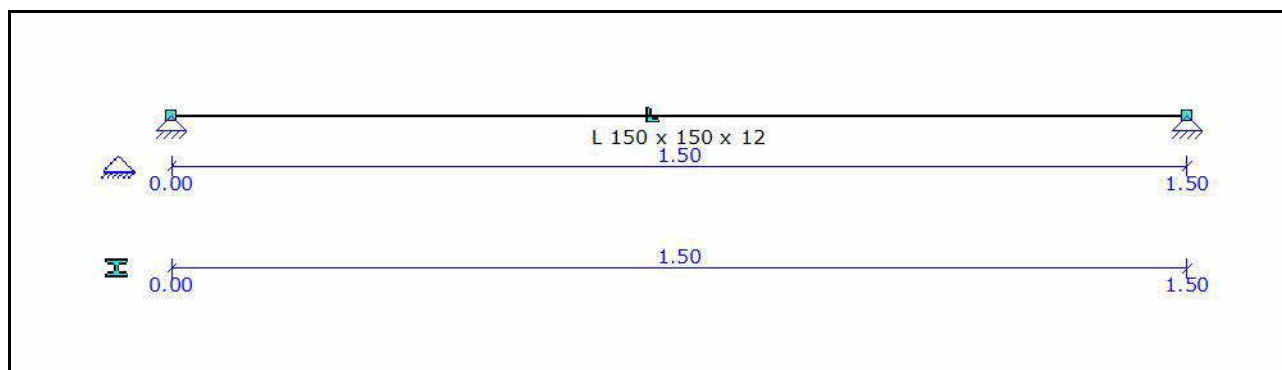


| | | | |
|------------|---|-------------------|------------------|
| q1p.rep. : | dak : | $0,77 * 2,7 :$ | 2,1 kN/m |
| | 1 ^e +2 ^e verdieping : | $2 * 4,8 * 2,7 :$ | <u>25,9 kN/m</u> |
| | | | 27,0 kN/m |
| q1v.rep. : | 1 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | 2 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| q2p.rep. : | kopgevel : | $2,4 * 4,4 :$ | 10,6 kN/m |
| q3p.rep. : | kopgevel : | $2,4 * 3,6 :$ | 8,6 kN/m |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 2 | 1 | 3 | 13 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|------------------|------|----------------------------|------------|-----------------|---------|
| 0,000 - L(1,500) | L 150 x 150 x 12 | 0 | 7.3692e-06 S235 | 2.1000e+08 | 12.0000e-06 | 0.27 |
| m - | | ° | m4 - | kN/m2 | C°m | kN/m |

OPLEGGINGEN

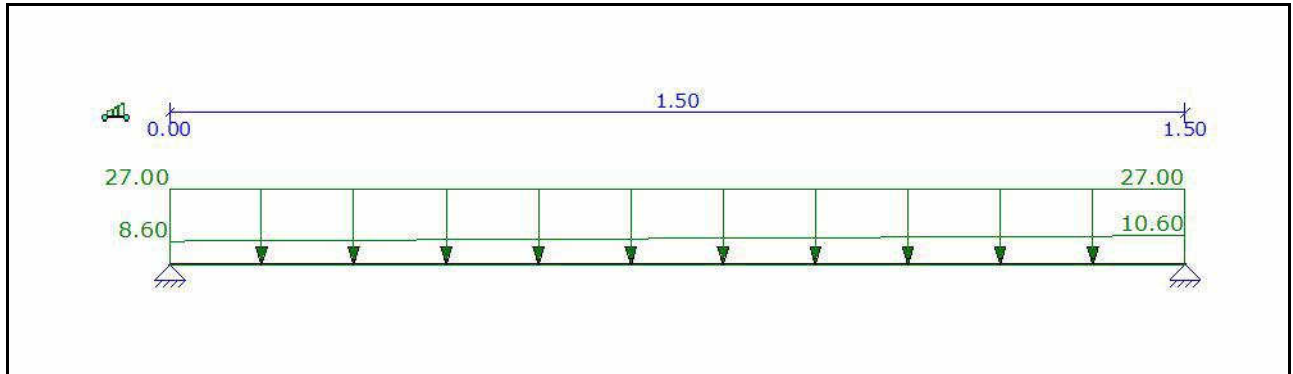
| Oplegging | Positie | Z | Yr |
|-----------|---------|---|----|
|-----------|---------|---|----|

| | | | |
|----|----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | L(1,500) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staf of knoop |
|------------------|-------------|-------------|--------------|-------------|----------|---------------|
| B.G.1: Permanent | | | | | | |
| q | 27,00 | 27,00 | 0,000 | 1,500(L) | Z | S1 |
| q | 8,60 | 10,60 | 0,000 | 1,500(L) | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 54,90 | kN | | | |
| - | - | - | m | m | - | - |

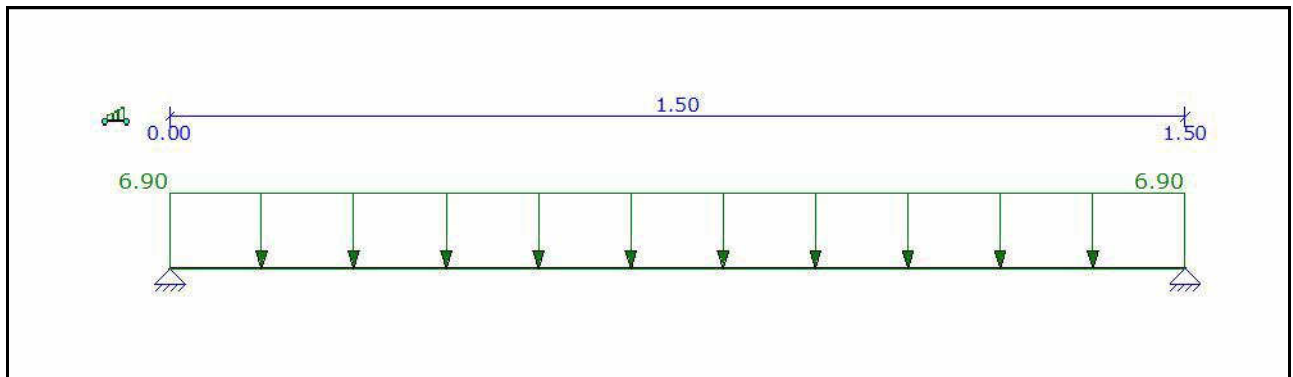
B.G.1: PERMANENT



B.G.2: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staf of knoop |
|----------------------|-------------|-------------|--------------|-------------|----------|---------------|
| B.G.2: 1e verdieping | | | | | | |
| q | 6,90 | 6,90 | 0,000 | 1,500(L) | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 10,35 | kN | | | |
| - | - | - | m | m | - | - |

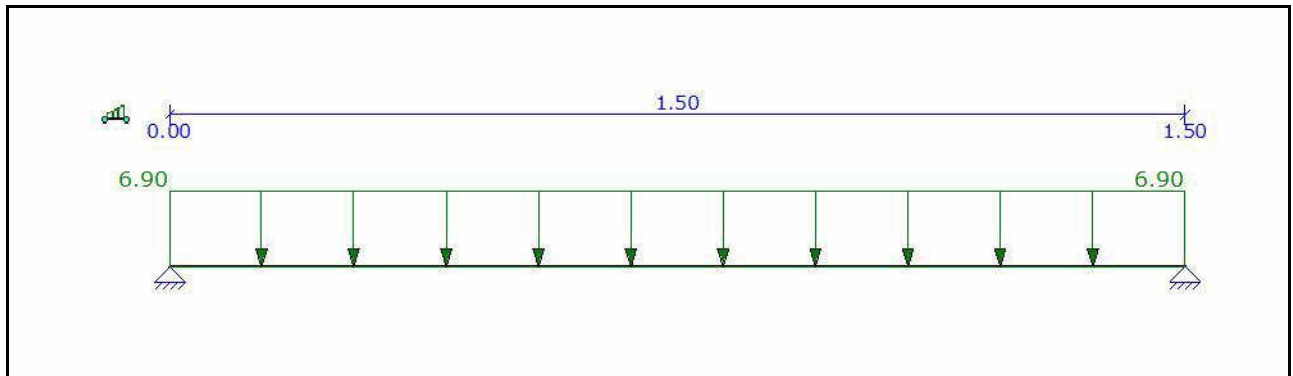
B.G.2: 1E VERDIEPING



B.G.3: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staf of knoop |
|----------------------|-------------|-------------|--------------|-------------|----------|---------------|
| B.G.3: 2e verdieping | | | | | | |
| q | 6,90 | 6,90 | 0,000 | 1,500(L) | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 10,35 | kN | | | |
| - | - | - | m | m | - | - |

B.G.3: 2E VERDIEPING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 | Fu.C.3 (Overslaan) | Fu.C.4 (Overslaan) |
|-------|---------------|--------|--------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.22 | 1.08 | 1.08 |
| B.G.2 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 |
| B.G.3 | 2e verdieping | 1.35 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 (Overslaan) | Ka.C.2 | Ka.C.3 |
|-------|---------------|-----------|-----------------------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.40 | 1.00 | 0.40 |
| B.G.3 | 2e verdieping | - | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 |
|-------|---------------|-----------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.50 | 0.30 |
| B.G.3 | 2e verdieping | - | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 1e verdieping | 0.30 |
| B.G.3 | 2e verdieping | 0.30 |

B.G. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|--------------|---------|------|--------|---------------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -27.20 | 0.00 |
| B.G.1 | O2 | 0.000 | vast | vrij | -27.70 | 0.00 |
| | Som Reacties | | | | -54.90 | |
| | Som Lasten | | | | 54.90 | |
| B.G.2 | O1 | 0.000 | vast | vrij | -5.18 | 0.00 |
| B.G.2 | O2 | 0.000 | vast | vrij | -5.18 | 0.00 |
| | Som Reacties | | | | -10.35 | |
| | Som Lasten | | | | 10.35 | |
| B.G.3 | O1 | 0.000 | vast | vrij | -5.18 | 0.00 |
| B.G.3 | O2 | 0.000 | vast | vrij | -5.18 | 0.00 |
| | Som Reacties | | | | -10.35 | |
| | Som Lasten | | | | 10.35 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

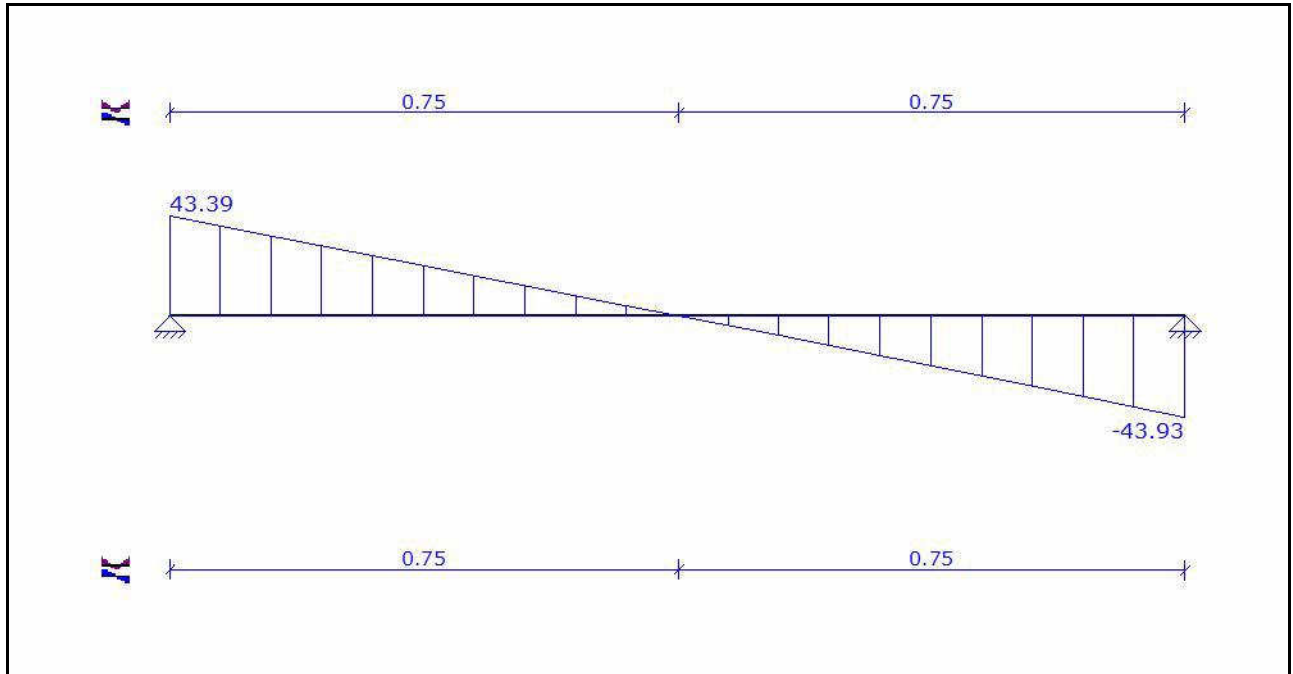
FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|--------------|---------|------|------|---------------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -43.39 | 0.00 |
| Fu.C.1 | O2 | 0.000 | vast | vrij | -43.93 | 0.00 |
| | Som Reacties | | | | -87.31 | |
| | Som Lasten | | | | 87.31 | |
| Fu.C.2 | O1 | 0.000 | vast | vrij | -38.64 | 0.00 |

| | | | | | | |
|--------|---------------------|-------|------|--------|---------------|------|
| Fu.C.2 | O2 | 0.000 | vast | vrij | -39.24 | 0.00 |
| | Som Reacties | | | | -77.88 | |
| | Som Lasten | | | | 77.88 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

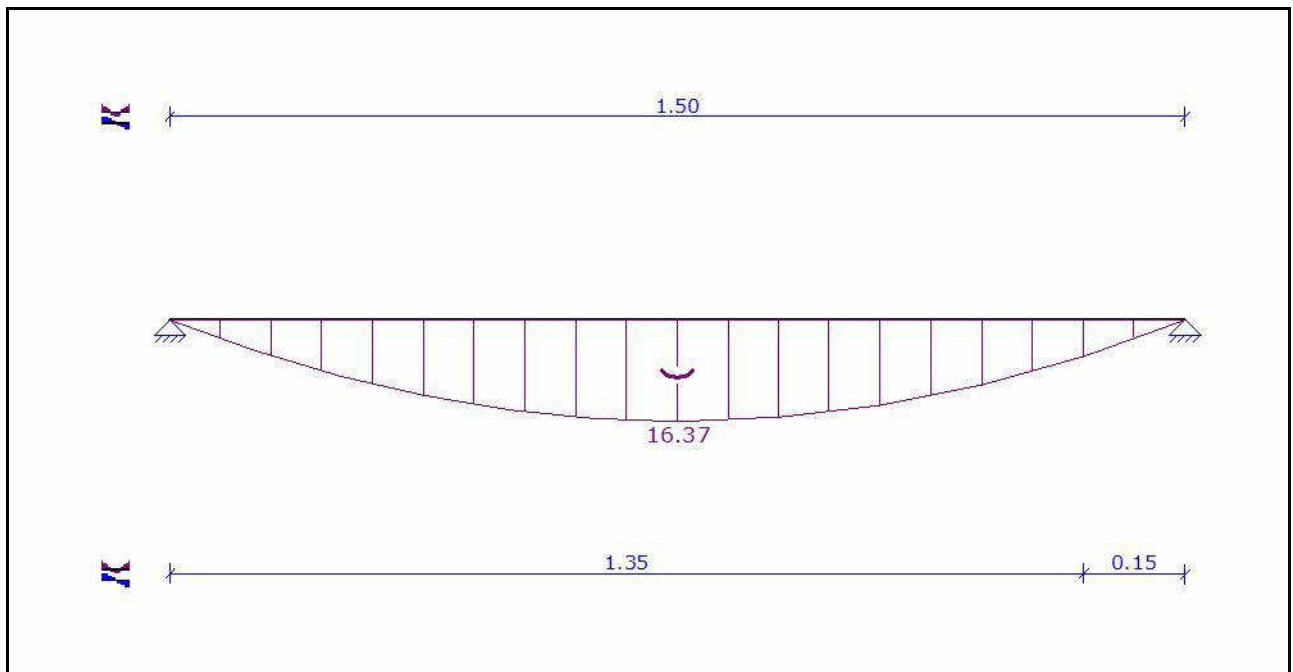
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



STAALTOETS RESULTATEN NEN-EN1993-1-1:2009/NB:2011

Doorsnedetoetsing C1-V1 (0.000-1.500)

Maatgevende combinatie: Fu.C.1 op 0,750 m

N;Ed = 0,0 kN

Vy;Ed = 0,0 kN

Vz;Ed = 0,1 kN

N;Rd = 818,6 kN

Vy;Rd = 247,9 kN

Profielklasse = 1

My;Ed = 16,4 kNm

Mz;Ed = 0,0 kNm

MyRd = 29,0 kNm

$V_z;R_d = 251,2 \text{ kN}$

$M_zR_d = 29,0 \text{ kNm}$

NEN-EN1993-1-1(6.12): $UC = 0,56 < 1$

Kiptoetsing C1-V1 (0.000-1.500)

Equi. profiel: U75x150x12x12

Maatgevende combinatie: Fu.C.2

Instab. curve Kip:d

Aangrijphoogte van de last: -0,069 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund

Beperk. eind: Gesteund

$b\text{-eff}(\text{Begin}) = 0,000$

$b\text{-eff}(\text{Eind}) = 0,000$

Tabel gebruikt NB 6.2

$q = 51,9 \text{ kN/m}$

$= 0,0$

Bovenflens maatgevend

$X_b; l_{st} = 0,000 \text{ m}$

$X_e; l_{st} = 1,500 \text{ m}$

$l_{st} = 1,500 \text{ m}$

$L_{sys} = 1,500 \text{ m}$

$L_g = 1,500 \text{ m}$

$S = 0,000 \text{ m}$

$I_{wa} = 0.0000\text{e}+00 \text{ m}^6$

$C1 = 1,13$

$C2 = 0,45$ (tabel)

$C2(\text{toegepast}) = 0,00$

$C = 3,55$

$M_{cr} = 163,7 \text{ kNm}$

$k_{red} = 1,0$

Profielklasse 1

$\lambda_{da}; M = 0,50$

$\lambda_{da}; T = 0,50$

$\lambda_{da}; MT = 1,00$

$\chi_i; LT(Fu.C.2) = 0,47$

$M; Ed = 14,6 \text{ kNm}$

$UC(y) = 0,00$

$\chi_i; LT, Z = 1,00$

$l_{kip} = 1,500 \text{ m}$

$UC(z) = 0,00$

$M_y; \text{begin} = 0,0 \text{ kNm}$

$M_y; \text{eind} = 0,0 \text{ kNm}$

Controle op Alfa; cr kan worden genegeerd omdat er geen drukspanning optreedt

NEN-EN1993-1-1(6.54): $UC = 0,00 < 1$ Kip N/B, ivm $\lambda_{da}; LT \leq 0,5$

Doorbuigingstoetsing Z' C1-V1 (0.000-1.500)

Constructietype : Vloer

Toets type: Algemeen

$w; c = 0,0 \text{ mm}$

Zeevorm Parabolisch

$w; 1 = 1,6 \text{ mm}$ ($x = 0,751 \text{ mm}$; Fr.C.(w1))

$w; 2 = 0,0 \text{ mm}$

$w; 3 = 0,2 \text{ mm}$ ($x = 0,751 \text{ mm}$; Qu.C.1)

$w; 3 = 0,2 \text{ mm}$ ($x = 0,750 \text{ mm}$; Fr.C.1)

$w; \text{tot} = 1,7 \text{ mm}$

$w; \text{max} = 1,7 \text{ mm}$

Limiet $w; \text{max} = L/250 = 6,0 \text{ mm}$

Limiet $(w; 2 + w; 3) = L/333 = 4,5 \text{ mm}$

$UC(w; \text{max}) = 0,3$

$UC(w; 2 + w; 3) = 0,1$

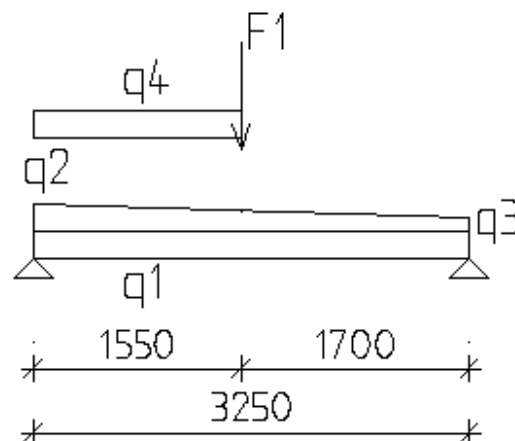
NEN-EN|NEN-EN1990/NB A1.4.2: $UC = 0,29 < 1$

UNITY CHECK NEN-EN1993-1-1:2009/NB:2011

| Veld | Toetsing | Combinatie | Artikel | UC max |
|---------------------|----------------------|------------|-----------------------------|--------|
| C1-V1 (0.000-1.500) | Doorsnede | Fu.C.1 | NEN-EN1993-1-1(6.12) | 0,56 |
| C1-V1 (0.000-1.500) | Kiptoetsing | Fu.C.2 | NEN-EN1993-1-1(6.54) | 0,00 |
| C1-V1 (0.000-1.500) | Doorbuigingstoetsing | Qu.C.1 | NEN-EN NEN-EN1990/NB A1.4.2 | 0,29 |

2.3

Stalen latei 1^e verdieping blok 2 + blok 4

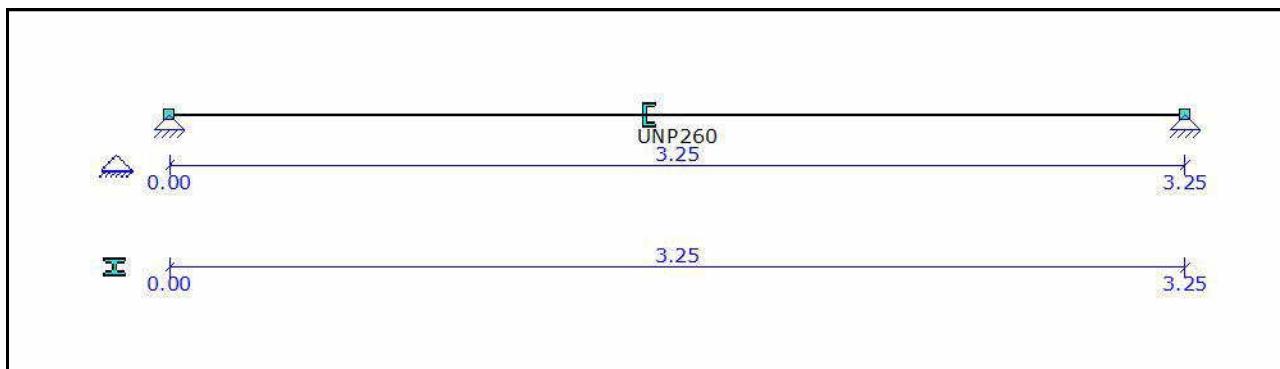


| | | | |
|------------|-----------------------------|--------------|------------------|
| q1p.rep. : | 1 ^e verdieping : | 4,8 * 2,7 : | 13,0 kN/m |
| q1v.rep. : | 1 ^e verdieping : | 2,55 * 2,7 : | 6,9 kN/m |
| q2p.rep. : | kopgevel : | 2,4 * 5,2 : | 12,5 kN/m |
| q3p.rep. : | kopgevel : | 2,4 * 4,4 : | 10,6 kN/m |
| q4p.rep. : | dak : | 0,77 * 2,7 : | 2,1 kN/m |
| | 2 ^e verdieping : | 4,8 * 2,7 : | <u>13,0 kN/m</u> |
| | | | 15,1 kN/m |
| q4v.rep. : | 2 ^e verdieping : | 2,55 * 2,7 : | 6,9 kN/m |
| F1p.rep. : | reactie ligger 2.1 : | | 14,4 kN |
| F1v.rep. : | reactie ligger 2.1 : | | 5,5 kN |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingsen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 2 | 8 | 3 | 13 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(3,250) | UNP260 | 0 | 4.8231e-05 | S235 | 2.1000e+08 | 12.0000e-06 | 0.38 |
| m - | | ° | m4 - | | kN/m2 | Cm | kN/m |

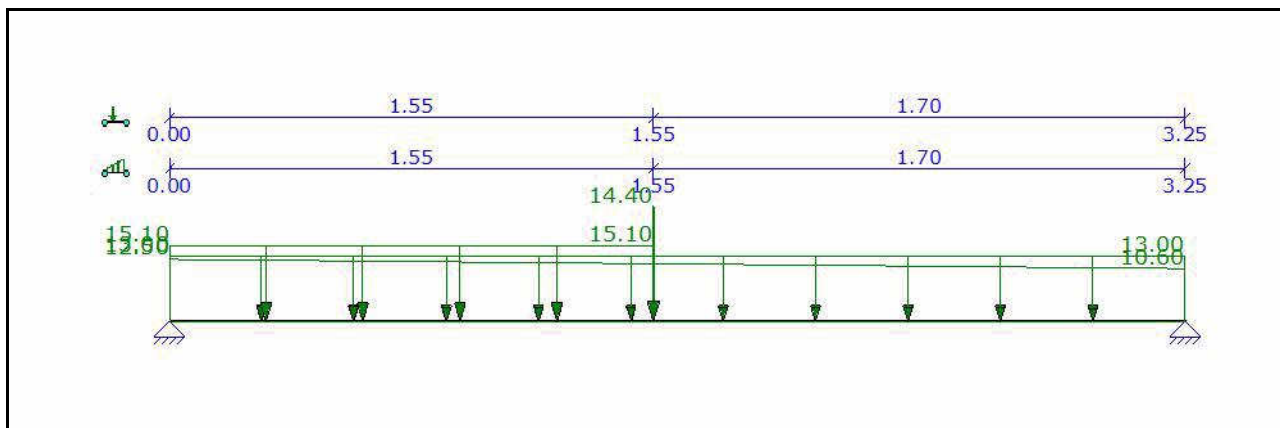
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | L(3,250) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 13,00 | 13,00 | 0,000 | 3,250(L) | Z S1 |
| q | 12,50 | 10,60 | 0,000 | 3,250(L) | Z S1 |
| q | 15,10 | 15,10 | 0,000 | 1,550 | Z S1 |
| F | 14,40 | | 1,550 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 117,59 | kN | | |
| - | - | - | m | m | - - |

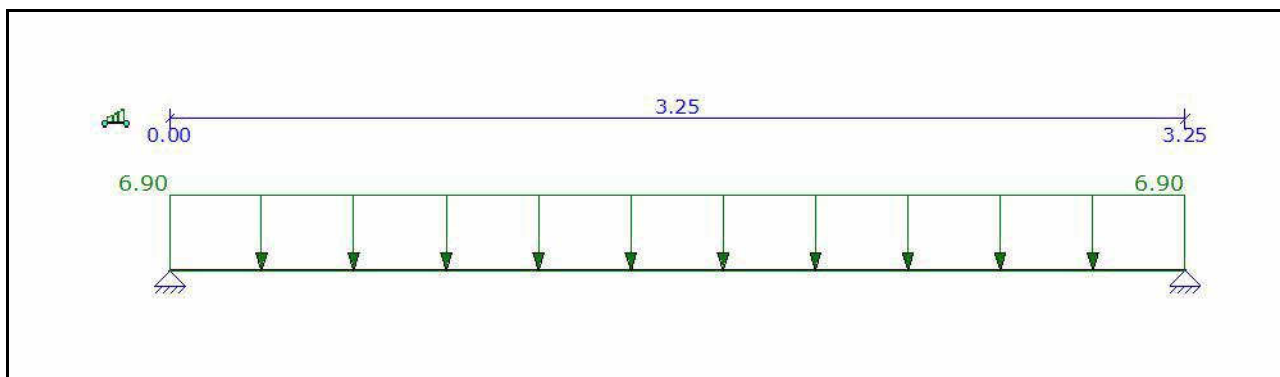
B.G.1: PERMANENT



B.G.2: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.2: 1e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 3,250(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 22,43 | kN | | |
| - | - | - | m | m | -- |

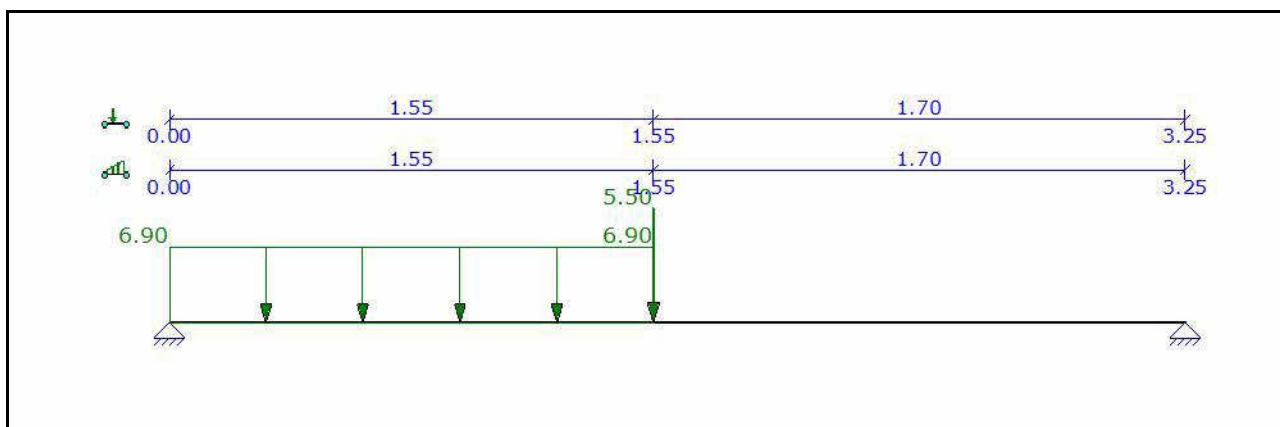
B.G.2: 1E VERDIEPING



B.G.3: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.3: 2e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 1,550 | Z S1 |
| F | 5,50 | | 1,550 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 16,20 | kN | | |
| - | - | - | m | m | -- |

B.G.3: 2E VERDIEPING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 | Fu.C.3 (Overslaan) | Fu.C.4 (Overslaan) |
|-------|---------------|--------|--------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.22 | 1.08 | 1.08 |
| B.G.2 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 |
| B.G.3 | 2e verdieping | 1.35 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 (Overslaan) | Ka.C.2 | Ka.C.3 |
|-------|---------------|-----------|-----------------------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.40 | 1.00 | 0.40 |
| B.G.3 | 2e verdieping | - | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 |
|-------|---------------|-----------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.50 | 0.30 |
| B.G.3 | 2e verdieping | - | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 1e verdieping | 0.30 |
| B.G.3 | 2e verdieping | 0.30 |

B.G. OPLEGREACTIES

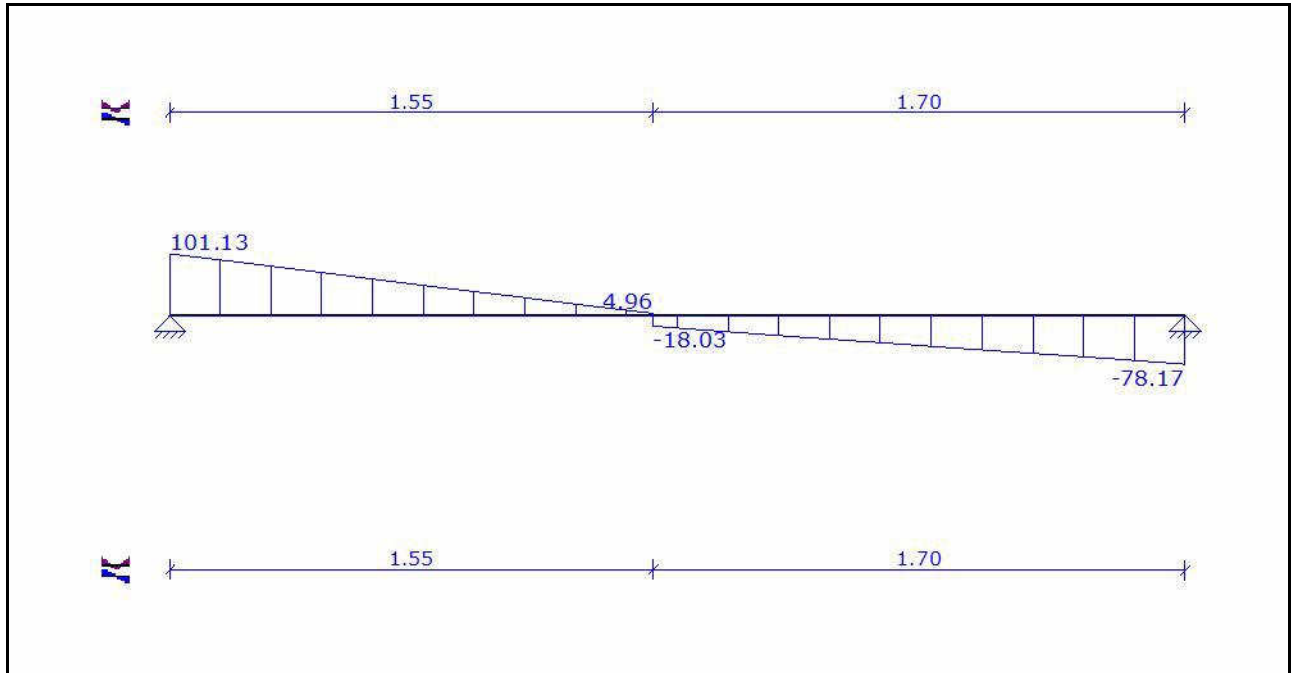
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|---------|------|--------|----------------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -65.76 | 0.00 |
| B.G.1 | O2 | 0.000 | vast | vrij | -51.83 | 0.00 |
| | Som Reacties | | | | -117.59 | |
| | Som Lasten | | | | 117.59 | |
| B.G.2 | O1 | 0.000 | vast | vrij | -11.21 | 0.00 |
| B.G.2 | O2 | 0.000 | vast | vrij | -11.21 | 0.00 |
| | Som Reacties | | | | -22.43 | |
| | Som Lasten | | | | 22.43 | |
| B.G.3 | O1 | 0.000 | vast | vrij | -11.02 | 0.00 |
| B.G.3 | O2 | 0.000 | vast | vrij | -5.17 | 0.00 |
| | Som Reacties | | | | -16.20 | |
| | Som Lasten | | | | 16.20 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|----------------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -101.13 | 0.00 |
| Fu.C.1 | O2 | 0.000 | vast | vrij | -78.17 | 0.00 |
| | Som Reacties | | | | -179.30 | |
| | Som Lasten | | | | 179.30 | |
| Fu.C.2 | O1 | 0.000 | vast | vrij | -91.91 | 0.00 |
| Fu.C.2 | O2 | 0.000 | vast | vrij | -71.82 | 0.00 |
| | Som Reacties | | | | -163.73 | |
| | Som Lasten | | | | 163.73 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

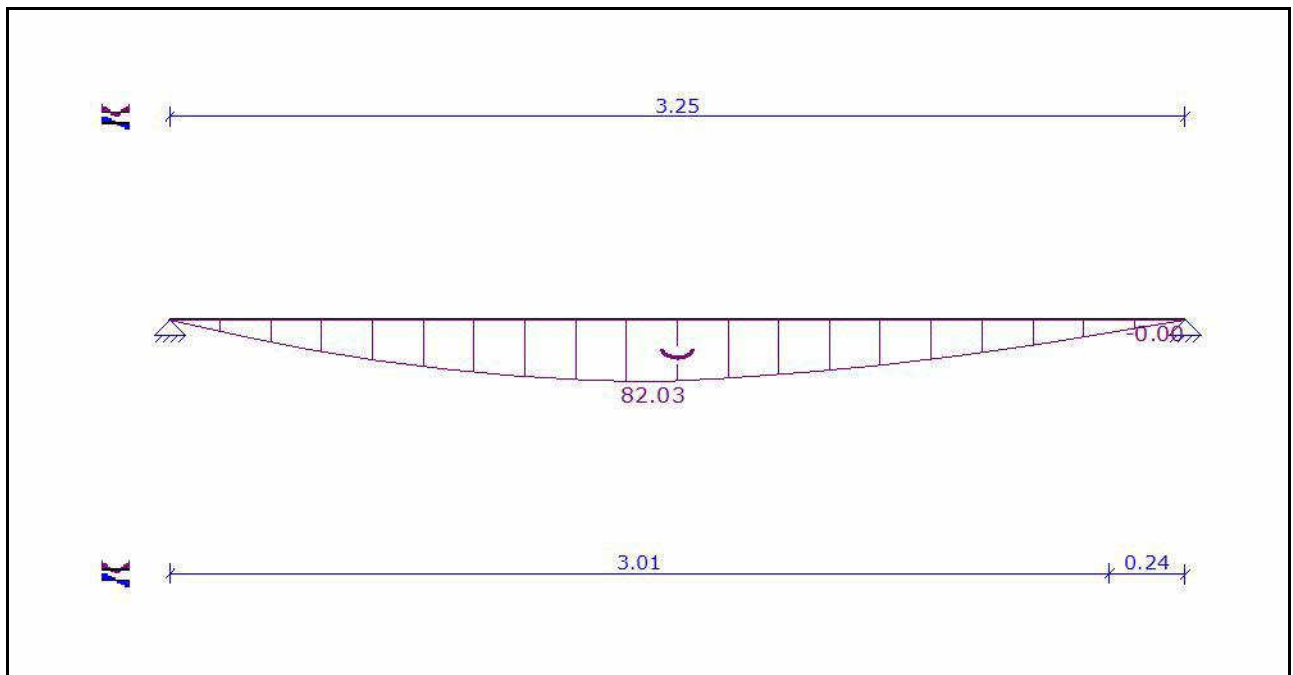
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



STAALTOETS RESULTATEN NEN-EN1993-1-1:2009/NB:2011

Doorsnedetoetsing C1-V1 (0.000-3.250)

Maatgevende combinatie: Fu.C.1 op 1,550 m

N;Ed = 0,0 kN

Vy;Ed = 0,0 kN

Vz;Ed = 5,0 kN

N;Rd = 1.134,4 kN

Vy;Rd = 340,2 kN

Vz;Rd = 358,6 kN

Profielklasse = 1

My;Ed = 82,0 kNm

Mz;Ed = 0,0 kNm

MyRd = 103,9 kNm

MzRd = 22,9 kNm

NEN-EN1993-1-1(6.1): UC = 0,79 < 1

Doorbuigingstoetsing Z' C1-V1 (0.000-3.250)

Constructietype : Vloer

Toets type: Algemeen

w;c = 0,0 mm
w;1 = 5,5 mm (x = 1,592 mm; Fr.C.(w1))
w;3 = 0,6 mm (x = 1,592 mm; Qu.C.1)
w;tot; = 6,1 mm
w;max = 6,1 mm
Limiet w;max = L/250 = 13,0 mm
UC(w;max) = 0,5
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0,47<1

Zeegvorm 3-Punt
w;2 = 0.0 mm
w;3 = 0,7 mm (x = 1,593 mm; Fr.C.1)

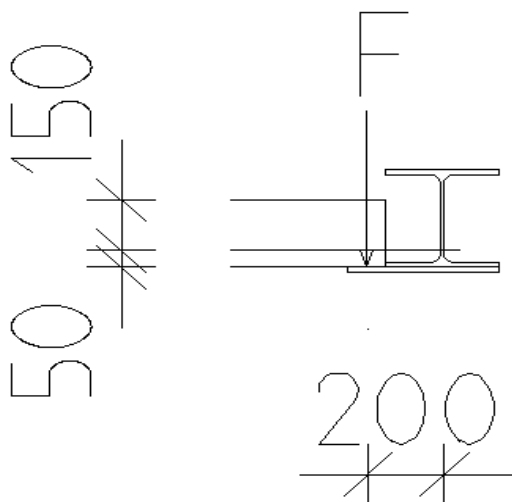
Limiet (w;2+w;3) = L/333 = 9,8 mm
UC(w;2+w;3) = 0,1

UNITY CHECK NEN-EN1993-1-1:2009/NB:2011

| Veld | Toetsing | Combinatie | Artikel | UC max |
|---------------------|-----------------------|------------|-----------------------------|--------|
| C1-V1 (0.000-3.250) | Doorsnede | Fu.C.1 | NEN-EN1993-1-1(6.1) | 0,79 |
| C1-V1 (0.000-3.250) | Doorbuigingsstoetsing | Qu.C.1 | NEN-EN NEN-EN1990/NB A1.4.2 | 0,47 |

2.3.1 Verankering excentriciteit belasting

Ten gevolge van de excentrische aansluiting in de plaat zal er een trekkracht ontstaan onderin het profiel. Dit dient te worden opgenomen door een anker in de kanaalplaat.



In de weergave is een HE-profiel getekend. In de berekening is dit een UNP

Totale belasting op profiel = 179,3 kN. Bij een lengte van 3,25 meter is dit 55,2 kN/m

$F_d = 55,2 \text{ kN/m}$

Trek in anker = $55,2 * 0,2 / (0,15) = 73,6 \text{ kN}$

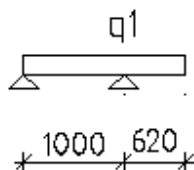
$A_{ben.} = 73600 / 235 = 313 \text{ mm}^2$

$A_{toe} = \emptyset 16-600 \text{ mm} = 335 \text{ mm}^2 \text{ per m}$

$M_{plaat} = 55,2 * 0,05 = 2,76 \text{ kNm} \Rightarrow 2,76 * 10^6 * 6 / (1000 * 15^2) = 73,6 \text{ N/mm}^2$

2.4

stalen latei 2^e verdieping tpv bouwmuur



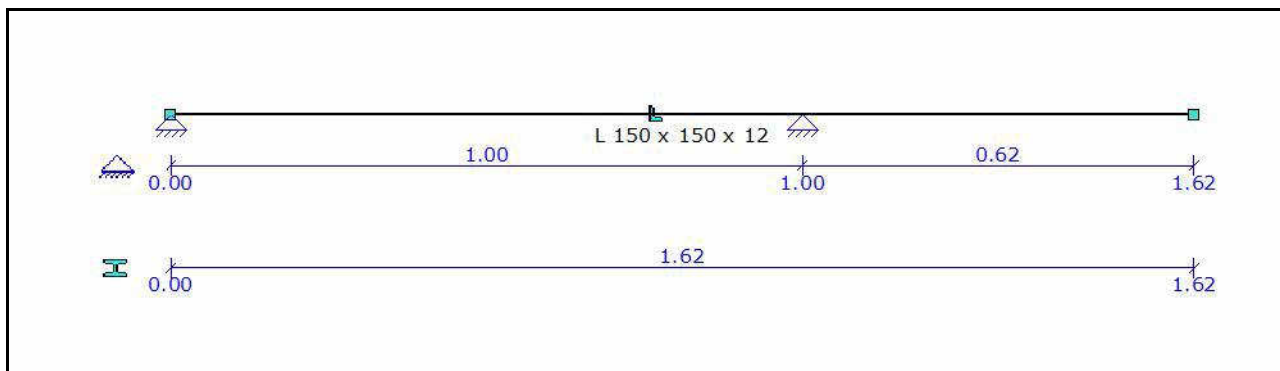
q1p.rep. : dak : $0,77 * 2,7 :$ 2,1 kN/m
 2^e verdieping : $4,8 * 2,7 :$ 13,0 kN/m
 15,1 kN/m

q1v.rep. : 2^e verdieping : $2,55 * 2,7 :$ 6,9 kN/m

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 2 | 1 | 5 | 26 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|------------------|------|----------------------------|------------|-----------------|---------|
| 0,000 - L(1,620) | L 150 x 150 x 12 | 0 | 7.3692e-06 S235 | 2.1000e+08 | 12.0000e-06 | 0.27 |
| m - | | ° | m4 - | kN/m2 | C°m | kN/m |

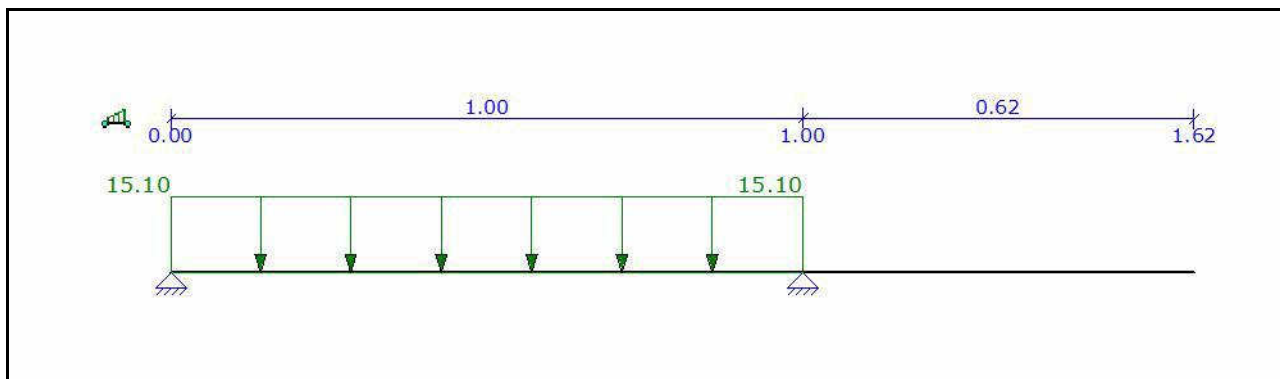
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | 1,000 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 15,10 | 15,10 | 0,000 | 1,000 | Z S1 |
| Som lasten | X: 0,00 | kN Z: 15,10 | kN | | |
| - | - | - | m | m | - - |

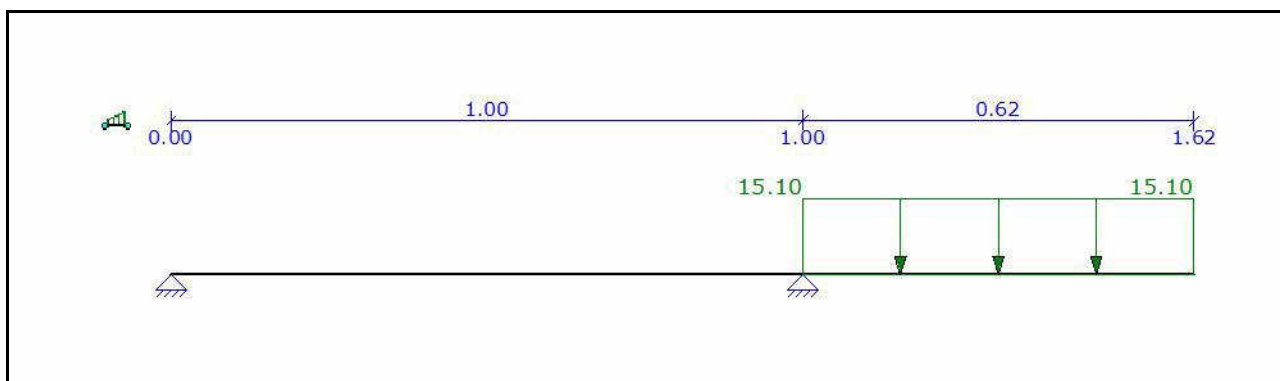
B.G.1: PERMANENT



B.G.2: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|------------|--------------|-------------|-------------------------|
| B.G.2: Permanent | | | | | |
| q | 15,10 | 15,10 | 1,000 | 1,620(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 9,36 | kN | | |
| - | - | - | m | m | - - |

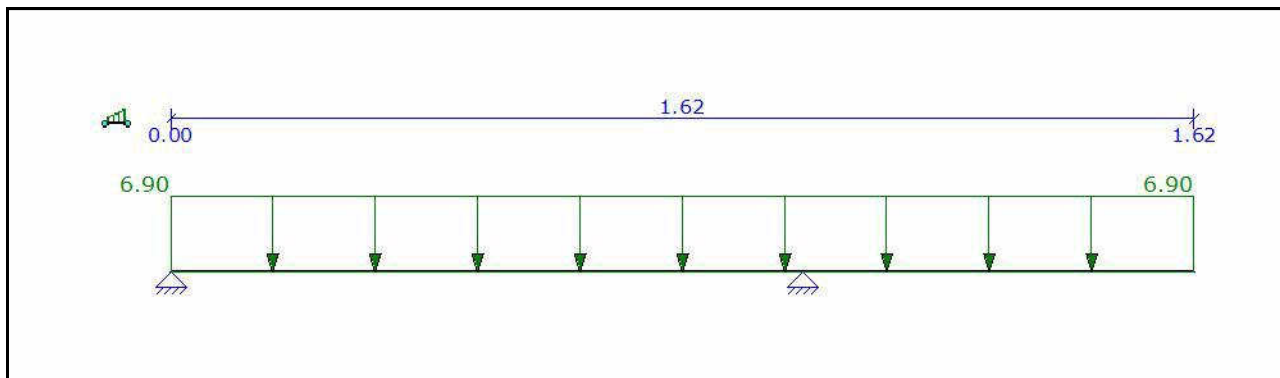
B.G.2: PERMANENT



B.G.3: VERDEELDE VERANDERLIJKE BELASTING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|---|-------------|-------------|--------------|-------------|-------------------------|
| B.G.3: Verdeelde veranderlijke belasting (Generatief) | | | | | |
| q | 6,90 | 6,90 | 0,000 | 1,620(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 11,18 | kN | | |
| - | - | - | m | m | - - |

B.G.3: VERDEELDE VERANDERLIJKE BELASTING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 (Overslaan) | Fu.C.2 (Overslaan) n) | Fu.C.3 (Overslaan) n) | Fu.C.4 (Overslaan) n) | Fu.C.5 (Overslaan) n) | Fu.C.6 (Overslaan) n) | Fu.C.7 | Fu.C.8 (Overslaan) |
|---------|-----------------------------------|-----------------------|------------------------------|-----------------------------|------------------------------|------------------------------|-----------------------------|--------|-----------------------|
| B.G.1 | Permanent | 0.90 | 1.22 | 0.90 | 1.22 | 0.90 | 1.22 | 0.90 | 1.22 |
| B.G.2 | Permanent | 1.08 | 0.90 | 1.22 | 0.90 | 1.22 | 0.90 | 1.22 | 0.90 |
| B.G.3 | Verdeelde veranderlijke belasting | - | - | - | - | - | - | - | - |
| B.G.3.1 | Verdeelde veranderlijke belasting | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 0.54 | - | - |
| B.G.3.2 | Verdeelde veranderlijke belasting | 1.35 | 1.35 | 0.54 | 0.54 | - | - | 0.54 | 0.54 |
| B.G. | Omschrijving | Fu.C.9 (Overslaan) | Fu.C.10 (Overslaan) n) | Fu.C.11 | Fu.C.12 (Overslaan) n) | Fu.C.13 (Overslaan) n) | | | |
| B.G.1 | Permanent | 0.90 | 1.08 | 0.90 | 1.08 | 1.08 | | | |
| B.G.2 | Permanent | 1.08 | 0.90 | 1.08 | 0.90 | 0.90 | | | |
| B.G.3 | Verdeelde veranderlijke belasting | - | - | - | - | - | | | |
| B.G.3.1 | Verdeelde veranderlijke belasting | 1.35 | 1.35 | - | - | 1.35 | | | |
| B.G.3.2 | Verdeelde veranderlijke belasting | - | - | 1.35 | 1.35 | 1.35 | | | |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 | Ka.C.5 | Ka.C.6 |
|---------|-----------------------------------|-----------|--------|--------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.3 | Verdeelde veranderlijke belasting | - | - | - | - | - | - | - |
| B.G.3.1 | Verdeelde veranderlijke belasting | - | 0.40 | - | 0.40 | 1.00 | - | 1.00 |
| B.G.3.2 | Verdeelde veranderlijke belasting | - | - | 0.40 | 0.40 | - | 1.00 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|---------|-----------------------------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.3 | Verdeelde veranderlijke belasting | - | - | - | - |
| B.G.3.1 | Verdeelde veranderlijke belasting | - | 0.50 | - | 0.50 |
| B.G.3.2 | Verdeelde veranderlijke belasting | - | - | 0.50 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|---------|-----------------------------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | Permanent | 1.00 |
| B.G.3 | Verdeelde veranderlijke belasting | - |
| B.G.3.1 | Verdeelde veranderlijke belasting | 0.30 |
| B.G.3.2 | Verdeelde veranderlijke belasting | 0.30 |

B.G. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|---------|---------------------|---------|------|--------|---------------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -7.55 | 0.00 |
| B.G.1 | O2 | 1.000 | vast | vrij | -7.55 | 0.00 |
| | Som Reacties | | | | -15.10 | |
| | Som Lasten | | | | 15.10 | |
| B.G.2 | O1 | 0.000 | vast | vrij | 2.90 | 0.00 |
| B.G.2 | O2 | 1.000 | vast | vrij | -12.26 | 0.00 |
| | Som Reacties | | | | -9.36 | |
| | Som Lasten | | | | 9.36 | |
| B.G.3.1 | O1 | 0.000 | vast | vrij | -3.45 | 0.00 |
| B.G.3.1 | O2 | 1.000 | vast | vrij | -3.45 | 0.00 |
| | Som Reacties | | | | -6.90 | |
| | Som Lasten | | | | 6.90 | |
| B.G.3.2 | O1 | 0.000 | vast | vrij | 1.33 | 0.00 |
| B.G.3.2 | O2 | 1.000 | vast | vrij | -5.60 | 0.00 |
| | Som Reacties | | | | -4.28 | |
| | Som Lasten | | | | 4.28 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

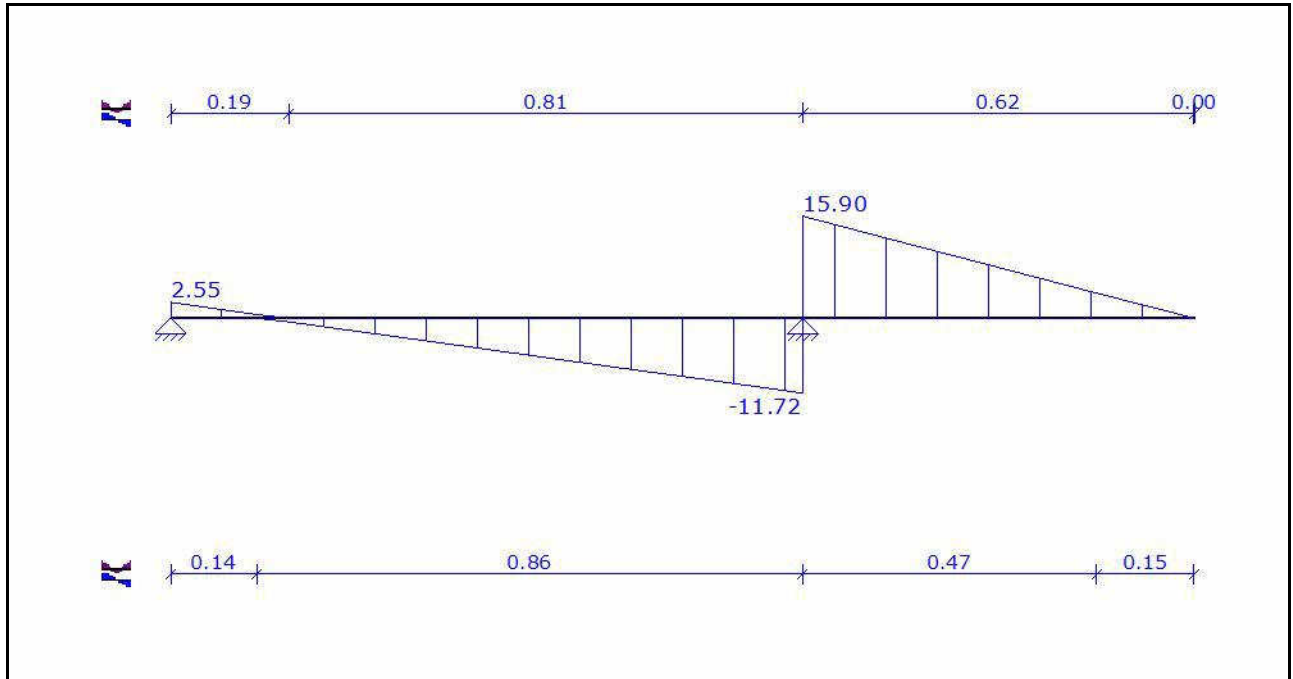
FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|------|---------------|------|
| Fu.C.7 | O1 | 0.000 | vast | vrij | -2.55 | 0.00 |
| Fu.C.7 | O2 | 1.000 | vast | vrij | -24.72 | 0.00 |
| | Som Reacties | | | | -27.27 | |
| | Som Lasten | | | | 27.27 | |

| | | | | | | |
|---------------------|----|----------|-------------|---------------|---------------|------------|
| Fu.C.11 | O1 | 0.000 | vast | vrij | -1.87 | 0.00 |
| Fu.C.11 | O2 | 1.000 | vast | vrij | -27.62 | 0.00 |
| Som Reacties | | | | | -29.49 | |
| Som Lasten | | | | | 29.49 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

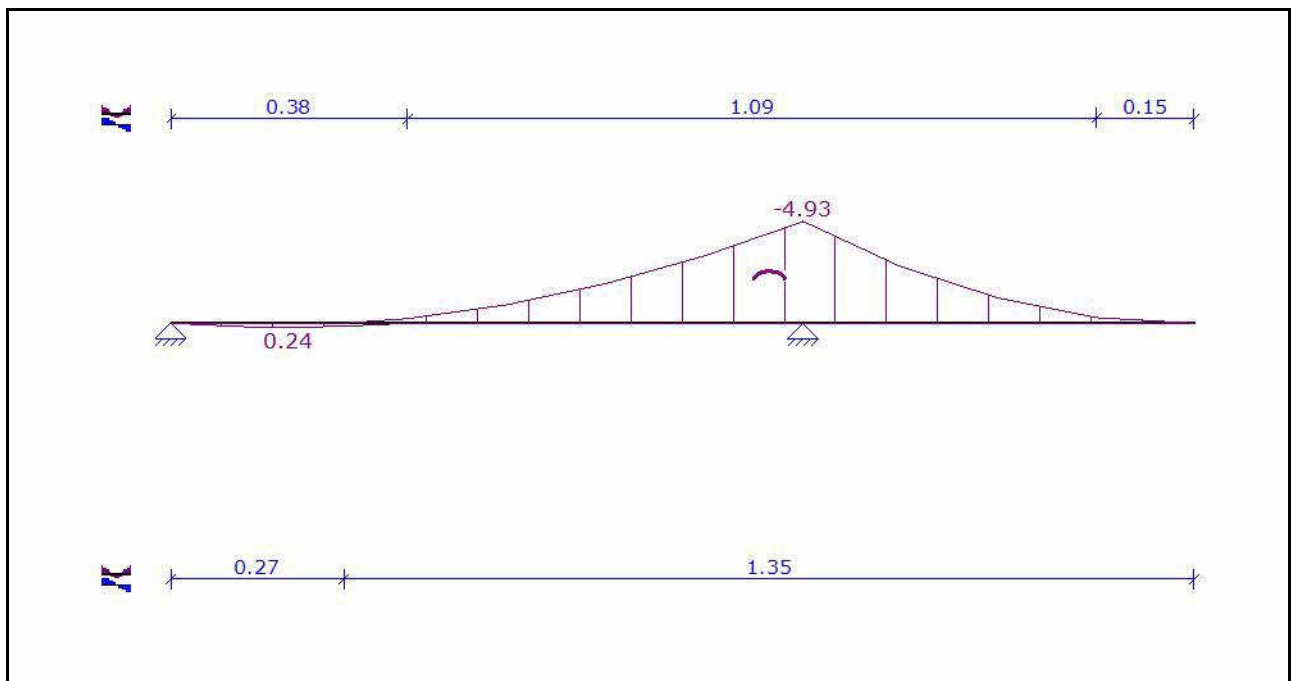
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



STAALTOETS RESULTATEN NEN-EN1993-1-1:2009/NB:2011

Doorsnedetoetsing C1-V1 (0.000-1.000)

Maatgevende combinatie: Fu.C.11 op 1,000 m

N;Ed = 0,0 kN

Vy;Ed = 0,0 kN

Vz;Ed = -11,7 kN

N;Rd = 818,6 kN

Vy;Rd = 247,9 kN

Vz;Rd = 251,2 kN

Profielklasse = 1

My;Ed = -4,9 kNm

Mz;Ed = 0,0 kNm

MyRd = 29,0 kNm

MzRd = 29,0 kNm

NEN-EN1993-1-1(6.12): UC = 0,17 < 1

Kiptoetsing C1-V1 (0.000-1.000)

Equi. profiel: U75x150x12x12

Maatgevende combinatie: Fu.C.11

Aangrijphoogte van de last: -0,069 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund

Beperk. eind: Gesteund

Tabel gebruikt NB 8.1

= 0,0kN/m

Bovenflens maatgevend

Xb;lst = 0,000 m

Lsys = 1,000 m

Lg = 1,000 m

C1 = 2,30

C2 = 1,55 (tabel)

Mcr = 499,9 kNm

kred = 1.0

Lamda;M = 0,28

Lamda;T = 0,72

Chi;LT(Fu.C.11) = 0,47

M;Ed = 0,1 kNm

Chi;LT,Z = 1,00

lkip = 1,000 m

My;begin = 0,0 kNm

My;eind = -4,9 kNm

Controle op Alfa;cr kan worden genegeerd omdat er geen drukspanning optreedt

NEN-EN1993-1-1(6.54): UC = 0,00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Instab. curve Kip:d

b-eff(Begin) = 0,000

b-eff(Eind) = 0,000

= 0,0

Xe;lst = 1,000 m

lst = 1,000 m

S = 0,000 m

Iwa = 0.0000e+00 m6

C2(toegepast) = 0,00

C = 7,23

Lamda;MT = 1,00

Profielklasse 1

UC(y) = 0,00

UC(z) = 0,00

Doorbuigingsstoetsing Z' C1-V1 (0.000-1.000)

Constructietype : Vloer

w;c = 0,0 mm

w;1 = 0,0 mm (x = 0,306 mm; Fr.C.(w1))

w;3 = 0,0 mm (x = 0,306 mm; Qu.C.1)

w;tot; = 0,0 mm

w;max = 0,0 mm

Limiet w;max = L/250 = 4,0 mm

UC(w;max) = 0,0

NEN-EN1990/NB A1.4.2: UC = 0,01 < 1

Toets type: Algemeen

Zeegvorm 3-Punt

w;2 = 0,0 mm

w;3 = 0,0 mm (x = 0,571 mm; Fr.C.1)

Limiet (w;2+w;3) = L/333 = 3,0 mm

UC(w;2+w;3) = 0,0

Doorsnedetoetsing C1-V2 (1.000-1.620)

Maatgevende combinatie: Fu.C.11 op 0,000 m

N;Ed = 0,0 kN

Vy;Ed = 0,0 kN

Vz;Ed = 15,9 kN

N;Rd = 818,6 kN

Vy;Rd = 247,9 kN

Vz;Rd = 251,2 kN

Profielklasse = 1

My;Ed = -4,9 kNm

Mz;Ed = 0,0 kNm

MyRd = 29,0 kNm

MzRd = 29,0 kNm

NEN-EN1993-1-1(6.12): UC = 0,17 < 1

Kiptoetsing C1-V2 (1.000-1.620)

Equi. profiel: U75x150x12x12

Maatgevende combinatie: Fu.C.11

Aangrijphoogte van de last: -0,069 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund

Beperk. eind: Overstek

Tabel gebruikt NB 6.6

q = 25,6kN/m

Bovenflens maatgevend

Xb;lst = 0,000 m

Lsys = 0,620 m

Lg = 0,620 m

C1 = 1,68

C2 = 0,78 (tabel)

Mcr = 589,0 kNm

kred = 1.0

Lamda;M = 0,26

Lamda;T = 0,74

Instab. curve Kip:d

b-eff(Begin) = 0,000

b-eff(Eind) = 0,000

= 0,0

Xe;lst = 0,620 m

lst = 0,508 m

S = 0,000 m

Iwa = 0.0000e+00 m6

C2(toegepast) = 0,00

C = 5,28

Lamda;MT = 1,00

Profielklasse 1

Chi;LT(Fu.C.11) = 0,47 M;Ed = 0,0 kNm UC(y) = 0,00
Chi;LT,Z = 1,00 lkip = 0,620 m UC(z) = 0,00
My;begin = -4,9 kNm My;eind = 0,0 kNm

Controle op Alfa;cr kan worden genegeerd omdat er geen drukspanning optreedt
NEN-EN1993-1-1(6.54): UC = 0,00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Doorbuigingstoetsing Z' C1-V2 (1.000-1.620)

Constructietype : Vloer

Toets type: Algemeen

w;c = 0,0 mm

Zeevorm Parabolisch

w;1 = 0,0 mm (x = 0,310 mm; Fr.C.(w1))

w;2 = 0.0 mm

w;3 = 0,0 mm (x = 0,310 mm; Qu.C.1)

w;3 = 0,0 mm (x = 0,229 mm; Fr.C.3)

w;tot; = 0,0 mm

w;max = 0,0 mm

Limiet w;max = L/250 = 2,5 mm

Limiet (w;2+w;3) = L/333 = 1,9 mm

UC(w;max) = 0,0

UC(w;2+w;3) = 0,0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0,01 < 1

UNITY CHECK NEN-EN1993-1-1:2009/NB:2011

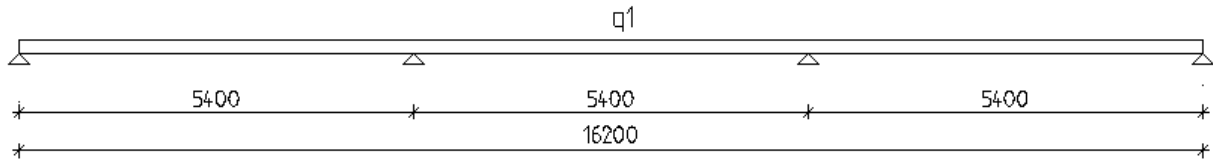
| Veld | Toetsing | Combinatie | Artikel | UC max |
|---------------------|----------------------|------------|-----------------------------|--------|
| C1-V1 (0.000-1.000) | Doorsnede | Fu.C.11 | NEN-EN1993-1-1(6.12) | 0,17 |
| C1-V1 (0.000-1.000) | Kiptoetsing | Fu.C.11 | NEN-EN1993-1-1(6.54) | 0,00 |
| C1-V1 (0.000-1.000) | Doorbuigingstoetsing | Fr.C.1 | NEN-EN NEN-EN1990/NB A1.4.2 | 0,01 |
| C1-V2 (1.000-1.620) | Doorsnede | Fu.C.11 | NEN-EN1993-1-1(6.12) | 0,17 |
| C1-V2 (1.000-1.620) | Kiptoetsing | Fu.C.11 | NEN-EN1993-1-1(6.54) | 0,00 |
| C1-V2 (1.000-1.620) | Doorbuigingstoetsing | Qu.C.1 | NEN-EN NEN-EN1990/NB A1.4.2 | 0,01 |

3

Gewichtsberekening

3.1

Achtergevelbalk algemeen

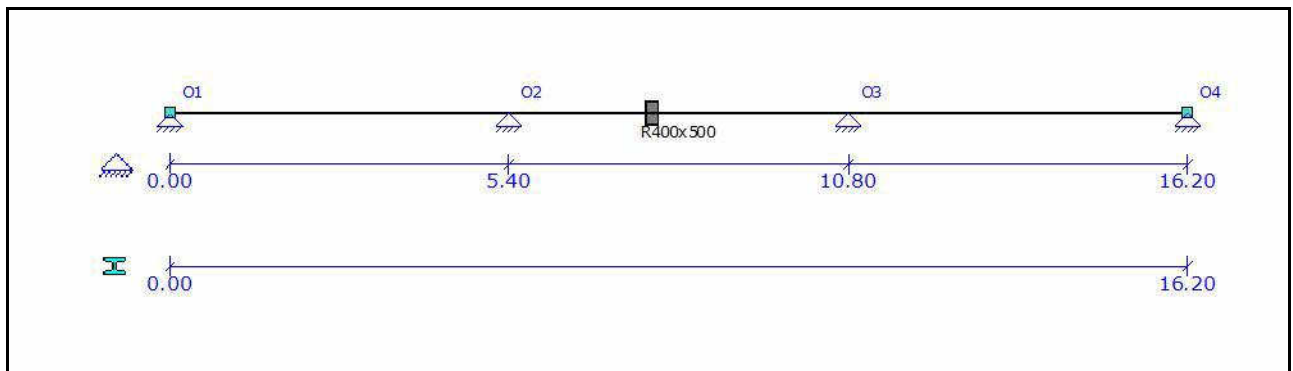


| | | | |
|-----------|-------------|---------------------|-----------------|
| qp.rep. : | gevel : | $0,7 * 4,0 * 6,5 :$ | 18,2 kN/m |
| | | $0,3 * 0,7 * 6,5 :$ | 1,4 kN/m |
| | fundering : | | <u>4,8 kN/m</u> |
| | | | 24,4 kN/m |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingsen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 4 | 1 | 1 | 7 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|-------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(16,200) | R400x500 | 0 | 4.1667e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |
| m | - | ° | m4 | - | kN/m2 | C°m | kN/m |

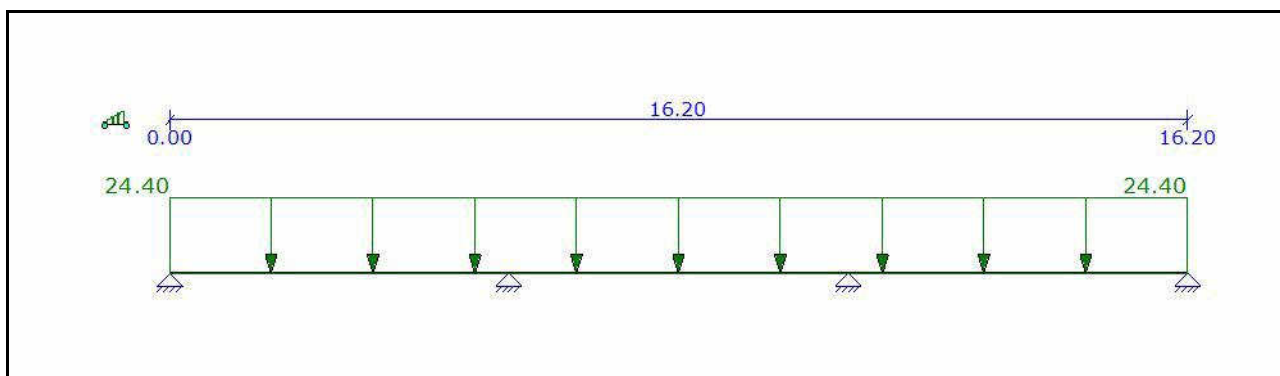
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|-----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | 5,400 | vast | vrij |
| O3 | 10,800 | vast | vrij |
| O4 | L(16,200) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staf of knoop |
|------------------|-------------|--------------|--------------|-------------|----------|---------------|
| B.G.1: Permanent | | | | | | |
| q | 24,40 | 24,40 | 0,000 | 16,200(L) | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 395,28 | kN | | | |
| - | - | - | m | m | - | - |

B.G.1: PERMANENT



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.22 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.00 |

B.G. OPLEGREACTIES

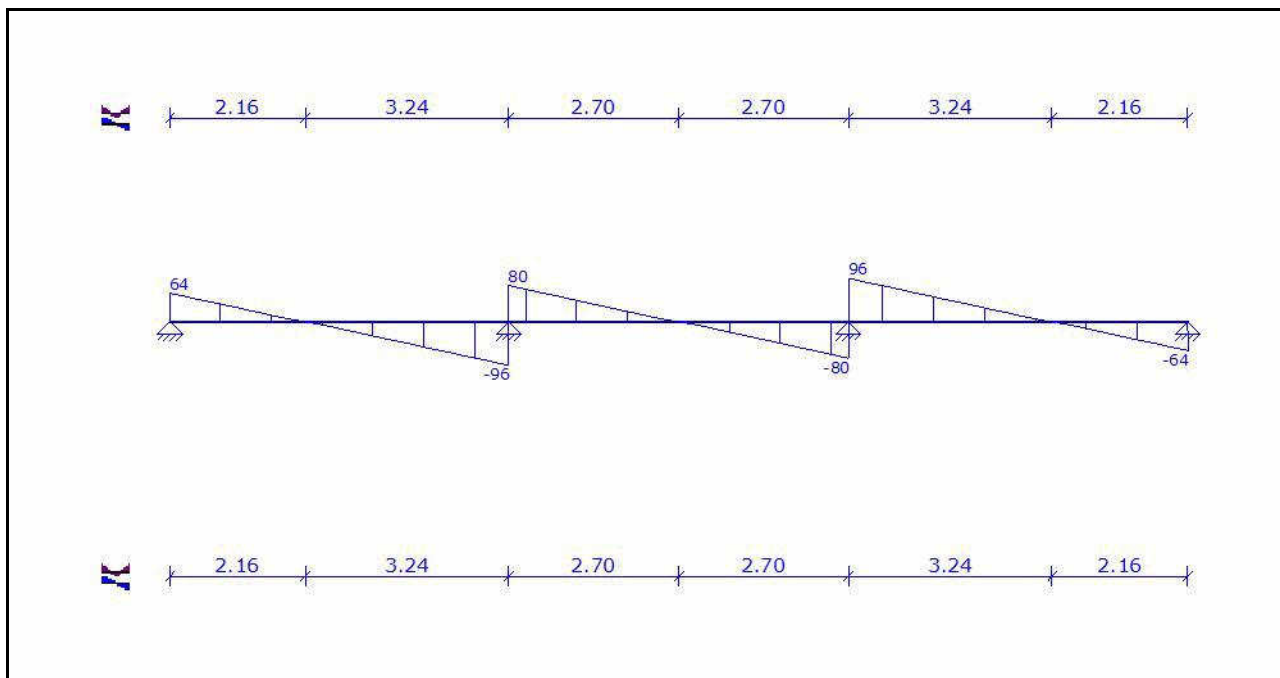
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|---------|------|--------|----------------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -52.70 | 0.00 |
| B.G.1 | O2 | 5.400 | vast | vrij | -144.94 | 0.00 |
| B.G.1 | O3 | 10.800 | vast | vrij | -144.94 | 0.00 |
| B.G.1 | O4 | 0.000 | vast | vrij | -52.70 | 0.00 |
| | Som Reacties | | | | -395.28 | |
| | Som Lasten | | | | 395.28 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|----------------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -64.04 | 0.00 |
| Fu.C.1 | O2 | 5.400 | vast | vrij | -176.10 | 0.00 |
| Fu.C.1 | O3 | 10.800 | vast | vrij | -176.10 | 0.00 |
| Fu.C.1 | O4 | 0.000 | vast | vrij | -64.04 | 0.00 |
| | Som Reacties | | | | -480.27 | |
| | Som Lasten | | | | 480.27 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

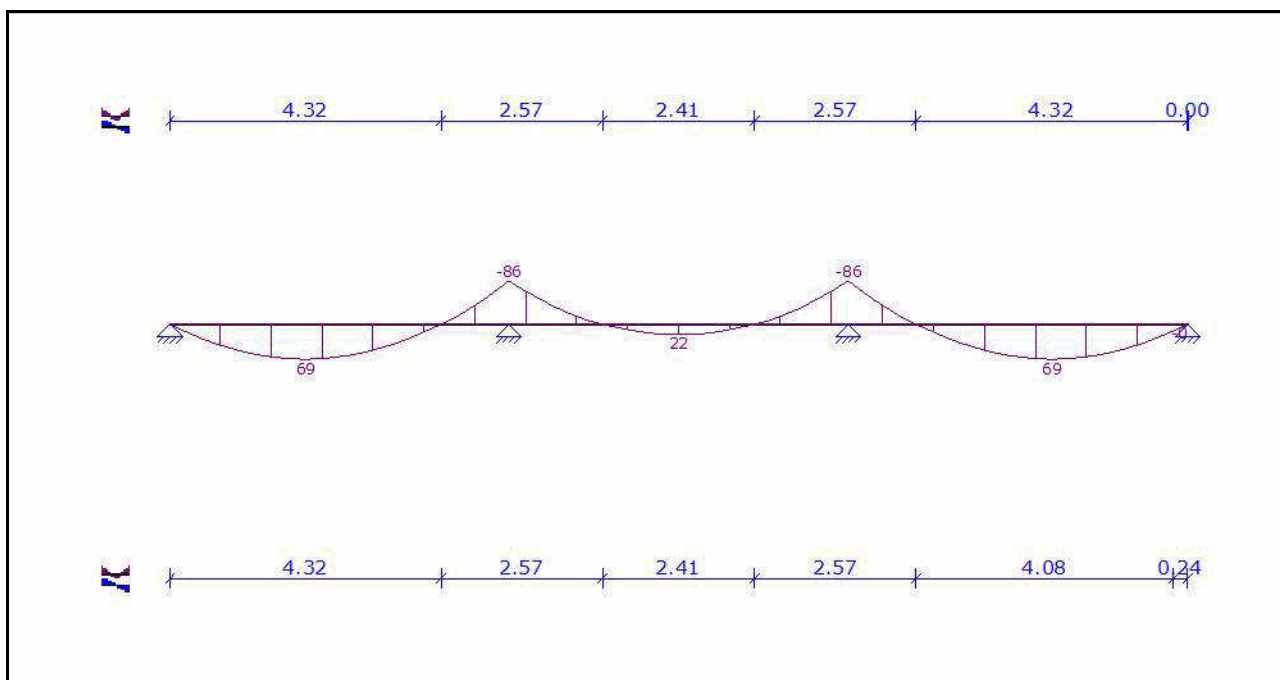
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staal | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|--------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 16.200 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: | 400 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVENS

| | | | | | | | | | | | Ligger 1 |
|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|----------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 0.000 | O1 | n.v.t. | 0,000 | | | Ja | 10,37 | 0,00 | Niet afgetopt | Niet |
| | 5.400 | O2 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 10.800 | O3 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 16.200 | O4 | n.v.t. | 0,000 | | | Ja | 10,37 | 0,00 | Niet afgetopt | Niet |
| afgetopt | | | | | | | | | | | |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 10.37 | 4R12 | Mti | 53 | 452 | | 27,72 | 300,00 |
| 5.400 | 86.45 | 4R12 | 1R10 | 455 | 531 | | 9,17 | 113,76 |
| 10.800 | 86.45 | 4R12 | 1R10 | 455 | 531 | | 9,17 | 113,76 |
| 16.200 | 10.37 | 4R12 | Mti | 53 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 2.160 | 69.16 | 5R10 | | 360 | 393 | | 8,46 | 88,59 |
| 8.100 | 21.61 | 5R10 | | 110 | 393 | | 28,36 | 300,00 |
| 14.040 | 69.16 | 5R10 | | 360 | 393 | | 8,46 | 88,59 |
| m | kNm | - | - | mm | mm | - | mm | mm |

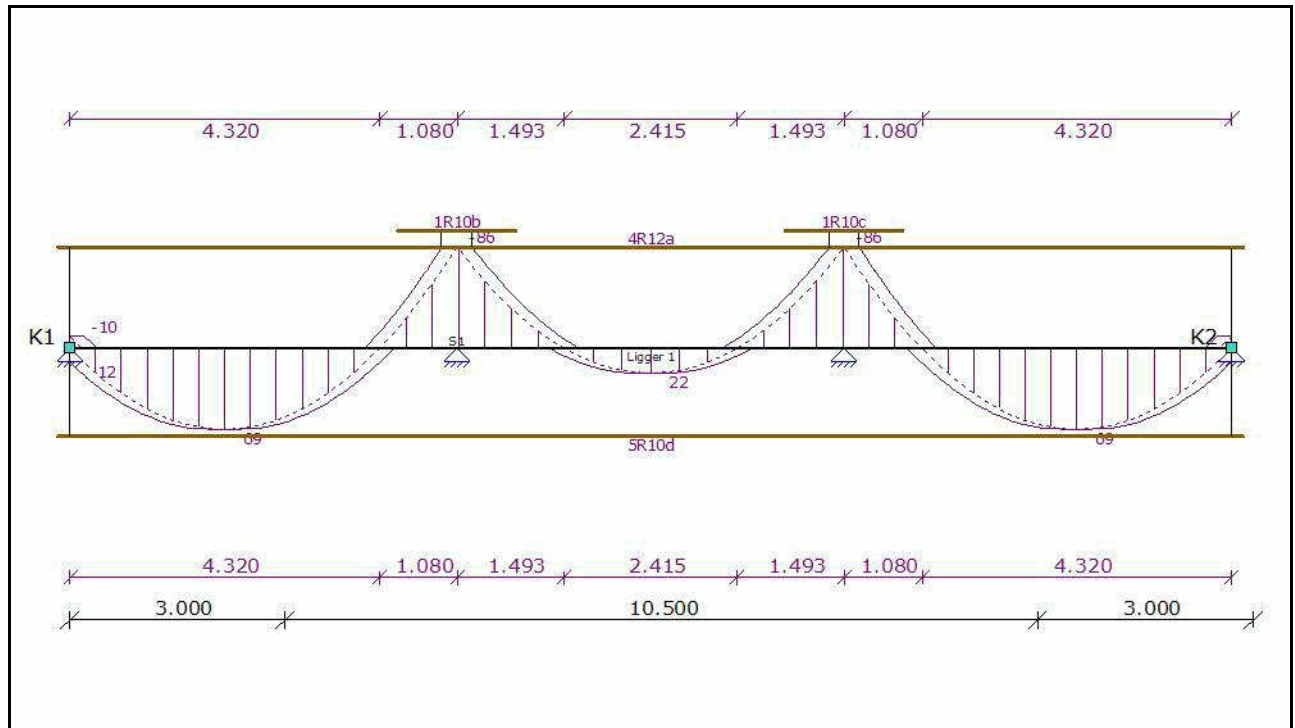
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | | 0 | 0 | |
| m | kNm | - | mm | mm | |

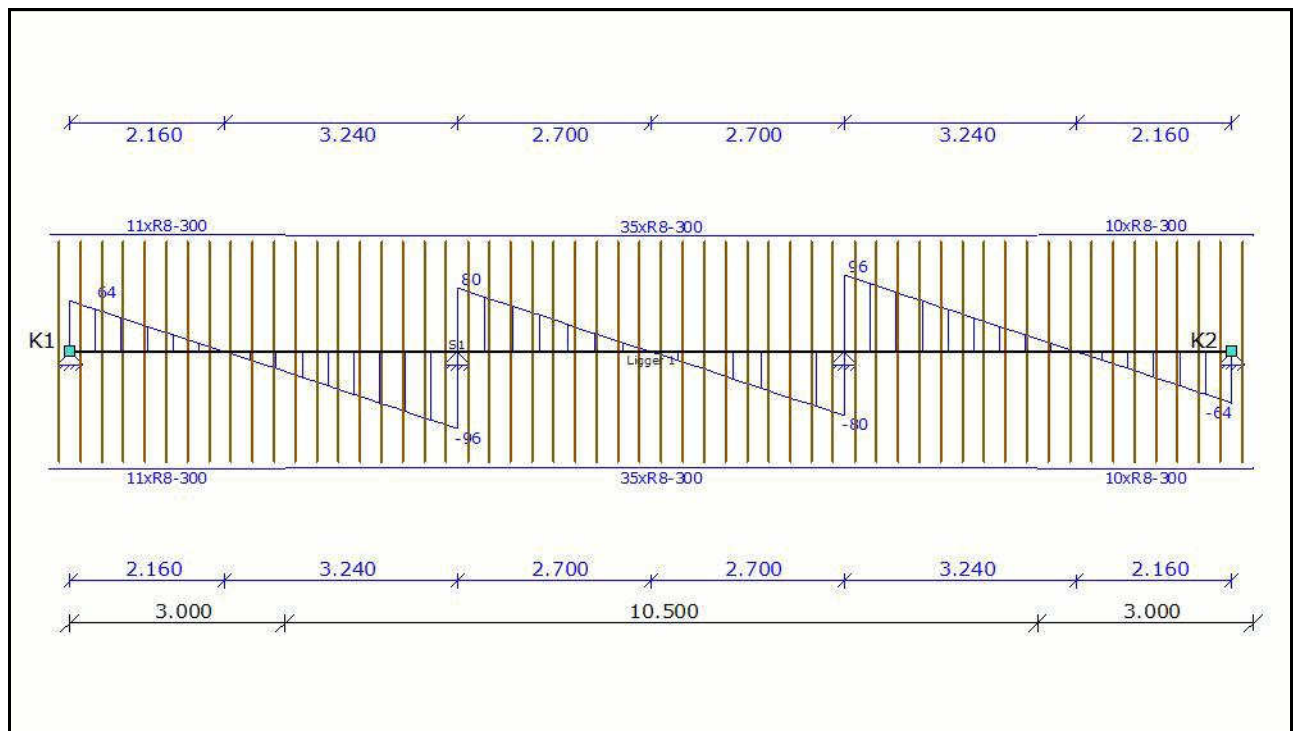
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 1 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 64.04 | R8-300 | 147 | 0 | 335 | 62.051 | 146.41 | 64.04 | N/B | N/B |
| 5.400 | Links | 96.05 | R8-300 | 221 | 0 | 335 | 65.462 | 145.35 | 96.05 | N/B | N/B |
| 5.400 | Rechts | 80.04 | R8-300 | 185 | 0 | 335 | 65.462 | 145.35 | 80.04 | N/B | N/B |
| 10.800 | Links | 80.04 | R8-300 | 185 | 0 | 335 | 65.462 | 145.35 | 80.04 | N/B | N/B |
| 10.800 | Rechts | 96.05 | R8-300 | 221 | 0 | 335 | 65.462 | 145.35 | 96.05 | N/B | N/B |
| 16.200 | Links | 64.04 | R8-300 | 147 | 0 | 335 | 62.051 | 146.41 | 64.04 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

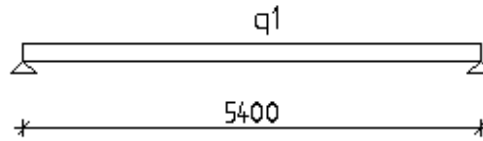


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.2

Achtergevelbalk woning 13

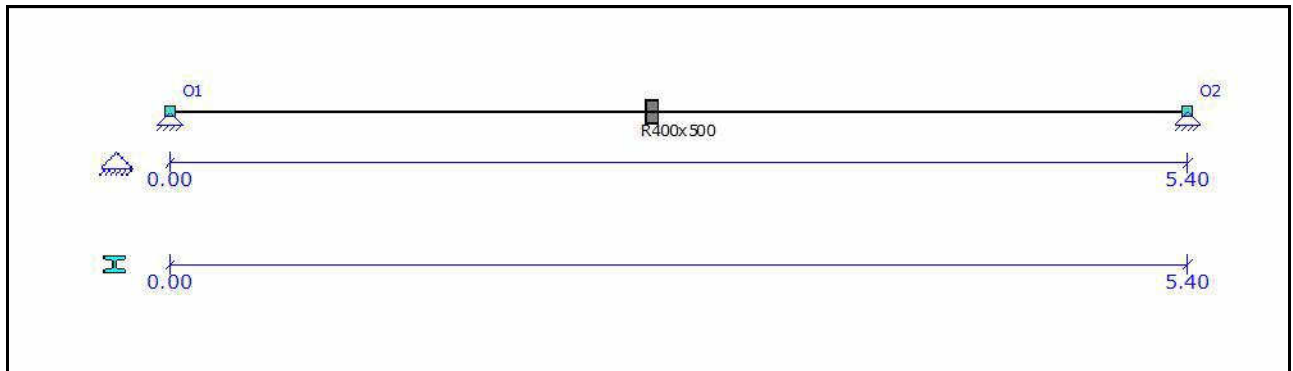


| | | | |
|-----------|-------------|---------------------|-----------|
| qp.rep. : | gevel : | $0,7 * 4,0 * 6,5 :$ | 18,2 kN/m |
| | | $0,3 * 0,7 * 6,5 :$ | 1,4 kN/m |
| | fundering : | | 4,8 kN/m |
| | | | 24,4 kN/m |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingsen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 2 | 1 | 1 | 7 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|----------------------------|------------|-----------------|---------|
| 0,000 - L(5,400) | R400x500 | 0 | 4.1667e-03 C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |
| m - | | ° | m4 - | kN/m2 | C°m | kN/m |

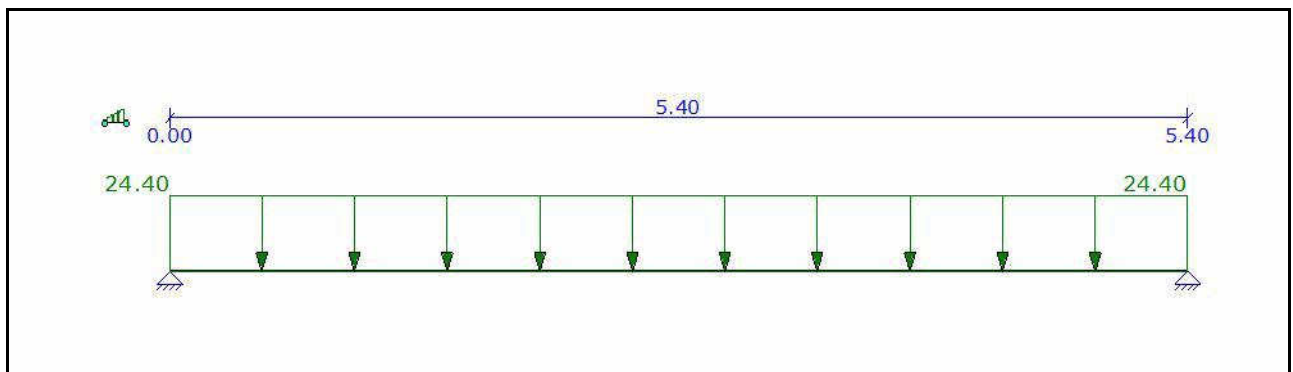
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | L(5,400) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 24,40 | 24,40 | 0,000 | 5,400(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 131,76 | kN | | |
| - | - | - | m | m | - - |

B.G.1: PERMANENT



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.22 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.00 |

B.G. OPLEGREACTIES

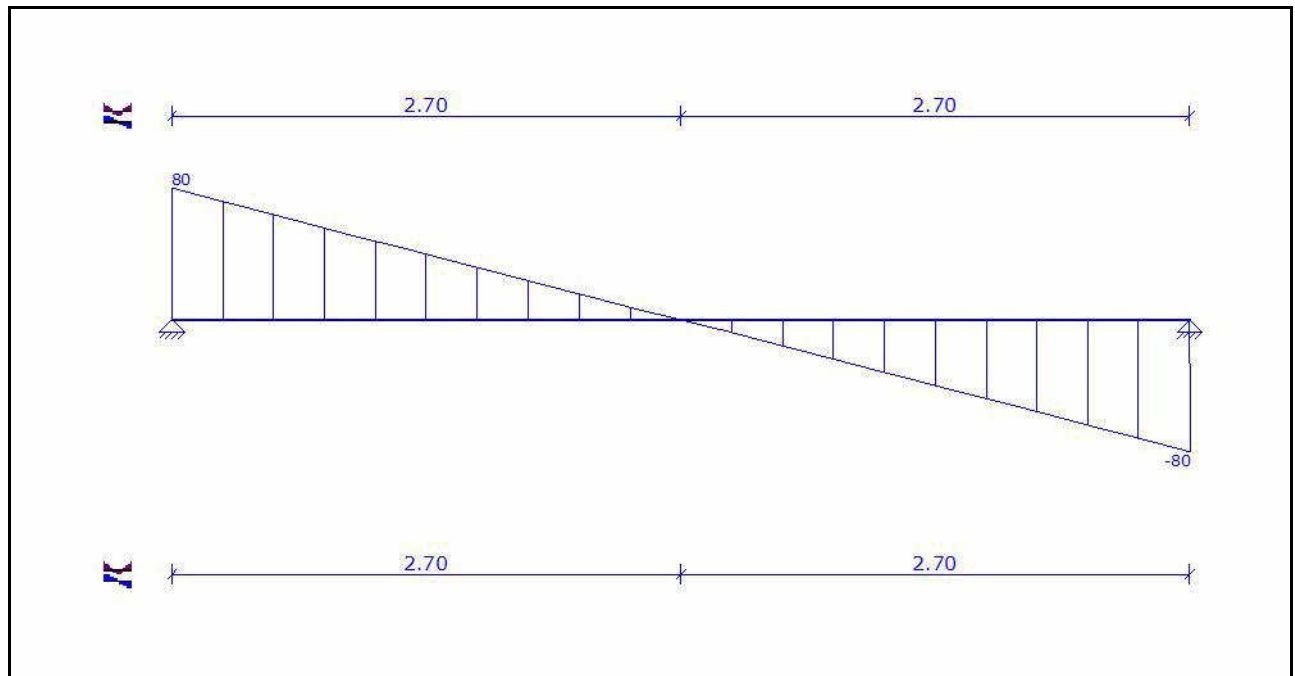
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|--------------|---------|------|--------|---------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -65.88 | 0.00 |
| B.G.1 | O2 | 0.000 | vast | vrij | -65.88 | 0.00 |
| | Som Reacties | | | | -131.76 | |
| | Som Lasten | | | | 131.76 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|--------------|---------|------|--------|---------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -80.04 | 0.00 |
| Fu.C.1 | O2 | 0.000 | vast | vrij | -80.04 | 0.00 |
| | Som Reacties | | | | -160.09 | |
| | Som Lasten | | | | 160.09 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

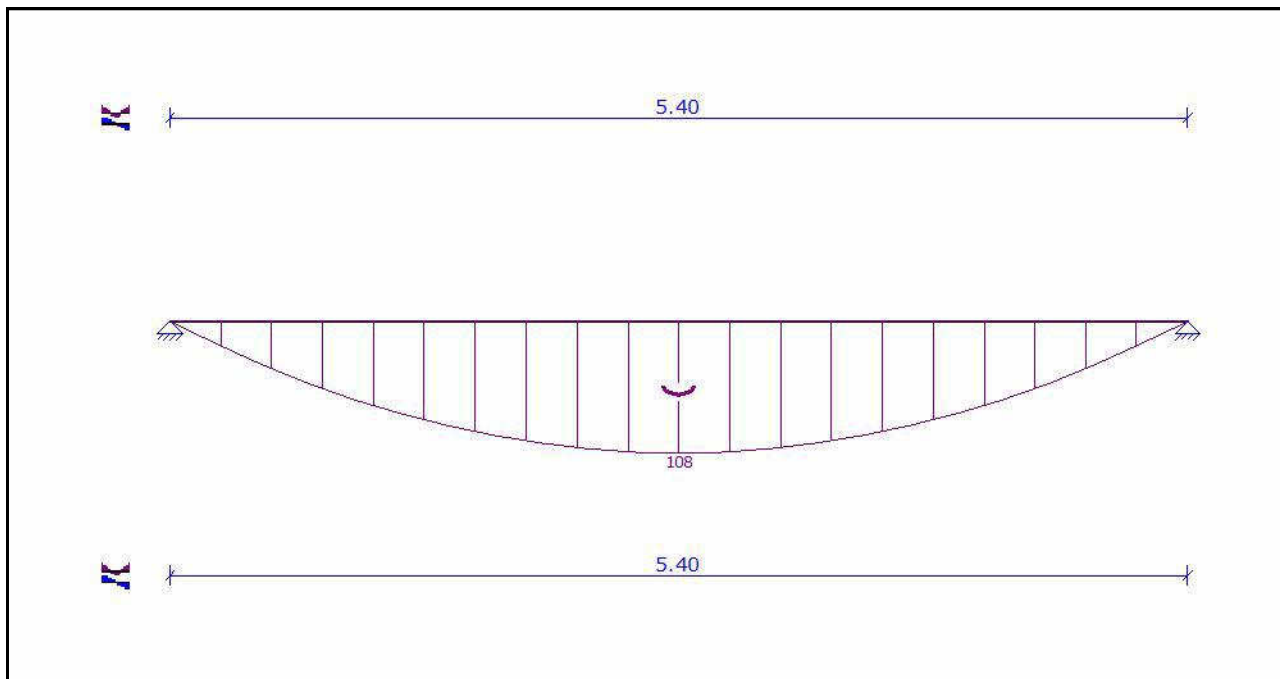
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingcombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 5.400 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|-----------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 | b,min: 400 >= 100 |
| - | - | - | - | - | - | - | mm | mm | NEN-EN1992-1-1#9.2(1) |

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEVENS

| | Positie | Oplegg. | Type | Afmeting | Staal | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|--------|
| | 0.000 | O1 | n.v.t. | 0,000 | | | Ja | 16,21 | 0,00 | Niet afgetopt | Niet |
| afgetopt | | | | | | | | | | | |
| | 5.400 | O2 | n.v.t. | 0,000 | | | Nee | | | Niet afgetopt | Niet |
| afgetopt | | | | | | | | | | | |

m - - m - m - kNm kNm - -

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 16.21 | 4R10 | Mti | 82 | 314 | | 28,36 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 2.700 | 108.06 | 6R12 | | 576 | 679 | | 9,24 | 116,61 |
| m | kNm | - | - | mm | mm | - | mm | mm |

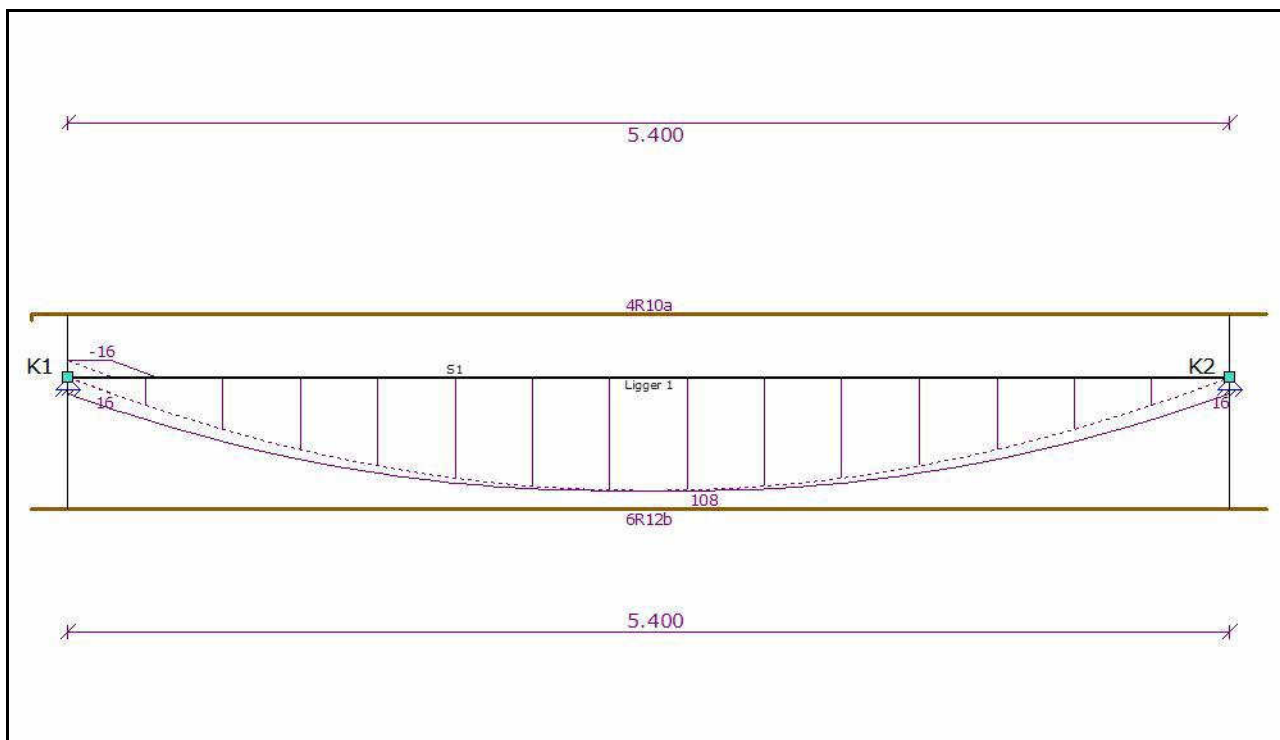
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | | 0 | 0 | |
| m | kNm | - | mm | mm | |

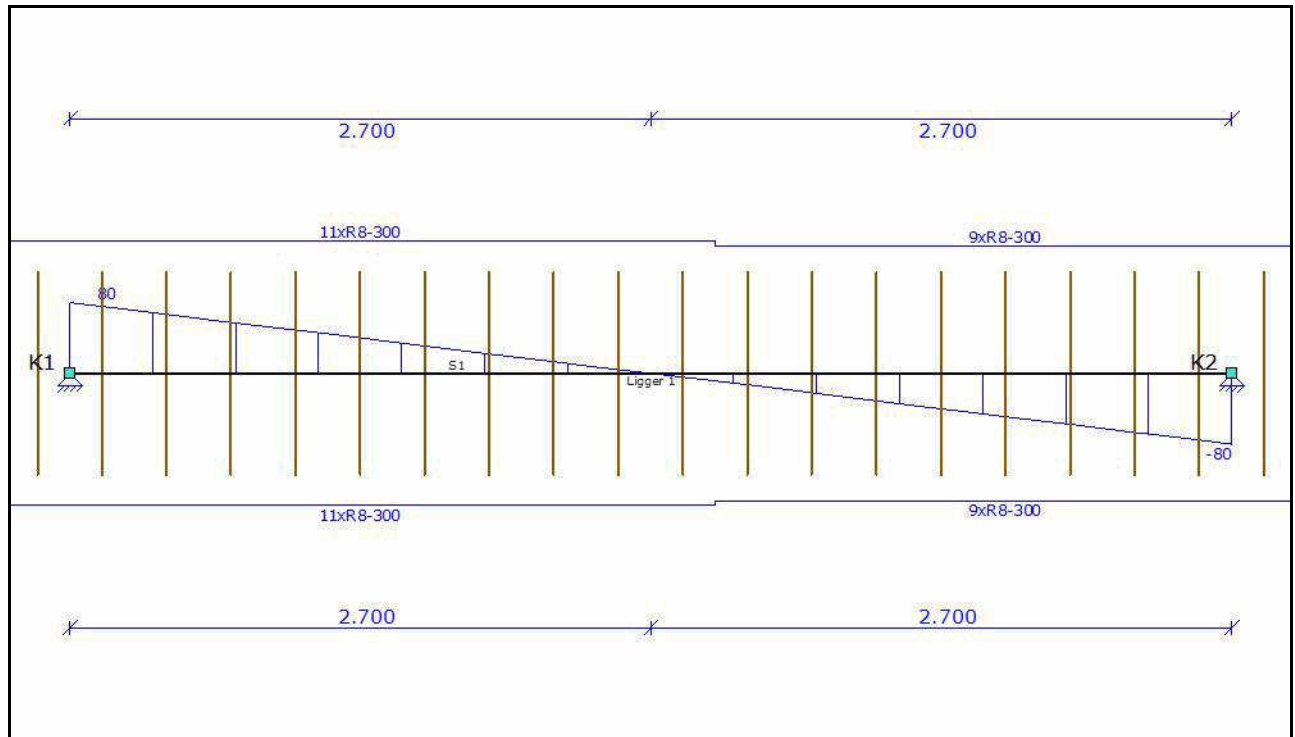
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 1 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 80.04 | R8-300 | 180 | 0 | 335 | 61.281 | 148.70 | 80.04 | N/B | N/B |
| 5.400 | Links | 80.04 | R8-300 | 187 | 0 | 335 | 71.030 | 143.21 | 80.04 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

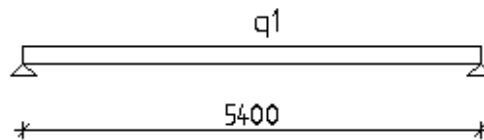


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.3

Voorgevelbalk woning 13

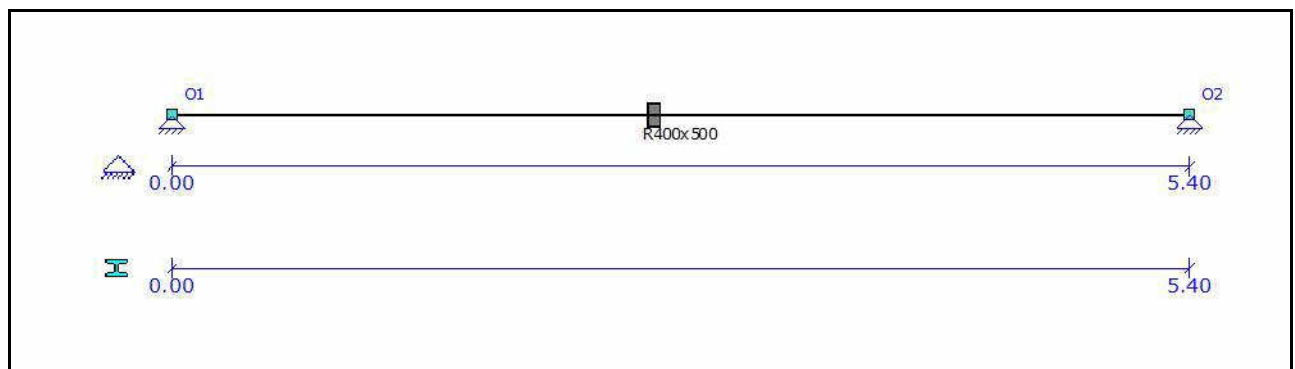


qp.rep. : gevel : 4,0 * 6,5 : 26,0 kN/m
 fundering : 4,8 kN/m
 30,8 kN/m

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 2 | 1 | 1 | 7 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(5,400) | R400x500 | 0 | 4.1667e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |
| m - | | ° | m4 - | | kN/m2 | Cm | kN/m |

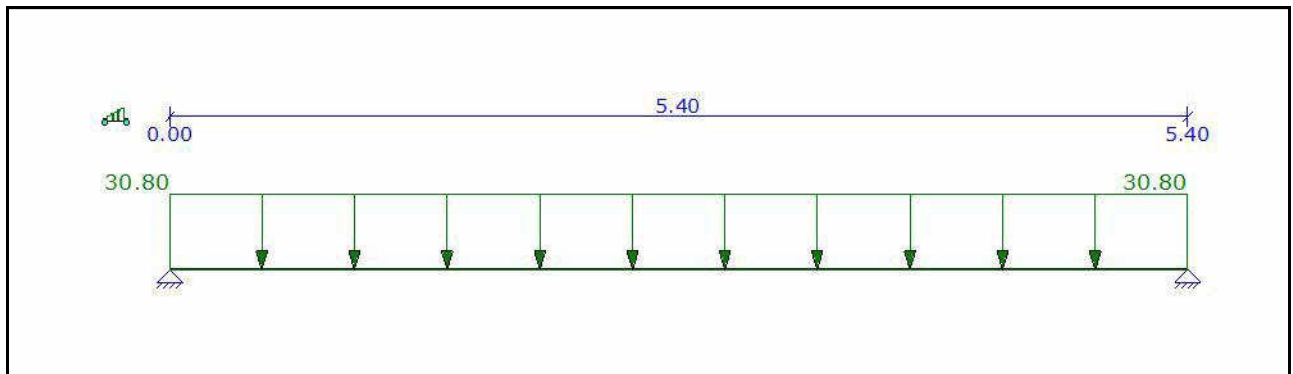
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | L(5,400) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staat of knoop |
|------------------|-------------|--------------|--------------|-------------|----------|----------------|
| B.G.1: Permanent | | | | | | |
| q | 30,80 | 30,80 | 0,000 | 5,400(L) | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 166,32 | kN | | | |
| - | - | - | m | m | - | - |

B.G.1: PERMANENT



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.22 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.00 |

B.G. OPLEGREACTIES

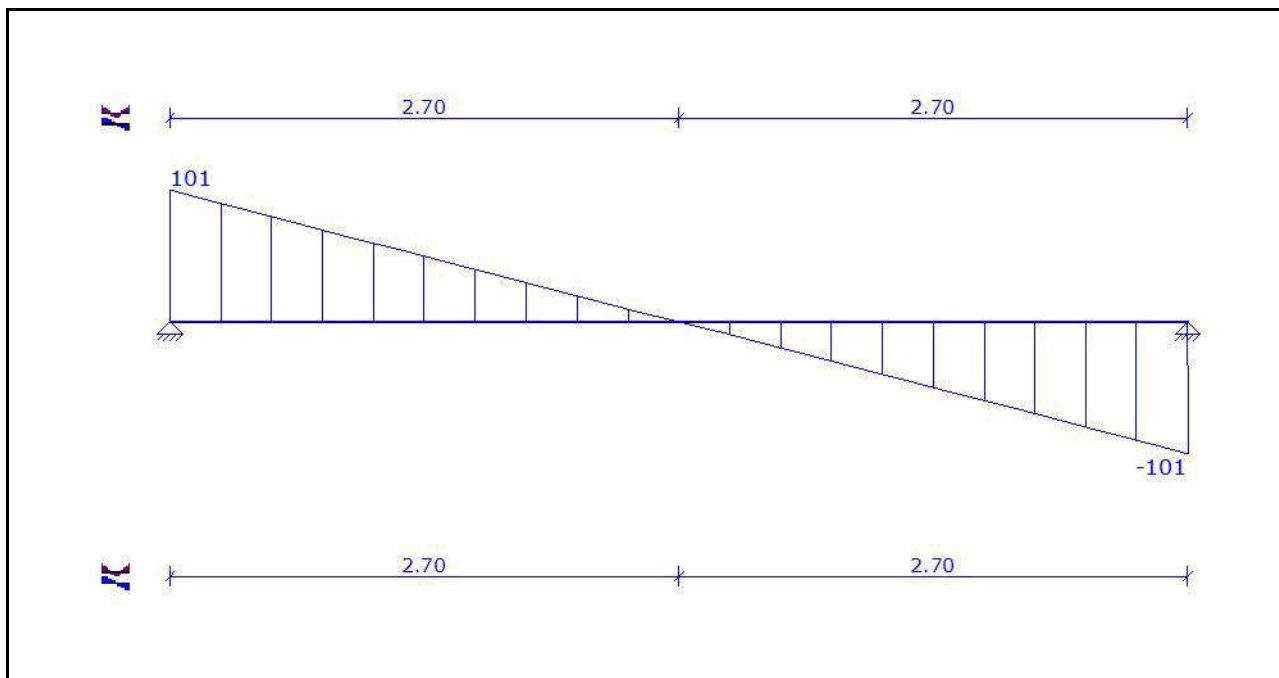
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|--------------|---------|------|--------|---------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -83.16 | 0.00 |
| B.G.1 | O2 | 0.000 | vast | vrij | -83.16 | 0.00 |
| | Som Reacties | | | | -166.32 | |
| | Som Lasten | | | | 166.32 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|--------------|---------|------|--------|---------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -101.04 | 0.00 |
| Fu.C.1 | O2 | 0.000 | vast | vrij | -101.04 | 0.00 |
| | Som Reacties | | | | -202.08 | |
| | Som Lasten | | | | 202.08 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

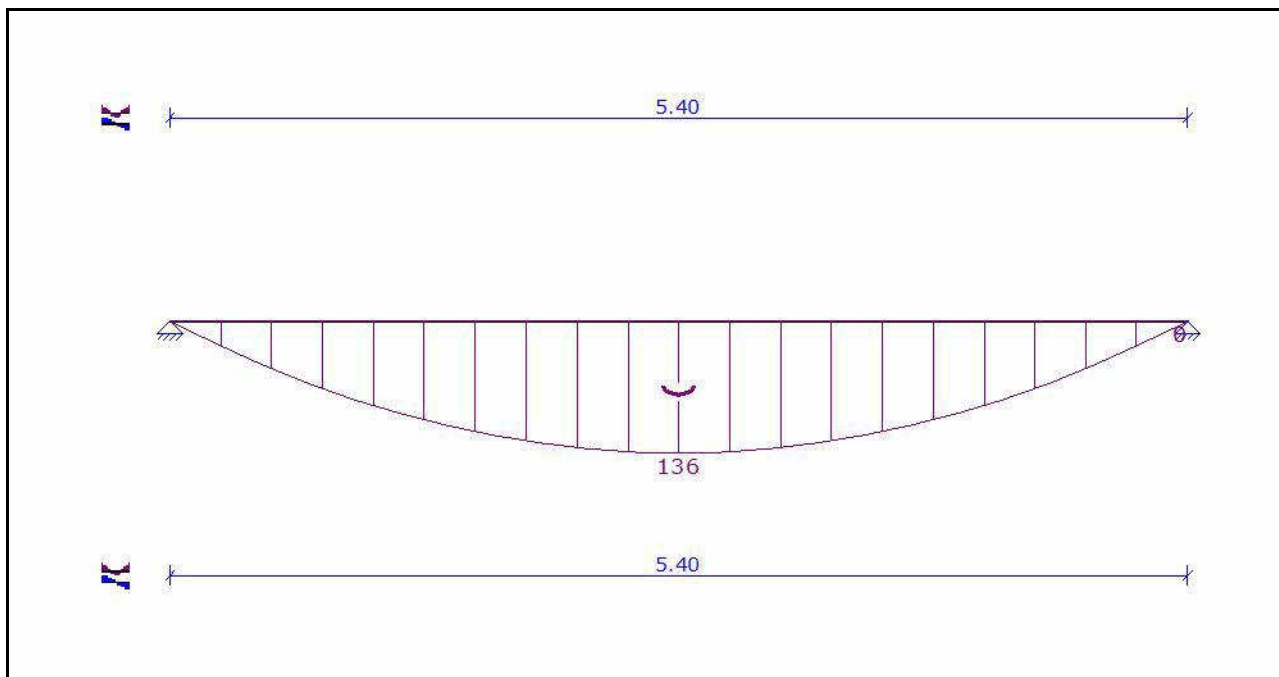
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staal | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 5.400 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|---|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 | b,min: 400 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | Zij- + Voorkant | | | | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|-----------------|-----|-------|-------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEDEGEVENS

| | | | | | | | | | | | Ligger 1 |
|----------|---------|---------|--------|----------|--------|----------|-----|----------|----------|---------------|----------|
| | Positie | Oplegg. | Type | Afmeting | Staaft | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| | 0.000 | O1 | n.v.t. | 0,000 | | | Ja | 20,46 | 0,00 | Niet afgetopt | Niet |
| afgetopt | | | | | | | | | | | |
| | 5.400 | O2 | n.v.t. | 0,000 | | | Nee | | | Niet afgetopt | Niet |
| afgetopt | | | | | | | | | | | |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|----------------|
| 0.000 | 20.46 | 4R10 | Mti | 104 | 314 | | 28,36 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|----------------|
| 2.700 | 136.40 | 4R16 | 1R10 | 742 | 883 | | 8,96 | 118,74 |
| m | kNm | - | - | mm | mm | - | mm | mm |

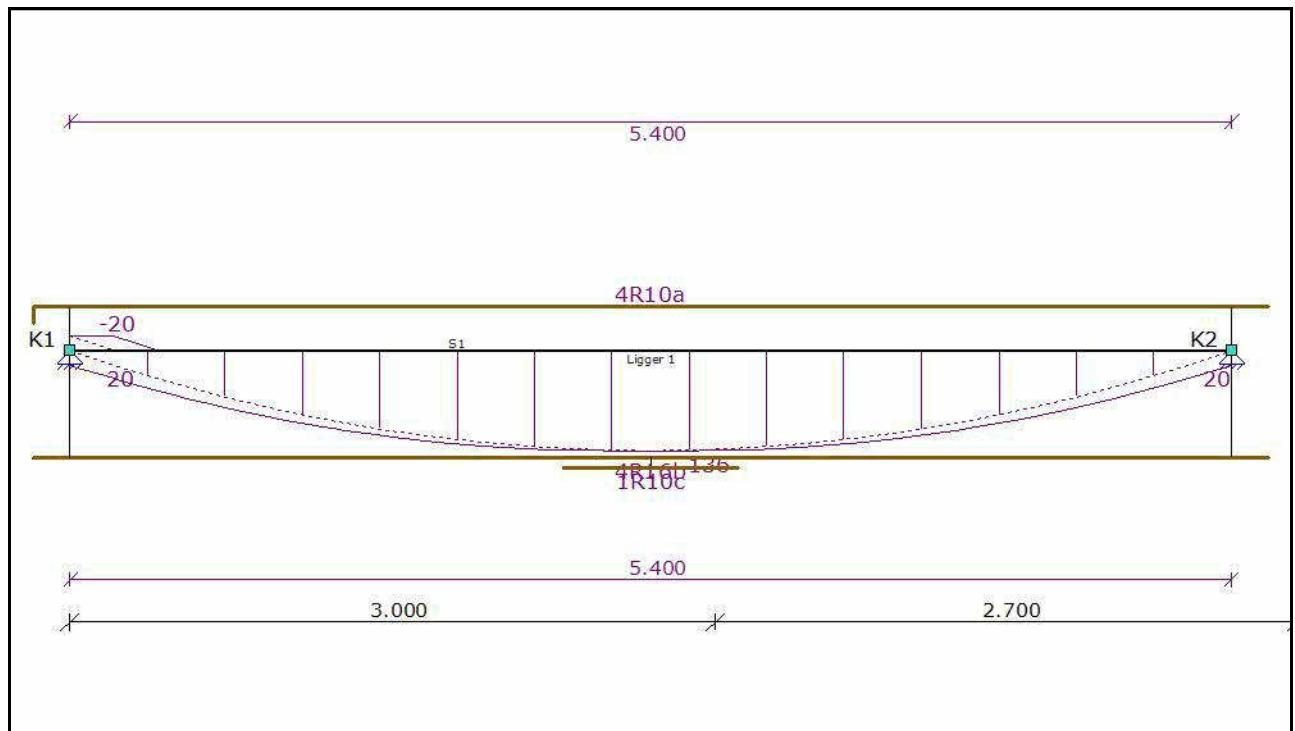
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | | 0 | 0 | |
| m | kNm | - | mm | mm | |

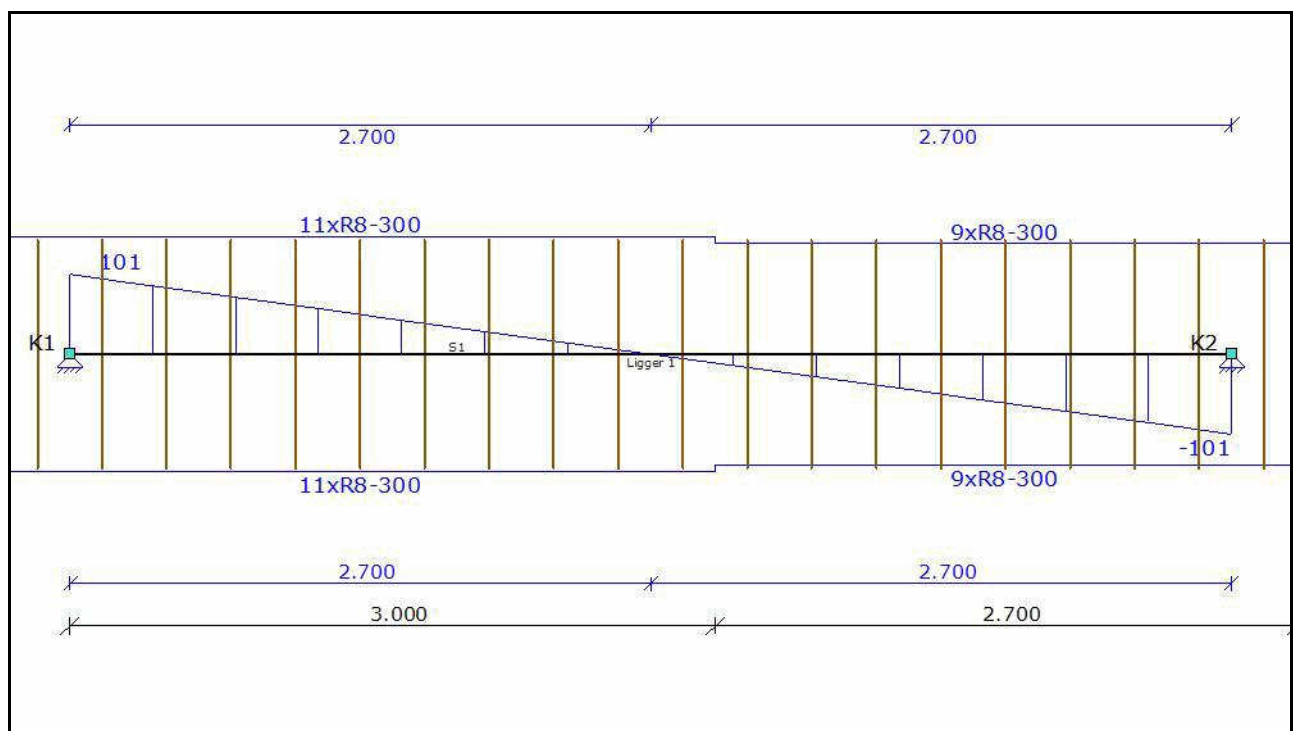
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 1 VEdi |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|---------------|
| 0.000 | Rechts | 101.04 | R8-300 | 228 | 0 | 335 | 61.281 | 148.70 | 101.04 | N/B | N/B |
| 5.400 | Links | 101.04 | R8-300 | 242 | 0 | 335 | 75.035 | 139.73 | 101.04 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

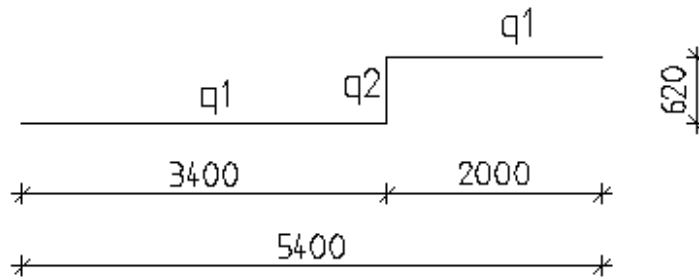


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.4

Voorgevelbalk enkel



| | | | |
|------------|-------------|-------------------|-----------------|
| q1p.rep. : | gevel : | 0,7 * 4,0 * 6,5 : | 18,2 kN/m |
| | | 0,3 * 0,7 * 6,5 : | 1,4 kN/m |
| | fundering : | | <u>4,8 kN/m</u> |
| | | | 24,4 kN/m |

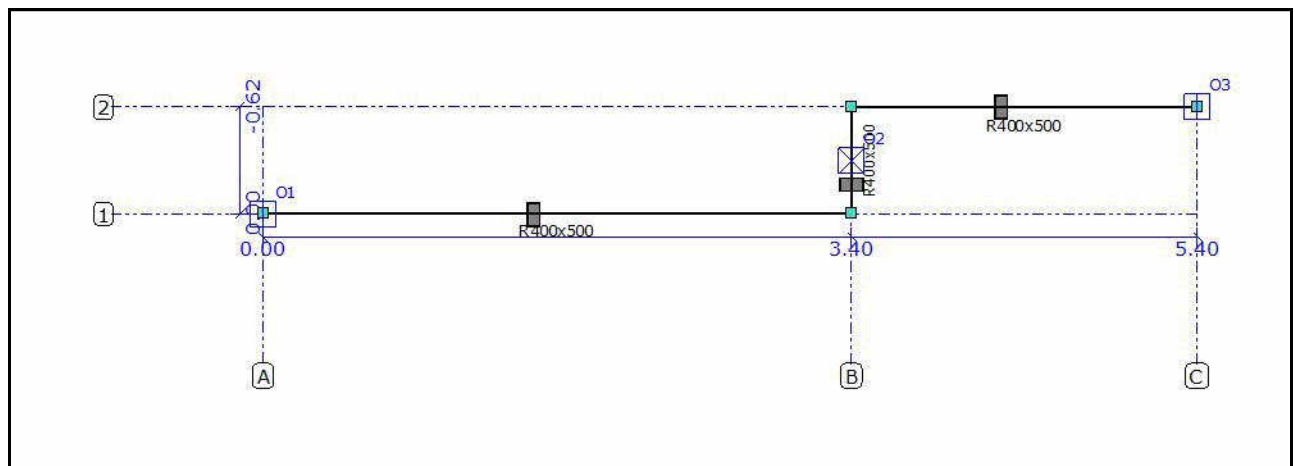
| | | | |
|------------|-----------------------------|-------------|-----------------|
| q2p.rep. : | 1 ^e verdieping : | 4,8 * 1,7 : | 8,2 kN/m |
| | b.g.g. : | 3,9 * 1,7 : | 6,6 kN/m |
| | gevel : | 4,0 * 6,5 : | 26,0 kN/m |
| | fundering : | | <u>4,8 kN/m</u> |
| | | | 45,6 kN/m |

| | | | |
|------------|-----------------------------|--------------|----------|
| q2v.rep. : | 1 ^e verdieping : | 2,55 * 1,7 : | 4,3 kN/m |
| | b.g.g. : | 2,55 * 1,7 : | 4,3 kN/m |

CONSTRUCTIEGEGEVENS

| Projecttype | Knopen | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------|-------------|-----------|----------|-----------|
| Balkrooster | 4 | 3 | 3 | 1 | 3 | 13 |

AFB. GEOMETRIE LIGGER



STAVEN

| Staaf | Knoop B | Knoop E | X-B | Y-B | X-E | Y-E | Lengte Profiel | Positie |
|-------|---------|---------|-------|--------|-------|--------|----------------|------------------|
| S1 | K1 | K2 | 0,000 | 0,000 | 3,400 | 0,000 | 3,400 P1 | 0,000 - L(3,400) |
| S2 | K2 | K3 | 3,400 | 0,000 | 3,400 | -0,620 | 0,620 P1 | 0,000 - L(0,620) |
| S3 | K3 | K4 | 3,400 | -0,620 | 5,400 | -0,620 | 2,000 P1 | 0,000 - L(2,000) |
| - | - | - | m | m | m | m | m - | - |

PROFIELEN

| Profiel | Profielnaam | It | Iv Materiaal | Hoek |
|---------|-------------|----|--------------|------|
|---------|-------------|----|--------------|------|

| | | | | | |
|----|----------|------------|------------|--------|---|
| P1 | R400x500 | 5.5552e-03 | 4.1667e-03 | C20/25 | 0 |
| - | - | m4 | m4 | - | ° |

PROFIELVORMEN

| Profiel | Verl. h. | hB | hE | tf | tw | tf2 | B | bL | bR | Raatl. | Hoogte |
|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| P1 | Nee | 0.500 | 0.500 | 0.000 | 0.000 | 0.000 | 0.400 | 0.000 | 0.000 | Nee | 0.000 |
| - | - | m | m | m | m | m | m | m | m | - | m |

MATERIALEN

| Materiaalnaam | Poison | Dichtheid | E-Modulus | Uitzettingcoëff |
|---------------|--------|-----------|------------|-----------------|
| C20/25 | 0.20 | 25.00 | 3.0000e+07 | 10.0000e-06 |
| - | - | kN/m3 | kN/m2 | C°m |

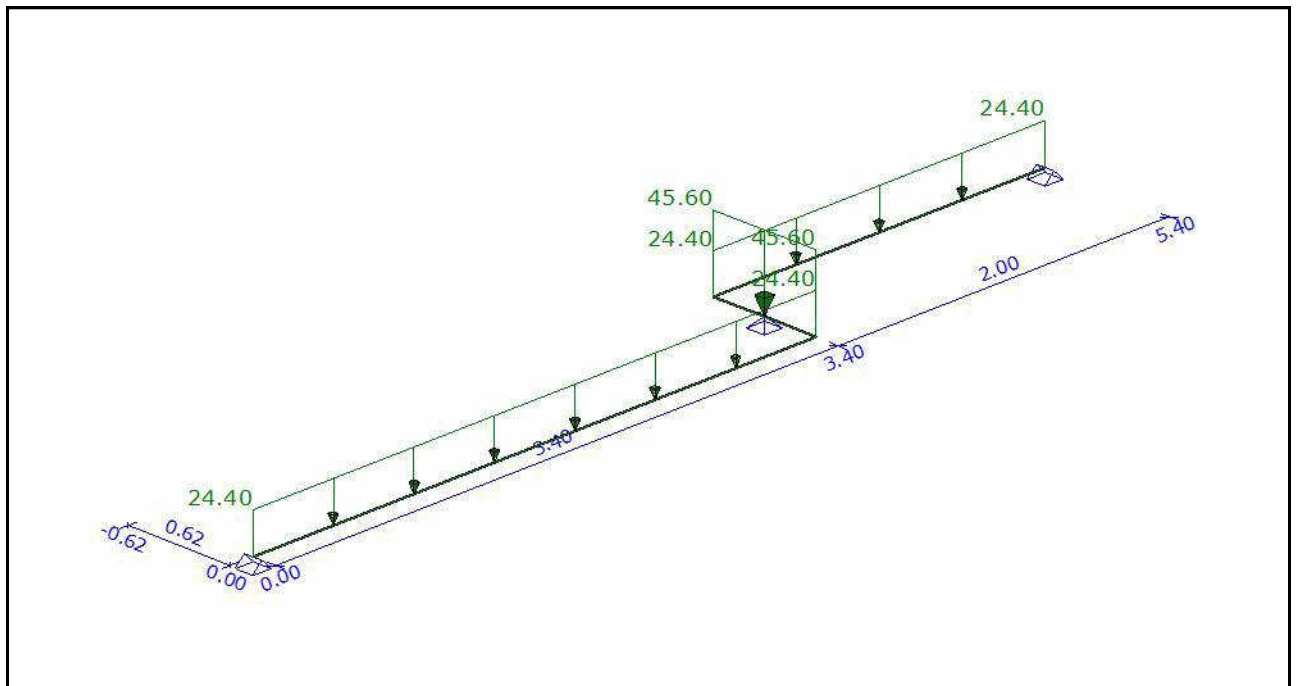
OPLEGGINGEN

| Oplegging | Staaf | Positie | | Xr | Yr |
|-----------|-------|----------|------|--------|--------|
| O1 | S1 | 0,000 | vast | vast | vrij |
| O2 | S2 | 0,310 | vast | vrij | vrij |
| O3 | S3 | L(2,000) | vast | vast | vrij |
| - | - | m | kN/m | kNmrad | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 24,40 | 24,40 | 0,000 | 3,400(L) | Z S1,S3 |
| q | 45,60 | 45,60 | 0,000 | 0,620(L) | Z S2 |
| Som lasten | X: 0,00 | kN Z: 160,03 | kN | | |
| - | - | - | m | m | - - |

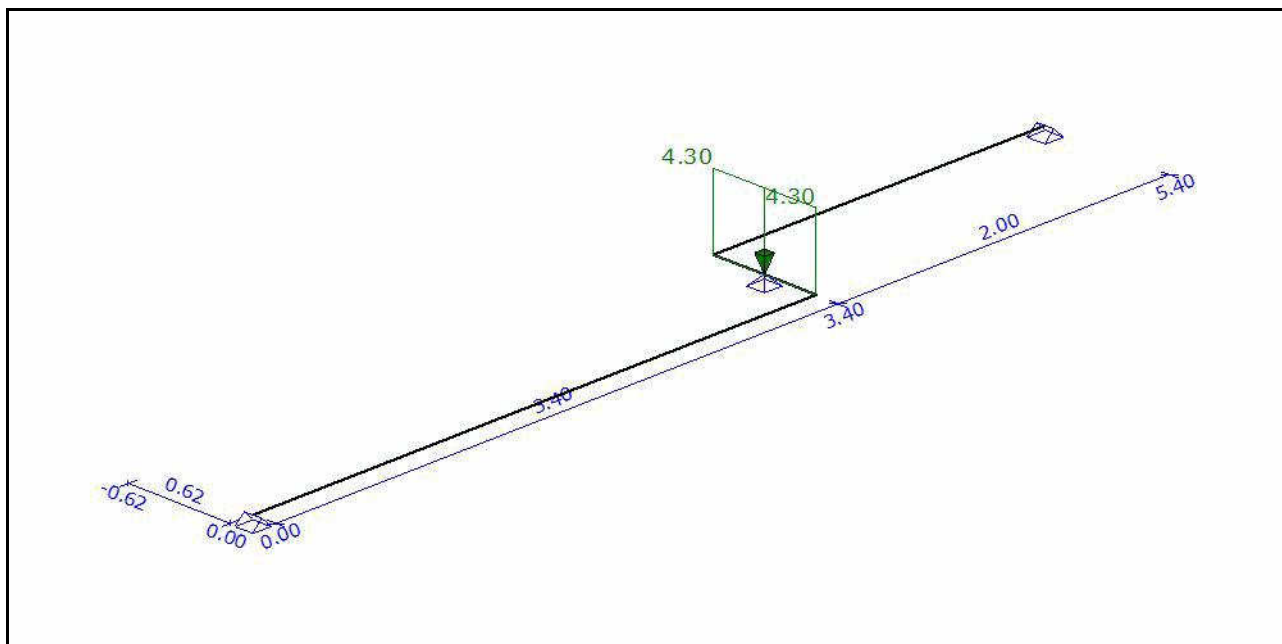
B.G.1: PERMANENT



B.G.2: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|------------|--------------|-------------|-------------------------|
| B.G.2: 1e verdieping | | | | | |
| q | 4,30 | 4,30 | 0,000 | 0,620(L) | Z S2 |
| Som lasten | X: 0,00 | kN Z: 2,67 | kN | | |
| - | - | - | m | m | - - |

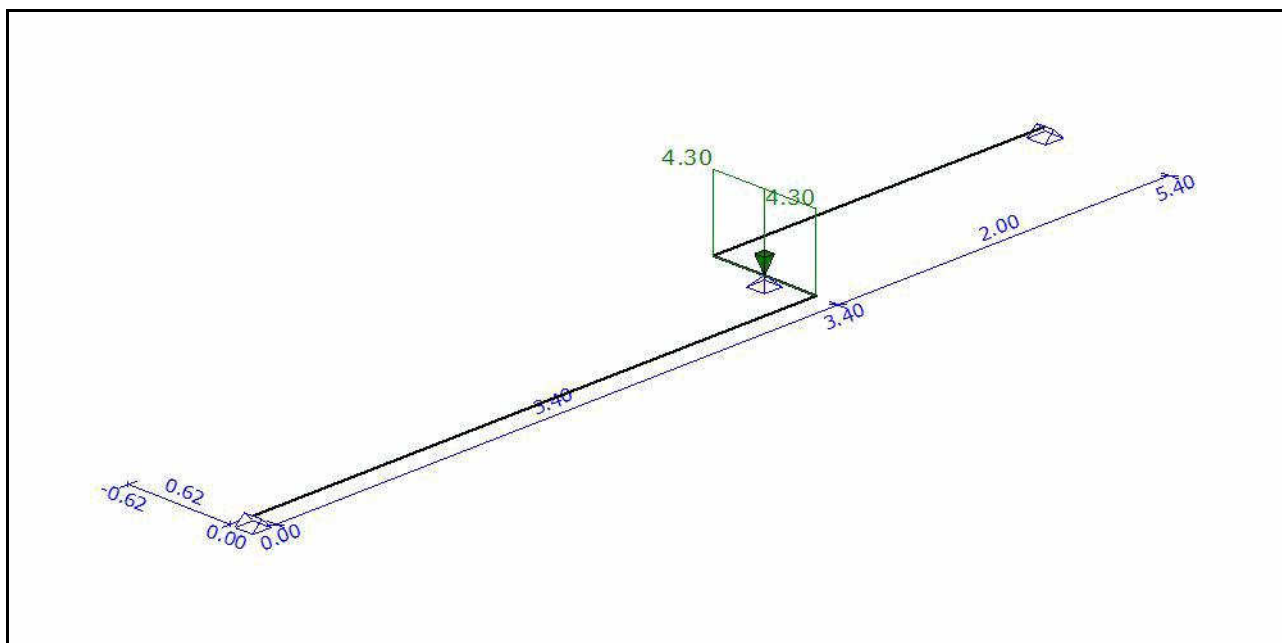
B.G.2: 1E VERDIEPING



B.G.3: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|----------------|-------------------|--------------|-------------|-------------------------|
| B.G.3: 2e verdieping | | | | | |
| q | 4,30 | 4,30 | 0,000 | 0,620(L) | Z S2 |
| Som lasten | X: 0,00 | kN Z: 2,67 | kN | | |
| - | - | - | m | m | - - |

B.G.3: 2E VERDIEPING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 | Fu.C.3 (Overslaan) | Fu.C.4 (Overslaan) |
|-------|---------------|--------|--------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.22 | 1.08 | 1.08 |
| B.G.2 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 |
| B.G.3 | 2e verdieping | 1.35 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.40 | 1.00 | 0.40 |
| B.G.3 | 2e verdieping | - | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 |
|-------|---------------|-----------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.50 | 0.30 |
| B.G.3 | 2e verdieping | - | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 1e verdieping | 0.30 |
| B.G.3 | 2e verdieping | 0.30 |

B.G. OPLEGREACTIES

| B.G. | Oplegging | Staaft | Positie | Z | Mx | My |
|-------|---------------------|--------|---------|----------------|-------|------|
| B.G.1 | O1 | S1 | 0.000 | -41.16 | -1.94 | 0.00 |
| B.G.1 | O2 | S2 | 0.310 | -95.02 | 0.00 | 0.00 |
| B.G.1 | O3 | S3 | 0.000 | -23.86 | -3.29 | 0.00 |
| | Som Reacties | | | -160.03 | | |
| | Som Lasten | | | 160.03 | | |
| B.G.2 | O1 | S1 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.2 | O2 | S2 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.2 | O3 | S3 | 0.000 | 0.00 | 0.00 | 0.00 |
| | Som Reacties | | | -2.67 | | |
| | Som Lasten | | | 2.67 | | |

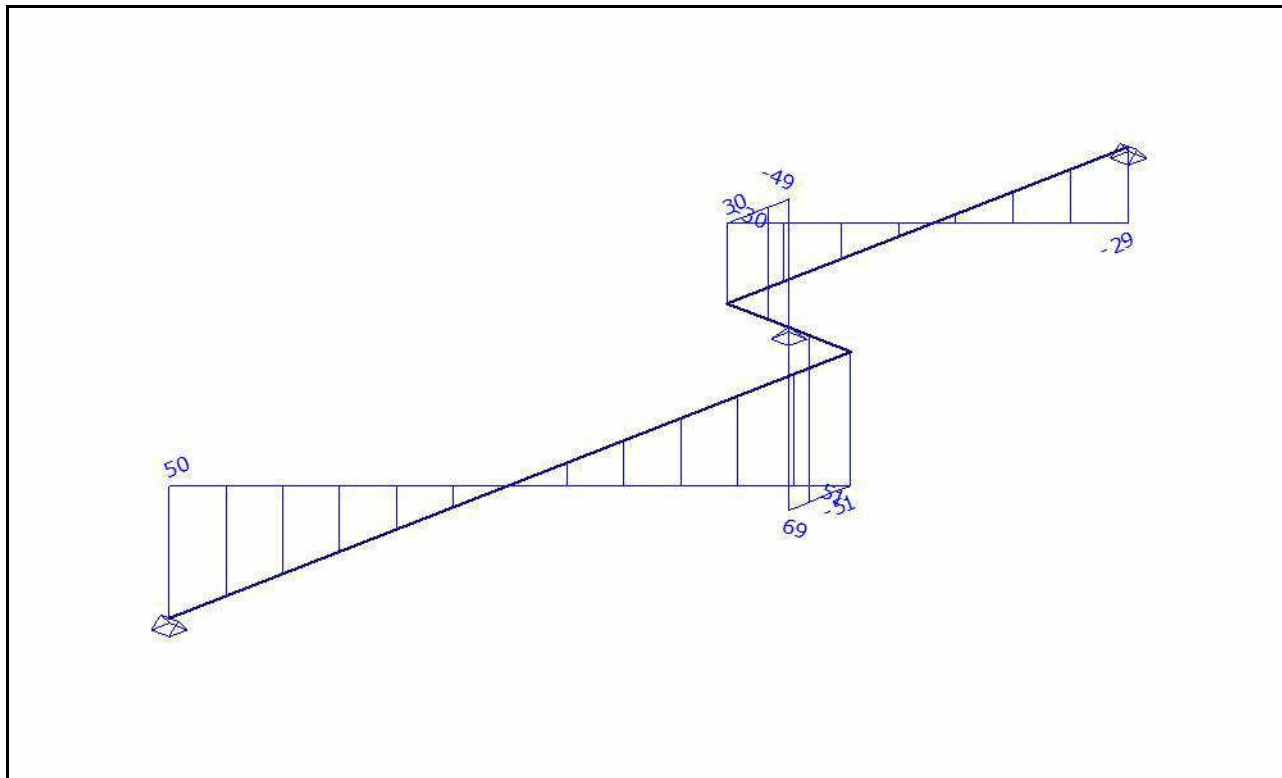
| B.G. | Oplegging | Staaft | Positie | Z | Mx | My |
|-------|---------------------|--------|---------|--------------|------|------|
| B.G.3 | O1 | S1 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.3 | O2 | S2 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.3 | O3 | S3 | 0.000 | 0.00 | 0.00 | 0.00 |
| | Som Reacties | | | -2.67 | | |
| | Som Lasten | | | 2.67 | | |
| - | - | - | m | kN | kNm | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Staaft | Positie | Z | Mx | My |
|--------|---------------------|--------|---------|----------------|-------|------|
| Fu.C.1 | O1 | S1 | 0.000 | -44.51 | -2.10 | 0.00 |
| Fu.C.1 | O2 | S2 | 0.310 | -109.94 | 0.00 | 0.00 |
| Fu.C.1 | O3 | S3 | 0.000 | -25.80 | -3.55 | 0.00 |
| | Som Reacties | | | -180.25 | | |
| | Som Lasten | | | 180.25 | | |
| Fu.C.2 | O1 | S1 | 0.000 | -50.01 | -2.36 | 0.00 |
| Fu.C.2 | O2 | S2 | 0.310 | -118.32 | 0.00 | 0.00 |
| Fu.C.2 | O3 | S3 | 0.000 | -28.98 | -3.99 | 0.00 |
| | Som Reacties | | | -197.32 | | |
| | Som Lasten | | | 197.32 | | |
| - | - | - | m | kN | kNm | kNm |

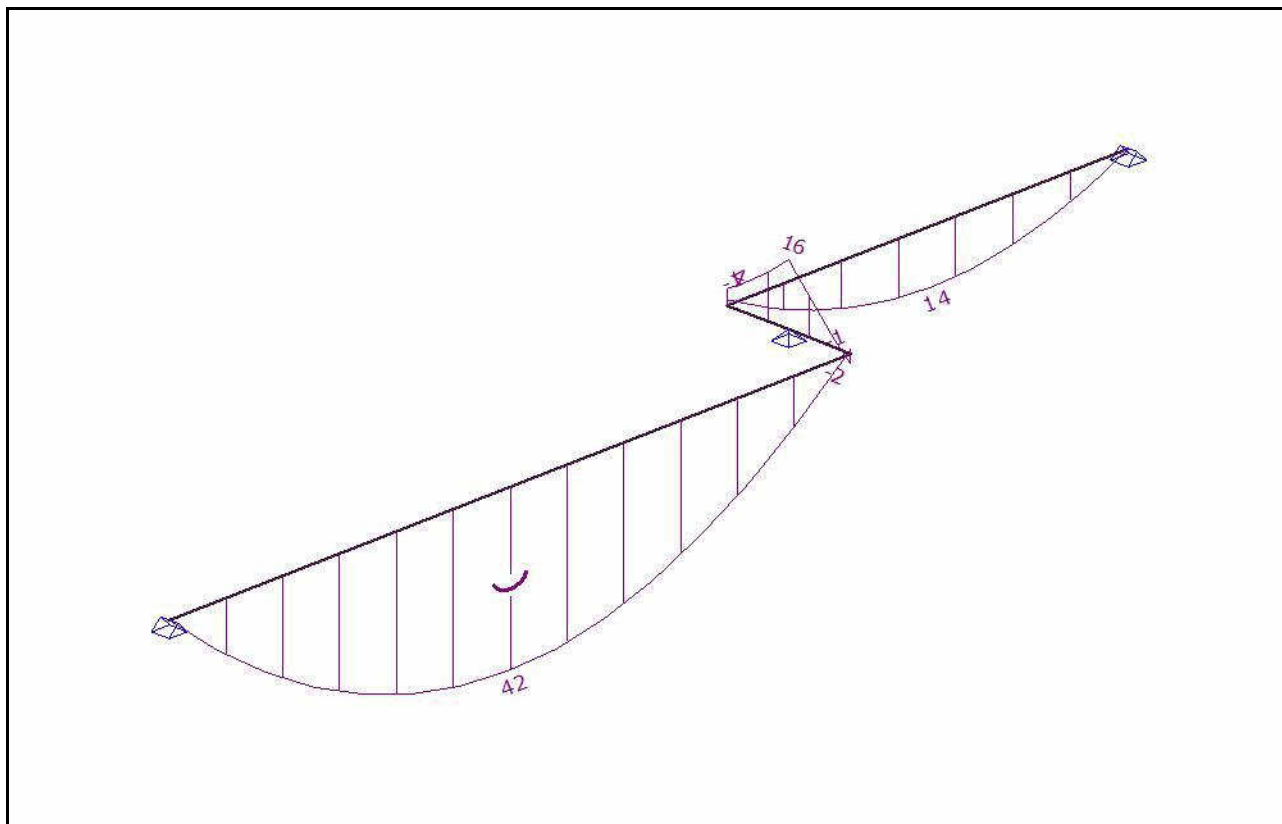
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 3.400 | G1 |
| S2 | P1 | R400x500 | C20/25 | Ligger 2 | Ligger | 0.000 | 0.620 | G1 |
| S3 | P1 | R400x500 | C20/25 | Ligger 3 | Ligger | 0.000 | 2.000 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|---|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 | b,min: 400 >= 100 NEN-EN1992-1-1#9.2(1) |
| - | - | - | - | - | - | - | mm | mm | - |

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVENS

| Ligger 1 | | | | | | | | | | | |
|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|--------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 0.000 | O1 | n.v.t. | 0,000 | | | Ja | 6,33 | 0,00 | Niet afgetopt | Niet |
| afgetopt | 3.400 | | | | S2 | 0,400 | Nee | | | Niet afgetopt | Niet |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |
| Ligger 2 | | | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 0.000 | | | | S1 | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | 0.310 | O2 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 0.620 | | | | S3 | 0,400 | Nee | | | Niet afgetopt | Niet |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |
| Ligger 3 | | | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 0.000 | | | | S2 | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | 2.000 | O3 | n.v.t. | 0,000 | | | Ja | 2,13 | 0,00 | Niet afgetopt | Niet |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|----------------|
| 0.000 | 6.33 | 4R12 | Mti | 32 | 452 | | 27,72 | 300,00 |
| 3.400 | 1.32 | 4R12 | | 7 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

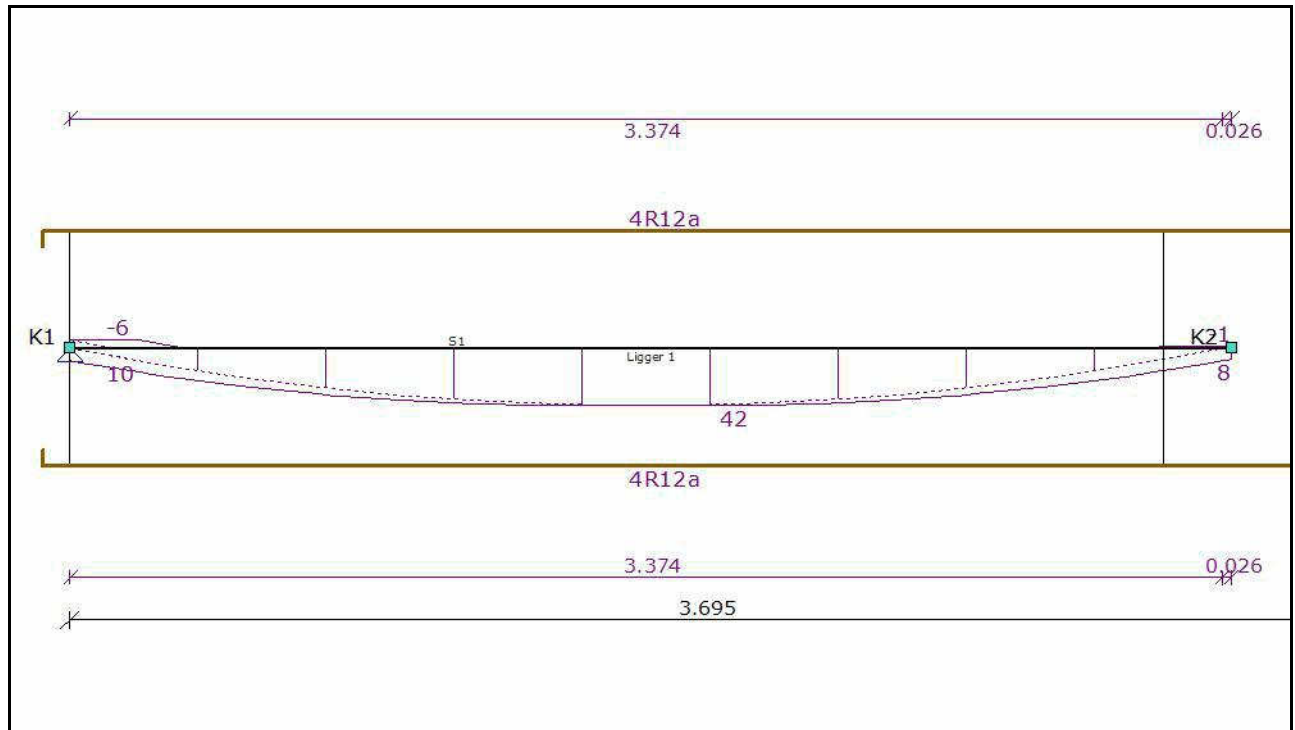
DOORSNEDE ONDERWAPENING

Ligger 1

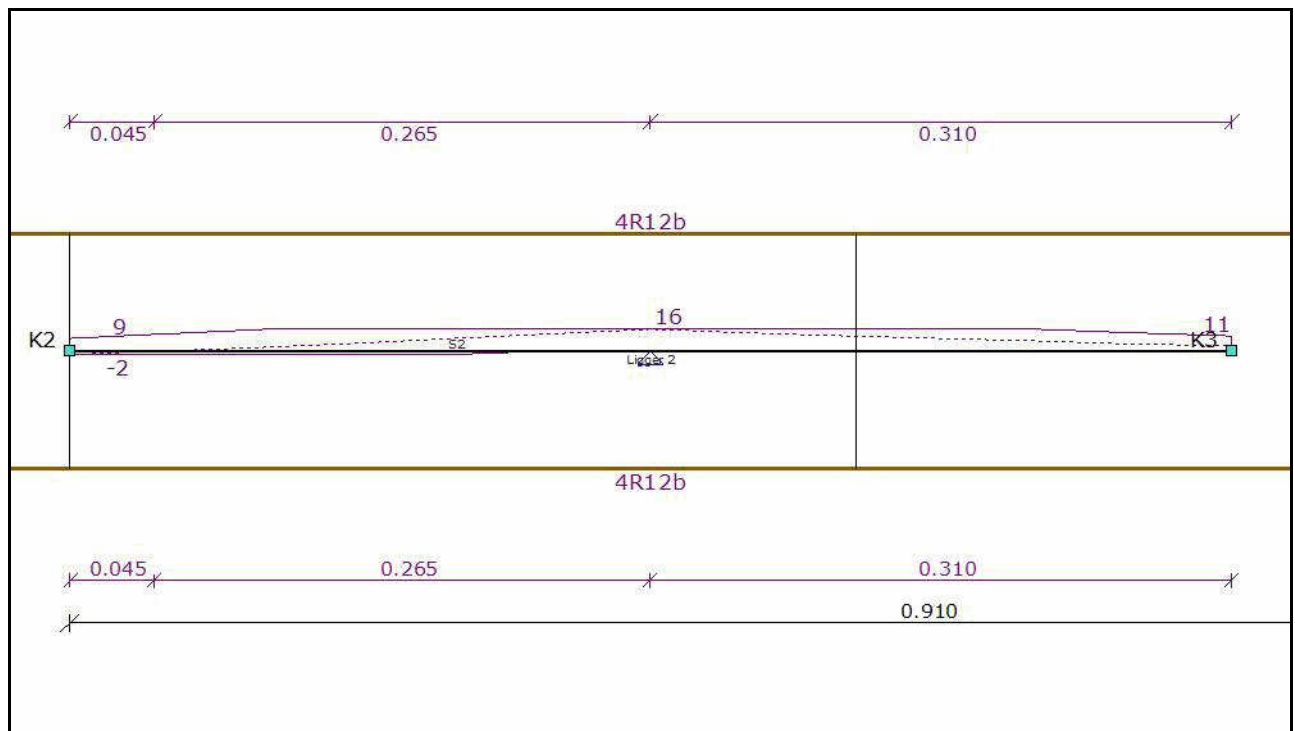
| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | S,max | | | |
|--------------------------|--------|-------|------|----------|----------|----------|---------------|--------|--------|----------|------|------|
| 1.687 | 42.18 | 4R12 | | | 217 | 452 | | 25,34 | 280,43 | | | |
| m | kNm | - | - | - | mm | mm | - | mm | mm | | | |
| DOORSNEDE FLANKWAPENING | | | | | | | | | | Ligger 1 | | |
| Positie | Mx | | | Wapening | | As,ben | As,toe | | | | | |
| 0.000 | 2,36 | | | 1R8 | | 0 | 50 | | | | | |
| m | kNm | | | - | | mm | mm | | | | | |
| DOORSNEDE BEUGELWAPENING | | | | | | | | | | Ligger 1 | | |
| Positie | Zijde | Vd | | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi |
| 0.000 | Rechts | 50.01 | | R8-300 | 114 | 0 | 335 | 62.051 | 146.41 | 50.01 | N/B | N/B |
| 3.400 | Links | 50.79 | | R8-300 | 116 | 0 | 335 | 62.051 | 146.41 | 50.79 | N/B | N/B |
| m | - | kN | | - | mm | mm | mm | kN | kN | kN | kN | kN |
| LIGGER 2 | | | | | | | | | | | | |
| DOORSNEDE BOVENWAPENING | | | | | | | | | | Ligger 2 | | |
| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | S,max | | | |
| 0.310 | 16.27 | 4R12 | | | 83 | 452 | | 27,72 | 300,00 | | | |
| m | kNm | - | - | - | mm | mm | - | mm | mm | | | |
| DOORSNEDE ONDERWAPENING | | | | | | | | | | Ligger 2 | | |
| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | S,max | | | |
| 0.000 | 2.36 | 4R12 | | | 12 | 452 | | 27,72 | 300,00 | | | |
| m | kNm | - | - | - | mm | mm | - | mm | mm | | | |
| DOORSNEDE FLANKWAPENING | | | | | | | | | | Ligger 2 | | |
| Positie | Mx | | | Wapening | | As,ben | As,toe | | | | | |
| 0.000 | 1,32 | | | 1R8 | | 0 | 50 | | | | | |
| m | kNm | | | - | | mm | mm | | | | | |
| DOORSNEDE BEUGELWAPENING | | | | | | | | | | Ligger 2 | | |
| Positie | Zijde | Vd | | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi |
| 0.000 | Rechts | 50.79 | | R8-300 | 116 | 0 | 335 | 62.051 | 146.41 | 50.79 | N/B | N/B |
| 0.310 | Links | 69.40 | | R8-300 | 159 | 8 | 335 | 61.581 | 146.41 | 69.40 | N/B | N/B |
| 0.310 | Rechts | 48.92 | | R8-300 | 112 | 0 | 335 | 62.051 | 146.41 | 48.92 | N/B | N/B |
| 0.620 | Links | 30.31 | | R8-300 | 69 | 0 | 335 | 62.051 | 146.41 | 30.31 | N/B | N/B |
| m | - | kN | | - | mm | mm | mm | kN | kN | kN | kN | kN |
| LIGGER 3 | | | | | | | | | | | | |
| DOORSNEDE BOVENWAPENING | | | | | | | | | | Ligger 3 | | |
| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | S,max | | | |
| 0.000 | 1.32 | 4R12 | | | 7 | 452 | | 27,72 | 300,00 | | | |
| 2.000 | 2.13 | 4R12 | Mti | | 11 | 452 | | 27,72 | 300,00 | | | |
| m | kNm | - | - | - | mm | mm | - | mm | mm | | | |
| DOORSNEDE ONDERWAPENING | | | | | | | | | | Ligger 3 | | |
| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | S,max | | | |
| 1.022 | 14.17 | 4R12 | | | 72 | 452 | | 27,72 | 300,00 | | | |
| m | kNm | - | - | - | mm | mm | - | mm | mm | | | |
| DOORSNEDE FLANKWAPENING | | | | | | | | | | Ligger 3 | | |
| Positie | Mx | | | Wapening | | As,ben | As,toe | | | | | |
| 0.000 | 3,99 | | | 1R8 | | 0 | 50 | | | | | |
| m | kNm | | | - | | mm | mm | | | | | |
| DOORSNEDE BEUGELWAPENING | | | | | | | | | | Ligger 3 | | |
| Positie | Zijde | Vd | | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi |
| 0.000 | Rechts | 30.31 | | R8-300 | 69 | 0 | 335 | 62.051 | 146.41 | 30.31 | N/B | N/B |

| | | | | | | | | | | | |
|-------|-------|-------|--------|----|----|-----|--------|--------|-------|-----|-----|
| 2.000 | Links | 28.98 | R8-300 | 66 | 0 | 335 | 62.051 | 146.41 | 28.98 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

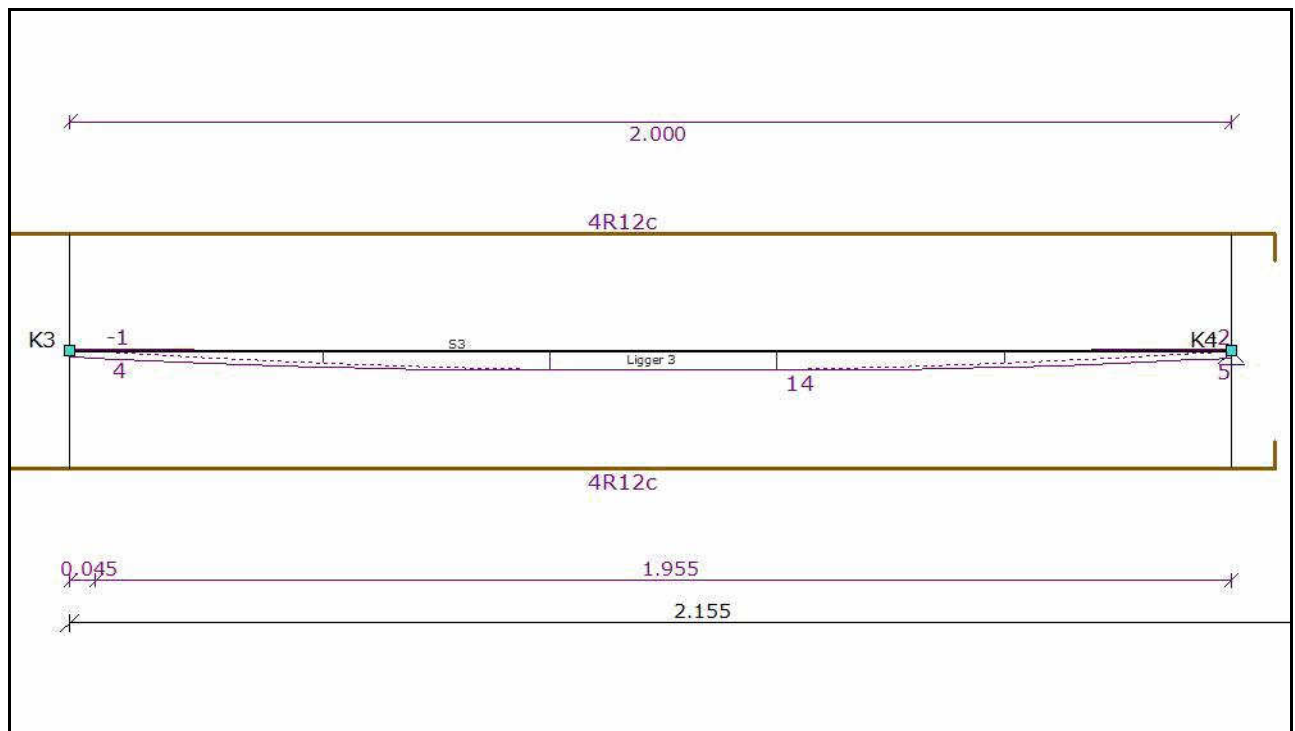
AFB. LANGSWAPENING. (AFBOUW) LIGGER 1



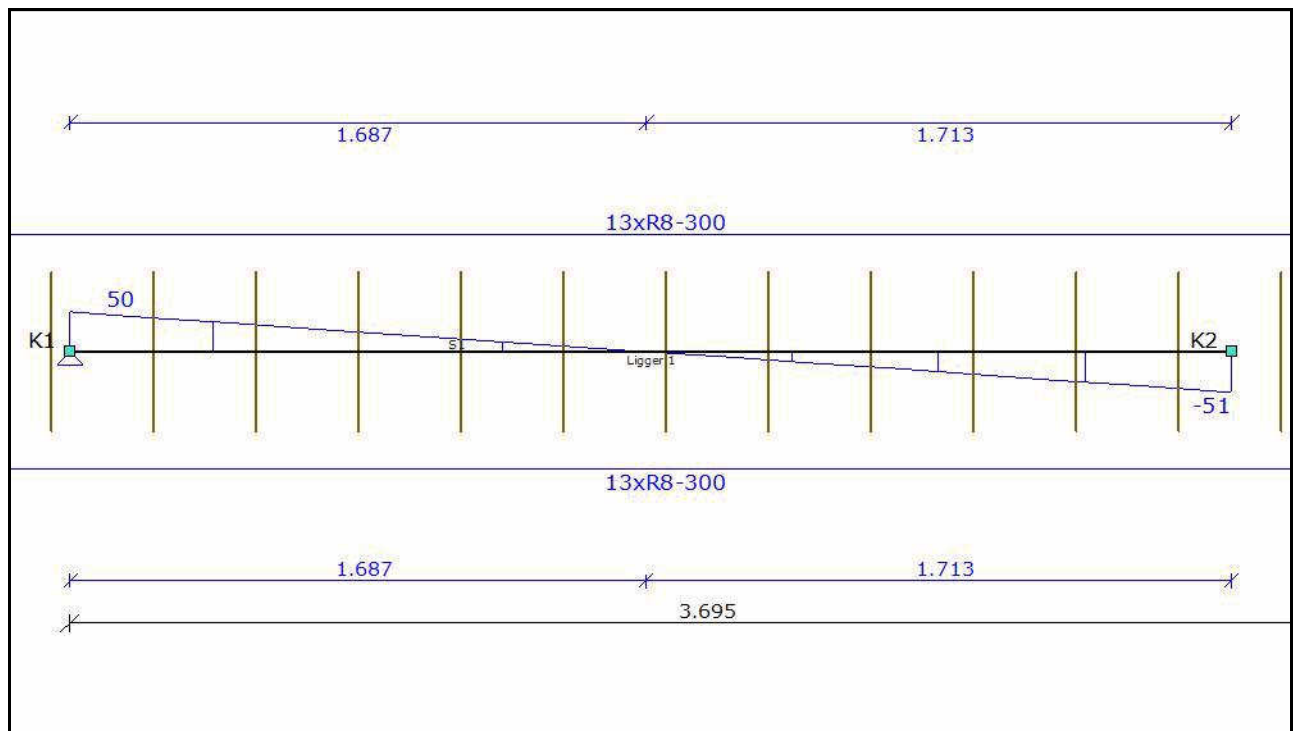
AFB. LANGSWAPENING. (AFBOUW) LIGGER 2



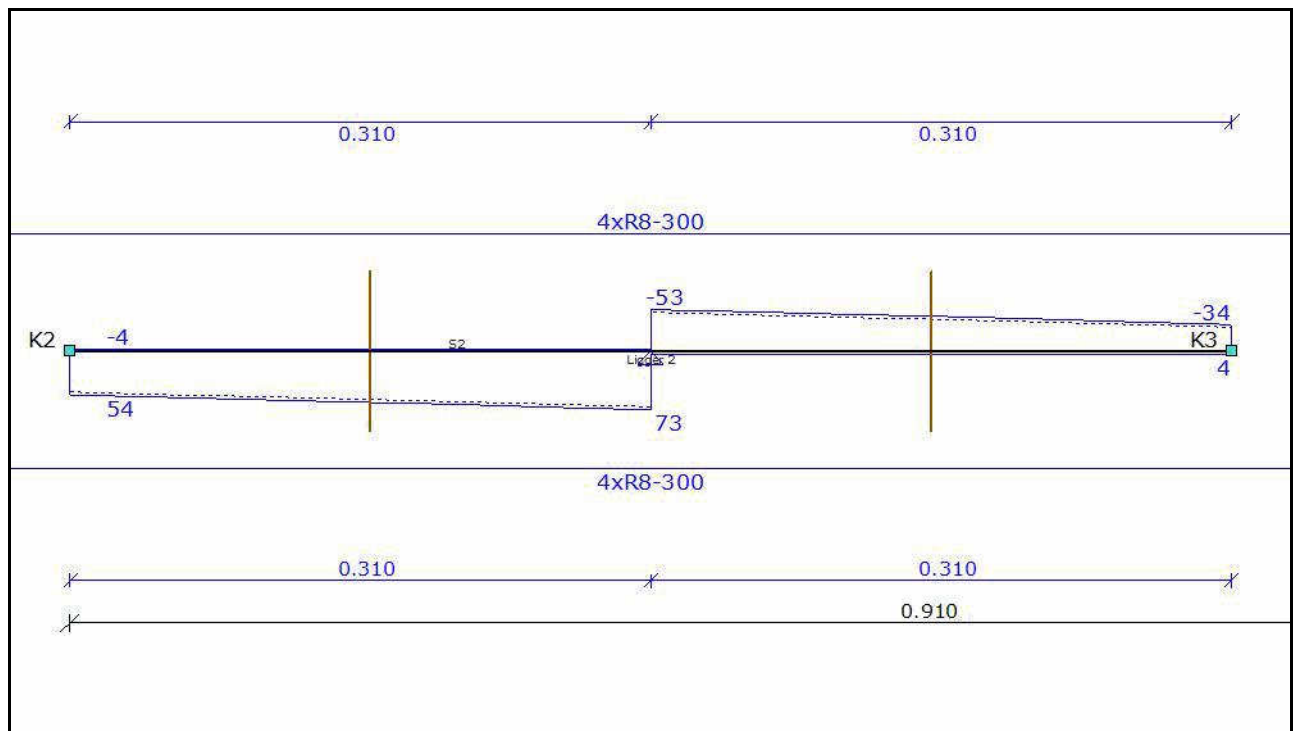
AFB. LANGSWAPENING. (AFBOUW) LIGGER 3



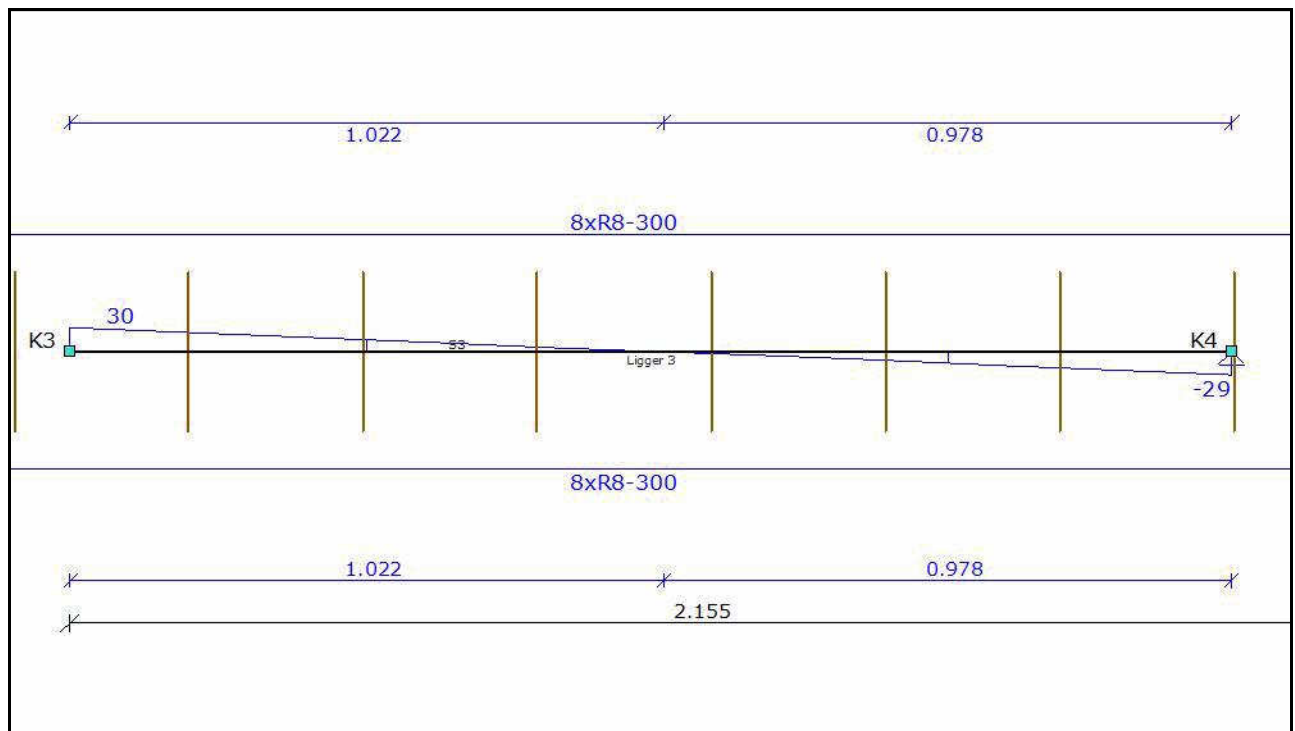
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 2

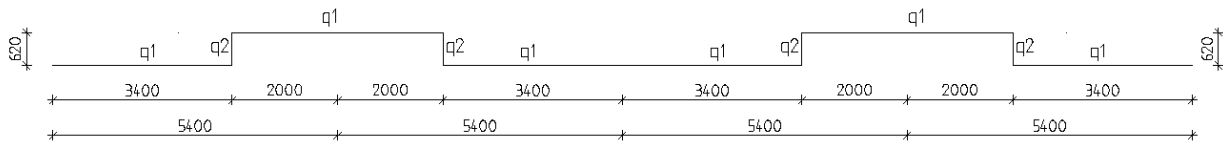


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 3



3.5

Voorgevelbalk dubbel



| | | | |
|------------|-------------|-------------------|-----------------|
| q1p.rep. : | gevel : | 0,7 * 4,0 * 6,5 : | 18,2 kN/m |
| | | 0,3 * 0,7 * 6,5 : | 1,4 kN/m |
| | fundering : | | <u>4,8 kN/m</u> |
| | | | 24.4 kN/m |

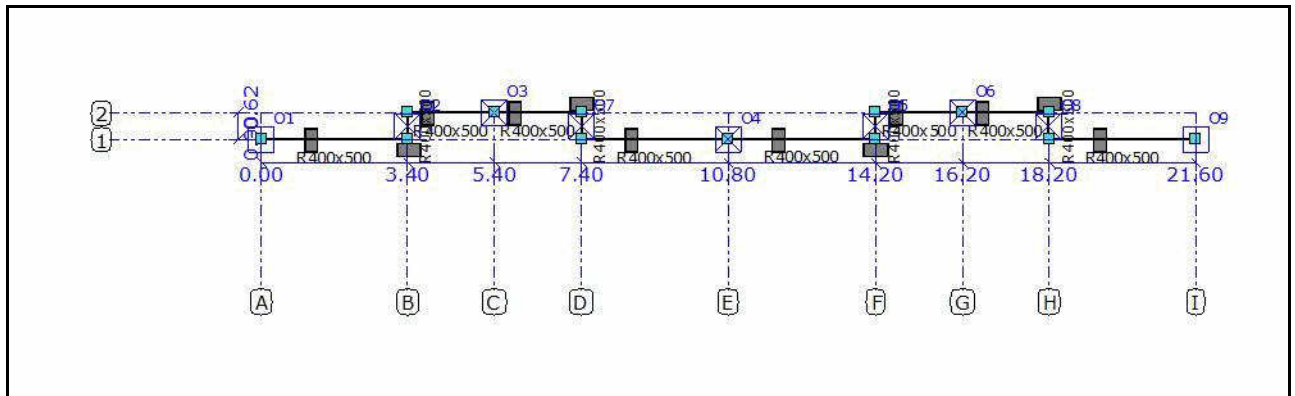
| | | | |
|------------|-----------------------------|-------------|-----------------|
| q2p.rep. : | 1 ^e verdieping : | 4,8 * 1,7 : | 8,2 kN/m |
| | b.g.g. : | 3,9 * 1,7 : | 6,6 kN/m |
| | gevel : | 4,0 * 6,5 : | 26,0 kN/m |
| | fundering : | | <u>4,8 kN/m</u> |
| | | | 45,6 kN/m |

| | | | |
|------------|-----------------------------|--------------|----------|
| q2v.rep. : | 1 ^e verdieping : | 2,55 * 1,7 : | 4,3 kN/m |
| | b.g.g. : | 2,55 * 1,7 : | 4,3 kN/m |

CONSTRUCTIEGEGEVENS

| Projecttype | Knopen | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------|-------------|-----------|----------|-----------|
| Balkrooster | 13 | 12 | 9 | 1 | 3 | 13 |

AFB. GEOMETRIE LIGGER



STAVEN

| Staaft | Knoop B | Knoop E | X-B | Y-B | X-E | Y-E | Lengte Profiel | Positie |
|--------|---------|---------|--------|--------|--------|--------|----------------|------------------|
| S1 | K1 | K2 | 0,000 | 0,000 | 3,400 | 0,000 | 3,400 P1 | 0,000 - L(3,400) |
| S2 | K2 | K3 | 3,400 | 0,000 | 3,400 | -0,620 | 0,620 P1 | 0,000 - L(0,620) |
| S3 | K3 | K4 | 3,400 | -0,620 | 5,400 | -0,620 | 2,000 P1 | 0,000 - L(2,000) |
| S4 | K4 | K5 | 5,400 | -0,620 | 7,400 | -0,620 | 2,000 P1 | 0,000 - L(2,000) |
| S5 | K5 | K6 | 7,400 | -0,620 | 7,400 | 0,000 | 0,620 P1 | 0,000 - L(0,620) |
| S6 | K6 | K7 | 7,400 | 0,000 | 10,800 | 0,000 | 3,400 P1 | 0,000 - L(3,400) |
| S7 | K7 | K8 | 10,800 | 0,000 | 14,200 | 0,000 | 3,400 P1 | 0,000 - L(3,400) |
| S8 | K8 | K9 | 14,200 | 0,000 | 14,200 | -0,620 | 0,620 P1 | 0,000 - L(0,620) |
| S9 | K9 | K10 | 14,200 | -0,620 | 16,200 | -0,620 | 2,000 P1 | 0,000 - L(2,000) |
| S10 | K10 | K11 | 16,200 | -0,620 | 18,200 | -0,620 | 2,000 P1 | 0,000 - L(2,000) |
| S11 | K11 | K12 | 18,200 | -0,620 | 18,200 | 0,000 | 0,620 P1 | 0,000 - L(0,620) |
| S12 | K12 | K13 | 18,200 | 0,000 | 21,600 | 0,000 | 3,400 P1 | 0,000 - L(3,400) |
| - | - | - | m | m | m | m | m - | |

PROFIELEN

| Profiel | Profielnaam | It | Iy Materiaal | Hoek |
|---------|-------------|------------|-------------------|------|
| P1 | R400x500 | 5.5552e-03 | 4.1667e-03 C20/25 | 0 |

- - m4 m4 - °

PROFIELVORMEN

| Profiel | Verl. h. | hB | hE | tf | tw | tf2 | B | bL | bR Raatl. | Hoogte |
|---------|----------|-------|-------|-------|-------|-------|-------|-------|-----------|--------|
| P1 | Nee | 0.500 | 0.500 | 0.000 | 0.000 | 0.000 | 0.400 | 0.000 | 0.000 Nee | 0.000 |
| - | - | m | m | m | m | m | m | m | m - | m |

MATERIALEN

| Materiaalnaam | Poison | Dichtheid | E-Modulus | Uitzettingcoëff |
|---------------|--------|-----------|------------|-----------------|
| C20/25 | 0.20 | 25.00 | 3.0000e+07 | 10.0000e-06 |
| - | - | kN/m3 | kN/m2 | C°m |

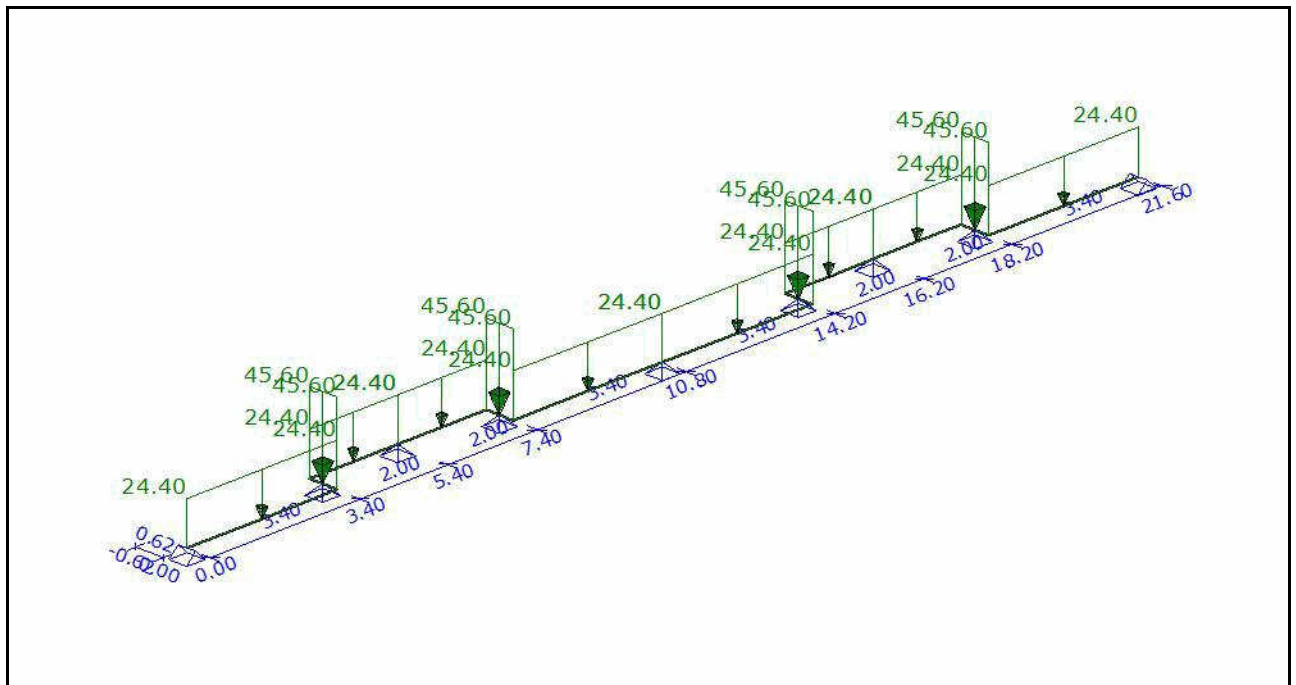
OPLEGGINGEN

| Oplegging | Staaf | Positie | | Xr | Yr |
|-----------|-------|----------|------|--------|--------|
| O1 | S1 | 0,000 | vast | vast | vrij |
| O2 | S2 | 0,310 | vast | vrij | vrij |
| O3 | S3 | L(2,000) | vast | vrij | vrij |
| O4 | S7 | 0,000 | vast | vrij | vrij |
| O5 | S8 | 0,310 | vast | vrij | vrij |
| O6 | S9 | L(2,000) | vast | vrij | vrij |
| O7 | S5 | 0,310 | vast | vrij | vrij |
| O8 | S11 | 0,310 | vast | vrij | vrij |
| O9 | S12 | L(3,400) | vast | vast | vrij |
| - | - | m | kN/m | kNmrad | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------------------|-------------|--------------|--------------|-------------|---------------------------------|
| B.G.1: Permanent | | | | | |
| q | 24,40 | 24,40 | 0,000 | 3,400(L) | Z S1,S3-S4,S6-S7, S9-S10,S12 |
| q | 45,60 | 45,60 | 0,000 | 0,620(L) | Z S2,S5,S8,S11 |
| Som lasten | X: 0,00 | kN Z: 640,13 | kN | | |
| - | - | - | m | m | - - |

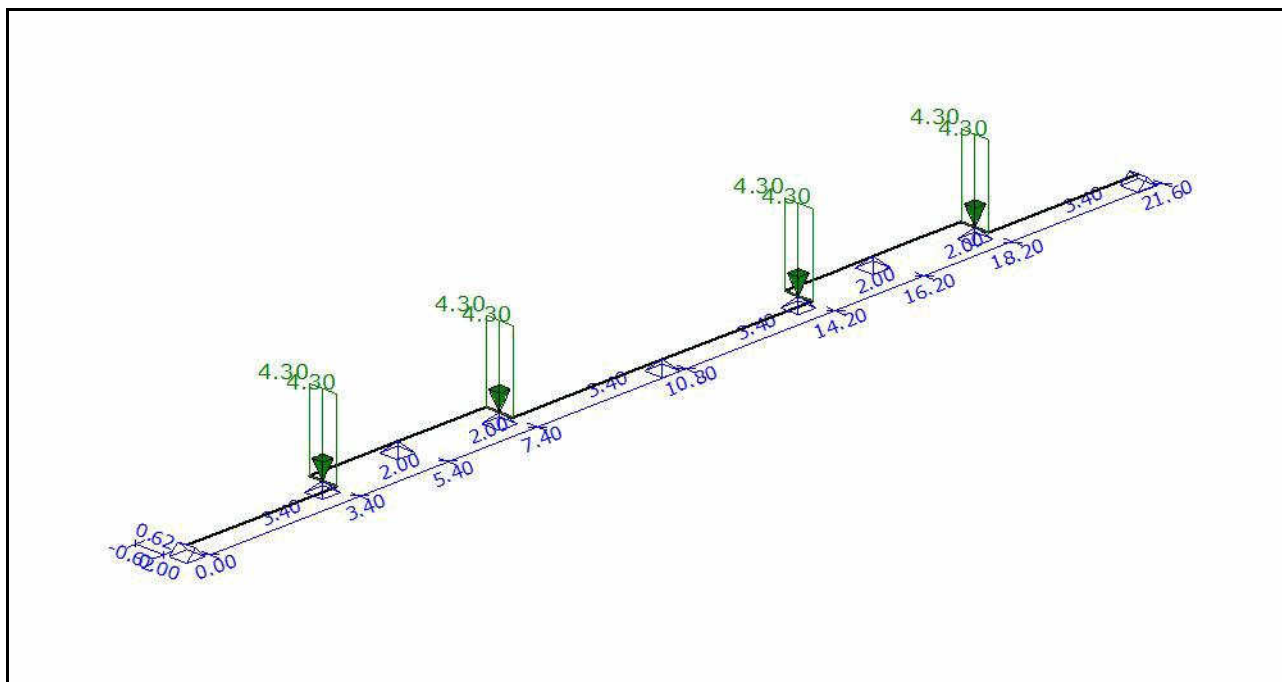
B.G.1: PERMANENT



B.G.2: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.2: 1e verdieping | | | | | |
| q | 4,30 | 4,30 | 0,000 | 0,620(L) | Z S2,S5,S8,S11 |
| Som lasten | X: 0,00 | kN Z: 10,66 | kN | | |
| - | - | - | m | m | - - |

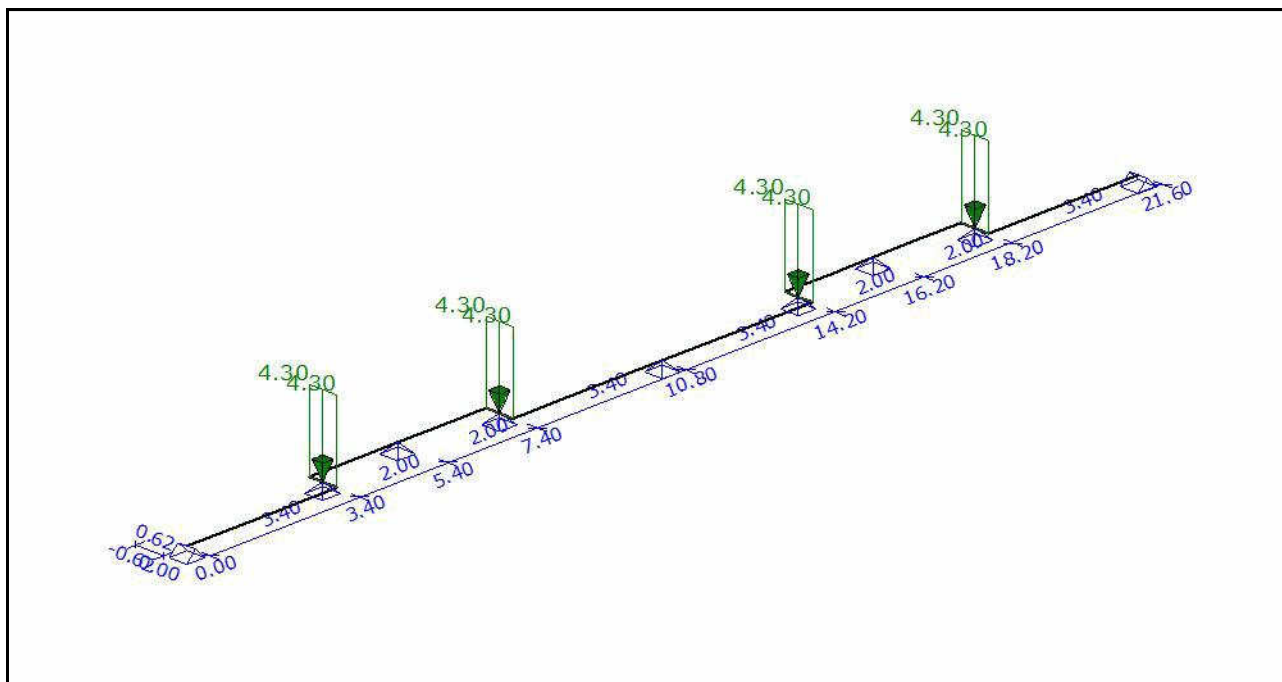
B.G.2: 1E VERDIEPING



B.G.3: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.3: 2e verdieping | | | | | |
| q | 4,30 | 4,30 | 0,000 | 0,620(L) | Z S2,S5,S8,S11 |
| Som lasten | X: 0,00 | kN Z: 10,66 | kN | | |
| - | - | - | m | m | - - |

B.G.3: 2E VERDIEPING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 | Fu.C.3 (Overslaan) | Fu.C.4 (Overslaan) |
|------|--------------|--------|--------|-----------------------|-----------------------|
|------|--------------|--------|--------|-----------------------|-----------------------|

| | | | | | |
|-------|---------------|------|------|------|------|
| B.G.1 | Permanent | 1.08 | 1.22 | 1.08 | 1.08 |
| B.G.2 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 |
| B.G.3 | 2e verdieping | 1.35 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.40 | 1.00 | 0.40 |
| B.G.3 | 2e verdieping | - | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 |
|-------|---------------|-----------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 |
| B.G.2 | 1e verdieping | - | 0.50 | 0.30 |
| B.G.3 | 2e verdieping | - | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 1e verdieping | 0.30 |
| B.G.3 | 2e verdieping | 0.30 |

B.G. OPLEGREACTIES

| B.G. | Oplegging | Staal | Positie | Z | Mx | My |
|-------|---------------------|-------|---------|----------------|-------|------|
| B.G.1 | O1 | S1 | 0.000 | -41.26 | -0.72 | 0.00 |
| B.G.1 | O2 | S2 | 0.310 | -106.84 | 0.00 | 0.00 |
| B.G.1 | O3 | S3 | 0.000 | -24.08 | 0.00 | 0.00 |
| B.G.1 | O4 | S7 | 0.000 | -97.64 | 0.00 | 0.00 |
| B.G.1 | O5 | S8 | 0.310 | -99.06 | 0.00 | 0.00 |
| B.G.1 | O6 | S9 | 0.000 | -24.08 | 0.00 | 0.00 |
| B.G.1 | O7 | S5 | 0.310 | -99.06 | 0.00 | 0.00 |
| B.G.1 | O8 | S11 | 0.310 | -106.84 | 0.00 | 0.00 |
| B.G.1 | O9 | S12 | 0.000 | -41.26 | -0.72 | 0.00 |
| | Som Reacties | | | -640.13 | | |
| | Som Lasten | | | 640.13 | | |
| B.G.2 | O1 | S1 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.2 | O2 | S2 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.2 | O3 | S3 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.2 | O4 | S7 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.2 | O5 | S8 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.2 | O6 | S9 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.2 | O7 | S5 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.2 | O8 | S11 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.2 | O9 | S12 | 0.000 | 0.00 | 0.00 | 0.00 |
| | Som Reacties | | | -10.66 | | |
| | Som Lasten | | | 10.66 | | |
| B.G.3 | O1 | S1 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.3 | O2 | S2 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.3 | O3 | S3 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.3 | O4 | S7 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.3 | O5 | S8 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.3 | O6 | S9 | 0.000 | 0.00 | 0.00 | 0.00 |
| B.G.3 | O7 | S5 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.3 | O8 | S11 | 0.310 | -2.67 | 0.00 | 0.00 |
| B.G.3 | O9 | S12 | 0.000 | 0.00 | 0.00 | 0.00 |
| | Som Reacties | | | -10.66 | | |
| | Som Lasten | | | 10.66 | | |
| - | - | - | m | kN | kNm | kNm |

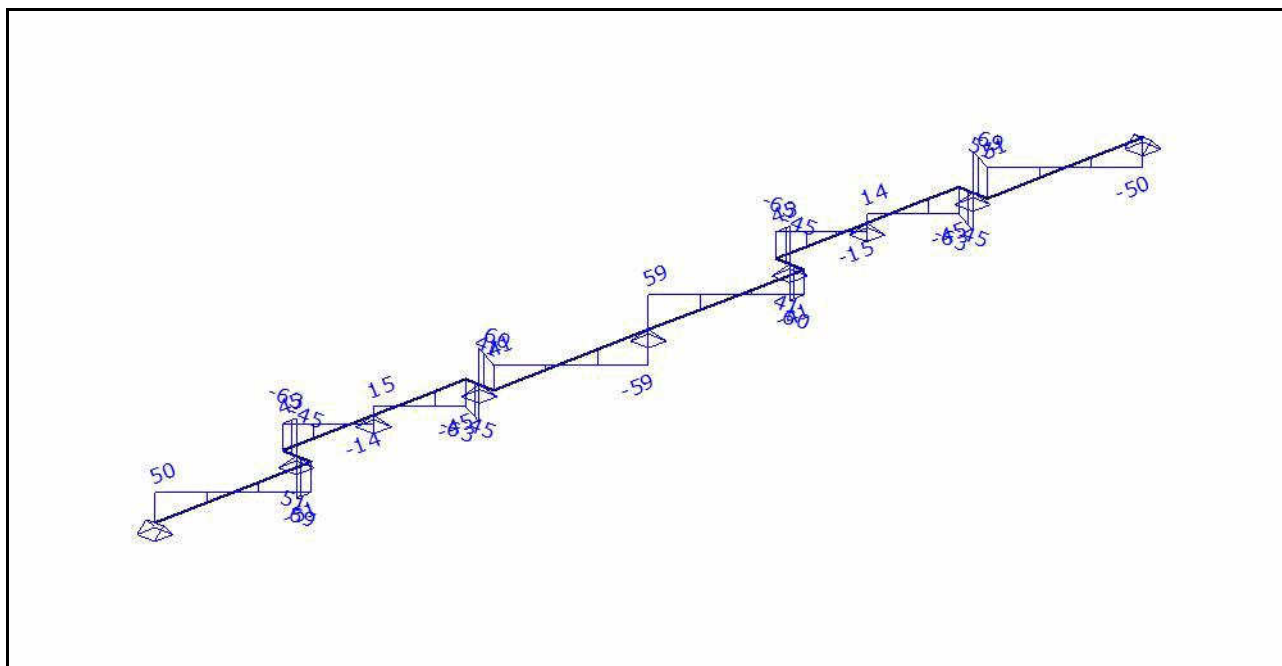
FU.C. OPLEGREACTIES

| B.C. | Oplegging | Staal | Positie | Z | Mx | My |
|--------|-----------|-------|---------|---------|-------|------|
| Fu.C.1 | O1 | S1 | 0.000 | -44.62 | -0.78 | 0.00 |
| Fu.C.1 | O2 | S2 | 0.310 | -122.73 | 0.00 | 0.00 |
| Fu.C.1 | O3 | S3 | 0.000 | -26.04 | 0.00 | 0.00 |
| Fu.C.1 | O4 | S7 | 0.000 | -105.59 | 0.00 | 0.00 |
| Fu.C.1 | O5 | S8 | 0.310 | -114.31 | 0.00 | 0.00 |

| B.C. | Oplegging | Staal | Positie | Z | Mx | My |
|---------------------|-----------|-------|---------|----------------|-------|------|
| Fu.C.1 | O6 | S9 | 0.000 | -26.04 | 0.00 | 0.00 |
| Fu.C.1 | O7 | S5 | 0.310 | -114.31 | 0.00 | 0.00 |
| Fu.C.1 | O8 | S11 | 0.310 | -122.73 | 0.00 | 0.00 |
| Fu.C.1 | O9 | S12 | 0.000 | -44.62 | -0.78 | 0.00 |
| Som Reacties | | | | -721.00 | | |
| Som Lasten | | | | 721.00 | | |
| Fu.C.2 | O1 | S1 | 0.000 | -50.13 | -0.87 | 0.00 |
| Fu.C.2 | O2 | S2 | 0.310 | -132.69 | 0.00 | 0.00 |
| Fu.C.2 | O3 | S3 | 0.000 | -29.26 | 0.00 | 0.00 |
| Fu.C.2 | O4 | S7 | 0.000 | -118.64 | 0.00 | 0.00 |
| Fu.C.2 | O5 | S8 | 0.310 | -123.24 | 0.00 | 0.00 |
| Fu.C.2 | O6 | S9 | 0.000 | -29.26 | 0.00 | 0.00 |
| Fu.C.2 | O7 | S5 | 0.310 | -123.24 | 0.00 | 0.00 |
| Fu.C.2 | O8 | S11 | 0.310 | -132.69 | 0.00 | 0.00 |
| Fu.C.2 | O9 | S12 | 0.000 | -50.13 | -0.87 | 0.00 |
| Som Reacties | | | | -789.27 | | |
| Som Lasten | | | | 789.27 | | |
| - | - | - | m | kN | kNm | kNm |

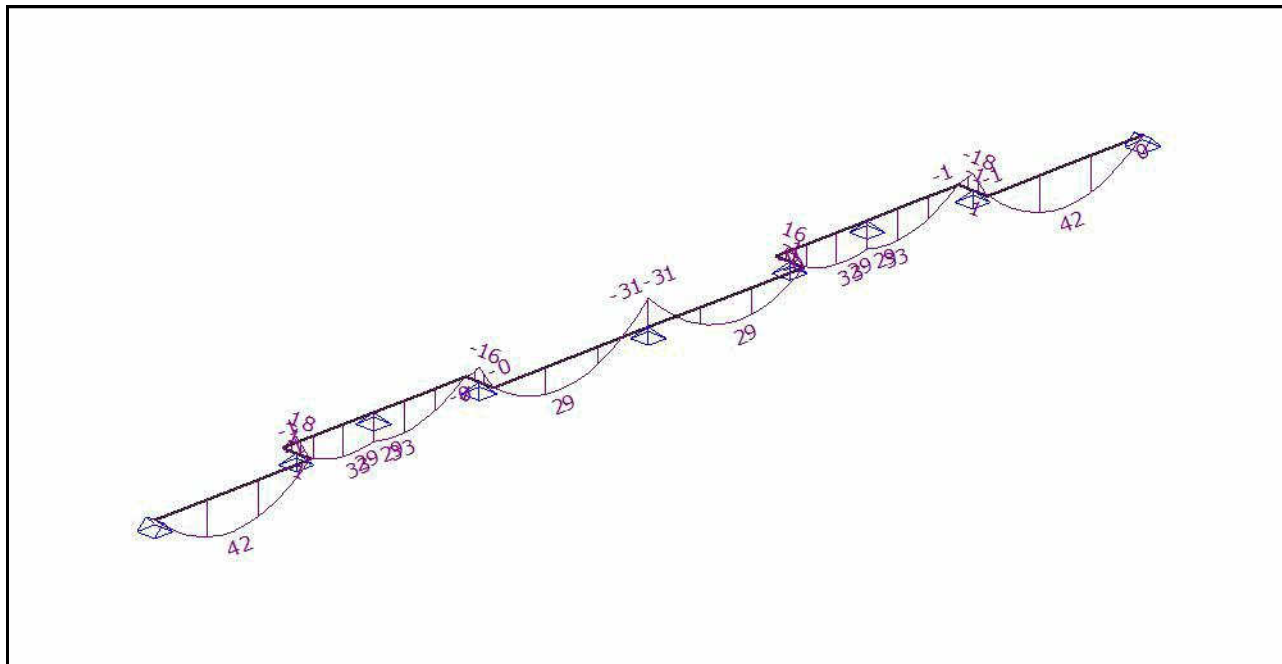
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 3.400 | G1 |
| S2 | P1 | R400x500 | C20/25 | Ligger 2 | Ligger | 0.000 | 0.620 | G1 |
| S3 | P1 | R400x500 | C20/25 | Ligger 3 | Ligger | 0.000 | 2.000 | G1 |
| S4 | P1 | R400x500 | C20/25 | Ligger 3 | Ligger | 0.000 | 2.000 | G1 |
| S5 | P1 | R400x500 | C20/25 | Ligger 4 | Ligger | 0.000 | 0.620 | G1 |
| S6 | P1 | R400x500 | C20/25 | Ligger 5 | Ligger | 0.000 | 3.400 | G1 |
| S7 | P1 | R400x500 | C20/25 | Ligger 5 | Ligger | 0.000 | 3.400 | G1 |
| S8 | P1 | R400x500 | C20/25 | Ligger 6 | Ligger | 0.000 | 0.620 | G1 |
| S9 | P1 | R400x500 | C20/25 | Ligger 7 | Ligger | 0.000 | 2.000 | G1 |
| S10 | P1 | R400x500 | C20/25 | Ligger 7 | Ligger | 0.000 | 2.000 | G1 |
| S11 | P1 | R400x500 | C20/25 | Ligger 8 | Ligger | 0.000 | 0.620 | G1 |
| S12 | P1 | R400x500 | C20/25 | Ligger 9 | Ligger | 0.000 | 3.400 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENEN

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|-----------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | Lh.w. | 31.5 | 0 | b,min: 400 >= 100 |
| - | - | - | - | - | - | - | mm | mm | NEN-EN1992-1-1#9.2(1) |

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | Onder | Zij- + Voorkant |
|-------|-----------|-------|-------|-----------------|
|-------|-----------|-------|-------|-----------------|

| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
|----|----|------|-----|-------|-------|------|-------|------|-----|-------|-------|------|-------|------|-----|-------|-------|------|-------|
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVENS

| Ligger 1 | | | | | | | | | | | | Ligger 2 | | | | | | | | | | | |
|----------|---------|---------|--------|----------|-------|----------|-------|----------|----------|---------------|--------|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|--------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment | | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| | 0.000 | O1 | n.v.t. | 0,000 | | | Ja | 6,36 | 0,00 | Niet afgetopt | Niet | | 0.000 | | | S1 | | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | 3.400 | | | | S2 | | 0,400 | Nee | | Niet afgetopt | Niet | | 0.310 | O2 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | m | - | - | m | - | m | - | kNm | kNm | - | - | | 0.620 | | | S3 | | 0,400 | Nee | | | Niet afgetopt | Niet |
| | | | | | | | | | | | | | m | - | - | m | - | m | - | kNm | kNm | - | - |
| Ligger 3 | | | | | | | | | | | | Ligger 4 | | | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment | | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| | 0.000 | | | | S2 | | 0,400 | Nee | | Niet afgetopt | Niet | | 0.000 | | | S6 | | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | 2.000 | O3 | n.v.t. | 0,000 | | | Ja | 0,00 | 0,00 | Niet afgetopt | Niet | | 0.310 | O7 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 4.000 | | | | S5 | | 0,400 | Nee | | Niet afgetopt | Niet | | 0.620 | | | S4 | | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | m | - | - | m | - | m | - | kNm | kNm | - | - | | m | - | - | m | - | m | - | kNm | kNm | - | - |
| Ligger 5 | | | | | | | | | | | | Ligger 6 | | | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment | | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| | 0.000 | | | | S5 | | 0,400 | Nee | | Niet afgetopt | Niet | | 0.000 | | | S7 | | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | 3.400 | O4 | n.v.t. | 0,000 | | | Nee | | | Niet afgetopt | Niet | | 0.310 | O5 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 6.800 | | | | S8 | | 0,400 | Nee | | Niet afgetopt | Niet | | 0.620 | | | S9 | | 0,400 | Nee | | | Niet afgetopt | Niet |
| afgetopt | m | - | - | m | - | m | - | kNm | kNm | - | - | | m | - | - | m | - | m | - | kNm | kNm | - | - |
| Ligger 7 | | | | | | | | | | | | Ligger 7 | | | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment | | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| | 0.000 | | | | S8 | | 0,400 | Nee | | Niet afgetopt | Niet | | 0.000 | | | S8 | | 0,400 | Nee | | | Niet afgetopt | Niet |

| | | | | | | | | | |
|-----------------|----------------|----------------|-------------|-----------------|--------------|-----------------|------------|-----------------|-----------------|
| afgetopt | 2.000 | O6 | n.v.t. | 0,000 | Ja | 0,00 | 0,00 | Niet afgetopt | Niet |
| afgetopt | 4.000 | | | S11 | 0,400 | Nee | | Niet afgetopt | Niet |
| afgetopt | m | - | - | m | - | m | kNm | kNm | - |
| Ligger 8 | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. |
| | 0.000 | | | | S12 | 0,400 | Nee | | Niet afgetopt |
| afgetopt | 0.310 | O8 | n.v.t. | 0,000 | | | N/B | | Niet afgetopt |
| afgetopt | 0.620 | | | S10 | 0,400 | Nee | | | Niet afgetopt |
| afgetopt | m | - | - | m | - | m | kNm | kNm | - |
| Ligger 9 | | | | | | | | | |
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. |
| | 0.000 | | | | S11 | 0,400 | Nee | | Niet afgetopt |
| afgetopt | 3.400 | O9 | n.v.t. | 0,000 | | | Ja | 6,36 | 0,00 |
| afgetopt | m | - | - | m | - | m | kNm | kNm | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 6.36 | 4R12 | Mti | | 32 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|-------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.691 | 42.39 | 4R12 | | | 218 | 452 | | 25,21 | 279,33 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0.87 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 1 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 50.13 | R8-300 | 115 | 0 | 335 | 62.051 | 146.41 | 50.13 | N/B | N/B |
| 3.400 | Links | 50.66 | R8-300 | 116 | 0 | 335 | 62.051 | 146.41 | 50.66 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

LIGGER 2

DOORSNEDE BOVENWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 2 S,max |
|---------|-------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.310 | 17.72 | 4R12 | | | 90 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 2 S,max |
|---------|------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 0.00 | 4R12 | | | 0 | 452 | N/B | | |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 2 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0.90 | 1R8 | 0 | 50 | |

| | | | | | | | | | | | | |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|--------------|--------------|------------|-------------|--------------|-----------------|
| m | kNm | - | | mm | mm | | | | | | | |
| DOORSNEDE BEUGELWAPENING | | | | | | | | | | | | Ligger 2 |
| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi | |
| 0.000 | Rechts | 50.66 | R8-300 | 116 | 0 | 335 | 62.051 | 146.41 | 50.66 | N/B | N/B | |
| 0.310 | Links | 69.28 | R8-300 | 159 | 6 | 335 | 61.733 | 146.41 | 69.28 | N/B | N/B | |
| 0.310 | Rechts | 63.41 | R8-300 | 145 | 6 | 335 | 61.733 | 146.41 | 63.41 | N/B | N/B | |
| 0.620 | Links | 44.80 | R8-300 | 103 | 0 | 335 | 62.051 | 146.41 | 44.80 | N/B | N/B | |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN | |
| LIGGER 3 | | | | | | | | | | | | |
| DOORSNEDE BOVENWAPENING | | | | | | | | | | | | Ligger 3 |
| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | | D,max | | | S,max | |
| 0.000 | 0.00 4R12 | | | 0 | 452 | N/B | | | | | | |
| m | kNm - | - | - | mm | mm | - | | mm | | | mm | |
| DOORSNEDE ONDERWAPENING | | | | | | | | | | | | Ligger 3 |
| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | | D,max | | | S,max | |
| 1.511 | 32.95 4R12 | | | 169 | 452 | | | 27,72 | | | 300,00 | |
| 2.498 | 33.08 4R12 | | | 170 | 452 | | | 27,72 | | | 300,00 | |
| m | kNm - | - | - | mm | mm | - | | mm | | | mm | |
| DOORSNEDE FLANKWAPENING | | | | | | | | | | | | Ligger 3 |
| Positie | Mx | Wapening | | As,ben | As,toe | | | | | | | |
| 0.000 | 0,95 | 1R8 | | 0 | 50 | | | | | | | |
| 2.000 | 0,95 | 1R8 | | 0 | 50 | | | | | | | |
| m | kNm | - | | mm | mm | | | | | | | |
| DOORSNEDE BEUGELWAPENING | | | | | | | | | | | | Ligger 3 |
| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi | |
| 0.000 | Rechts | 44.80 | R8-300 | 103 | 0 | 335 | 62.051 | 146.41 | 44.80 | N/B | N/B | |
| 2.000 | Links | 14.49 | R8-300 | 33 | 0 | 335 | 62.051 | 146.41 | 14.49 | N/B | N/B | |
| 2.000 | Rechts | 14.76 | R8-300 | 34 | 0 | 335 | 62.051 | 146.41 | 14.76 | N/B | N/B | |
| 4.000 | Links | 44.53 | R8-300 | 102 | 0 | 335 | 62.051 | 146.41 | 44.53 | N/B | N/B | |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN | |
| LIGGER 4 | | | | | | | | | | | | |
| DOORSNEDE BOVENWAPENING | | | | | | | | | | | | Ligger 4 |
| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | | D,max | | | S,max | |
| 0.310 | 15.74 4R12 | | | 80 | 452 | | | 27,72 | | | 300,00 | |
| m | kNm - | - | - | mm | mm | - | | mm | | | mm | |
| DOORSNEDE ONDERWAPENING | | | | | | | | | | | | Ligger 4 |
| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | | D,max | | | S,max | |
| 0.000 | 0.00 4R12 | | | 0 | 452 | N/B | | | | | | |
| m | kNm - | - | - | mm | mm | - | | mm | | | mm | |
| DOORSNEDE FLANKWAPENING | | | | | | | | | | | | Ligger 4 |
| Positie | Mx | Wapening | | As,ben | As,toe | | | | | | | |
| 0.000 | 0,36 | 1R8 | | 0 | 50 | | | | | | | |
| m | kNm | - | | mm | mm | | | | | | | |
| DOORSNEDE BEUGELWAPENING | | | | | | | | | | | | Ligger 4 |
| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi | |
| 0.000 | Rechts | 41.48 | R8-300 | 95 | 0 | 335 | 62.051 | 146.41 | 41.48 | N/B | N/B | |
| 0.310 | Links | 60.09 | R8-300 | 138 | 0 | 335 | 62.051 | 146.41 | 60.09 | N/B | N/B | |
| 0.310 | Rechts | 63.14 | R8-300 | 145 | 2 | 335 | 61.923 | 146.41 | 63.14 | N/B | N/B | |
| 0.620 | Links | 44.53 | R8-300 | 102 | 0 | 335 | 62.051 | 146.41 | 44.53 | N/B | N/B | |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN | |

LIGGER 5

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 5 S,max |
|---------|------------|------|--------|--------|--------|---------------|-------|-------------------|
| 3.400 | 30.69 4R12 | | | 157 | 452 | | 27,72 | 300,00 |
| 3.400 | 30.69 4R12 | | | 157 | 452 | | 27,72 | 300,00 |
| m | kNm - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 5 S,max |
|---------|------------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.399 | 28.66 4R12 | | | 147 | 452 | | 27,72 | 300,00 |
| 5.401 | 28.66 4R12 | | | 147 | 452 | | 27,72 | 300,00 |
| m | kNm - | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 5 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| 3.400 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 5 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 41.48 | R8-300 | 0 | 0 | 335 | 62.051 | 146.41 | 41.48 | N/B | N/B |
| 3.400 | Links | 59.32 | R8-300 | 0 | 0 | 335 | 62.051 | 146.41 | 59.32 | N/B | N/B |
| 3.400 | Rechts | 59.32 | R8-300 | 0 | 0 | 335 | 62.051 | 146.41 | 59.32 | N/B | N/B |
| 6.800 | Links | 41.48 | R8-300 | 0 | 0 | 335 | 62.051 | 146.41 | 41.48 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

LIGGER 6

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 6 S,max |
|---------|------------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.310 | 15.74 4R12 | | | 80 | 452 | | 27,72 | 300,00 |
| m | kNm - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 6 S,max |
|---------|-----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 0.00 4R12 | | | 0 | 452 | N/B | | |
| m | kNm - | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 6 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,36 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 6 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 41.48 | R8-300 | 95 | 0 | 335 | 62.051 | 146.41 | 41.48 | N/B | N/B |
| 0.310 | Links | 60.09 | R8-300 | 138 | 0 | 335 | 62.051 | 146.41 | 60.09 | N/B | N/B |
| 0.310 | Rechts | 63.14 | R8-300 | 145 | 2 | 335 | 61.923 | 146.41 | 63.14 | N/B | N/B |
| 0.620 | Links | 44.53 | R8-300 | 102 | 0 | 335 | 62.051 | 146.41 | 44.53 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

LIGGER 7

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 7 S,max |
|---------|-----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 0.00 4R12 | | | 0 | 452 | N/B | | |
| m | kNm - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 7 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.502 | 33.08 | 4R12 | | 170 | 452 | | 27,72 | 300,00 |
| 2.489 | 32.95 | 4R12 | | 169 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 7 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,95 | 1R8 | 0 | 50 | |
| 2.000 | 0,95 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 7 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 44.53 | R8-300 | 102 | 0 | 335 | 62.051 | 146.41 | 44.53 | N/B | N/B |
| 2.000 | Links | 14.76 | R8-300 | 34 | 0 | 335 | 62.051 | 146.41 | 14.76 | N/B | N/B |
| 2.000 | Rechts | 14.49 | R8-300 | 33 | 0 | 335 | 62.051 | 146.41 | 14.49 | N/B | N/B |
| 4.000 | Links | 44.80 | R8-300 | 103 | 0 | 335 | 62.051 | 146.41 | 44.80 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

LIGGER 8

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 8 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.310 | 17.72 | 4R12 | | 90 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 8 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 0.00 | 4R12 | | 0 | 452 | N/B | | |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 8 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,90 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 8 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|------------------|
| 0.000 | Rechts | 50.66 | R8-300 | 116 | 0 | 335 | 62.051 | 146.41 | 50.66 | N/B | N/B |
| 0.310 | Links | 69.28 | R8-300 | 159 | 6 | 335 | 61.733 | 146.41 | 69.28 | N/B | N/B |
| 0.310 | Rechts | 63.41 | R8-300 | 145 | 6 | 335 | 61.733 | 146.41 | 63.41 | N/B | N/B |
| 0.620 | Links | 44.80 | R8-300 | 103 | 0 | 335 | 62.051 | 146.41 | 44.80 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

LIGGER 9

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 9 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.000 | 0.00 | 4R12 | | 0 | 452 | N/B | | |
| 3.400 | 6.36 | 4R12 | Mti | 32 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 9 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.709 | 42.39 | 4R12 | | 218 | 452 | | 25,21 | 279,33 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

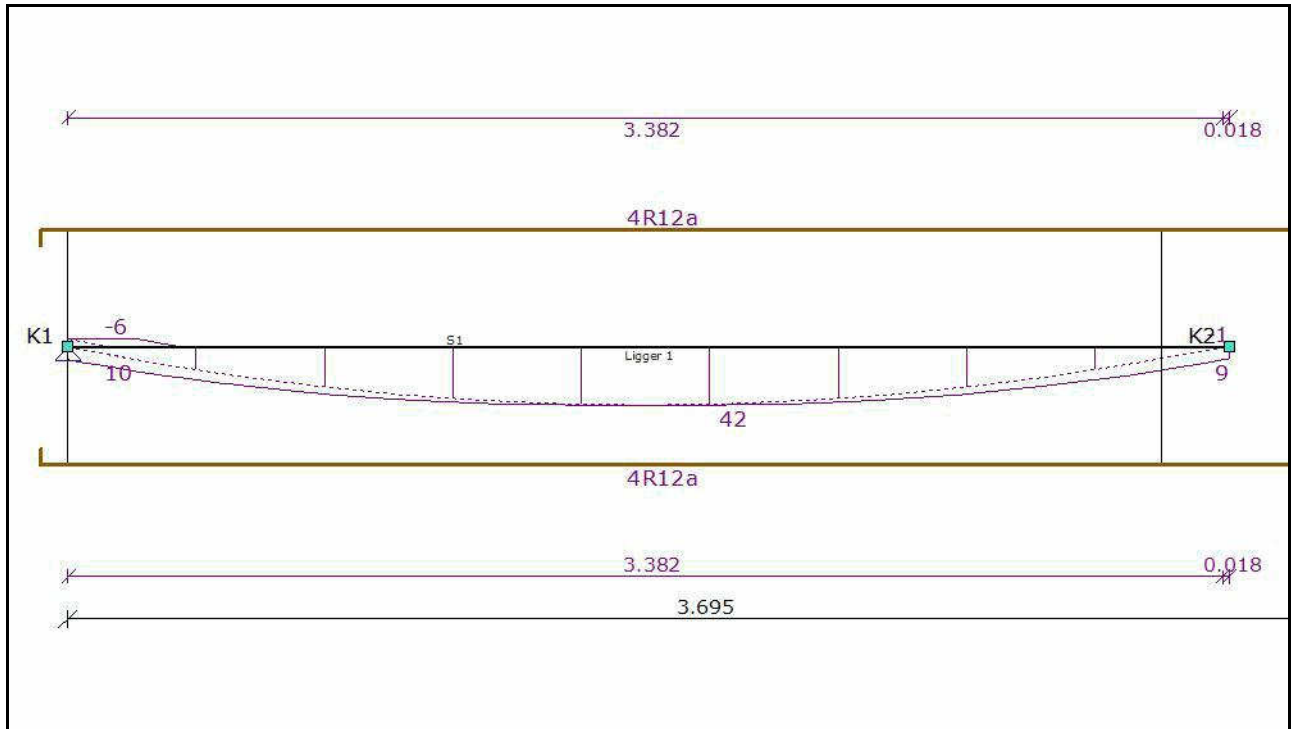
| Positie | Mx | Wapening | As,ben | As,toe | Ligger 9 |
|---------|----|----------|--------|--------|----------|
|---------|----|----------|--------|--------|----------|

| | | | | |
|-------|------|-----|----|----|
| 0.000 | 0.87 | IR8 | 0 | 50 |
| m | kNm | - | mm | mm |

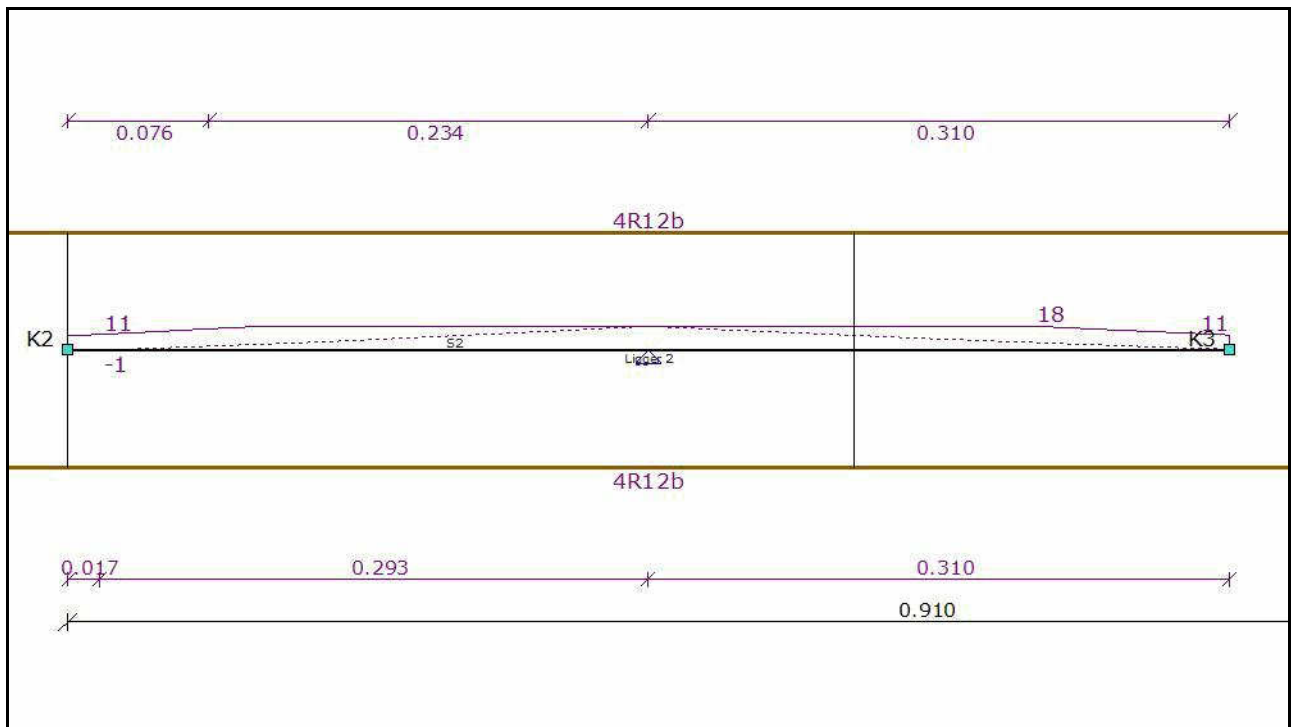
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 9 | VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|----------|------|
| 0.000 | Rechts | 50.66 | R8-300 | 116 | 0 | 335 | 62.051 | 146.41 | 50.66 | N/B | | N/B |
| 3.400 | Links | 50.13 | R8-300 | 115 | 0 | 335 | 62.051 | 146.41 | 50.13 | N/B | | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | | kN |

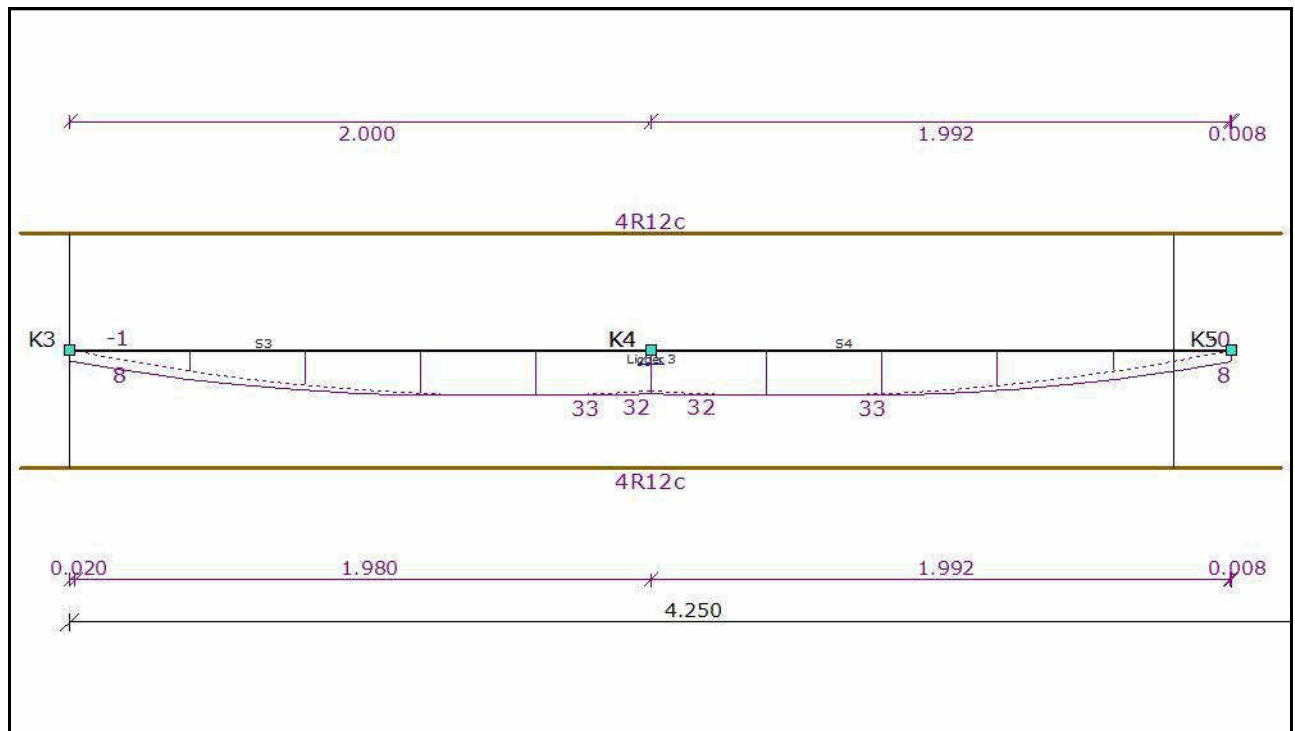
AFB. LANGSWAPENING. (AFBOUW) LIGGER 1



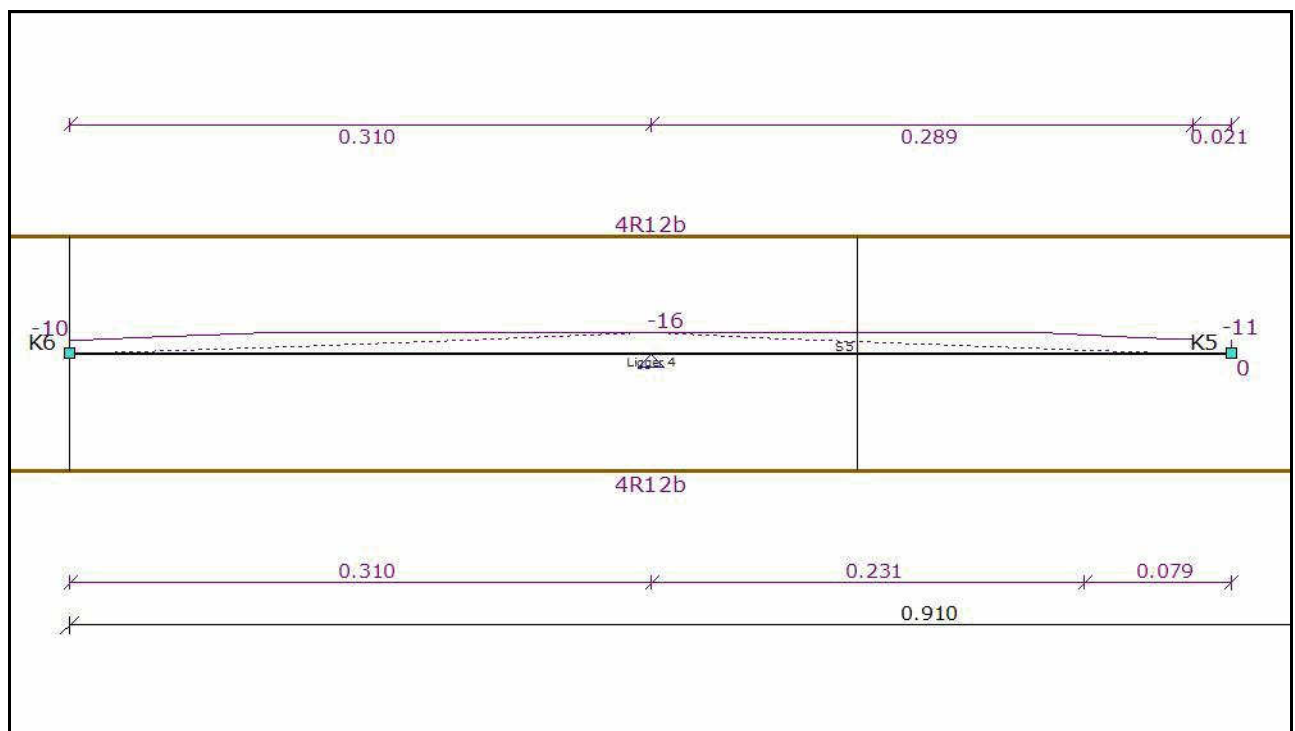
AFB. LANGSWAPENING. (AFBOUW) LIGGER 2



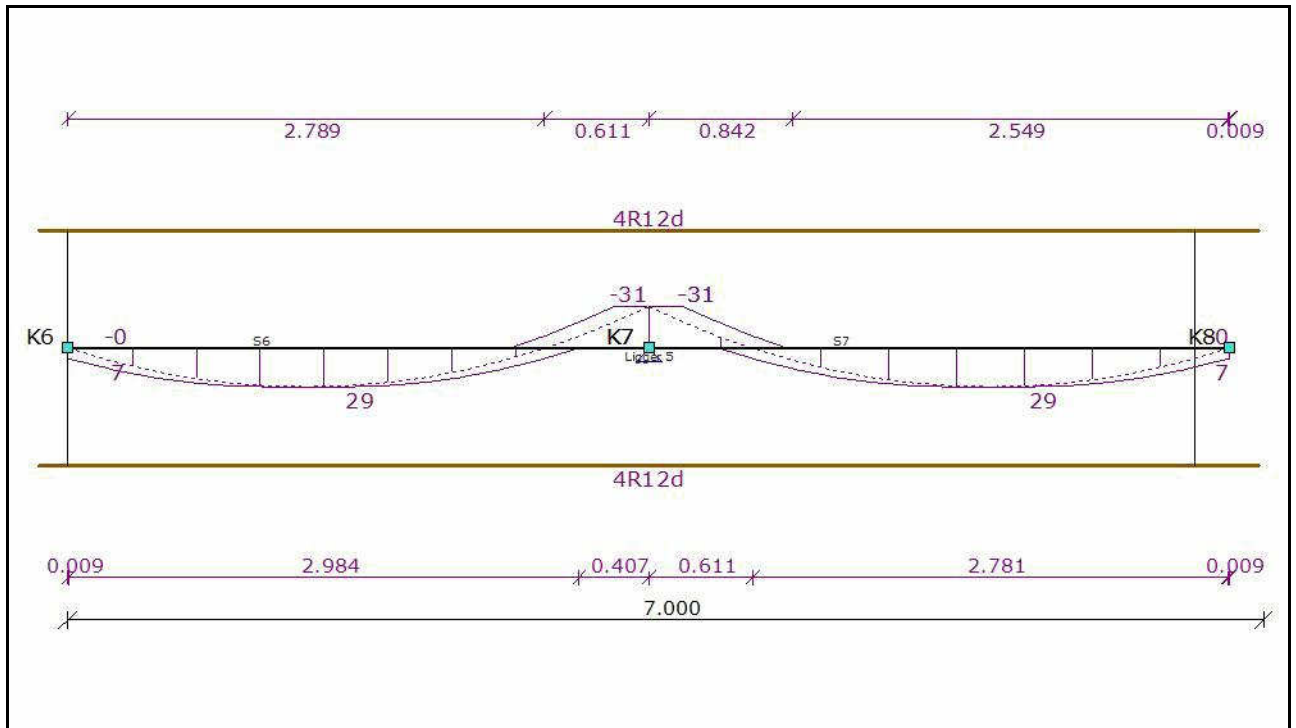
AFB. LANGSWAPENING. (AFBOUW) LIGGER 3



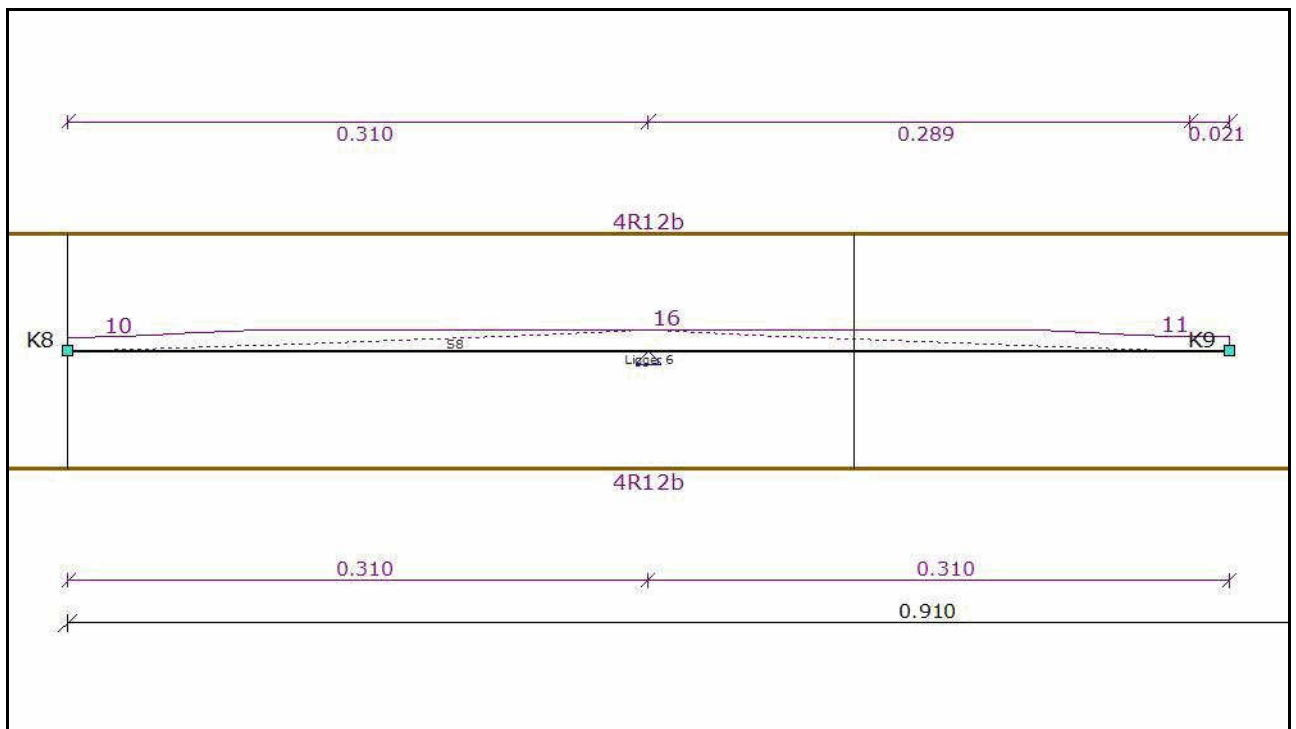
AFB. LANGSWAPENING. (AFBOUW) LIGGER 4



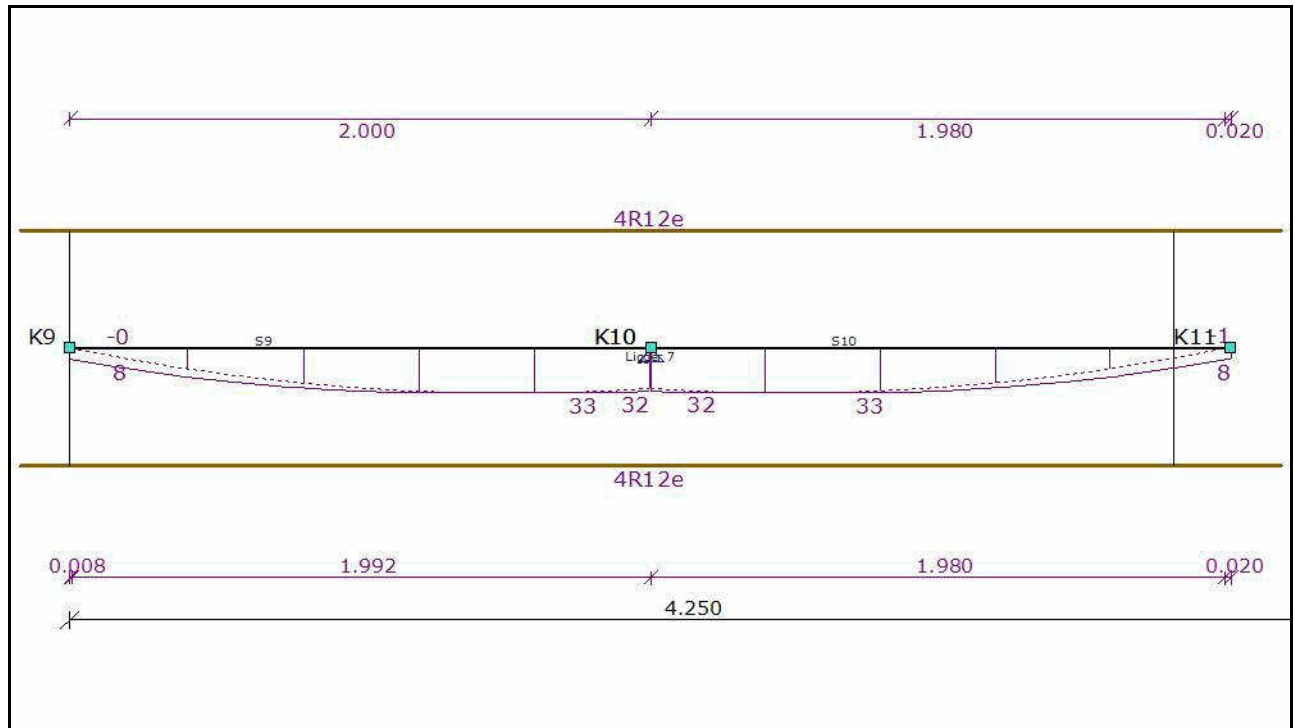
AFB. LANGSWAPENING. (AFBOUW) LIGGER 5



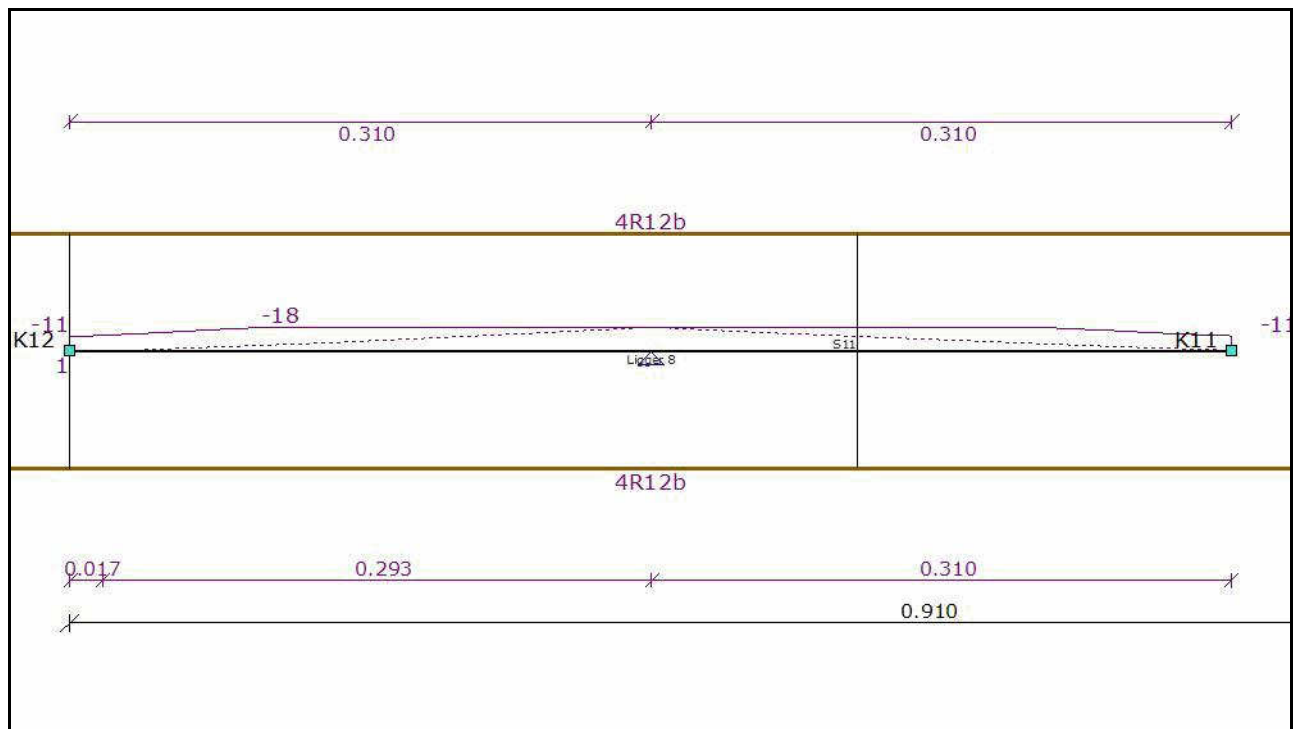
AFB. LANGSWAPENING. (AFBOUW) LIGGER 6



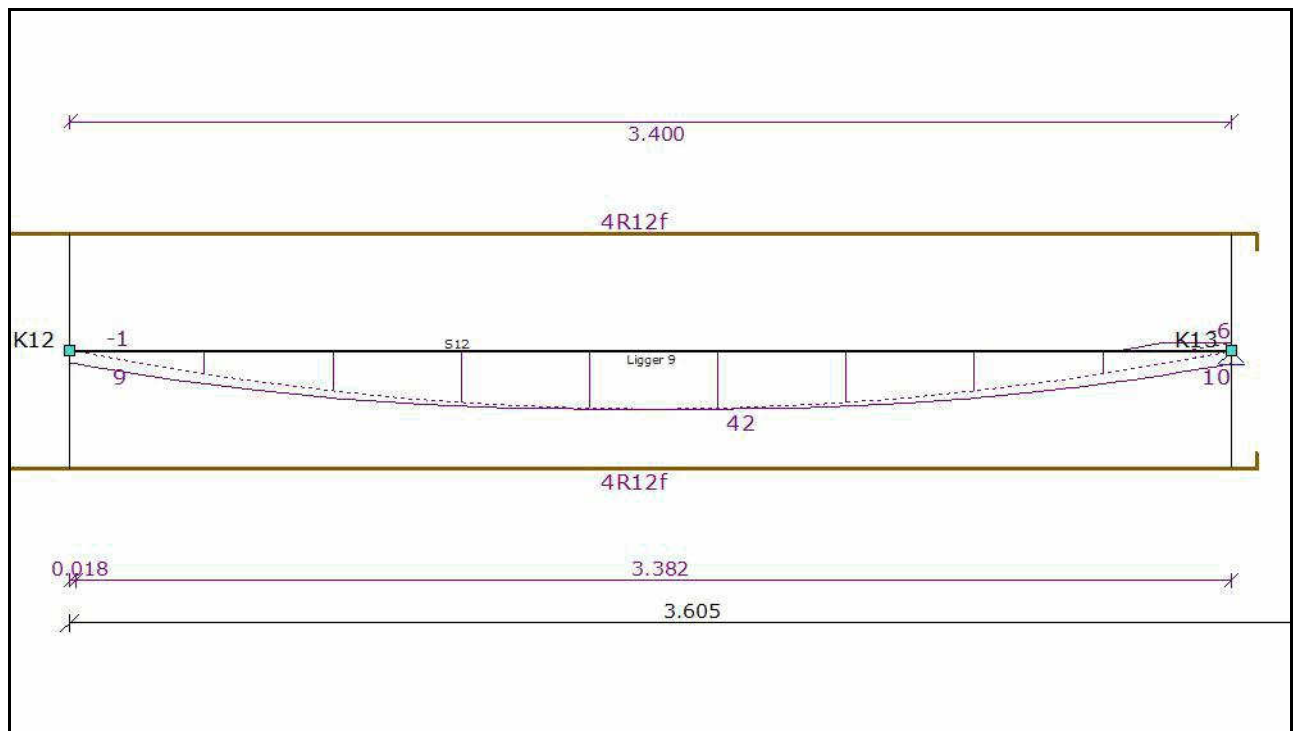
AFB. LANGSWAPENING. (AFBOUW) LIGGER 7



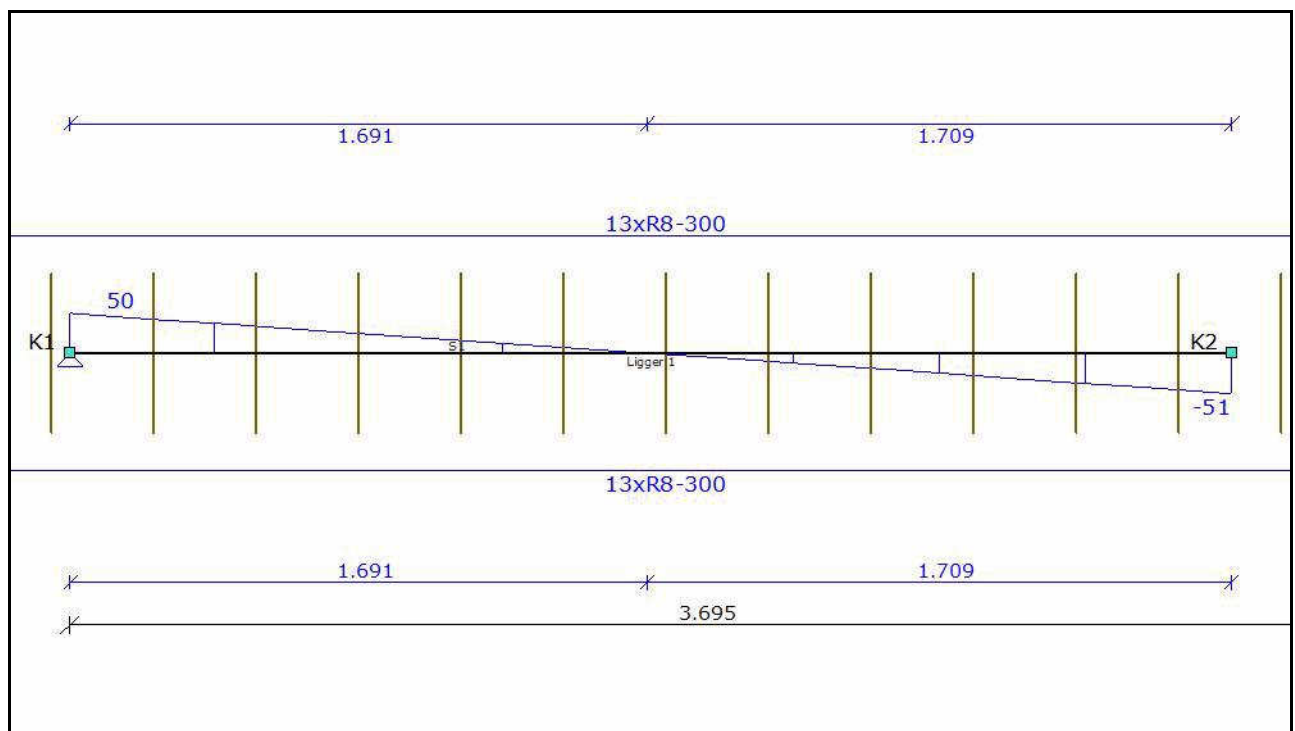
AFB. LANGSWAPENING. (AFBOUW) LIGGER 8



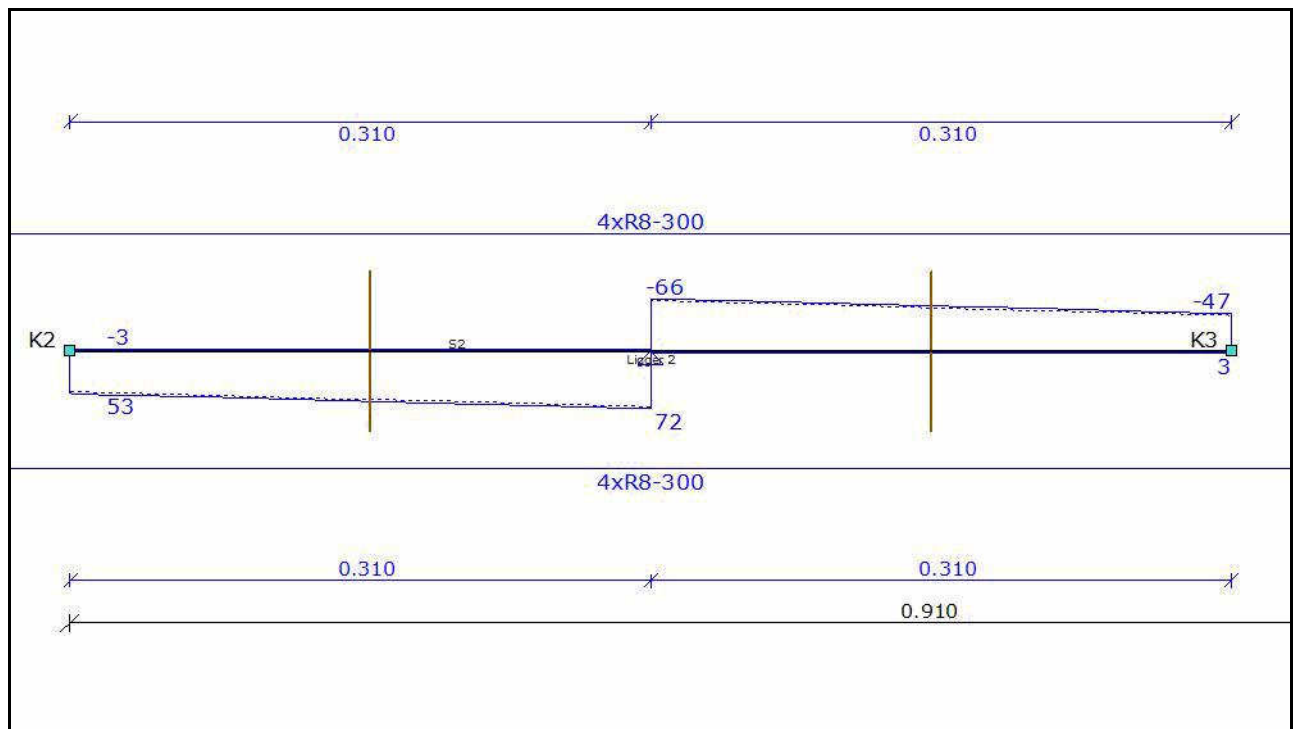
AFB. LANGSWAPENING. (AFBOUW) LIGGER 9



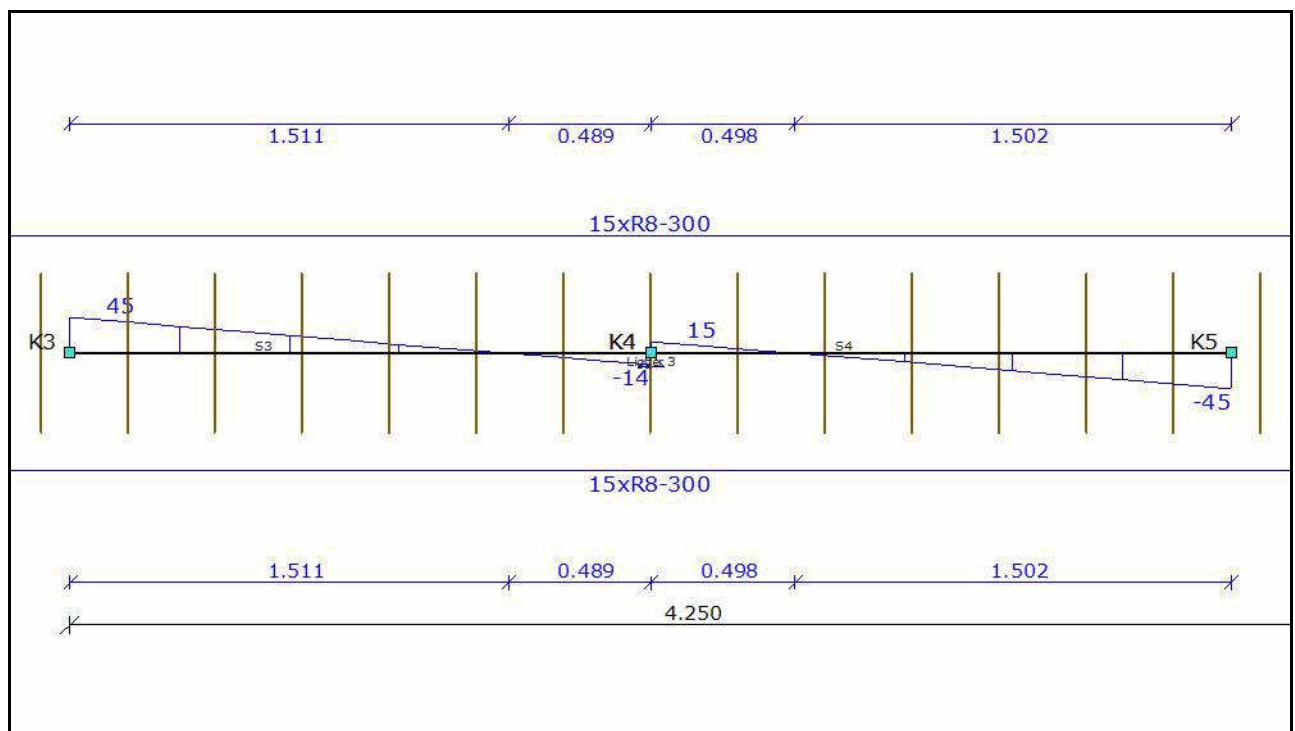
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



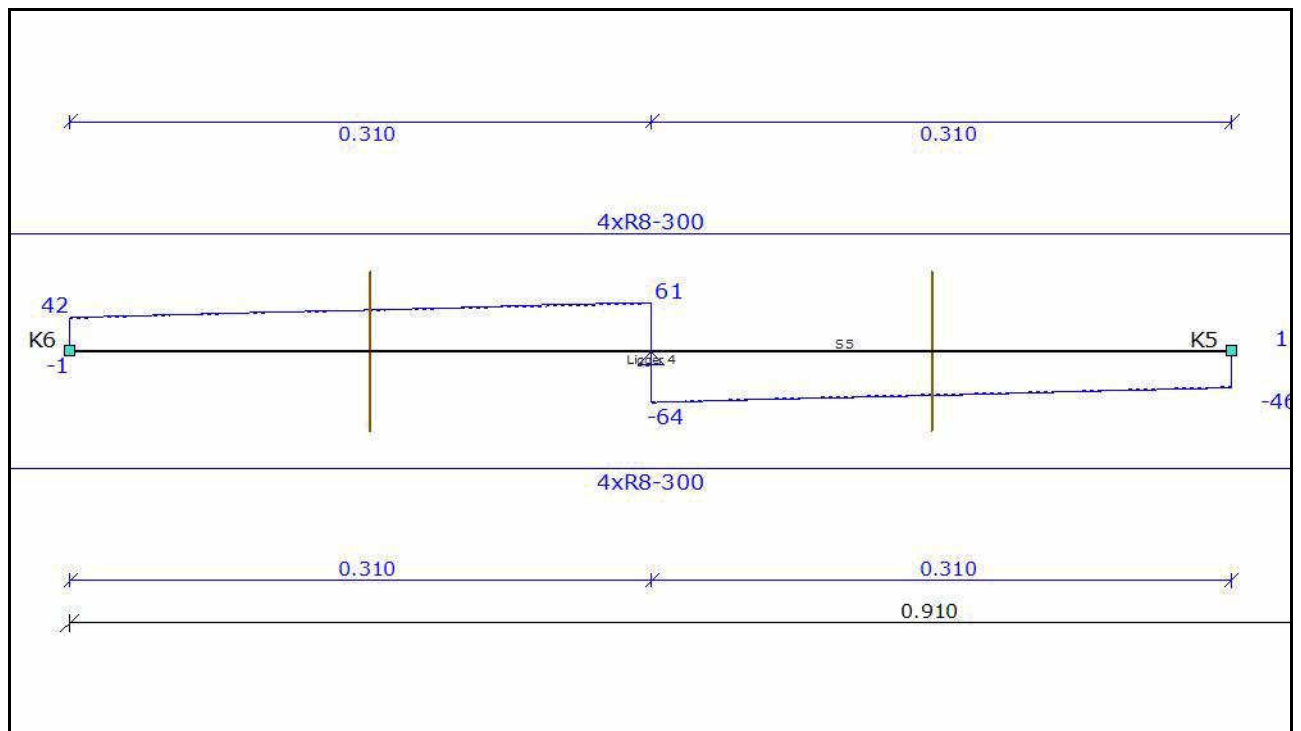
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 2



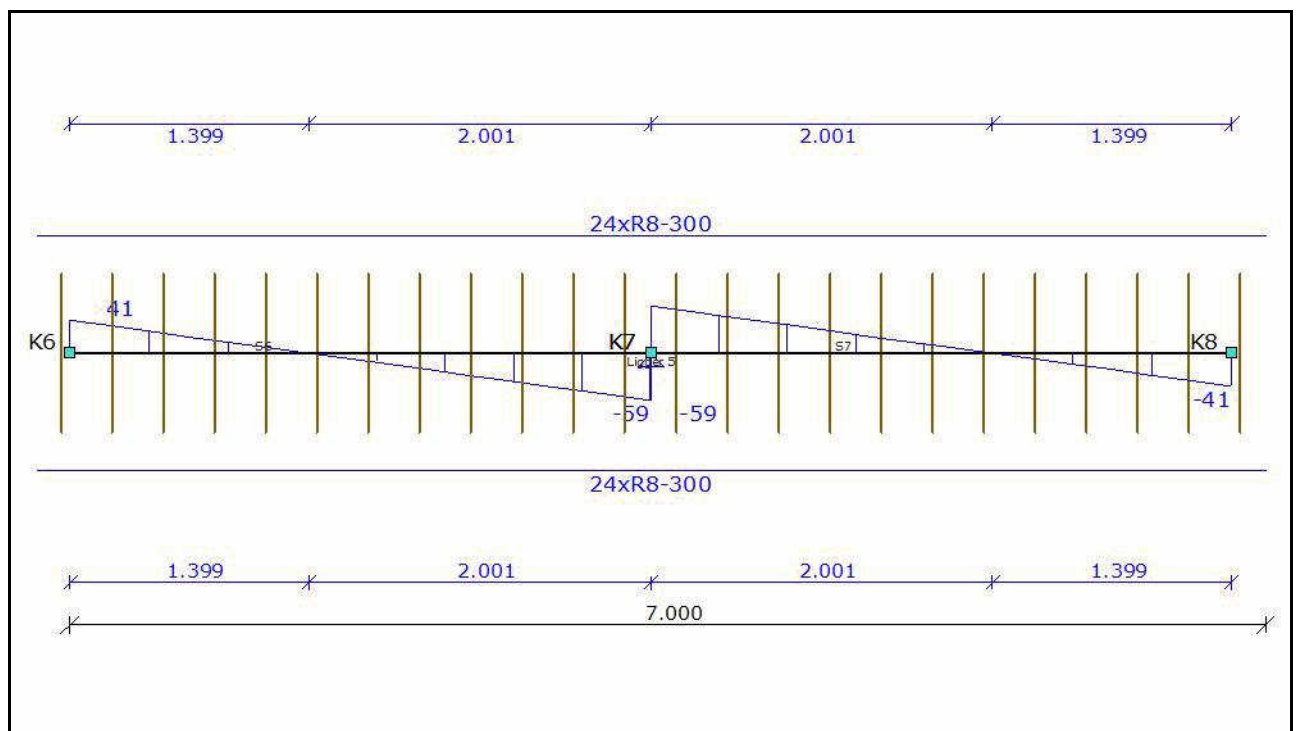
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 3



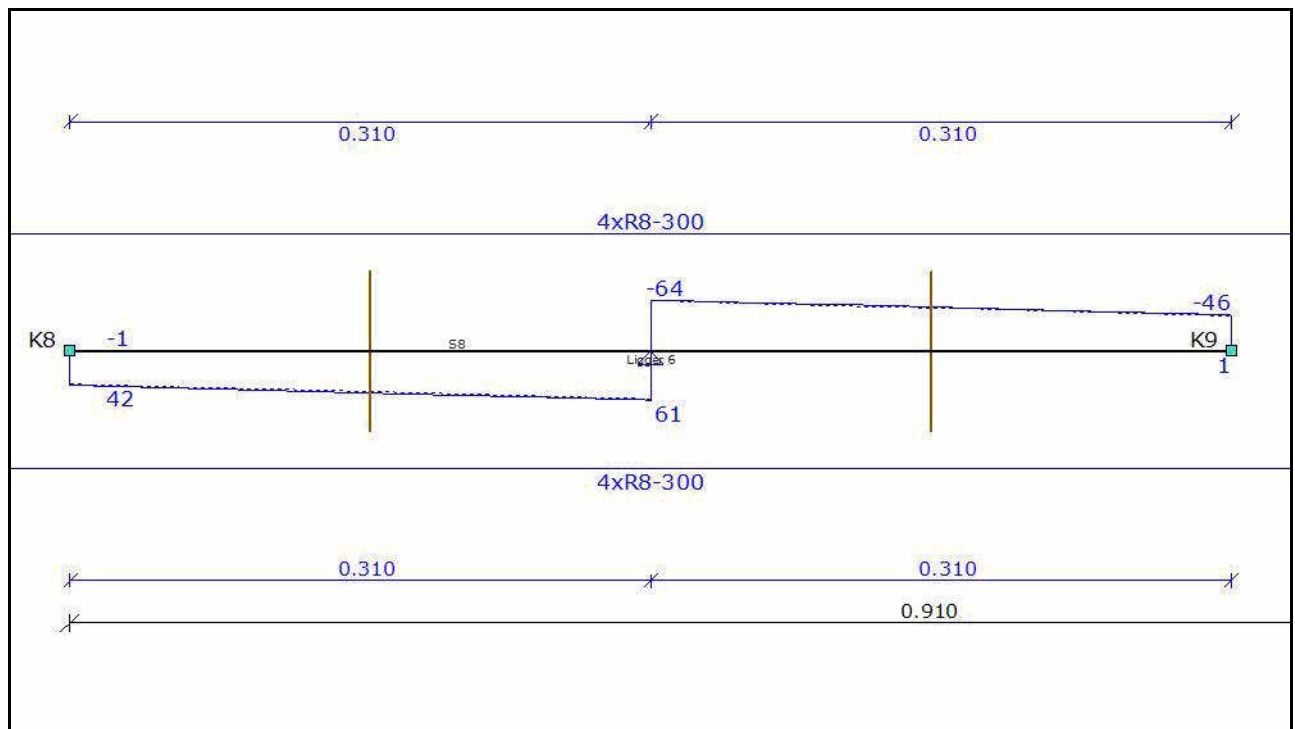
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 4



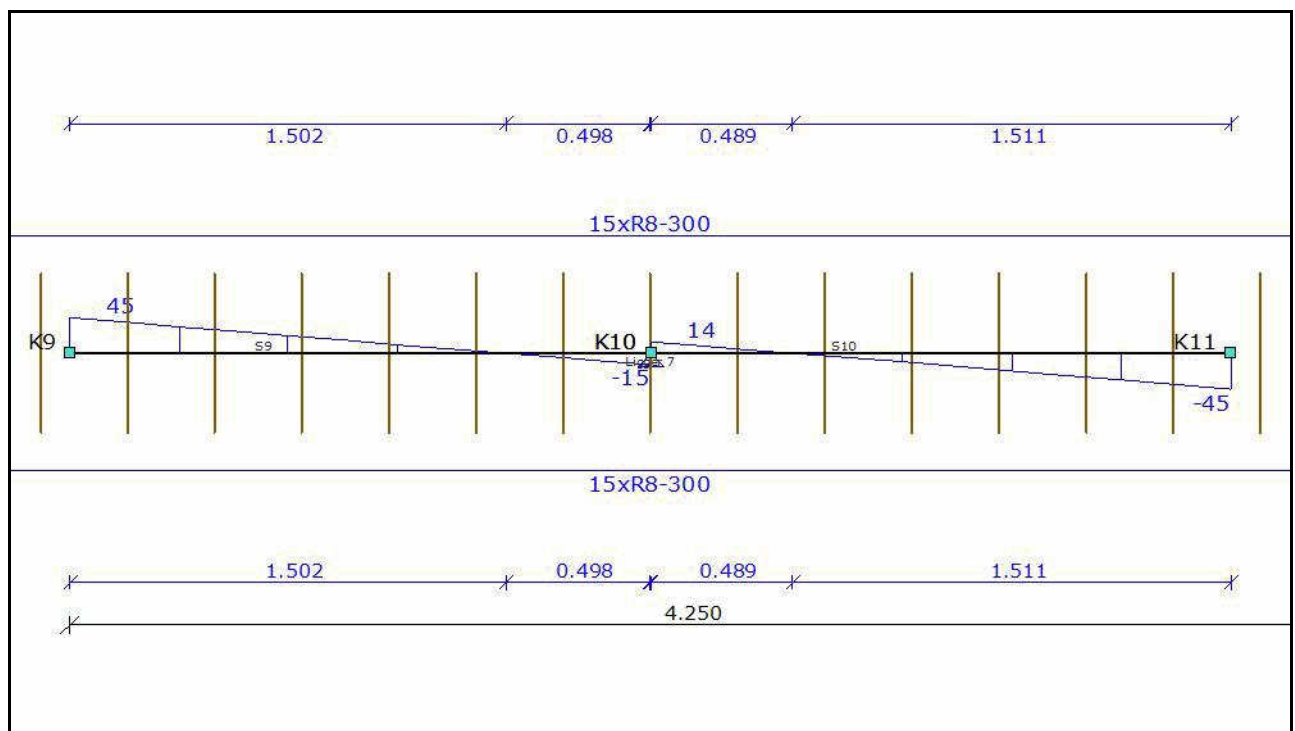
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 5



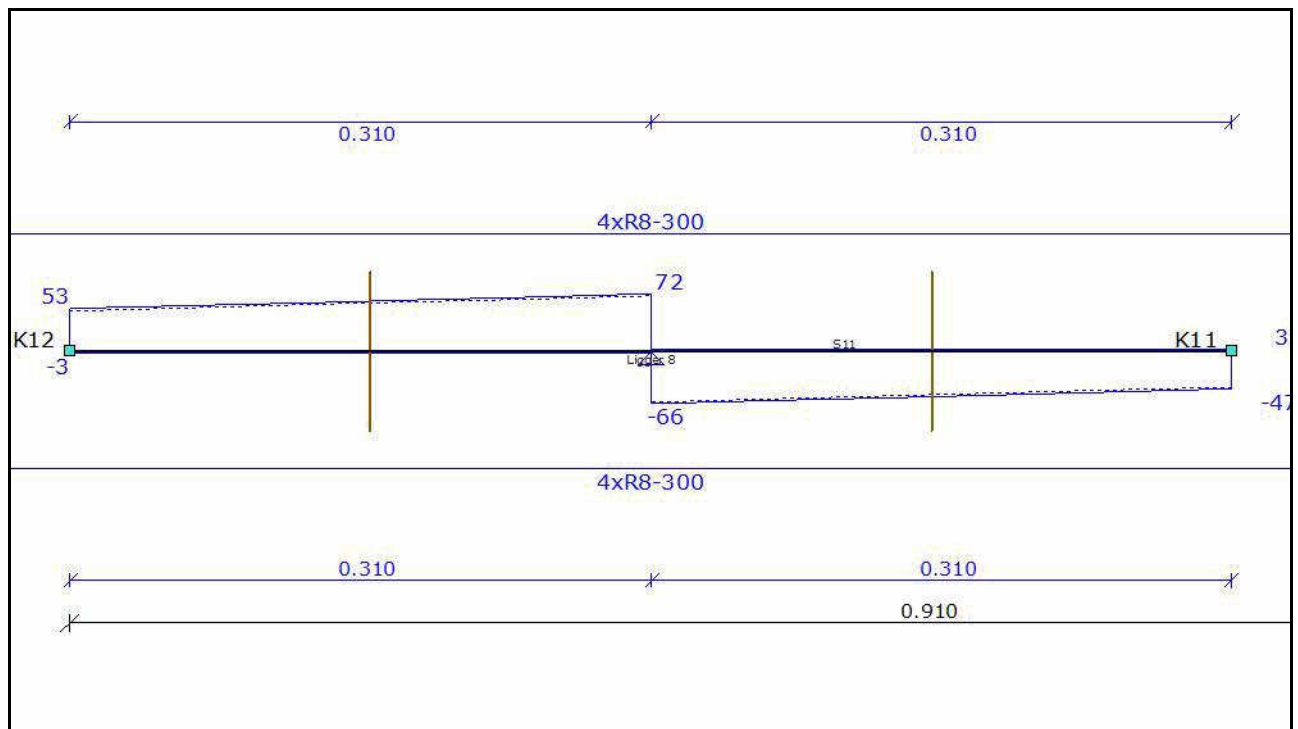
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 6



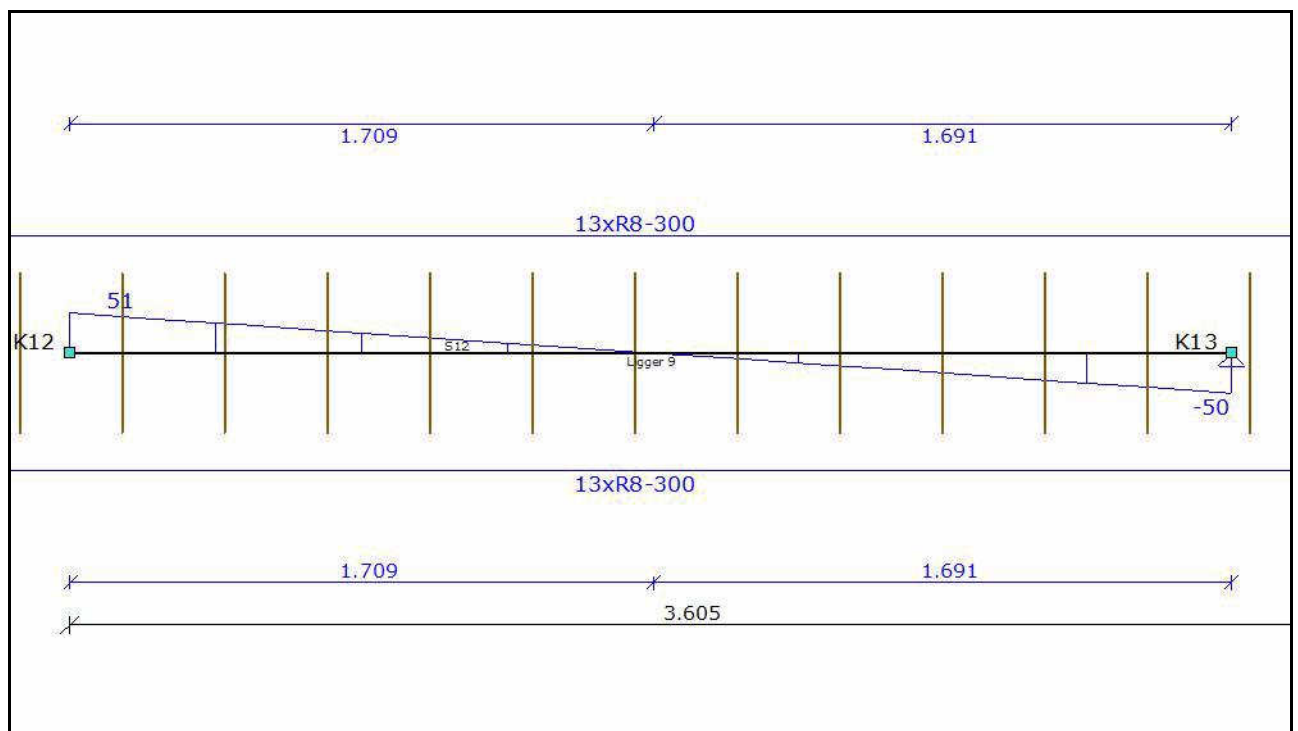
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 7



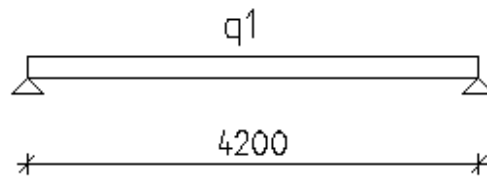
AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 8



AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 9



3.6 Stabiliteitsbalk

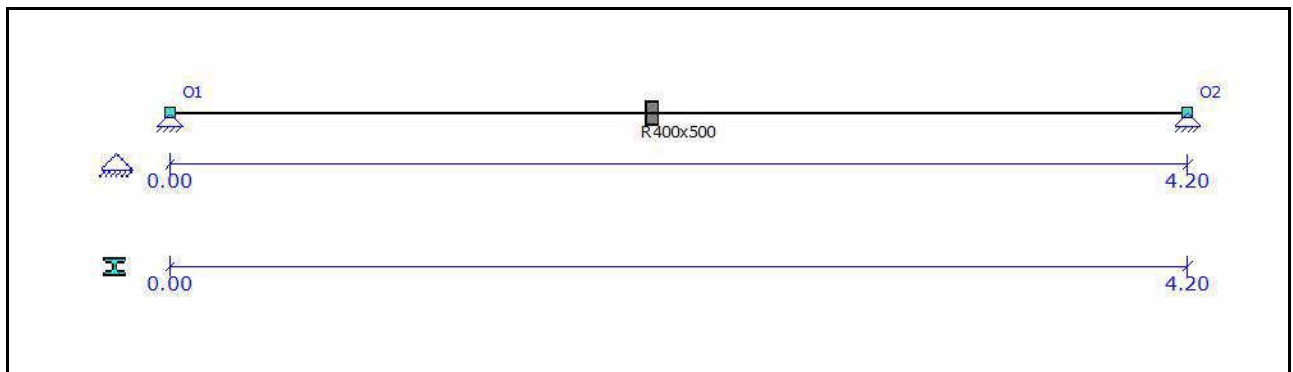


q1p.rep. : wand : 2,0 * 6,0 : 12,0 kN/m
fundering : 4,8 kN/m
16,8 kN/m

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| ID-Ligger | 1 | 2 | 1 | 1 | 7 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(4,200) | R400x500 | 0 | 4.1667e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |
| m | - | ° | m4 | - | kN/m2 | C°m | kN/m |

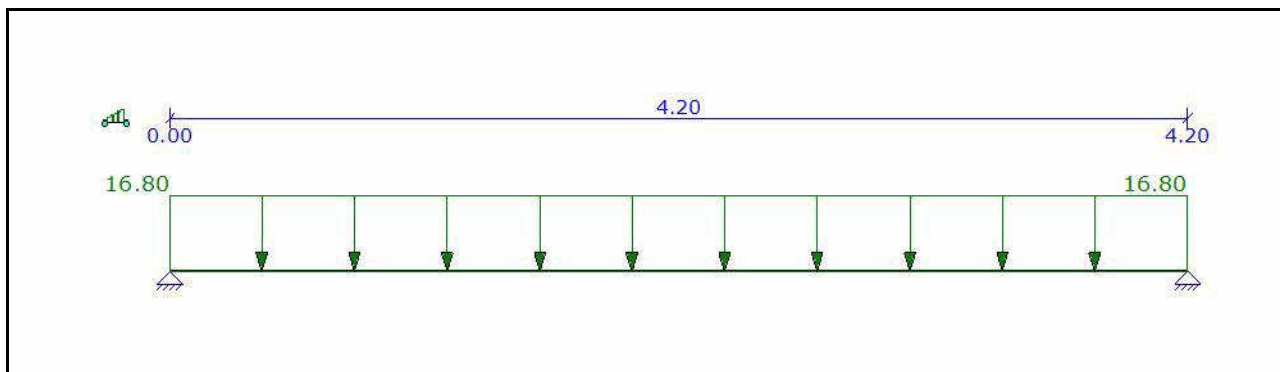
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|----------|------|--------|
| O1 | 0,000 | vast | vrij |
| O2 | L(4,200) | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staf of knoop |
|------------------|-------------|-------------|--------------|-------------|----------|---------------|
| B.G.1: Permanent | | | | | | |
| q | 16,80 | 16,80 | 0,000 | 4,200(L) | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 70,56 | kN | | | |
| - | - | - | m | m | - | - |

B.G.1: PERMANENT



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.22 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 |
|-------|--------------|-----------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.00 |

B.G. OPLEGREACTIES

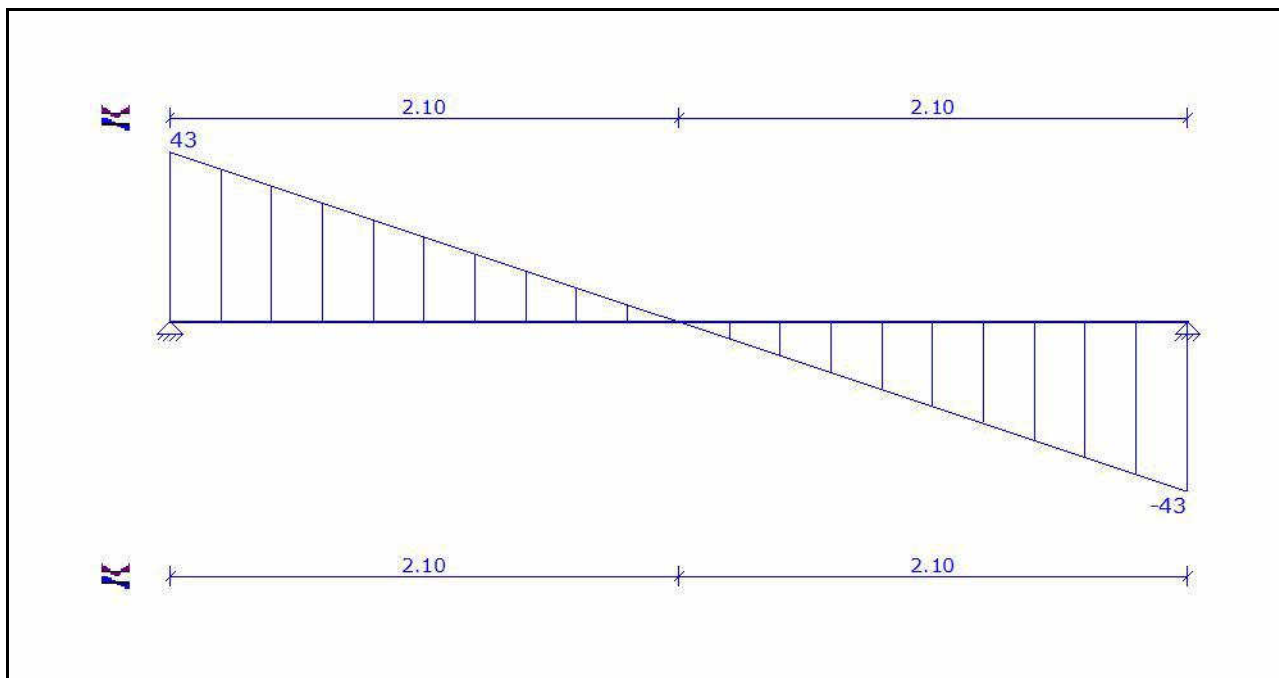
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|--------------|---------|------|--------|---------------|------|
| B.G.1 | O1 | 0.000 | vast | vrij | -35.28 | 0.00 |
| B.G.1 | O2 | 0.000 | vast | vrij | -35.28 | 0.00 |
| | Som Reacties | | | | -70.56 | |
| | Som Lasten | | | | 70.56 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|--------------|---------|------|--------|---------------|------|
| Fu.C.1 | O1 | 0.000 | vast | vrij | -42.87 | 0.00 |
| Fu.C.1 | O2 | 0.000 | vast | vrij | -42.87 | 0.00 |
| | Som Reacties | | | | -85.73 | |
| | Som Lasten | | | | 85.73 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

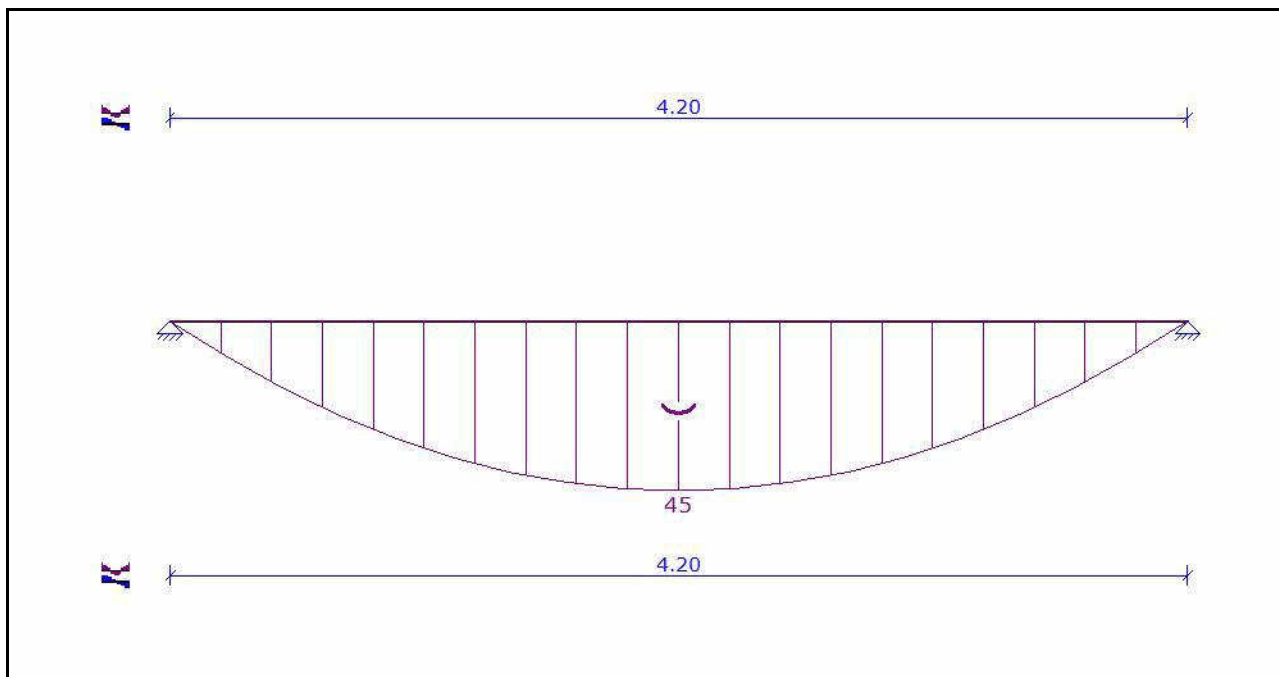
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 4.200 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | L.h.w. | 31.5 | 0 b,min: | 400 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVENS

| | | | | | | | | | | | | Ligger 1 |
|----------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|--------|--|----------|
| Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment | | |
| 0.000 | O1 | n.v.t. | 0,000 | | | Ja | 6,75 | 0,00 | Niet afgetopt | Niet | | |
| afgetopt | | | | | | | | | | | | |
| 4.200 | O2 | n.v.t. | 0,000 | | | Nee | | | Niet afgetopt | Niet | | |
| afgetopt | | | | | | | | | | | | |
| m | - | - | m | - | m | - | kNm | kNm | - | - | | |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|----------------|
| 0.000 | 6.75 | 4R10 | Mti | 34 | 314 | | 28,36 | 300,00 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|----------------|
| 2.100 | 45.01 | 4R10 | | 231 | 314 | | 11,90 | 167,82 |
| m | kNm | - | - | mm | mm | - | mm | mm |

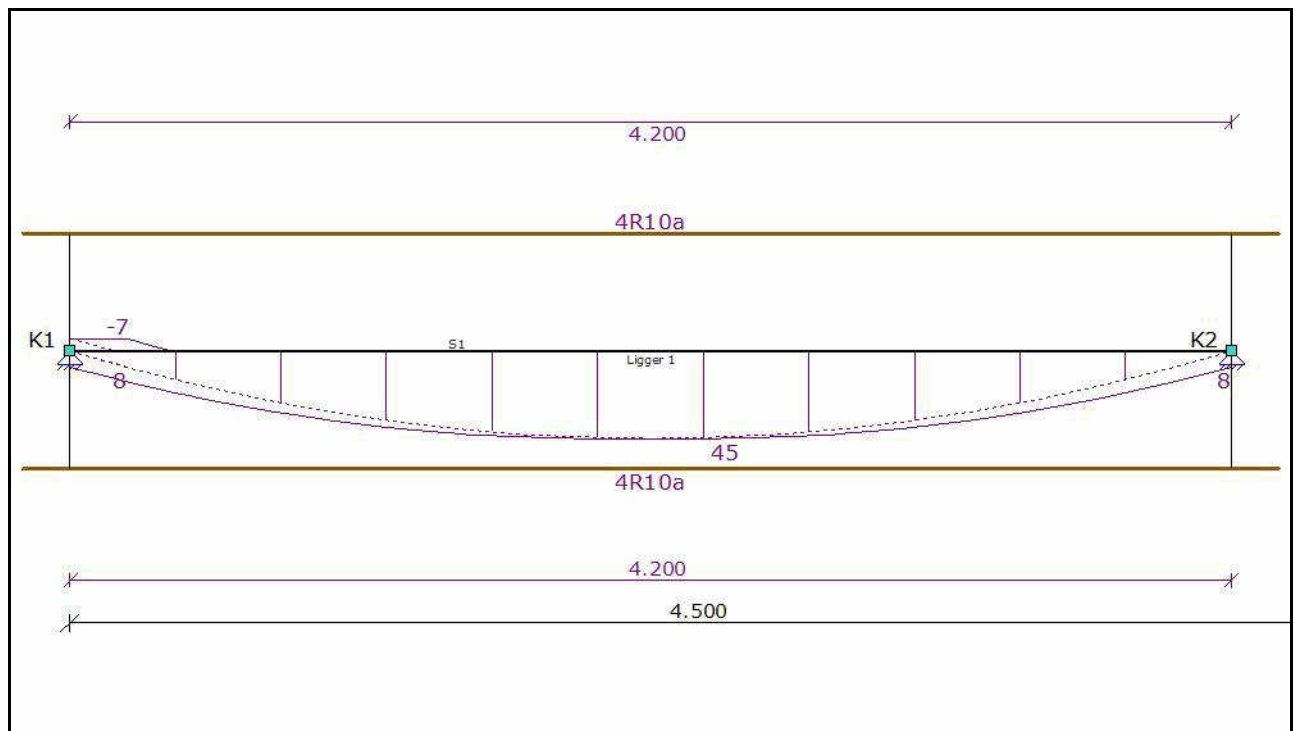
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | | 0 | 0 | |
| m | kNm | - | mm | mm | |

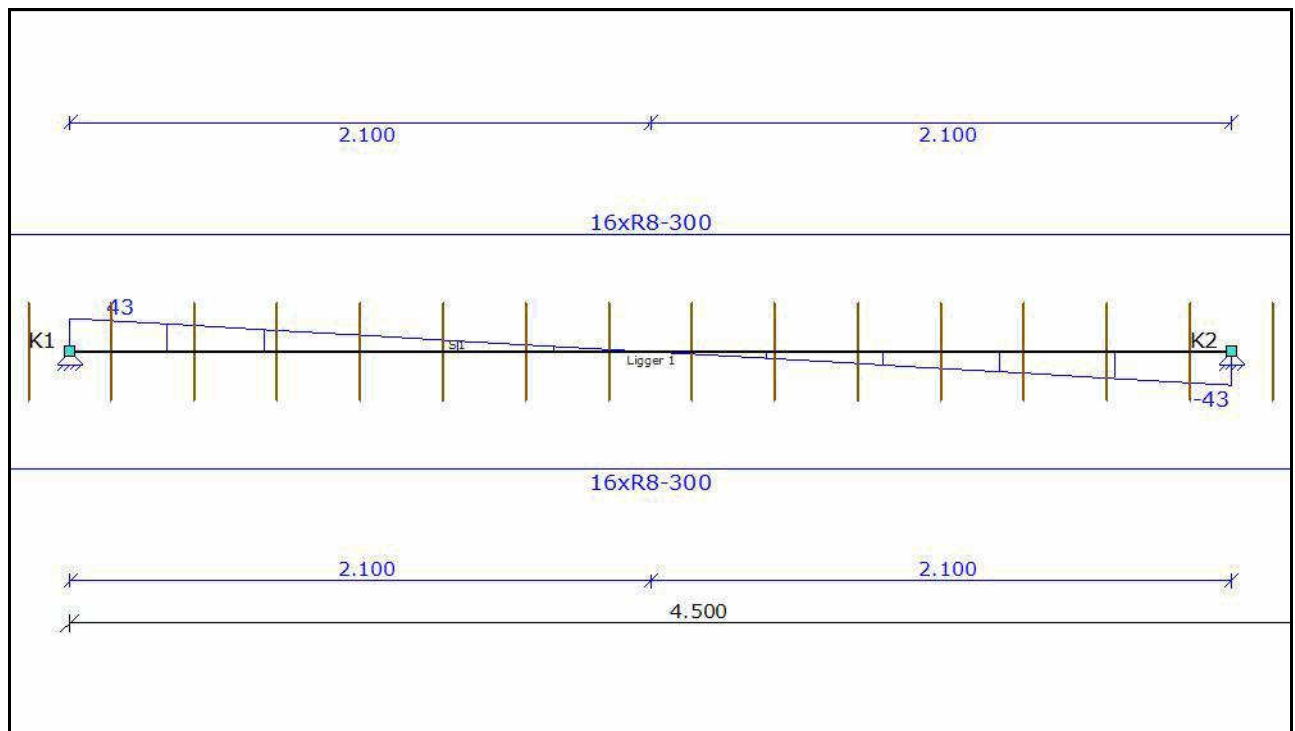
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 1 VEdi |
|---------|--------|-------|----------|----------|----------|--------|--------|--------|-------|------|---------------|
| 0.000 | Rechts | 42.87 | R8-300 | 0 | 0 | 335 | 61.281 | 148.70 | 42.87 | N/B | N/B |
| 4.200 | Links | 42.87 | R8-300 | 0 | 0 | 335 | 61.281 | 148.70 | 42.87 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

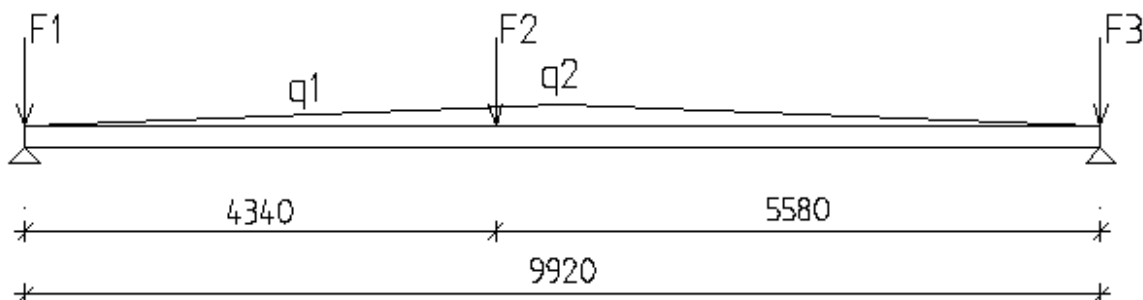


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.7

Kopgevelbalk as 1, 5, 9, 19 en E

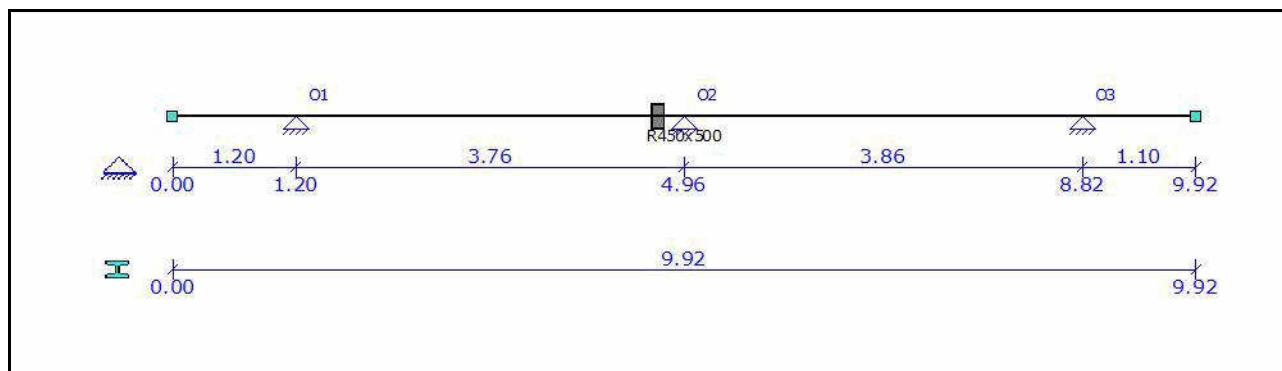


| | | | |
|------------|--|-------------------|-----------------|
| q1p.rep. : | dak : | $0,77 * 2,7 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 2,7 :$ | 25,9 kN/m |
| | b.g.g. : | $3,9 * 2,7 :$ | 10,5 kN/m |
| | gevel : | $4,4 * 6,5 :$ | 28,6 kN/m |
| | fundering : | | <u>5,6 kN/m</u> |
| | | | 72,7 kN/m |
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | 1 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | b.g.g. : | $2,55 * 2,7 :$ | 6,9 kN/m |
| q2p.rep. : | gevel : | $4,4 * 3,0 :$ | 13,2 kN/m |
| F1p.rep: | reactie ligger 3.4 | | 41,2 kN |
| F2p.rep: | reactie ligger 3.6 | | 35,3 kN |
| F3p.rep: | reactie ligger 3.1 | | 52,7 kN |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 3 | 1 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(9,920) | R450x500 | 0 | 4.6875e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.63 |
| m - | | ° | m4 - | | kN/m2 | C°m | kN/m |

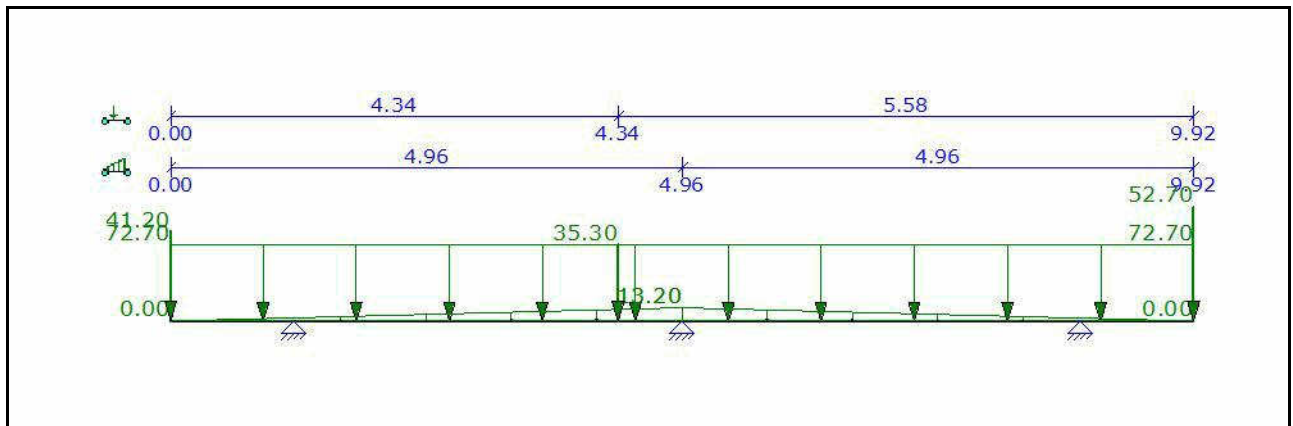
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 1,200 | vast | vrij |
| O2 | 4,960 | vast | vrij |
| O3 | 8,820 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-------------------------|----------------|---------------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 72,70 | 72,70 | 0,000 | 9,920(L) | Z S1 |
| q | 0,00 | 13,20 | 0,000 | 4,960 | Z S1 |
| q | 13,20 | 0,00 | 4,960 | 9,920(L) | Z S1 |
| F | 41,20 | 0,000 | 0,000 | | Z S1 |
| F | 35,30 | 4,340 | 4,340 | | Z S1 |
| F | 52,70 | 9,920 | 9,920 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 915,86 | kN | | |
| - | - | - | m | m | - - |

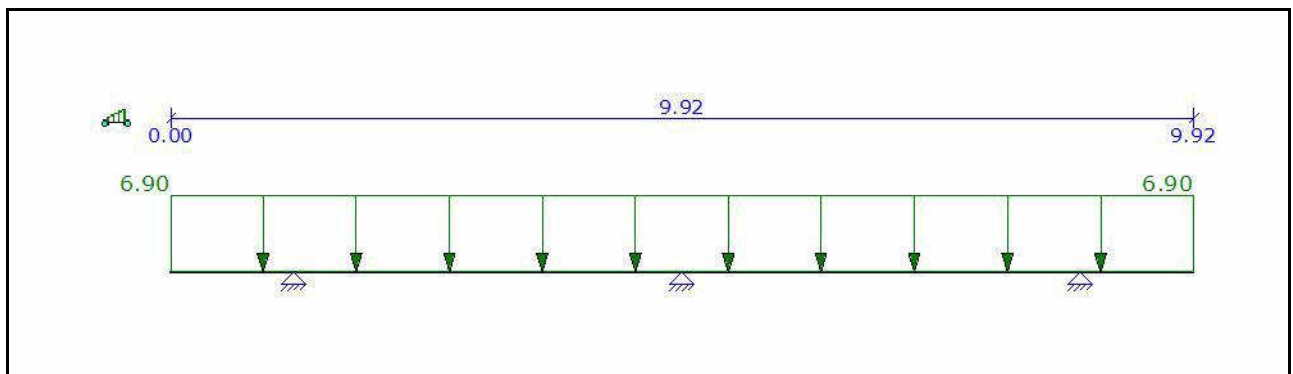
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|----------------|--------------------|--------------|-------------|-------------------------|
| B.G.2: 2e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,45 | kN | | |
| - | - | - | m | m | - - |

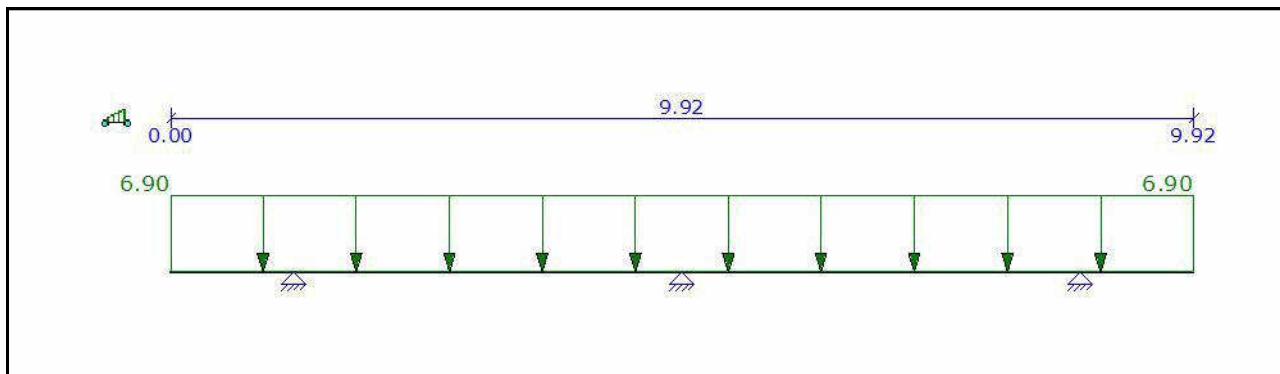
B.G.2: 2E VERDIEPING



B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|----------------|--------------------|--------------|-------------|-------------------------|
| B.G.3: 1e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,45 | kN | | |
| - | - | - | m | m | - - |

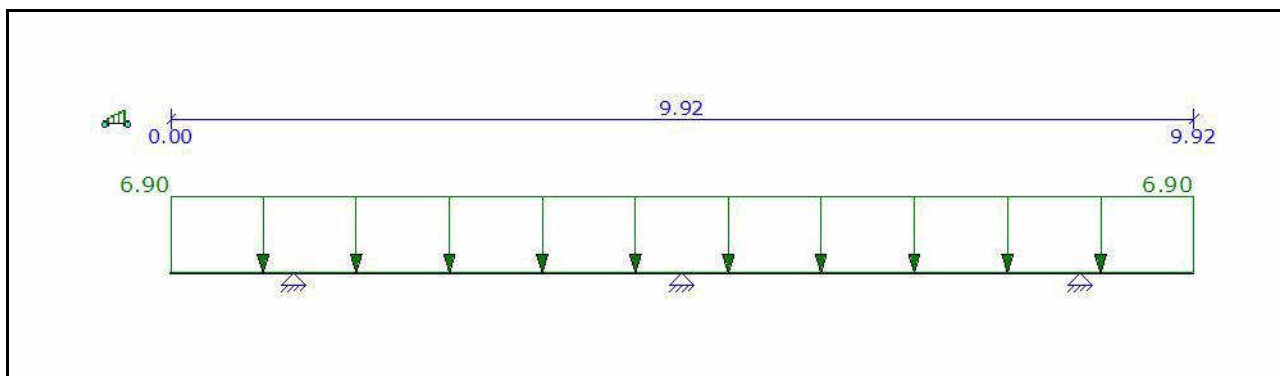
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|---------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,45 | kN | | |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan n) | Fu.C.3 (Overslaan n) | Fu.C.4 | Fu.C.5 (Overslaan n) | Fu.C.6 (Overslaan n) | Fu.C.7 (Overslaan n) |
|-------|---------------|--------|----------------------------|----------------------------|--------|----------------------------|----------------------------|----------------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 2e verdieping | 0.30 |

| | | |
|-------|---------------|------|
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

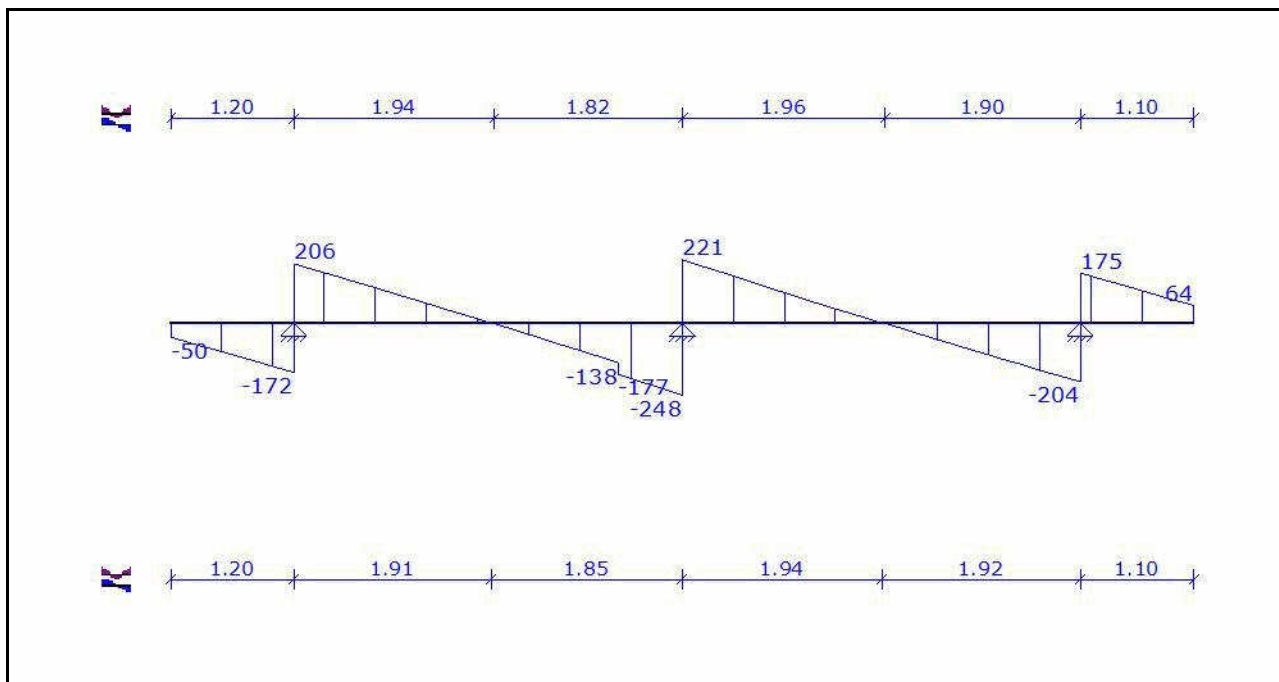
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------------|---------------------|----------------|----------|-----------|----------------|-----------|
| B.G.1 | O1 | 1.200 | vast | vrij | -284.65 | 0.00 |
| B.G.1 | O2 | 4.960 | vast | vrij | -344.83 | 0.00 |
| B.G.1 | O3 | 8.820 | vast | vrij | -286.38 | 0.00 |
| | Som Reacties | | | | -915.86 | |
| | Som Lasten | | | | 915.86 | |
| B.G.2 | O1 | 1.200 | vast | vrij | -19.85 | 0.00 |
| B.G.2 | O2 | 4.960 | vast | vrij | -29.26 | 0.00 |
| B.G.2 | O3 | 8.820 | vast | vrij | -19.33 | 0.00 |
| | Som Reacties | | | | -68.45 | |
| | Som Lasten | | | | 68.45 | |
| B.G.3 | O1 | 1.200 | vast | vrij | -19.85 | 0.00 |
| B.G.3 | O2 | 4.960 | vast | vrij | -29.26 | 0.00 |
| B.G.3 | O3 | 8.820 | vast | vrij | -19.33 | 0.00 |
| | Som Reacties | | | | -68.45 | |
| | Som Lasten | | | | 68.45 | |
| B.G.4 | O1 | 1.200 | vast | vrij | -19.85 | 0.00 |
| B.G.4 | O2 | 4.960 | vast | vrij | -29.26 | 0.00 |
| B.G.4 | O3 | 8.820 | vast | vrij | -19.33 | 0.00 |
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
| | Som Reacties | | | | -68.45 | |
| | Som Lasten | | | | 68.45 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|-----------------|------|
| Fu.C.1 | O1 | 1.200 | vast | vrij | -372.11 | 0.00 |
| Fu.C.1 | O2 | 4.960 | vast | vrij | -467.70 | 0.00 |
| Fu.C.1 | O3 | 8.820 | vast | vrij | -372.32 | 0.00 |
| | Som Reacties | | | | -1212.13 | |
| | Som Lasten | | | | 1212.13 | |
| Fu.C.4 | O1 | 1.200 | vast | vrij | -378.00 | 0.00 |
| Fu.C.4 | O2 | 4.960 | vast | vrij | -466.37 | 0.00 |
| Fu.C.4 | O3 | 8.820 | vast | vrij | -379.27 | 0.00 |
| | Som Reacties | | | | -1223.65 | |
| | Som Lasten | | | | 1223.65 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

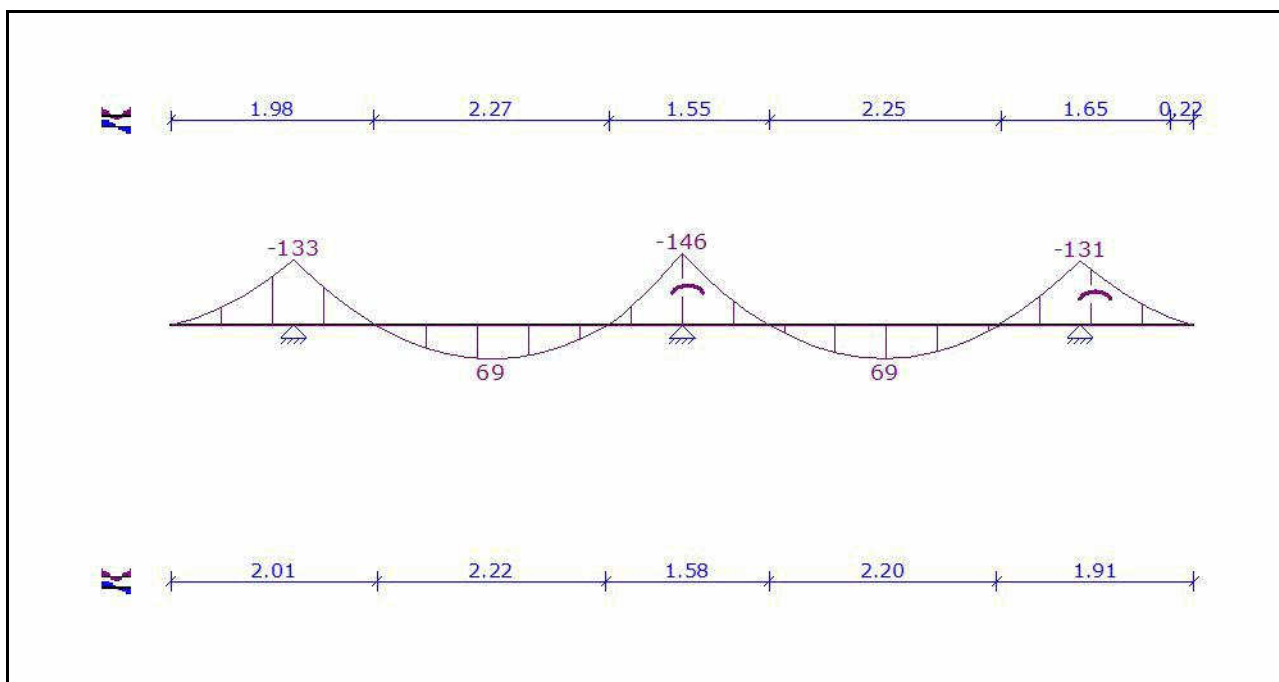
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staat | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P2 | R450x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 9.920 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: | 450 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P2 | R450x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVEN

| | | | | | | | | | | Ligger 1 | |
|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|--------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 1.200 | O1 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 4.960 | O2 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 8.820 | O3 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.200 | 132.65 | 4R16 | 1R10 | 714 | 883 | | 9,56 | 136,79 |
| 4.960 | 146.03 | 4R16 | 1R10 | 791 | 883 | | 8,71 | 111,21 |
| 8.820 | 131.35 | 4R16 | 1R10 | 706 | 883 | | 9,66 | 139,75 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 3.107 | 69.46 | 4R12 | | 361 | 452 | | 10,52 | 151,80 |
| 6.925 | 69.14 | 4R12 | | 359 | 452 | | 11,58 | 167,05 |
| m | kNm | - | - | mm | mm | - | mm | mm |

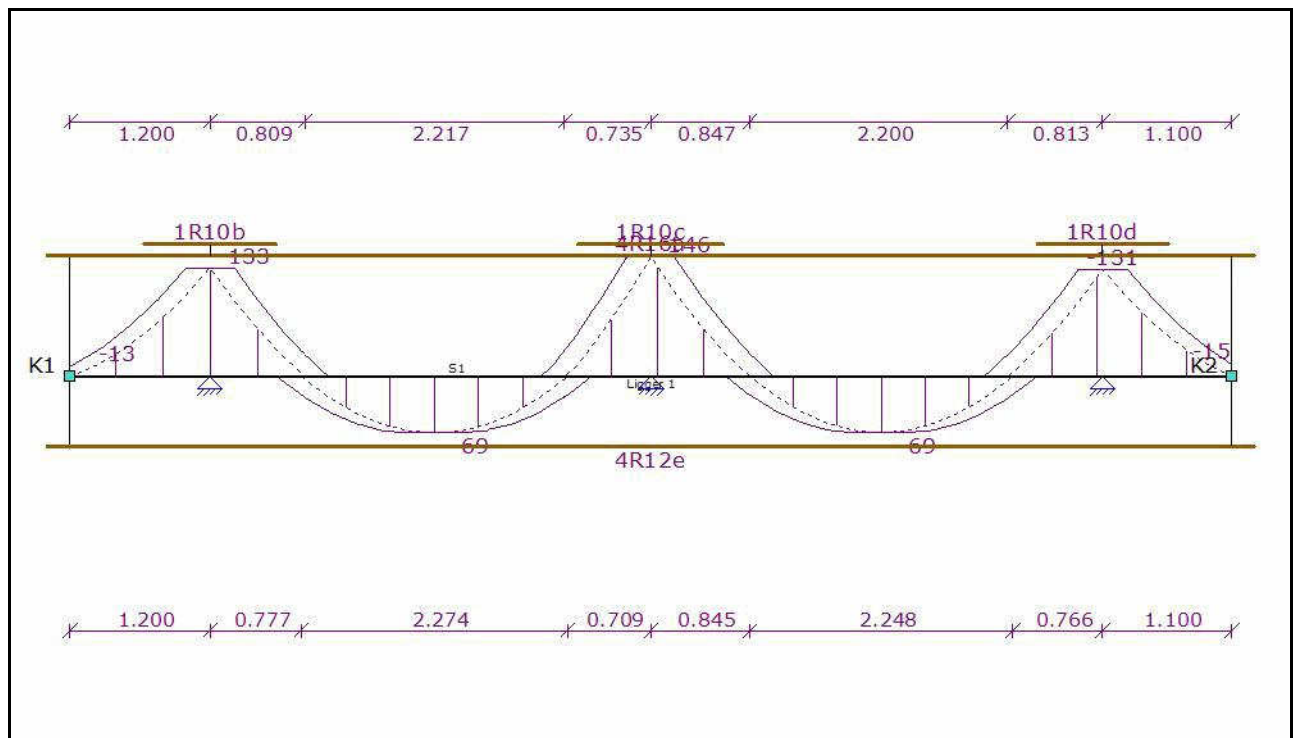
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

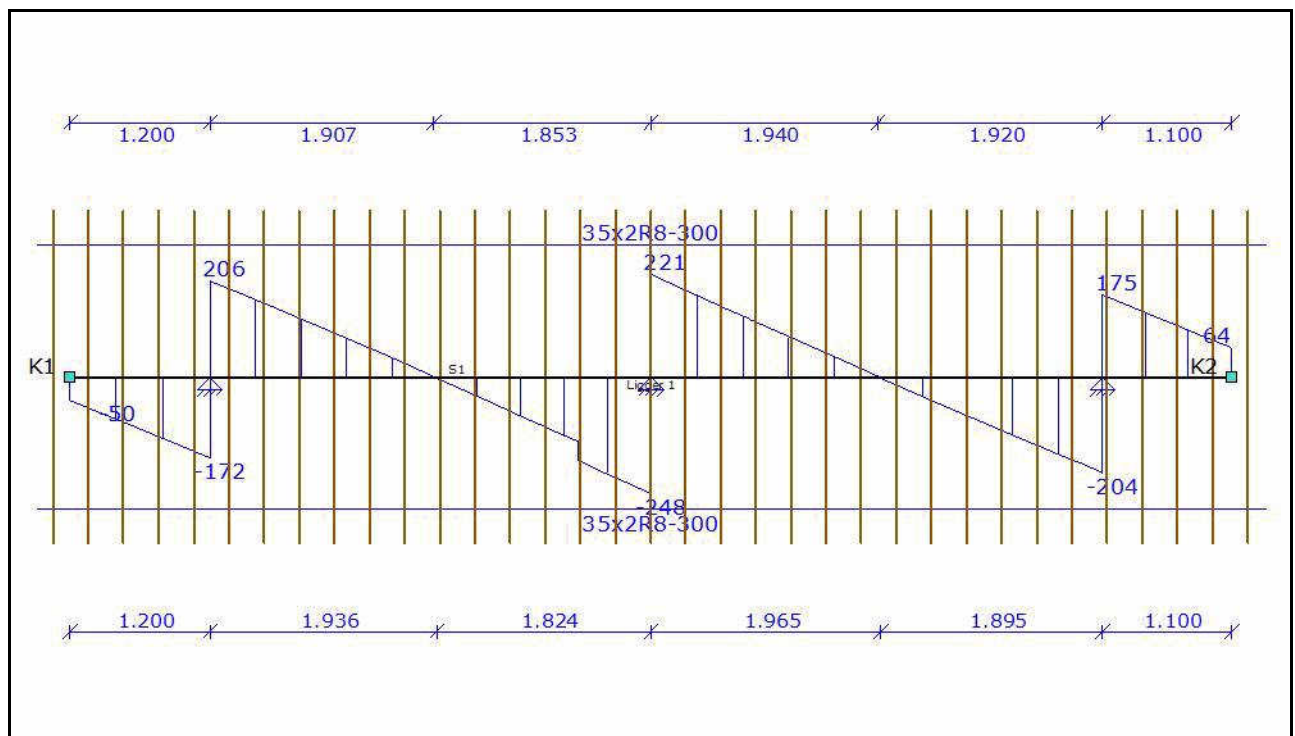
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi | Ligger 1 |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------|----------|
| 0.000 | Rechts | 50.06 | 2R8-300 | 0 | 0 | 670 | 81.165 | 282.24 | 50.06 | N/B | N/B | |
| 1.200 | Links | 171.80 | 2R8-300 | 408 | 0 | 670 | 83.725 | 282.24 | 171.80 | N/B | N/B | |
| 1.200 | Rechts | 206.21 | 2R8-300 | 490 | 0 | 670 | 83.725 | 282.24 | 206.21 | N/B | N/B | |
| 4.960 | Links | 248.28 | 2R8-300 | 590 | 0 | 670 | 83.725 | 282.24 | 248.28 | N/B | N/B | |
| 4.960 | Rechts | 220.88 | 2R8-300 | 524 | 0 | 670 | 83.725 | 282.24 | 220.88 | N/B | N/B | |
| 8.820 | Links | 203.83 | 2R8-300 | 484 | 0 | 670 | 83.725 | 282.24 | 203.83 | N/B | N/B | |
| 8.820 | Rechts | 175.45 | 2R8-300 | 417 | 0 | 670 | 83.725 | 282.24 | 175.45 | N/B | N/B | |
| 9.920 | Links | 64.03 | 2R8-300 | 0 | 0 | 670 | 81.165 | 282.24 | 64.03 | N/B | N/B | |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN | |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

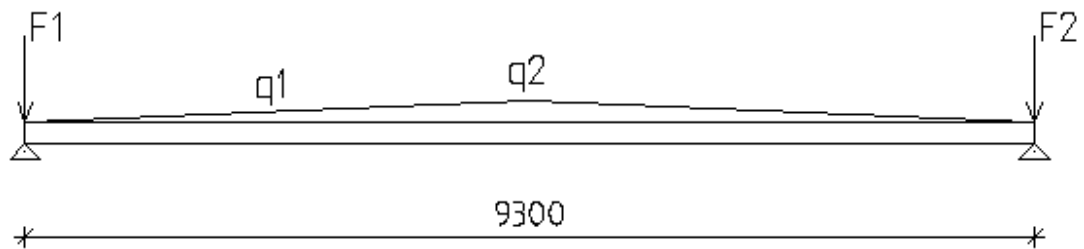


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.8

Kopgevelbalk as 4 en K

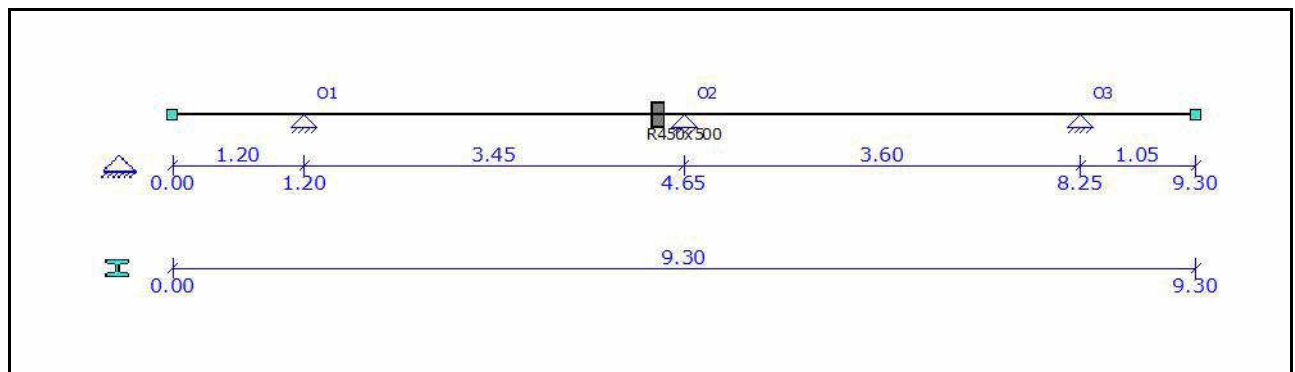


| | | | |
|------------|--|-----------------------|-----------------|
| q1p.rep. : | dak : | $0,77 * 2,7 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 2,7 :$ | 25,9 kN/m |
| | b.g.g. : | $3,9 * 2,7 :$ | 10,5 kN/m |
| | gevel : | $4,4 * 6,5 :$ | 28,6 kN/m |
| | fundering : | | <u>5,6 kN/m</u> |
| | | | 72,7 kN/m |
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | 1 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | b.g.g. : | $2,55 * 2,7 :$ | 6,9 kN/m |
| q2p.rep. : | gevel : | $4,4 * 3,0 :$ | 13,2 kN/m |
| F1p.rep: | reactie ligger 3.4 | | 23,9 kN |
| | dak : | $0,62 * 0,77 * 2,7 :$ | 1,3 kN |
| | 2 ^e verdieping : | $0,62 * 4,8 * 2,7 :$ | <u>8,0 kN</u> |
| | | | 33,2 kN |
| F1v.rep: | 2 ^e verdieping : | $0,62 * 2,55 * 2,7 :$ | 4,3 kN |
| F2p.rep: | reactie ligger 3.1 | | 52,7 kN |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 3 | 2 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(9,300) | R450x500 | 0 | 4.6875e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.62 |

m -

°

m4 -

kN/m2

C°m

kN/m

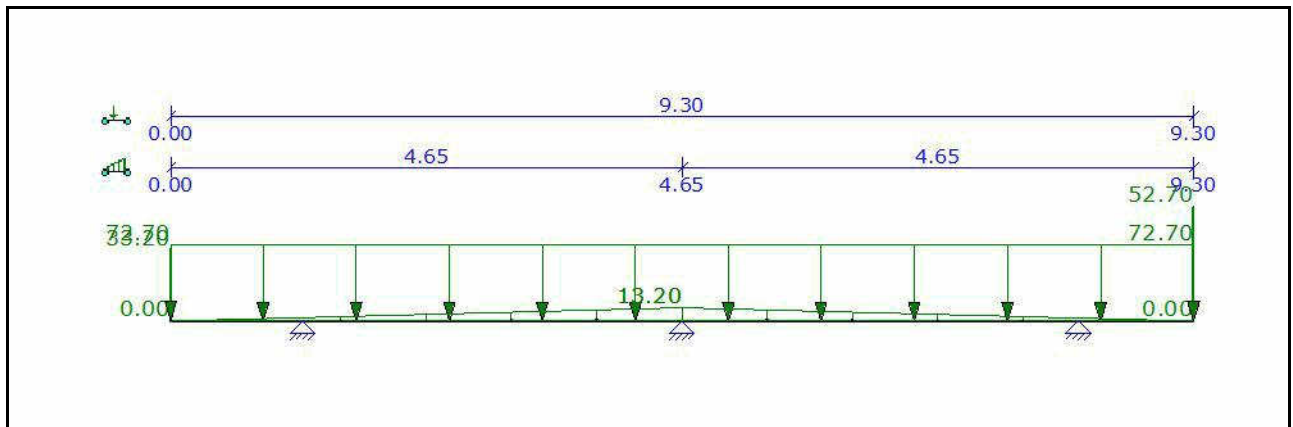
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 1,200 | vast | vrij |
| O2 | 4,650 | vast | vrij |
| O3 | 8,250 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-------------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 72,70 | 72,70 | 0,000 | 9,300(L) | Z S1 |
| q | 0,00 | 13,20 | 0,000 | 4,650 | Z S1 |
| q | 13,20 | 0,00 | 4,650 | 9,300(L) | Z S1 |
| F | 33,20 | | 0,000 | | Z S1 |
| F | 52,70 | | 9,300 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 823,39 | kN | | |
| - | - | - | m | m | - - |

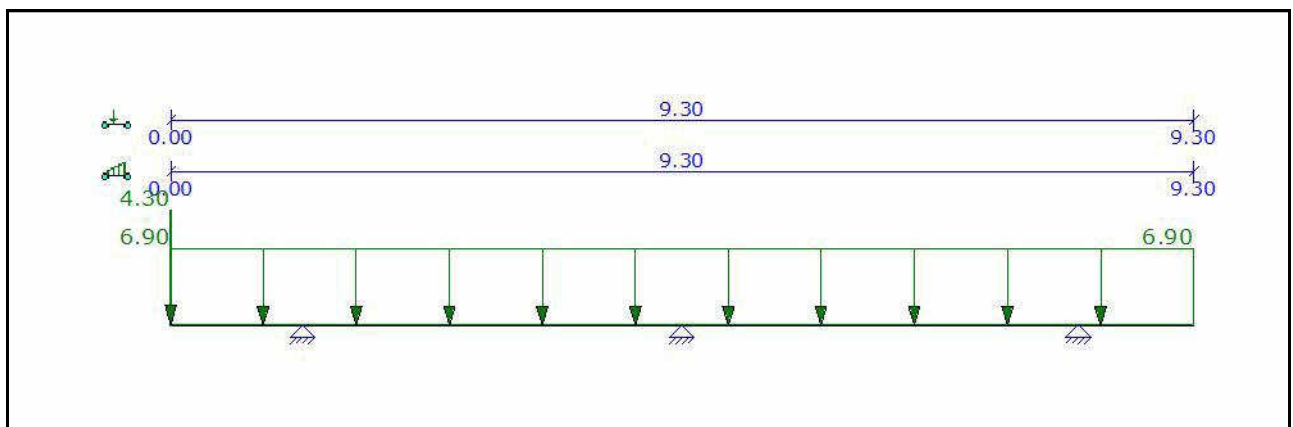
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.2: 2e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,300(L) | Z S1 |
| F | 4,30 | | 0,000 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,47 | kN | | |
| - | - | - | m | m | - - |

B.G.2: 2E VERDIEPING



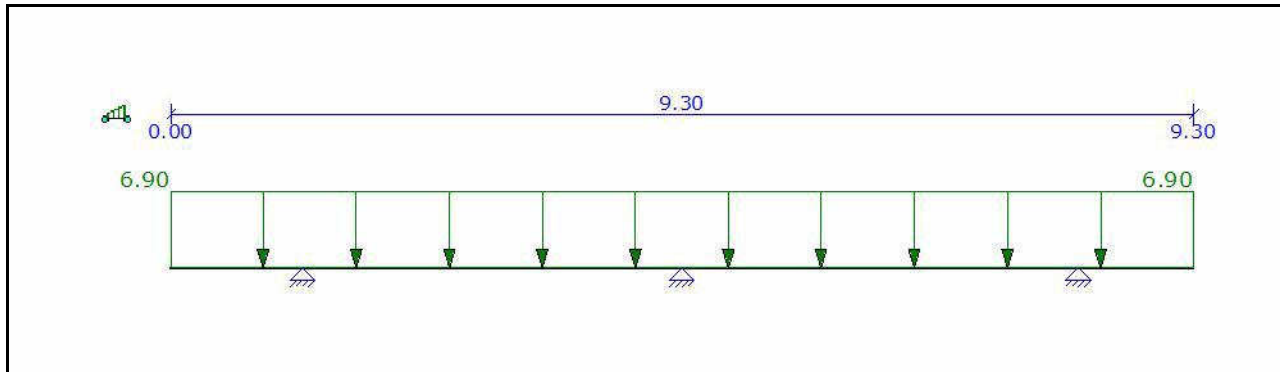
B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------|-------------|------------|--------------|-------------|-------------------------|
|------|-------------|------------|--------------|-------------|-------------------------|

B.G.3: 1e verdieping

| | | | | | |
|------------|---------|-------------|-------|----------|------|
| q | 6,90 | 6,90 | 0,000 | 9,300(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 64,17 | kN | | |
| - | - | - | m | m | - - |

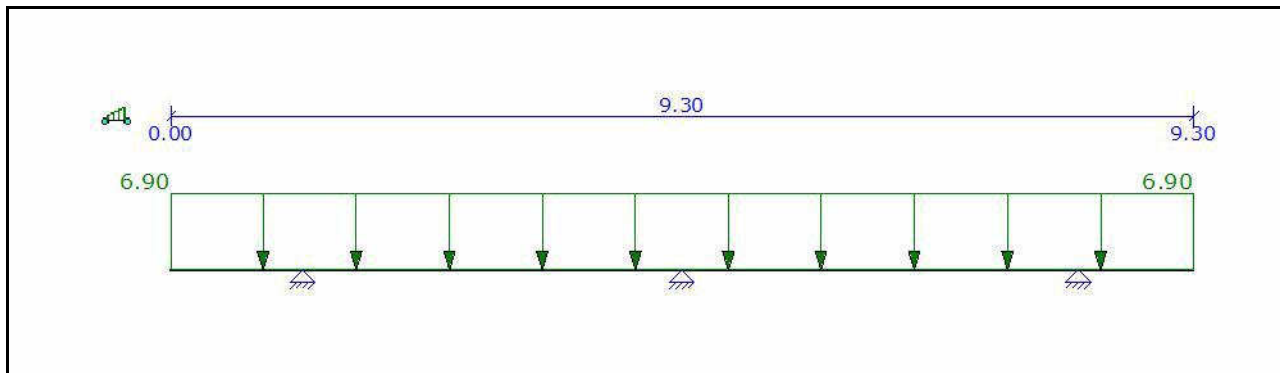
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|---------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,300(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 64,17 | kN | | |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan) | Fu.C.3 (Overslaan) | Fu.C.4 | Fu.C.5 (Overslaan) | Fu.C.6 (Overslaan) | Fu.C.7 (Overslaan) |
|-------|---------------|--------|-----------------------|-----------------------|--------|-----------------------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 2e verdieping | 0.30 |
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|---------|------|------|----------------|------|
| B.G.1 | O1 | 1.200 | vast | vrij | -263.44 | 0.00 |
| B.G.1 | O2 | 4.650 | vast | vrij | -282.31 | 0.00 |
| B.G.1 | O3 | 8.250 | vast | vrij | -277.65 | 0.00 |
| | Som Reacties | | | | -823.39 | |
| | Som Lasten | | | | 823.39 | |
| B.G.2 | O1 | 1.200 | vast | vrij | -25.31 | 0.00 |
| B.G.2 | O2 | 4.650 | vast | vrij | -24.46 | 0.00 |
| B.G.2 | O3 | 8.250 | vast | vrij | -18.70 | 0.00 |
| | Som Reacties | | | | -68.47 | |
| | Som Lasten | | | | 68.47 | |
| B.G.3 | O1 | 1.200 | vast | vrij | -19.15 | 0.00 |
| B.G.3 | O2 | 4.650 | vast | vrij | -26.68 | 0.00 |
| B.G.3 | O3 | 8.250 | vast | vrij | -18.35 | 0.00 |
| | Som Reacties | | | | -64.17 | |
| | Som Lasten | | | | 64.17 | |
| B.G.4 | O1 | 1.200 | vast | vrij | -19.15 | 0.00 |
| B.G.4 | O2 | 4.650 | vast | vrij | -26.68 | 0.00 |
| B.G.4 | O3 | 8.250 | vast | vrij | -18.35 | 0.00 |

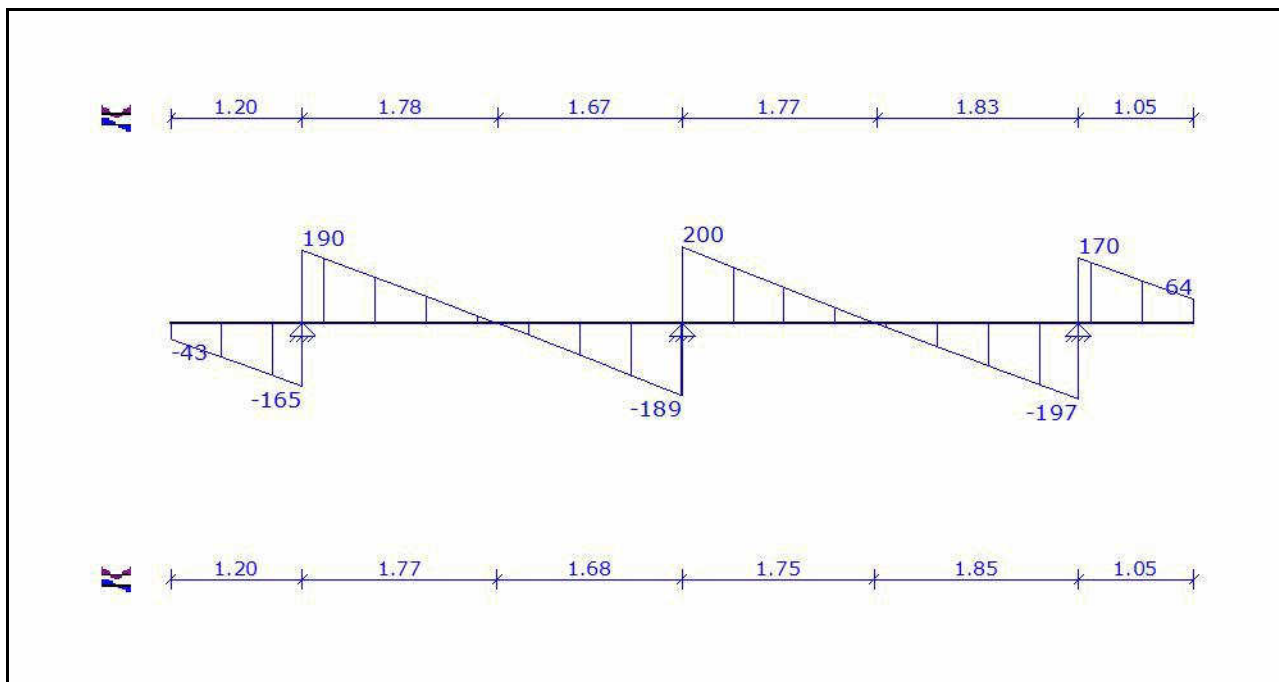
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|------|---------------------|---------|------|--------|---------------|-----|
| | Som Reacties | | | | -64.17 | |
| | Som Lasten | | | | 64.17 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|-----------------|------|
| Fu.C.1 | O1 | 1.200 | vast | vrij | -355.22 | 0.00 |
| Fu.C.1 | O2 | 4.650 | vast | vrij | -388.72 | 0.00 |
| Fu.C.1 | O3 | 8.250 | vast | vrij | -360.15 | 0.00 |
| | Som Reacties | | | | -1104.09 | |
| | Som Lasten | | | | 1104.09 | |
| Fu.C.4 | O1 | 1.200 | vast | vrij | -354.42 | 0.00 |
| Fu.C.4 | O2 | 4.650 | vast | vrij | -385.02 | 0.00 |
| Fu.C.4 | O3 | 8.250 | vast | vrij | -367.25 | 0.00 |
| | Som Reacties | | | | -1106.70 | |
| | Som Lasten | | | | 1106.70 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

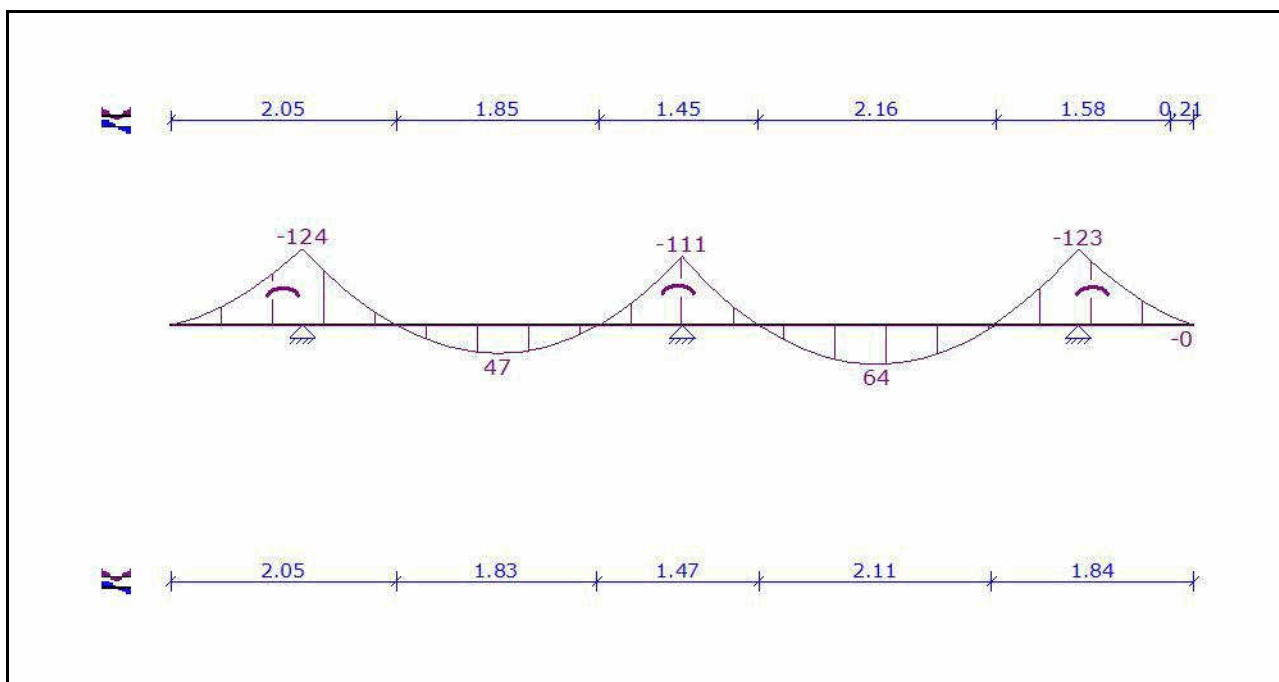
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P2 | R450x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 9.300 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: | 450 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|-------------|-------|-------|-------|--------|-------|
| G1 | P2 | R450x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVEN

| | | | | | | | | | | | Ligger 1 |
|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|----------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 1.200 | O1 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| | 4.650 | O2 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| | 8.250 | O3 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.200 | 123.83 | 4R16 | | 664 | 804 | | 9,26 | 129,41 |
| 4.650 | 111.49 | 4R16 | | 594 | 804 | | 11,73 | 176,91 |
| 8.250 | 122.75 | 4R16 | | 658 | 804 | | 9,37 | 132,72 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 2.979 | 46.69 | 4R12 | | 240 | 452 | | 23,06 | 261,56 |
| 6.423 | 64.00 | 4R12 | | 332 | 452 | | 13,25 | 191,25 |
| m | kNm | - | - | mm | mm | - | mm | mm |

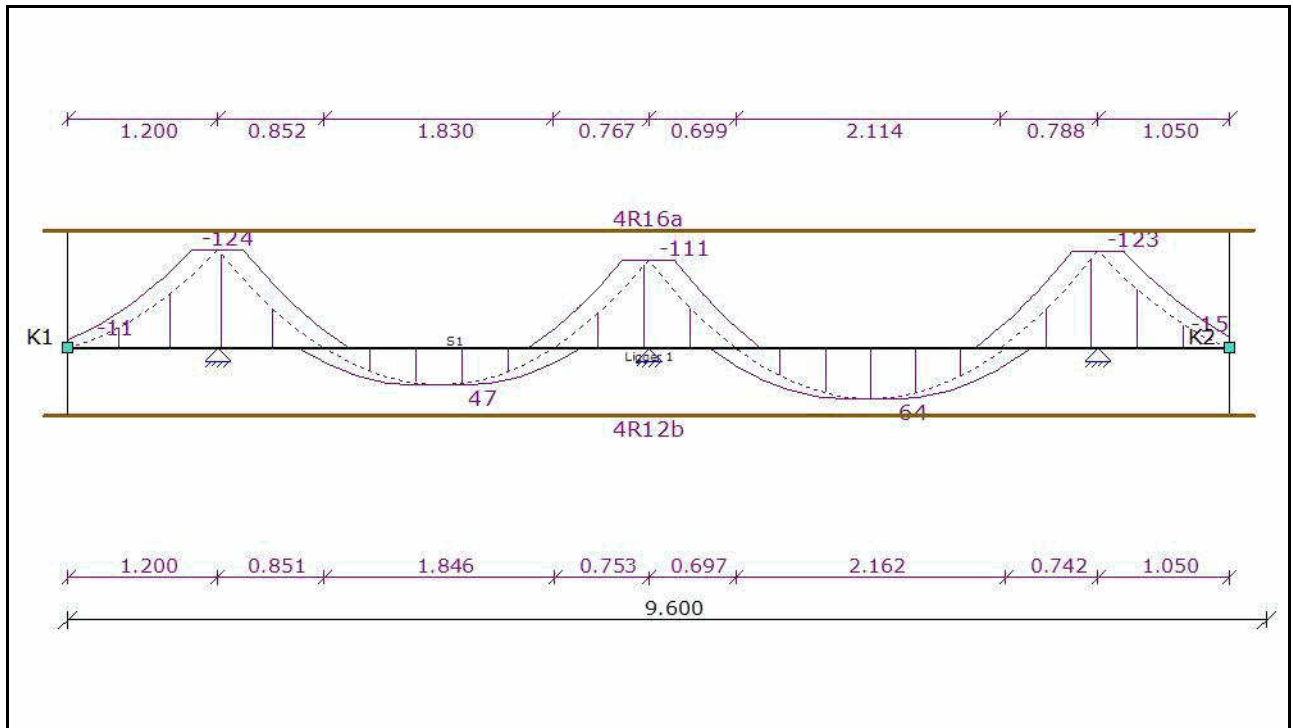
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

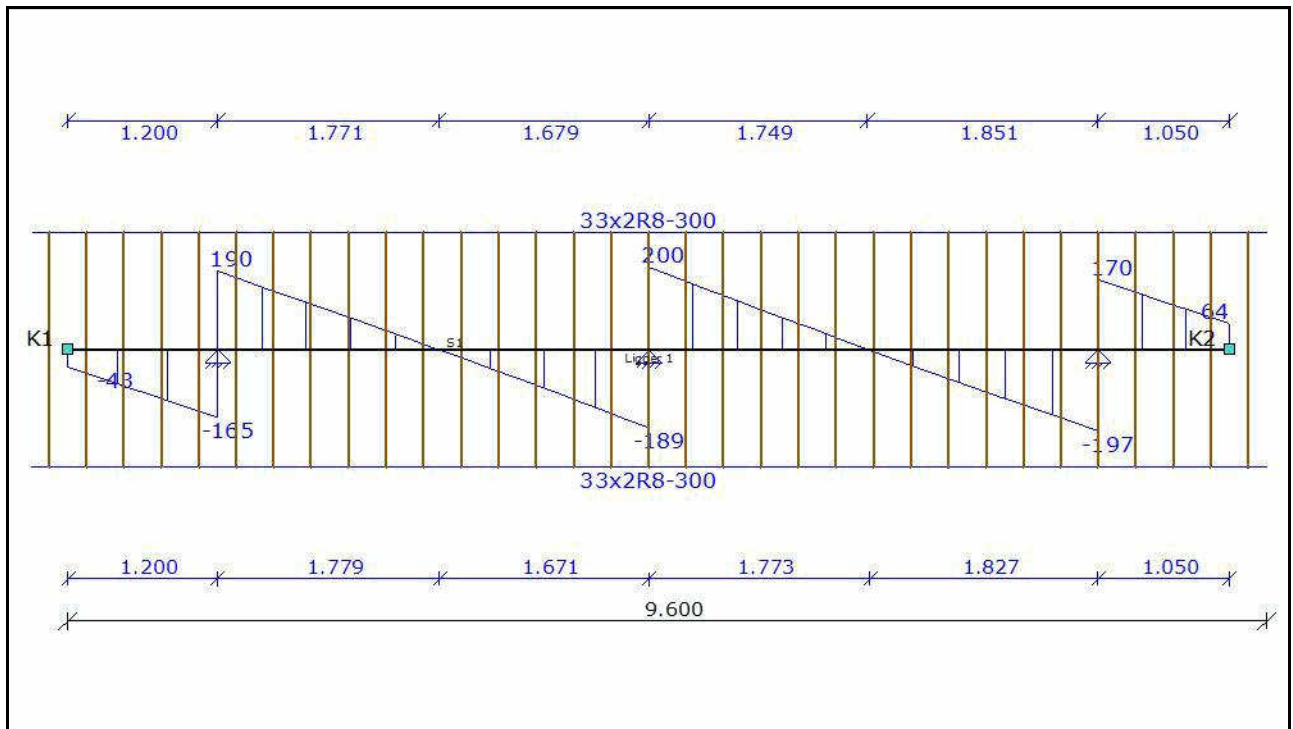
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi | Ligger 1 |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------|----------|
| 0.000 | Rechts | 42.66 | 2R8-300 | 0 | 0 | 670 | 81.142 | 284.04 | 42.66 | N/B | N/B | |
| 1.200 | Links | 165.08 | 2R8-300 | 390 | 0 | 670 | 81.142 | 284.04 | 165.08 | N/B | N/B | |
| 1.200 | Rechts | 190.14 | 2R8-300 | 449 | 0 | 670 | 81.142 | 284.04 | 190.14 | N/B | N/B | |
| 4.650 | Links | 189.19 | 2R8-300 | 446 | 0 | 670 | 81.142 | 284.04 | 189.19 | N/B | N/B | |
| 4.650 | Rechts | 199.53 | 2R8-300 | 471 | 0 | 670 | 81.142 | 284.04 | 199.53 | N/B | N/B | |
| 8.250 | Links | 196.84 | 2R8-300 | 464 | 0 | 670 | 81.142 | 284.04 | 196.84 | N/B | N/B | |
| 8.250 | Rechts | 170.42 | 2R8-300 | 402 | 0 | 670 | 81.142 | 284.04 | 170.42 | N/B | N/B | |
| 9.300 | Links | 64.03 | 2R8-300 | 0 | 0 | 670 | 81.142 | 284.04 | 64.03 | N/B | N/B | |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN | |

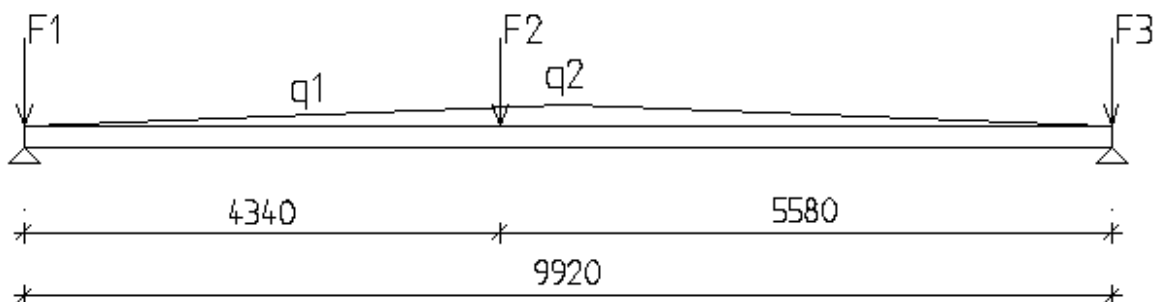
AFB. LANGSWAPENING. (AFBOUW) LIGGER 1



AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.9 Kopgevelbalk as 12

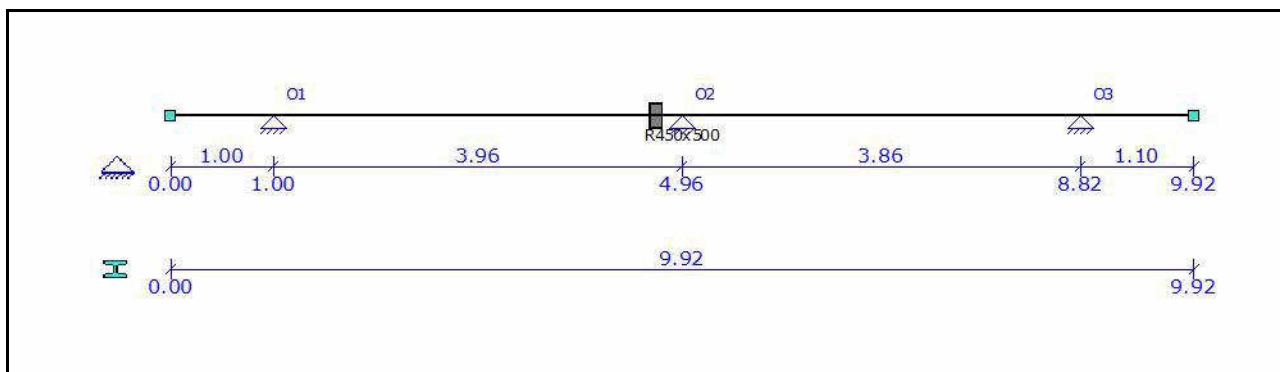


| | | | |
|------------|--|-------------------|-----------------|
| q1p.rep. : | dak : | $0,77 * 2,7 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 2,7 :$ | 25,9 kN/m |
| | b.g.g. : | $3,9 * 2,7 :$ | 10,5 kN/m |
| | gevel : | $4,4 * 6,5 :$ | 28,6 kN/m |
| | fundering : | | <u>5,6 kN/m</u> |
| | | | 72,7 kN/m |
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | 1 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | b.g.g. : | $2,55 * 2,7 :$ | 6,9 kN/m |
| q2p.rep. : | gevel : | $4,4 * 3,0 :$ | 13,2 kN/m |
| F1p.rep: | reactie ligger 3.3 | | 83,2 kN |
| F2p.rep: | reactie ligger 3.6 | | 35,3 kN |
| F3p.rep: | reactie ligger 3.2 | | 65,9 kN |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 3 | 1 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(9,920) | R450x500 | 0 | 4.6875e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.63 |
| m - | | ° | m4 - | | kN/m2 | C°m | kN/m |

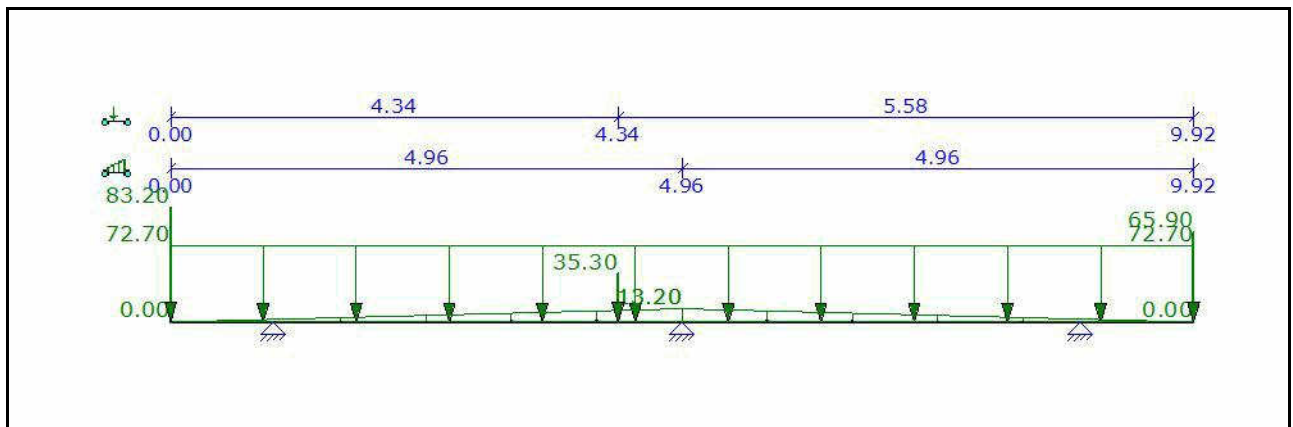
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 1,000 | vast | vrij |
| O2 | 4,960 | vast | vrij |
| O3 | 8,820 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-------------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 72,70 | 72,70 | 0,000 | 9,920(L) | Z S1 |
| q | 0,00 | 13,20 | 0,000 | 4,960 | Z S1 |
| q | 13,20 | 0,00 | 4,960 | 9,920(L) | Z S1 |
| F | 83,20 | | 0,000 | | Z S1 |
| F | 65,90 | | 9,920 | | Z S1 |
| F | 35,30 | | 4,340 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 971,06 | kN | | |
| - | - | - | m | m | - - |

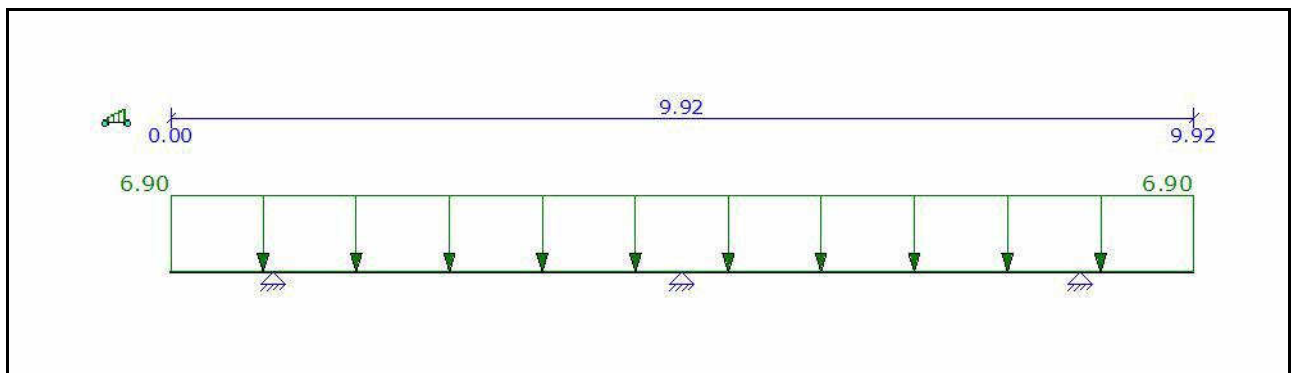
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.2: 2e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,45 | kN | | |
| - | - | - | m | m | - - |

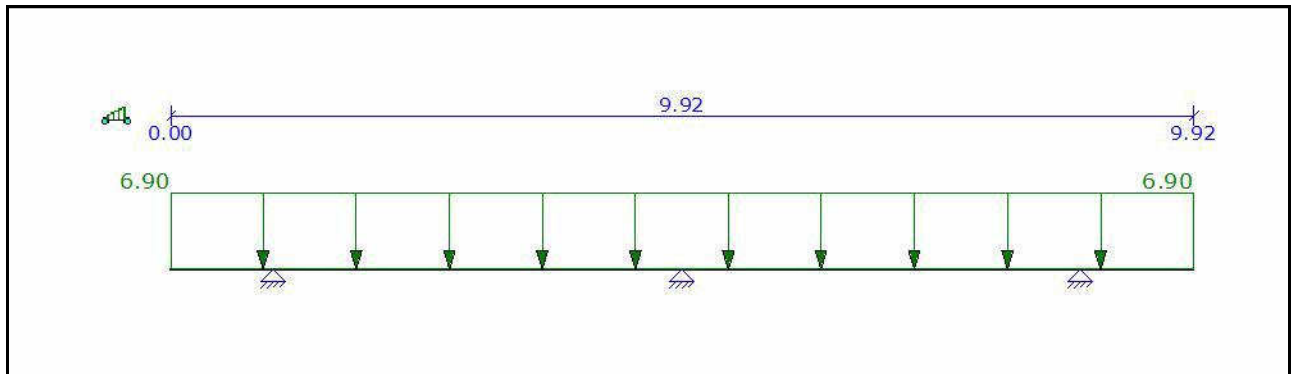
B.G.2: 2E VERDIEPING



B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.3: 1e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,45 | kN | | |

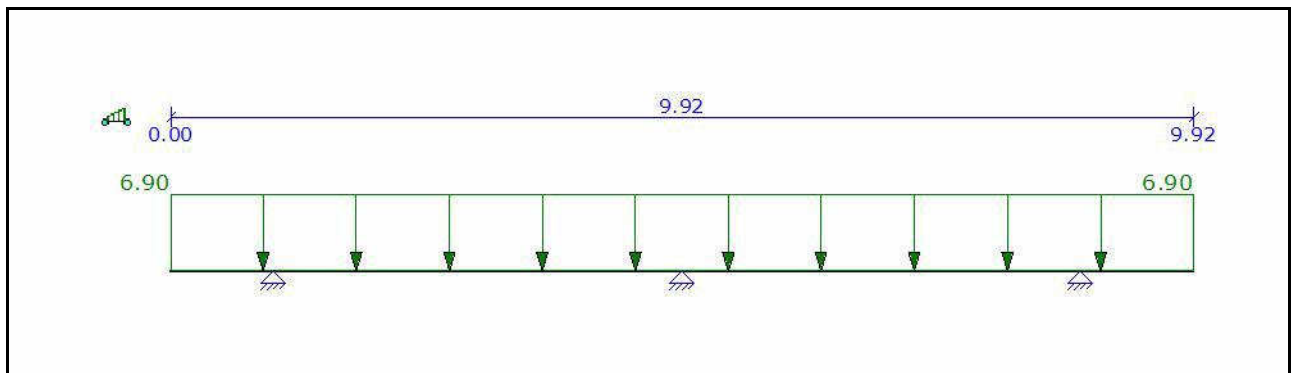
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------------|-------------|-------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 68,45 | kN | | |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan n) | Fu.C.3 (Overslaan n) | Fu.C.4 | Fu.C.5 (Overslaan n) | Fu.C.6 (Overslaan n) | Fu.C.7 (Overslaan n) |
|-------|---------------|--------|----------------------------|----------------------------|--------|----------------------------|----------------------------|----------------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|--------------|--------|
| B.G.1 | Permanent | 1.00 |

| | | |
|-------|---------------|------|
| B.G.2 | 2e verdieping | 0.30 |
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

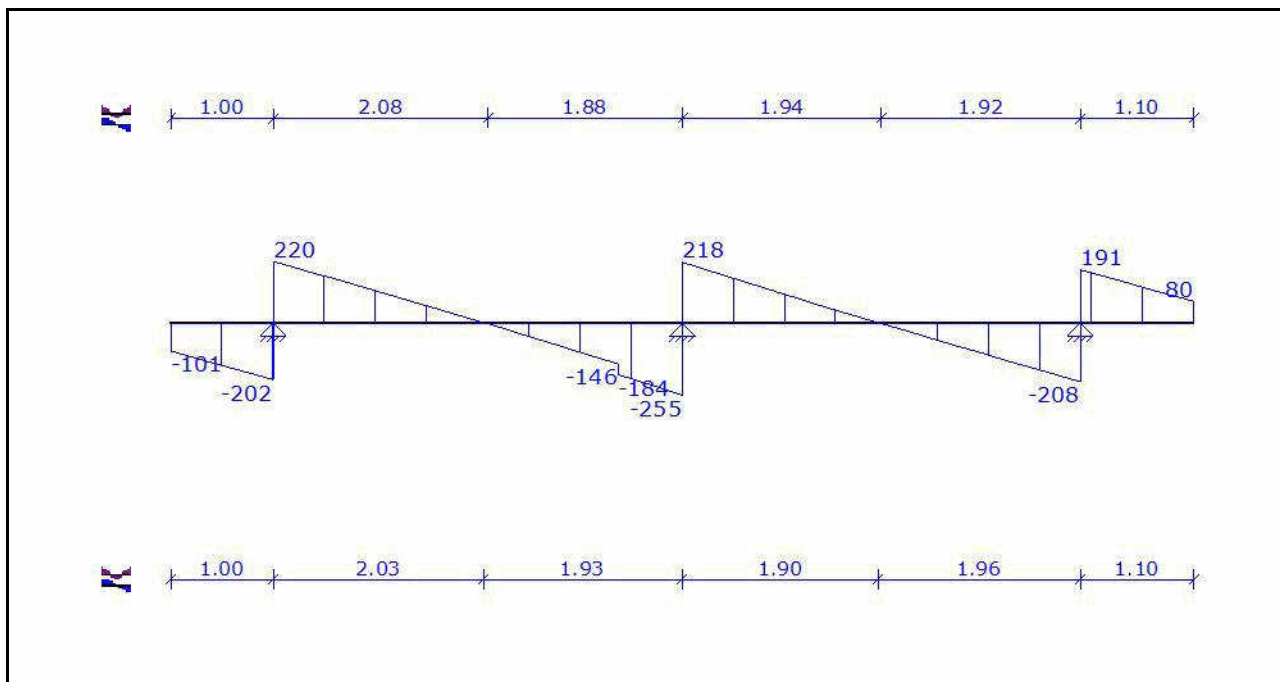
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------------|---------------------|----------------|----------|-----------|----------------|-----------|
| B.G.1 | O1 | 1.000 | vast | vrij | -322.89 | 0.00 |
| B.G.1 | O2 | 4.960 | vast | vrij | -344.80 | 0.00 |
| B.G.1 | O3 | 8.820 | vast | vrij | -303.36 | 0.00 |
| | Som Reacties | | | | -971.06 | |
| | Som Lasten | | | | 971.06 | |
| B.G.2 | O1 | 1.000 | vast | vrij | -18.58 | 0.00 |
| B.G.2 | O2 | 4.960 | vast | vrij | -30.80 | 0.00 |
| B.G.2 | O3 | 8.820 | vast | vrij | -19.06 | 0.00 |
| | Som Reacties | | | | -68.45 | |
| | Som Lasten | | | | 68.45 | |
| B.G.3 | O1 | 1.000 | vast | vrij | -18.58 | 0.00 |
| B.G.3 | O2 | 4.960 | vast | vrij | -30.80 | 0.00 |
| B.G.3 | O3 | 8.820 | vast | vrij | -19.06 | 0.00 |
| | Som Reacties | | | | -68.45 | |
| | Som Lasten | | | | 68.45 | |
| B.G.4 | O1 | 1.000 | vast | vrij | -18.58 | 0.00 |
| B.G.4 | O2 | 4.960 | vast | vrij | -30.80 | 0.00 |
| B.G.4 | O3 | 8.820 | vast | vrij | -19.06 | 0.00 |
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
| | Som Reacties | | | | -68.45 | |
| | Som Lasten | | | | 68.45 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|-----------------|------|
| Fu.C.1 | O1 | 1.000 | vast | vrij | -409.37 | 0.00 |
| Fu.C.1 | O2 | 4.960 | vast | vrij | -472.65 | 0.00 |
| Fu.C.1 | O3 | 8.820 | vast | vrij | -389.80 | 0.00 |
| | Som Reacties | | | | -1271.82 | |
| | Som Lasten | | | | 1271.82 | |
| Fu.C.4 | O1 | 1.000 | vast | vrij | -422.42 | 0.00 |
| Fu.C.4 | O2 | 4.960 | vast | vrij | -468.83 | 0.00 |
| Fu.C.4 | O3 | 8.820 | vast | vrij | -399.46 | 0.00 |
| | Som Reacties | | | | -1290.72 | |
| | Som Lasten | | | | 1290.72 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

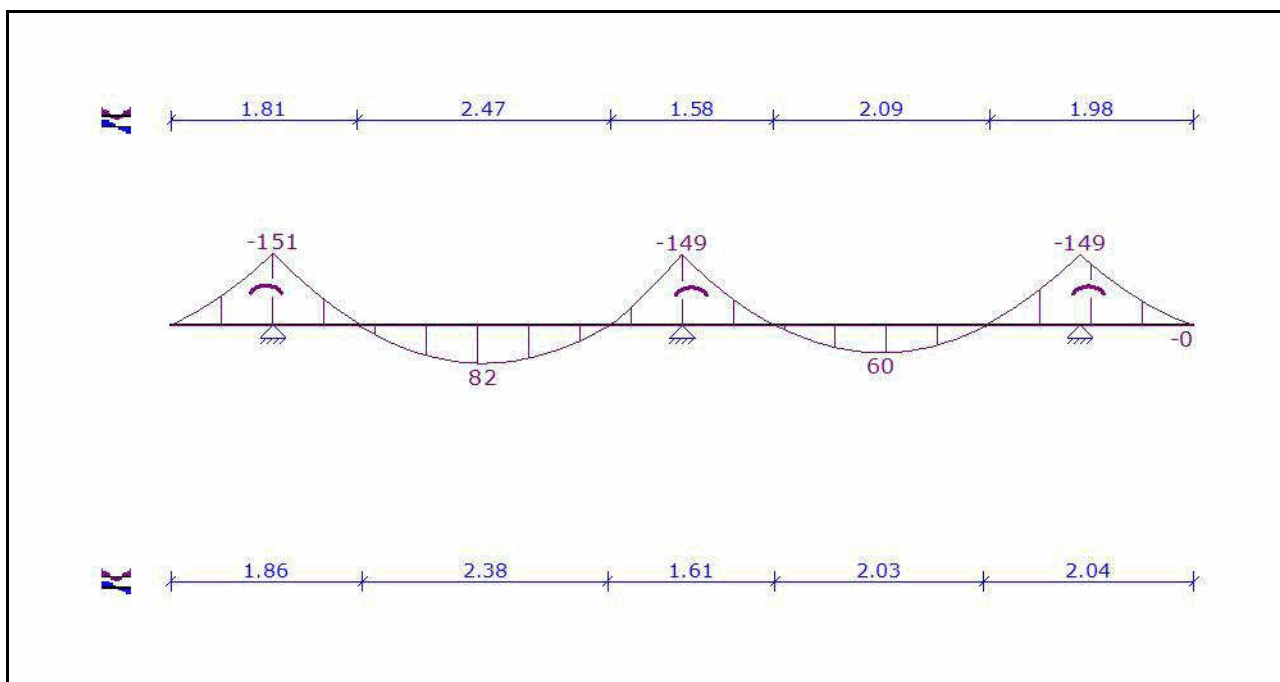
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P2 | R450x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 9.920 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: | 450 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P2 | R450x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVEN

| | | | | | | | | | | Ligger 1 | |
|----------|---------|---------|--------|----------|-------|----------|-----|----------|----------|---------------|--------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 1.000 | O1 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 4.960 | O2 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| afgetopt | 8.820 | O3 | n.v.t. | 0,000 | | | N/B | | | Niet afgetopt | Niet |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|--------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.000 | 151.38 | 4R16 | | 1R12 | 822 | 917 | | 8,27 | 98,17 |
| 4.960 | 149.35 | 4R16 | | 1R10 | 811 | 883 | | 8,59 | 107,56 |
| 8.820 | 149.00 | 4R16 | | 1R12 | 808 | 917 | | 8,50 | 105,10 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|-------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 3.032 | 81.57 | 4R12 | | 1R10 | 426 | 531 | | 10,91 | 156,98 |
| 6.896 | 59.56 | 4R12 | | | 308 | 452 | | 16,40 | 216,31 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

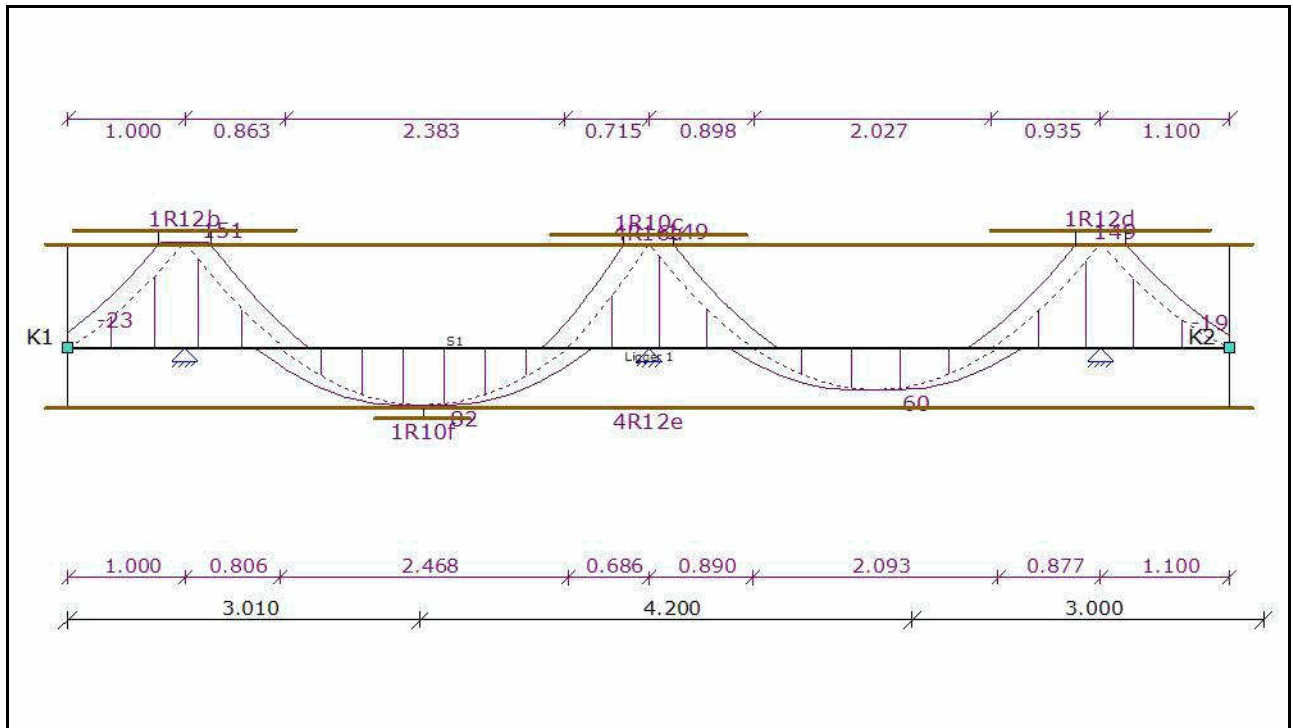
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

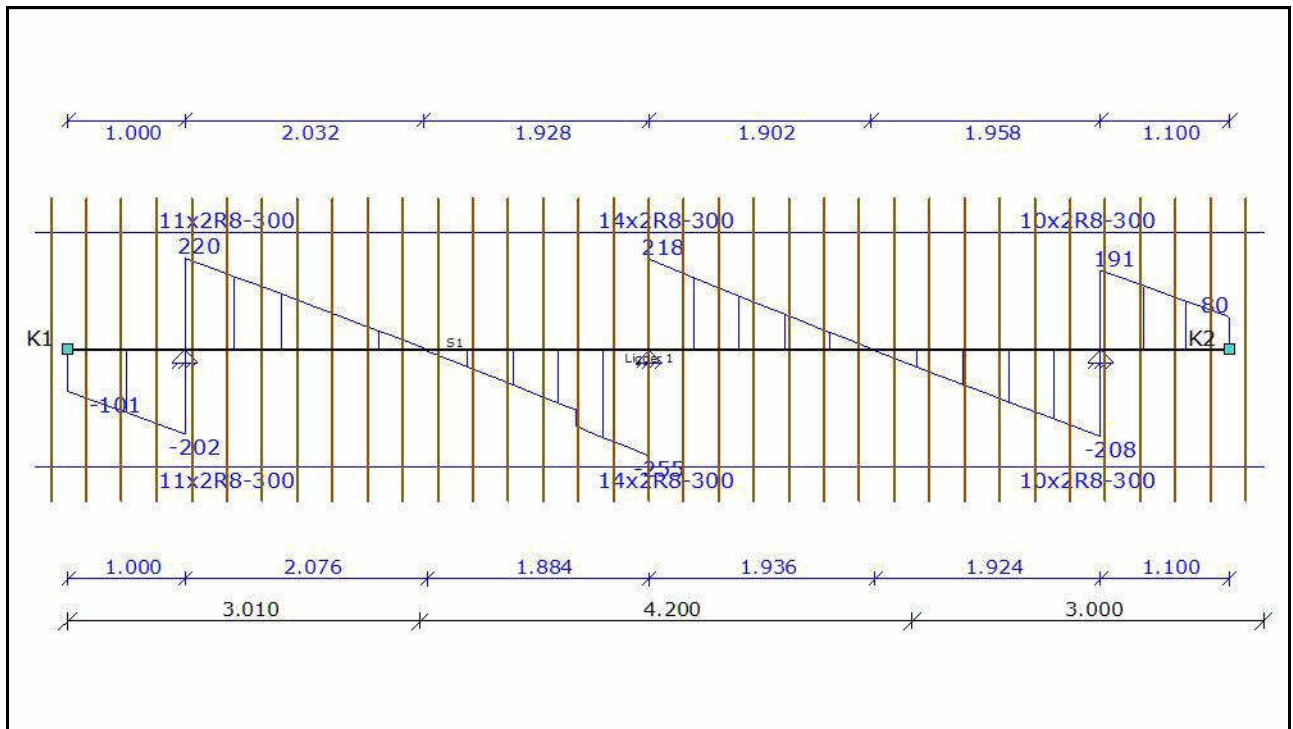
DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEdi |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------|
| 0.000 | Rechts | 101.09 | 2R8-300 | 241 | 0 | 670 | 81.163 | 281.36 | 101.09 | N/B | N/B |
| 1.000 | Links | 202.21 | 2R8-300 | 482 | 0 | 670 | 84.802 | 281.36 | 202.21 | N/B | N/B |
| 1.000 | Rechts | 220.21 | 2R8-300 | 525 | 0 | 670 | 84.802 | 281.36 | 220.21 | N/B | N/B |
| 4.960 | Links | 254.98 | 2R8-300 | 605 | 0 | 670 | 83.725 | 282.24 | 254.98 | N/B | N/B |
| 4.960 | Rechts | 217.67 | 2R8-300 | 517 | 0 | 670 | 83.725 | 282.24 | 217.67 | N/B | N/B |
| 8.820 | Links | 207.98 | 2R8-300 | 495 | 0 | 670 | 84.802 | 281.36 | 207.98 | N/B | N/B |
| 8.820 | Rechts | 191.48 | 2R8-300 | 456 | 0 | 670 | 84.802 | 281.36 | 191.48 | N/B | N/B |
| 9.920 | Links | 80.07 | 2R8-300 | 0 | 0 | 670 | 81.163 | 281.36 | 80.07 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

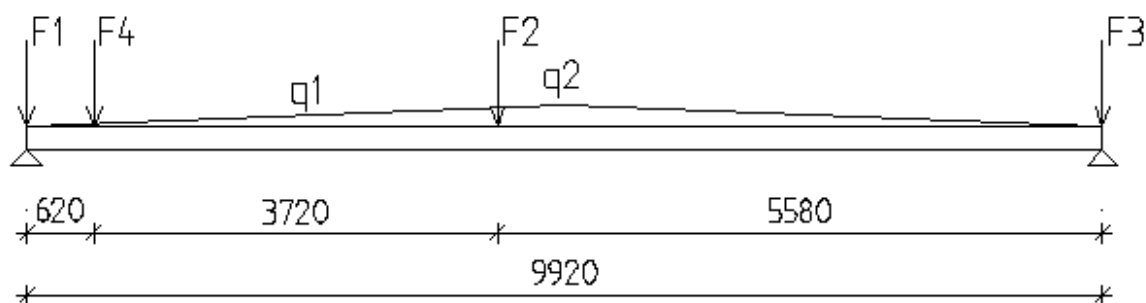


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.10

Bouwmuurbalk as 2, 3, F, G, H, J

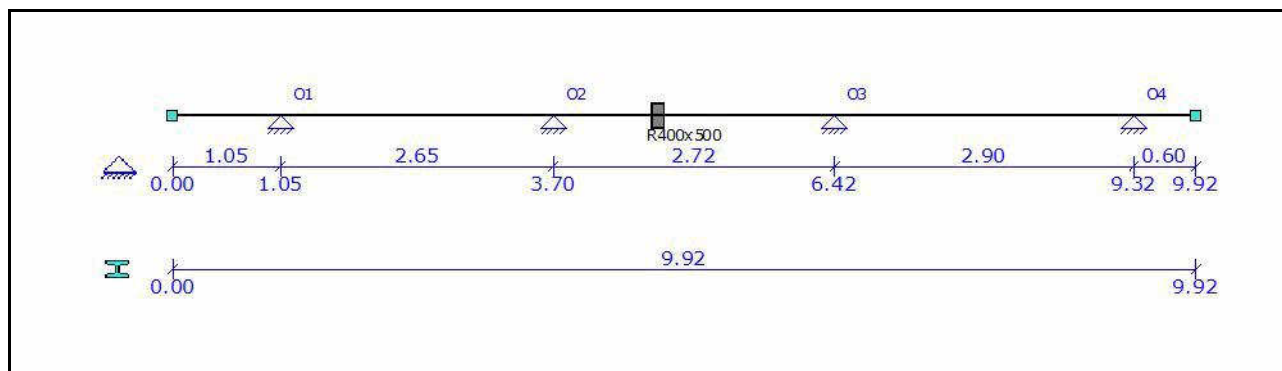


| | | | |
|------------|--|-------------------|-----------------|
| q1p.rep. : | dak : | $0,77 * 5,4 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 5,4 :$ | 51,8 kN/m |
| | b.g.g. : | $3,9 * 5,4 :$ | 21,1 kN/m |
| | bouwmuur : | $4,8 * 6,5 :$ | 31,2 kN/m |
| | fundering : | | <u>5,0 kN/m</u> |
| | | | 111,3 kN/m |
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 5,4 :$ | 13,8 kN/m |
| | 1 ^e verdieping : | $2,55 * 5,4 :$ | 13,8 kN/m |
| | bgg : | $2,55 * 5,4 :$ | 13,8 kN/m |
| q2p.rep. : | bouwmuur : | $4,8 * 3,0 :$ | 14,4 kN/m |
| F1p.rep: | reactie ligger 3.4 | | 41,2 kN |
| F2p.rep: | reactie ligger 3.6 | | 35,3 kN |
| F3p.rep: | reactie ligger 3.1 | | 144,9 kN |
| F4p.rep: | reactie ligger 3.4 | | 23,9 kN |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 4 | 2 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Material | E-Modulus | Uitzettingcoëff | Gewicht |
|---------|-------------|------|------------------|----------|-----------|-----------------|---------|
|---------|-------------|------|------------------|----------|-----------|-----------------|---------|

0,000 - L(9,920) R400x500
m -

0
°

4.1667e-03 C20/25
m4 -

3.0000e+07
kN/m2

10.0000e-06
C°m

5.00
kN/m

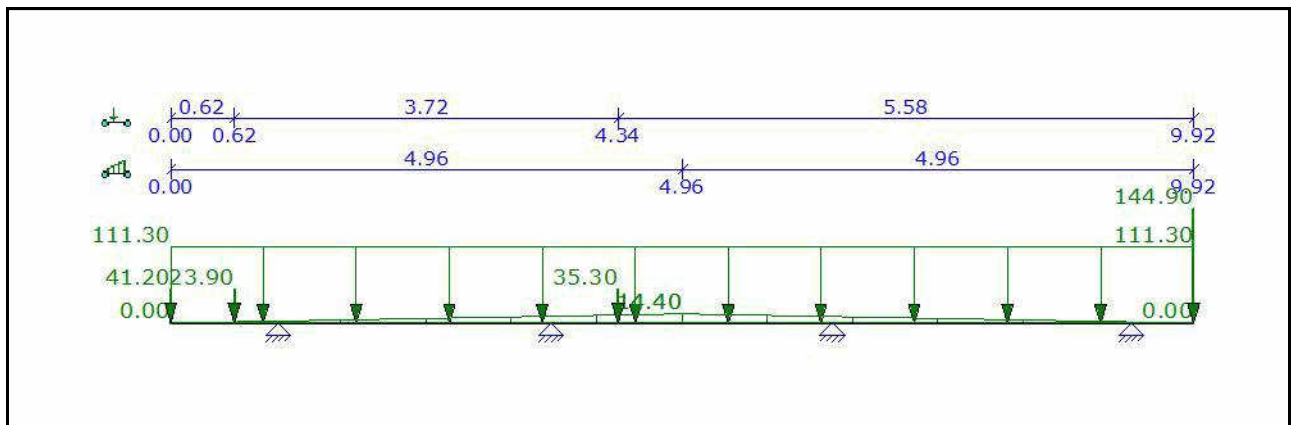
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 1,050 | vast | vrij |
| O2 | 3,700 | vast | vrij |
| O3 | 6,420 | vast | vrij |
| O4 | 9,320 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-------------------------|----------------|-----------------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 111,30 | 111,30 | 0,000 | 9,920(L) | Z S1 |
| q | 0,00 | 14,40 | 0,000 | 4,960 | Z S1 |
| q | 14,40 | 0,00 | 4,960 | 9,920(L) | Z S1 |
| F | 41,20 | | 0,000 | | Z S1 |
| F | 35,30 | | 4,340 | | Z S1 |
| F | 144,90 | | 9,920 | | Z S1 |
| F | 23,90 | | 0,620 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 1.420,82 | kN | | |
| - | - | - | m | m | - - |

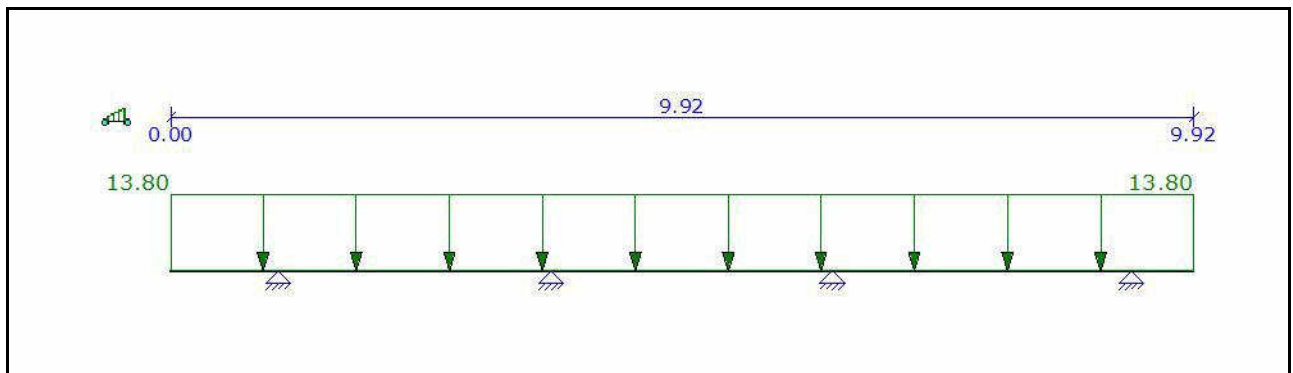
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|----------------|---------------------|--------------|-------------|-------------------------|
| B.G.2: 2e verdieping | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | | |
| - | - | - | m | m | - - |

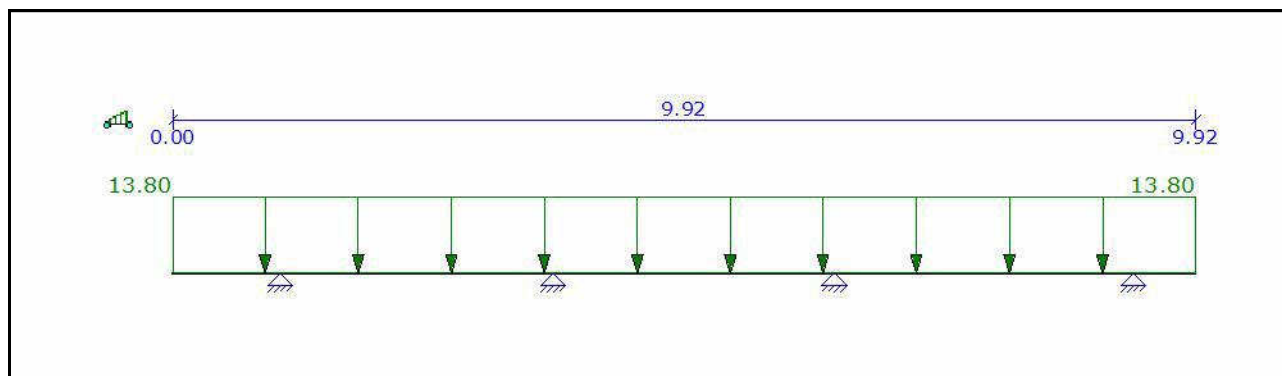
B.G.2: 2E VERDIEPING



B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|----------------|---------------------|--------------|-------------|-------------------------|
| B.G.3: 1e verdieping | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | | |
| - | - | - | m | m | - - |

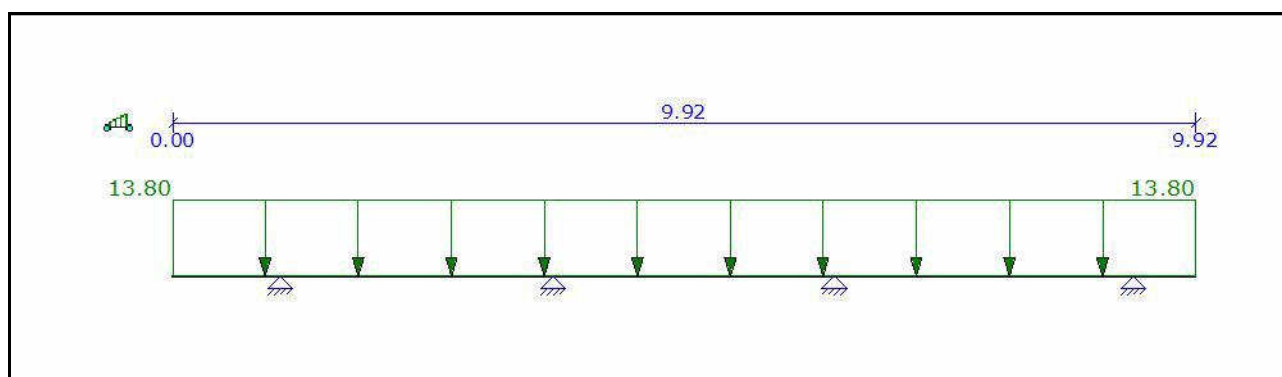
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------------|----------------|---------------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | | |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan) | Fu.C.3 (Overslaan) | Fu.C.4 | Fu.C.5 (Overslaan) | Fu.C.6 (Overslaan) | Fu.C.7 (Overslaan) |
|-------|---------------|--------|-----------------------|-----------------------|--------|-----------------------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 2e verdieping | 0.30 |
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

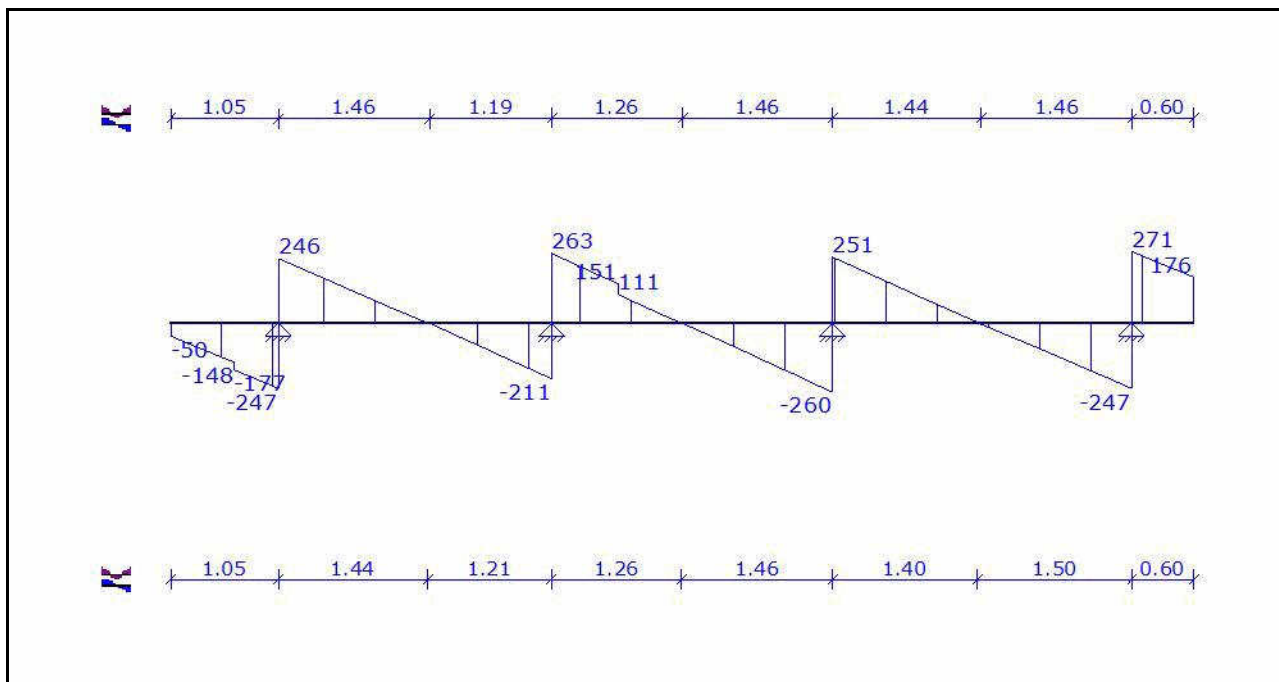
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|----------------|-------------|---------------|-----------------|------------|
| B.G.1 | O1 | 1.050 | vast | vrij | -356.23 | 0.00 |
| B.G.1 | O2 | 3.700 | vast | vrij | -331.62 | 0.00 |
| B.G.1 | O3 | 6.420 | vast | vrij | -343.56 | 0.00 |
| B.G.1 | O4 | 9.320 | vast | vrij | -389.41 | 0.00 |
| | Som Reacties | | | | -1420.82 | |
| | Som Lasten | | | | 1420.82 | |
| B.G.2 | O1 | 1.050 | vast | vrij | -32.72 | 0.00 |
| B.G.2 | O2 | 3.700 | vast | vrij | -35.85 | 0.00 |
| B.G.2 | O3 | 6.420 | vast | vrij | -43.02 | 0.00 |
| B.G.2 | O4 | 9.320 | vast | vrij | -25.30 | 0.00 |
| | Som Reacties | | | | -136.90 | |
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
| | Som Lasten | | | | 136.90 | |
| B.G.3 | O1 | 1.050 | vast | vrij | -32.72 | 0.00 |
| B.G.3 | O2 | 3.700 | vast | vrij | -35.85 | 0.00 |
| B.G.3 | O3 | 6.420 | vast | vrij | -43.02 | 0.00 |
| B.G.3 | O4 | 9.320 | vast | vrij | -25.30 | 0.00 |
| | Som Reacties | | | | -136.90 | |
| | Som Lasten | | | | 136.90 | |
| B.G.4 | O1 | 1.050 | vast | vrij | -32.72 | 0.00 |
| B.G.4 | O2 | 3.700 | vast | vrij | -35.85 | 0.00 |
| B.G.4 | O3 | 6.420 | vast | vrij | -43.02 | 0.00 |
| B.G.4 | O4 | 9.320 | vast | vrij | -25.30 | 0.00 |
| | Som Reacties | | | | -136.90 | |
| | Som Lasten | | | | 136.90 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|----------|-------------|---------------|-----------------|------------|
| Fu.C.1 | O1 | 1.050 | vast | vrij | -491.24 | 0.00 |
| Fu.C.1 | O2 | 3.700 | vast | vrij | -474.75 | 0.00 |
| Fu.C.1 | O3 | 6.420 | vast | vrij | -510.89 | 0.00 |
| Fu.C.1 | O4 | 9.320 | vast | vrij | -503.07 | 0.00 |
| | Som Reacties | | | | -1979.95 | |
| | Som Lasten | | | | 1979.95 | |
| Fu.C.4 | O1 | 1.050 | vast | vrij | -485.83 | 0.00 |
| Fu.C.4 | O2 | 3.700 | vast | vrij | -460.99 | 0.00 |
| Fu.C.4 | O3 | 6.420 | vast | vrij | -487.12 | 0.00 |
| Fu.C.4 | O4 | 9.320 | vast | vrij | -514.12 | 0.00 |
| | Som Reacties | | | | -1948.07 | |
| | Som Lasten | | | | 1948.07 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

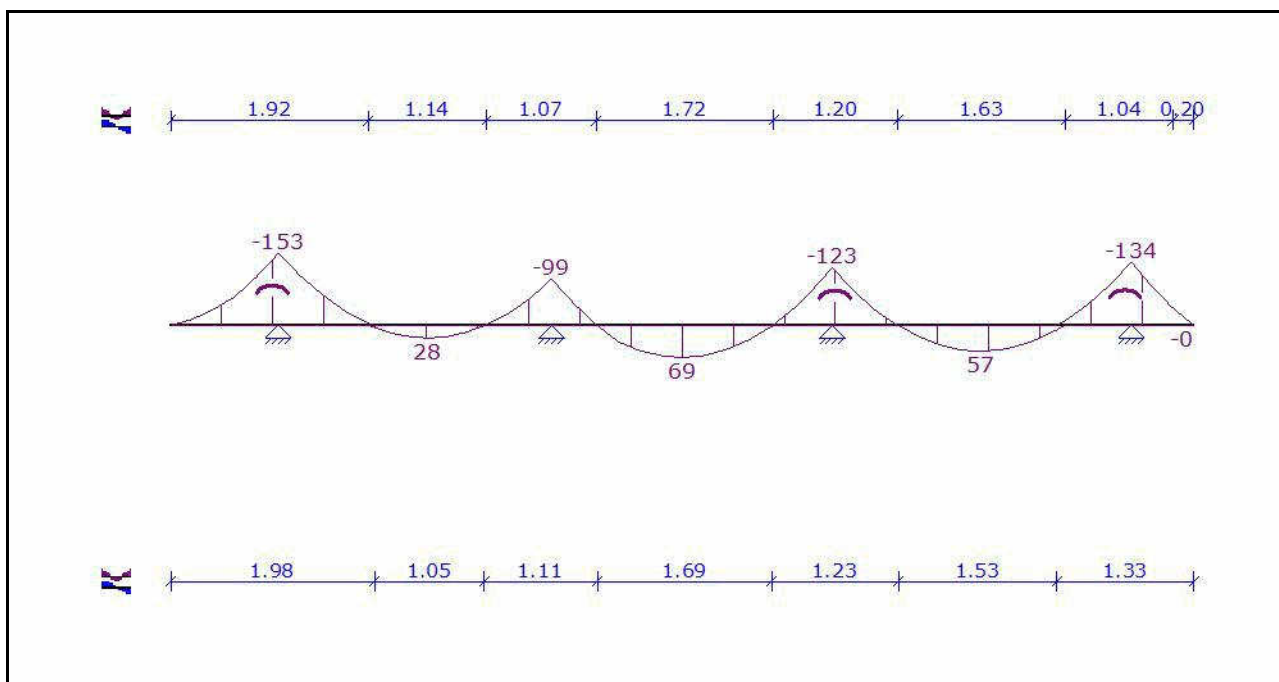
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staal | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P3 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 9.920 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: | 400 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P3 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVENS

| Ligger 1 | | | | | | | | | | | |
|----------|---------|---------|------------|----------|-------|----------|-----|----------|----------|----------|--------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 1.050 | O1 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 3.700 | O2 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 6.420 | O3 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 9.320 | O4 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.050 | 152.60 | 4R16 | 1R10 | 838 | 883 | | 7,65 | 79,51 |
| 3.700 | 99.05 | 4R16 | | 528 | 804 | | 15,55 | 215,36 |
| 6.420 | 122.97 | 4R16 | | 664 | 804 | | 10,43 | 157,40 |
| 9.320 | 134.12 | 4R16 | 1R10 | 728 | 883 | | 9,24 | 127,08 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 2.491 | 28.32 | 4R12 | | 145 | 452 | | 27,72 | 300,00 |
| 4.959 | 69.38 | 4R12 | | 362 | 452 | | 10,18 | 143,81 |
| 7.862 | 56.89 | 4R12 | | 295 | 452 | | 23,10 | 261,90 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

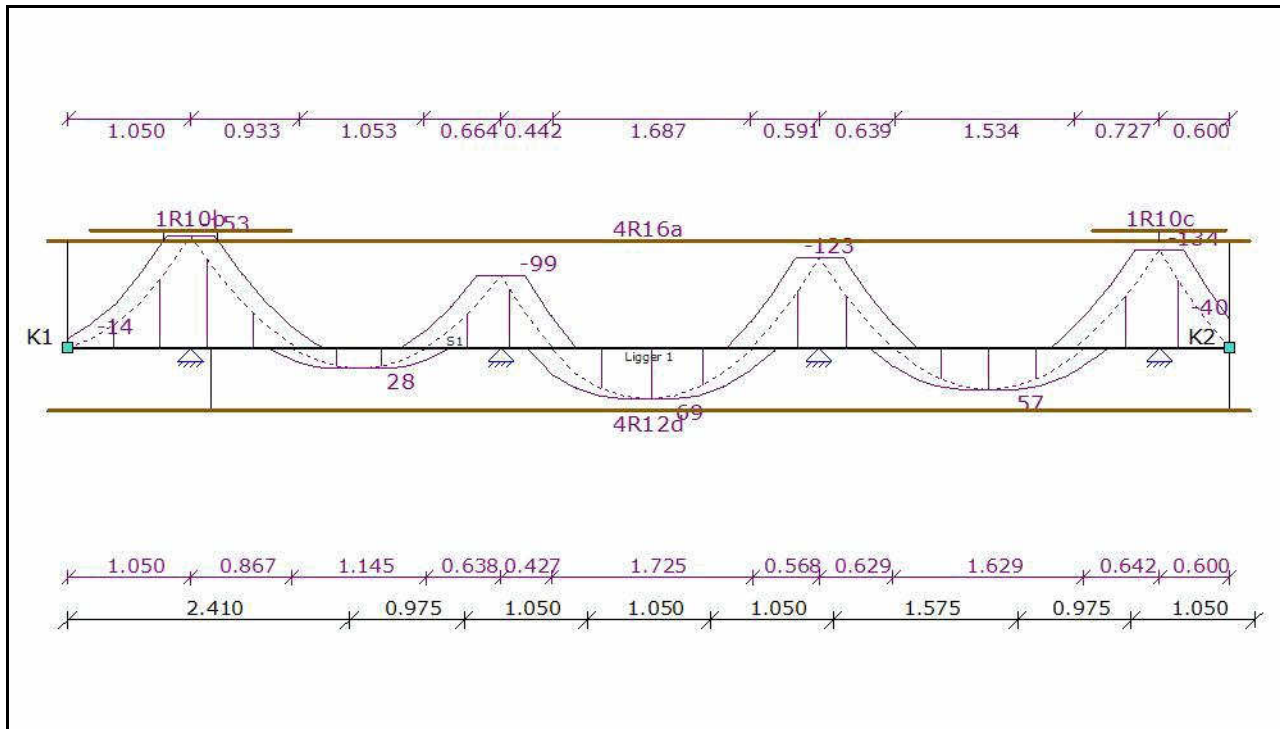
| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

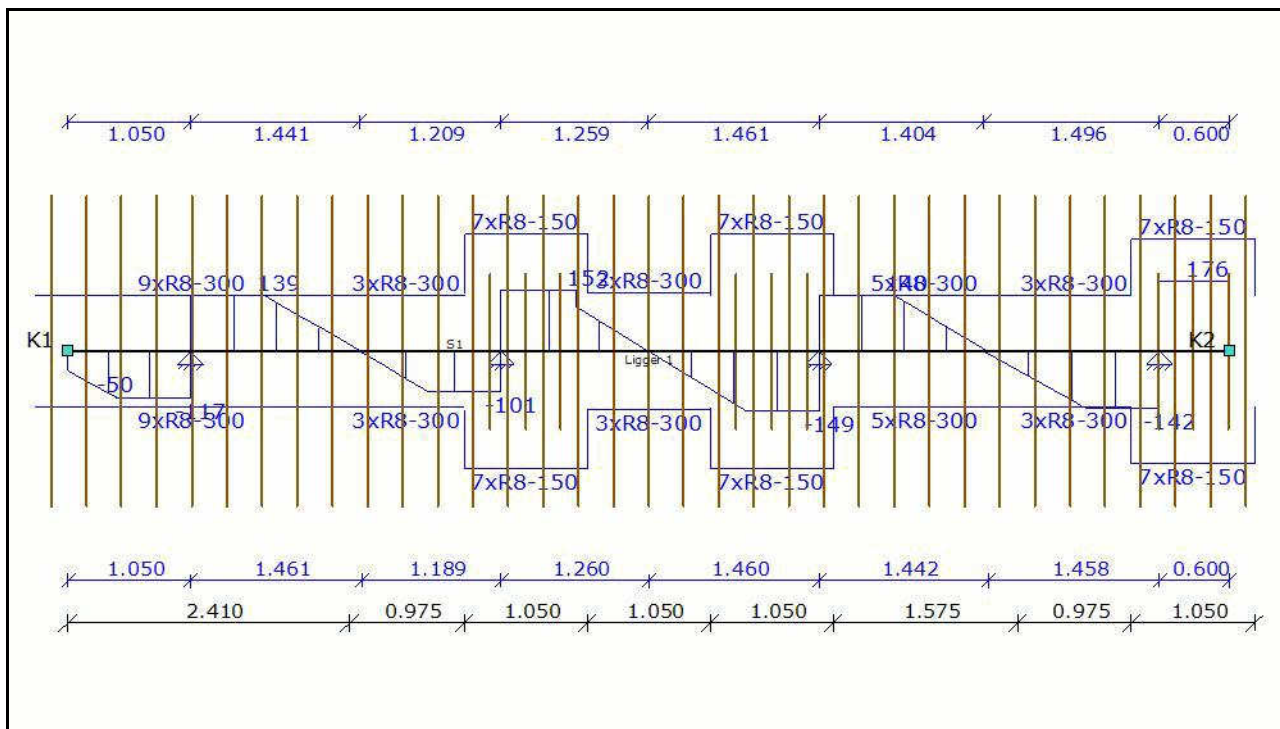
| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEDi | Ligger 1 |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------|----------|
| 0.000 | Rechts | 50.06 | R8-300 | 0 | 0 | 335 | 75.035 | 139.73 | 50.06 | N/B | N/B | |
| 0.421 | Links | 116.67 | R8-300 | 280 | 0 | 335 | 77.402 | 139.73 | 116.67 | N/B | N/B | |
| 1.679 | Rechts | 139.22 | R8-300 | 334 | 0 | 335 | 77.402 | 139.73 | 139.22 | N/B | N/B | |
| 3.071 | Links | 100.89 | R8-300 | 240 | 0 | 335 | 75.015 | 140.75 | 100.89 | N/B | N/B | |
| 4.329 | Rechts | 152.50 | R8-150 | 349 | 0 | 670 | 62.051 | 292.82 | 152.50 | N/B | N/B | |
| 5.791 | Links | 148.94 | R8-150 | 341 | 0 | 670 | 62.051 | 292.82 | 148.94 | N/B | N/B | |
| 7.049 | Rechts | 140.46 | R8-300 | 334 | 0 | 335 | 75.015 | 140.75 | 140.46 | N/B | N/B | |

| | | | | | | | | | | | |
|-------|-------|--------|--------|-----|----|-----|--------|--------|--------|-----|-----|
| 8.691 | Links | 141.73 | R8-300 | 340 | 0 | 335 | 77.402 | 139.73 | 141.73 | N/B | N/B |
| 9.920 | Links | 176.05 | R8-150 | 422 | 0 | 670 | 75.035 | 279.46 | 176.05 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

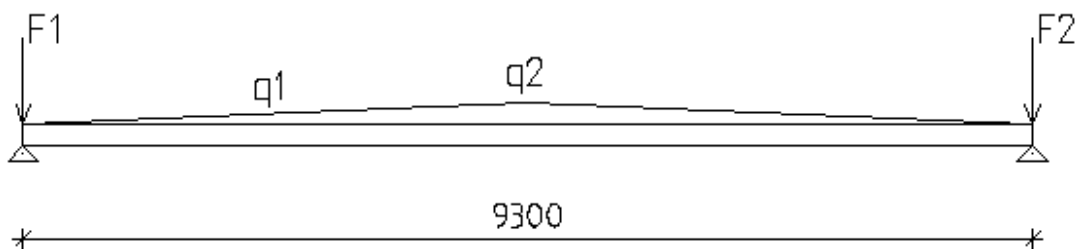


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.11

Bouwmuurbalk as 6, 8, 14, 16 en 18



| | | | |
|------------|--|-------------------|-----------------|
| q1p.rep. : | dak : | $0,77 * 5,4 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 5,4 :$ | 51,8 kN/m |
| | b.g.g. : | $3,9 * 5,4 :$ | 21,1 kN/m |
| | bouwmuur : | $4,8 * 6,5 :$ | 31,2 kN/m |
| | fundering : | | <u>5,0 kN/m</u> |
| | | | 111,3 kN/m |

| | | | |
|------------|-----------------------------|----------------|-----------|
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 5,4 :$ | 13,8 kN/m |
| | 1 ^e verdieping : | $2,55 * 5,4 :$ | 13,8 kN/m |
| | bgg : | $2,55 * 5,4 :$ | 13,8 kN/m |

| | | | |
|------------|------------|---------------|-----------|
| q2p.rep. : | bouwmuur : | $4,8 * 3,0 :$ | 14,4 kN/m |
|------------|------------|---------------|-----------|

| | | | |
|----------|-----------------------------|-----------------------|----------------|
| F1p.rep: | 2 * reactie ligger 3.4 | | 47,8 kN |
| | dak : | $0,62 * 0,77 * 5,4 :$ | 2,6 kN |
| | 2 ^e verdieping : | $0,62 * 4,8 * 5,4 :$ | <u>16,1 kN</u> |
| | | | 66,5 kN |

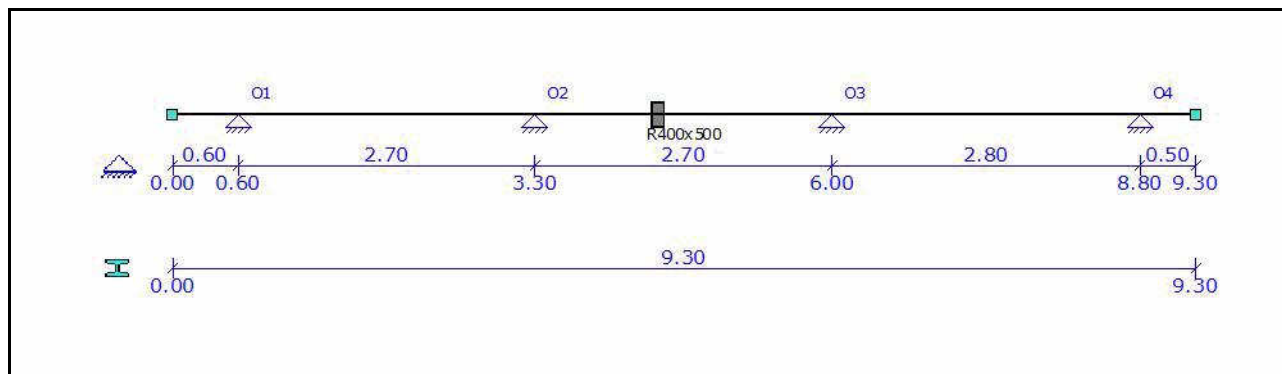
| | | | |
|----------|-----------------------------|-----------------------|--------|
| F1v.rep: | 2 ^e verdieping : | $0,62 * 2,55 * 5,4 :$ | 8,5 kN |
|----------|-----------------------------|-----------------------|--------|

| | | | |
|----------|--------------------|--|----------|
| F2p.rep: | reactie ligger 3.1 | | 144,9 kN |
|----------|--------------------|--|----------|

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 4 | 1 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(9,300) | R400x500 | 0 | 4.1667e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |

m -

○

m4 -

kN/m² $C^{\circ}m$

kN/m

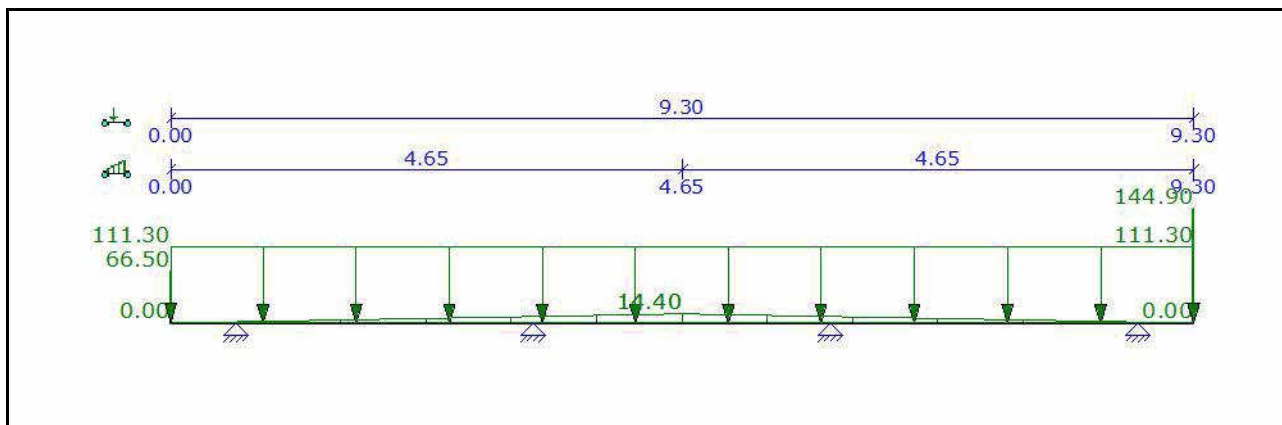
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 0,600 | vast | vrij |
| O2 | 3,300 | vast | vrij |
| O3 | 6,000 | vast | vrij |
| O4 | 8,800 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoopp |
|-------------------------|----------------|-----------------------|--------------|-------------|--------------------------|
| B.G.1: Permanent | | | | | |
| q | 111,30 | 111,30 | 0,000 | 9,300(L) | Z S1 |
| q | 0,00 | 14,40 | 0,000 | 4,650 | Z S1 |
| q | 14,40 | 0,00 | 4,650 | 9,300(L) | Z S1 |
| F | 66,50 | | 0,000 | | Z S1 |
| F | 144,90 | | 9,300 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 1.313,45 | kN | | |
| - | - | - | m | m | - |

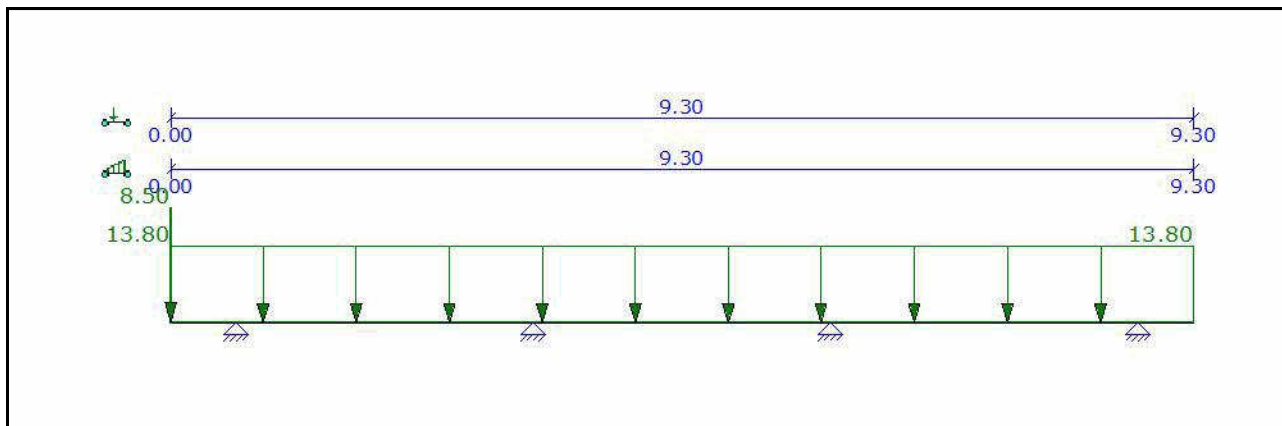
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting | Staaft van knoopp |
|-----------------------------|----------------|---------------------|--------------|-------------|----------|-------------------|
| B.G.2: 2e verdieping | | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,300(L) | Z | S1 |
| F | 8,50 | | 0,000 | | Z | S1 |
| Som lasten | X: 0,00 | kN Z: 136,84 | kN | | | |
| - | - | - | m | m | - | - |

B.G.2: 2E VERDIEPING



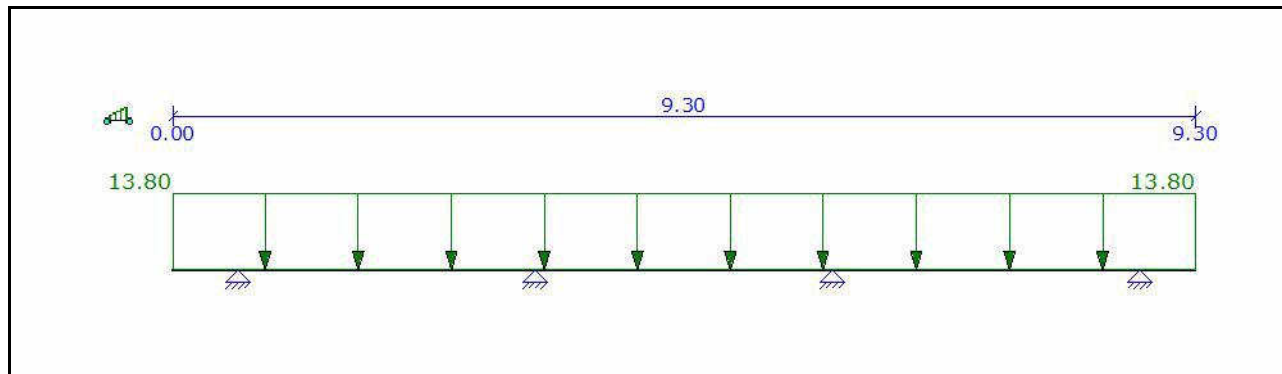
B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|------|-------------|------------|--------------|-------------|-------------------------|
|------|-------------|------------|--------------|-------------|-------------------------|

B.G.3: 1e verdieping

| | | | | | |
|------------|---------|--------------|-------|----------|------|
| q | 13,80 | 13,80 | 0,000 | 9,300(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 128,34 | kN | | |
| - | - | - | m | m | - - |

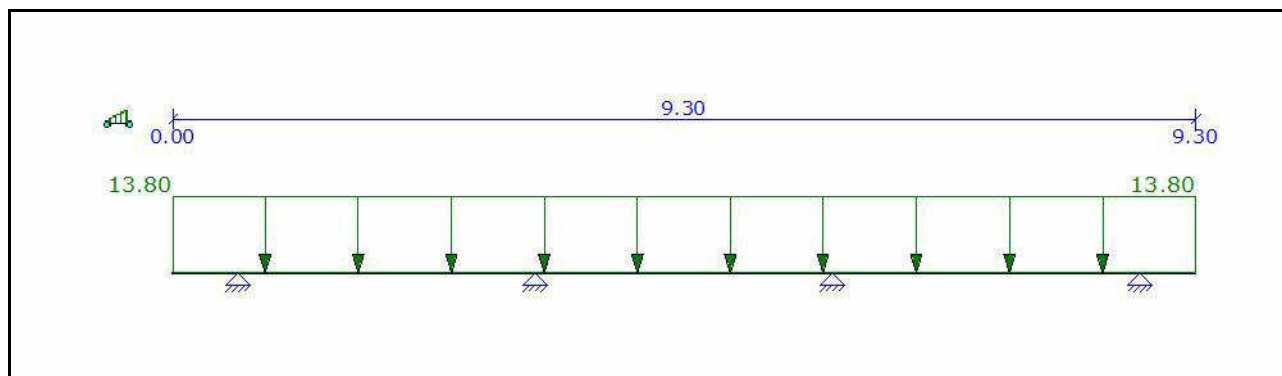
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|---------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,300(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 128,34 | kN | | |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan) | Fu.C.3 (Overslaan) | Fu.C.4 | Fu.C.5 (Overslaan) | Fu.C.6 (Overslaan) | Fu.C.7 (Overslaan) |
|-------|---------------|--------|-----------------------|-----------------------|--------|-----------------------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 2e verdieping | 0.30 |
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

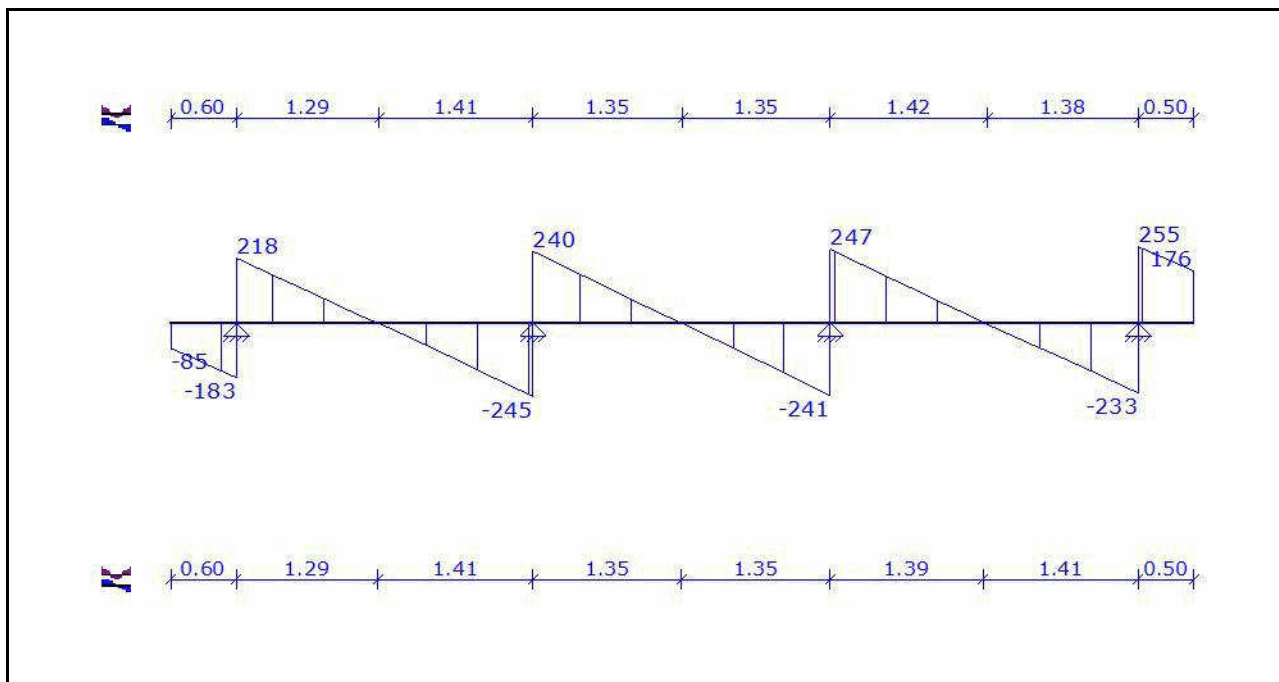
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|---------|------|--------|-----------------|------|
| B.G.1 | O1 | 0.600 | vast | vrij | -284.15 | 0.00 |
| B.G.1 | O2 | 3.300 | vast | vrij | -334.68 | 0.00 |
| B.G.1 | O3 | 6.000 | vast | vrij | -326.95 | 0.00 |
| B.G.1 | O4 | 8.800 | vast | vrij | -367.67 | 0.00 |
| | Som Reacties | | | | -1313.45 | |
| | Som Lasten | | | | 1313.45 | |
| B.G.2 | O1 | 0.600 | vast | vrij | -35.25 | 0.00 |
| B.G.2 | O2 | 3.300 | vast | vrij | -36.44 | 0.00 |
| B.G.2 | O3 | 6.000 | vast | vrij | -42.11 | 0.00 |
| B.G.2 | O4 | 8.800 | vast | vrij | -23.03 | 0.00 |
| | Som Reacties | | | | -136.84 | |
| | Som Lasten | | | | 136.84 | |
| B.G.3 | O1 | 0.600 | vast | vrij | -24.36 | 0.00 |
| B.G.3 | O2 | 3.300 | vast | vrij | -39.46 | 0.00 |
| B.G.3 | O3 | 6.000 | vast | vrij | -41.37 | 0.00 |
| B.G.3 | O4 | 8.800 | vast | vrij | -23.15 | 0.00 |
| | Som Reacties | | | | -128.34 | |
| | Som Lasten | | | | 128.34 | |
| B.G.4 | O1 | 0.600 | vast | vrij | -24.36 | 0.00 |
| B.G.4 | O2 | 3.300 | vast | vrij | -39.46 | 0.00 |
| B.G.4 | O3 | 6.000 | vast | vrij | -41.37 | 0.00 |
| B.G.4 | O4 | 8.800 | vast | vrij | -23.15 | 0.00 |
| | Som Reacties | | | | -128.34 | |
| | Som Lasten | | | | 128.34 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|-----------------|------|
| Fu.C.1 | O1 | 0.600 | vast | vrij | -400.89 | 0.00 |
| Fu.C.1 | O2 | 3.300 | vast | vrij | -485.69 | 0.00 |
| Fu.C.1 | O3 | 6.000 | vast | vrij | -488.59 | 0.00 |
| Fu.C.1 | O4 | 8.800 | vast | vrij | -472.42 | 0.00 |
| | Som Reacties | | | | -1847.60 | |
| | Som Lasten | | | | 1847.60 | |
| Fu.C.4 | O1 | 0.600 | vast | vrij | -390.59 | 0.00 |
| Fu.C.4 | O2 | 3.300 | vast | vrij | -468.94 | 0.00 |
| Fu.C.4 | O3 | 6.000 | vast | vrij | -464.67 | 0.00 |
| Fu.C.4 | O4 | 8.800 | vast | vrij | -484.15 | 0.00 |
| | Som Reacties | | | | -1808.34 | |
| | Som Lasten | | | | 1808.34 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

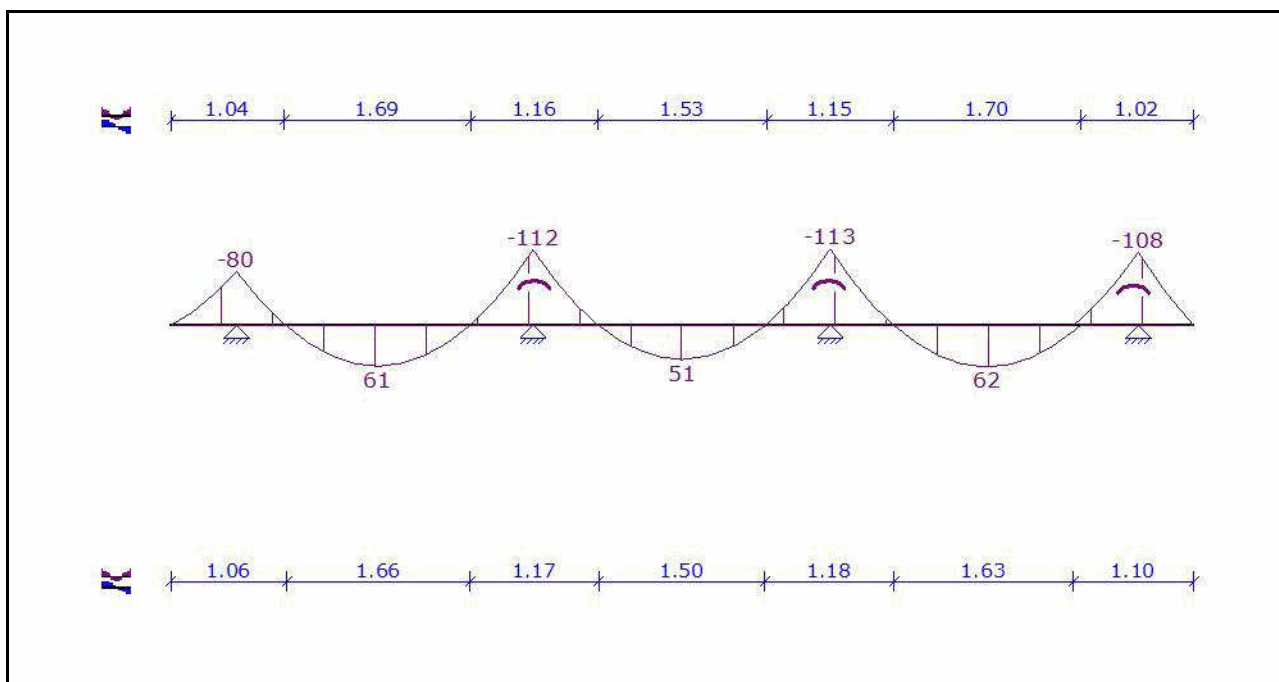
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staat | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P1 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 9.300 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|---------------------|-----------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: 400 >= 100 | NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P1 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVEN

| | | | | | | | | | | | Ligger 1 |
|----------|---------|---------|------------|----------|-------|----------|-----|----------|----------|----------|----------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 0.600 | O1 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| | 3.300 | O2 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 6.000 | O3 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 8.800 | O4 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | | | | | | | | | | | |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.600 | 79.86 | 6R12 | | 419 | 679 | | 16,72 | 218,38 |
| 3.300 | 111.60 | 6R12 | | 596 | 679 | | 9,57 | 126,17 |
| 6.000 | 113.13 | 6R12 | | 604 | 679 | | 9,85 | 134,44 |
| 8.800 | 107.80 | 6R12 | | 574 | 679 | | 9,33 | 119,25 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|----------|------|--------|--------|--------|---------------|-------|-------------------|
| 1.887 | 60.97 | 4R12 | | 317 | 452 | | 15,91 | 213,16 |
| 4.654 | 51.14 | 4R12 | | 264 | 452 | | 19,72 | 237,63 |
| 7.423 | 61.96 | 4R12 | | 322 | 452 | | 18,56 | 230,13 |
| m | kNm | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

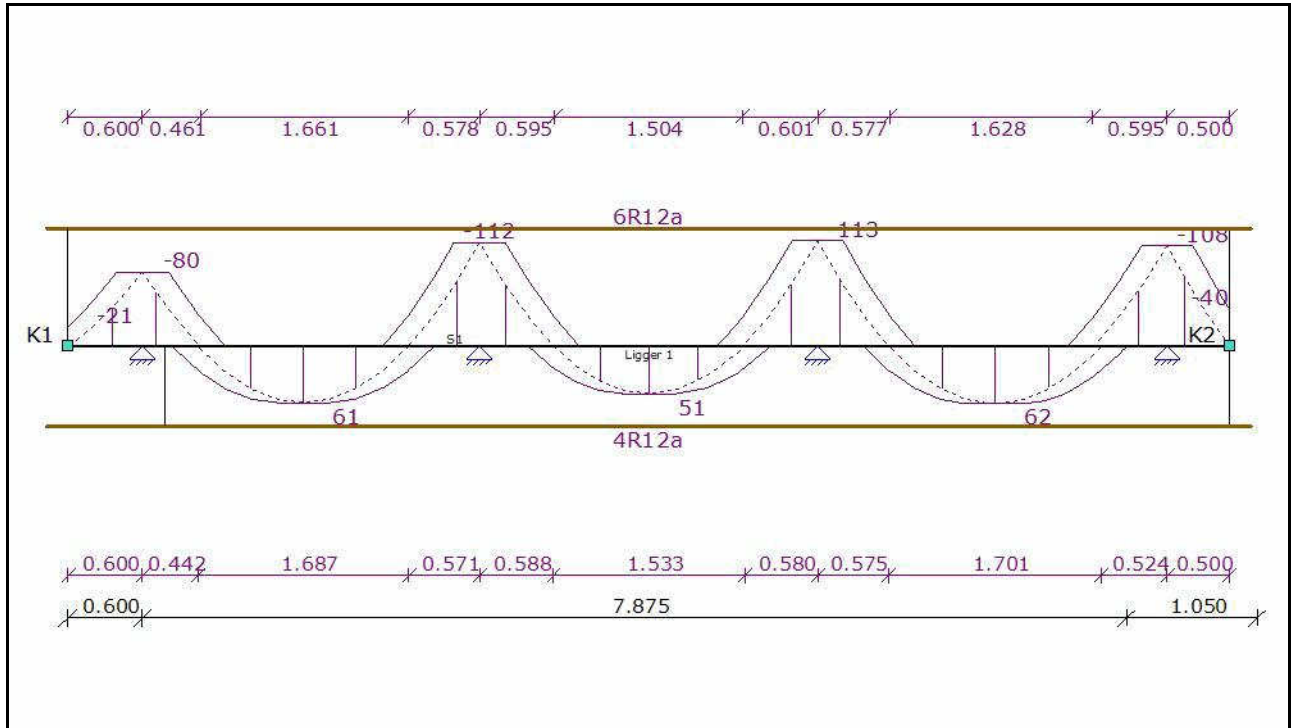
| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

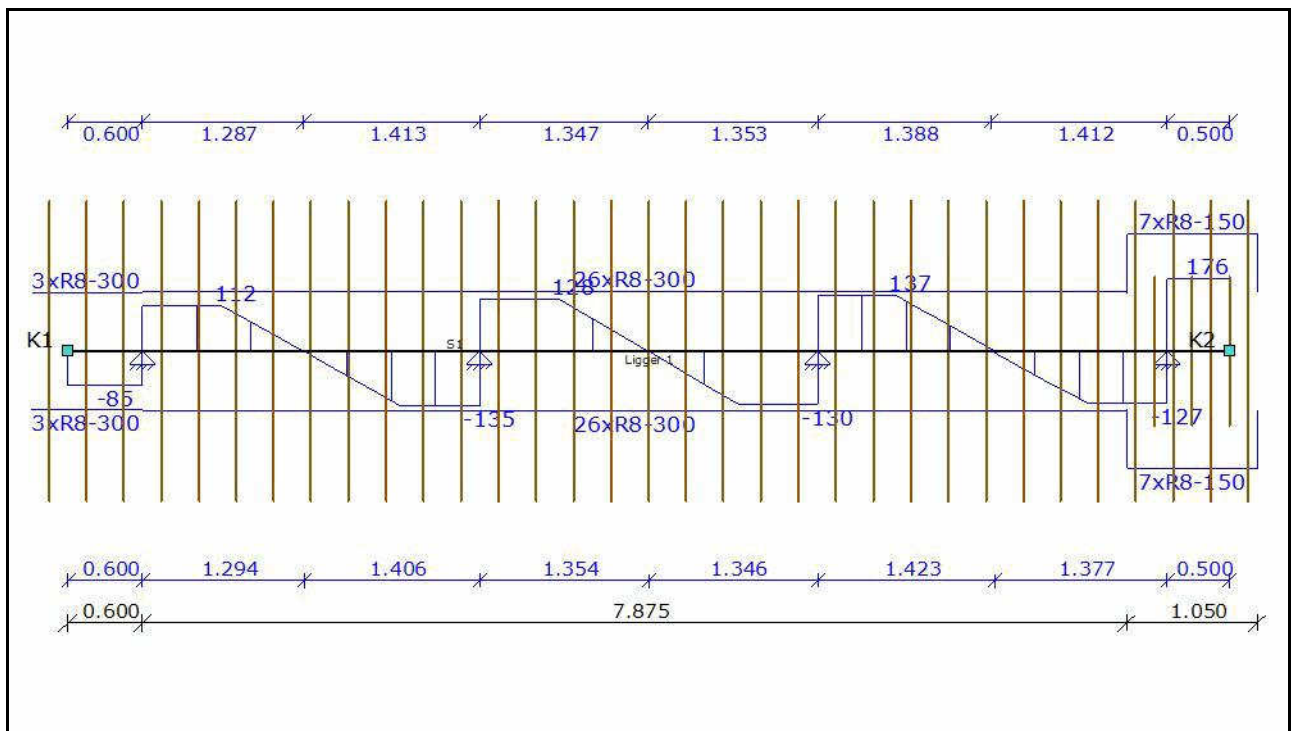
| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEDi | Ligger 1 |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------|----------|
| 0.000 | Rechts | 85.39 | R8-300 | 200 | 0 | 335 | 71.030 | 143.21 | 85.39 | N/B | N/B | |
| 1.231 | Rechts | 111.76 | R8-300 | 256 | 0 | 335 | 62.051 | 146.41 | 111.76 | N/B | N/B | |
| 2.669 | Links | 135.00 | R8-300 | 309 | 0 | 335 | 62.051 | 146.41 | 135.00 | N/B | N/B | |
| 3.931 | Rechts | 128.44 | R8-300 | 294 | 0 | 335 | 62.051 | 146.41 | 128.44 | N/B | N/B | |
| 5.369 | Links | 129.57 | R8-300 | 297 | 0 | 335 | 62.051 | 146.41 | 129.57 | N/B | N/B | |
| 6.631 | Rechts | 136.77 | R8-300 | 313 | 0 | 335 | 62.051 | 146.41 | 136.77 | N/B | N/B | |
| 8.169 | Links | 127.45 | R8-300 | 292 | 0 | 335 | 62.051 | 146.41 | 127.45 | N/B | N/B | |

| | | | | | | | | | | | |
|-------|-------|--------|--------|-----|----|-----|--------|--------|--------|-----|-----|
| 9.300 | Links | 176.05 | R8-150 | 412 | 0 | 670 | 71.030 | 286.41 | 176.05 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

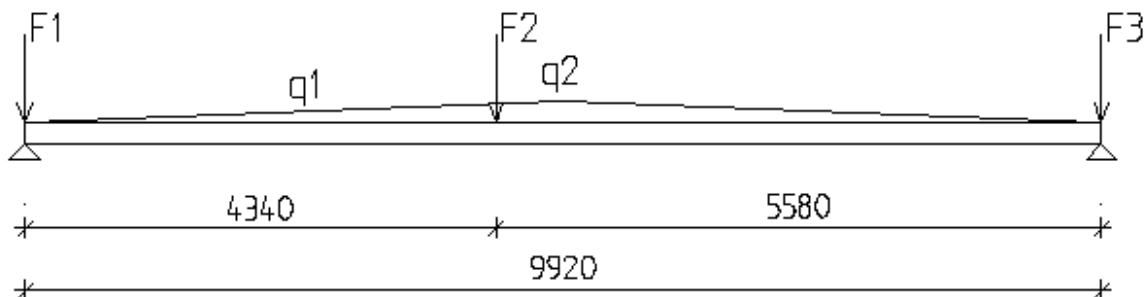


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.12

Bouwmuurbalk as 7, 15 en 17

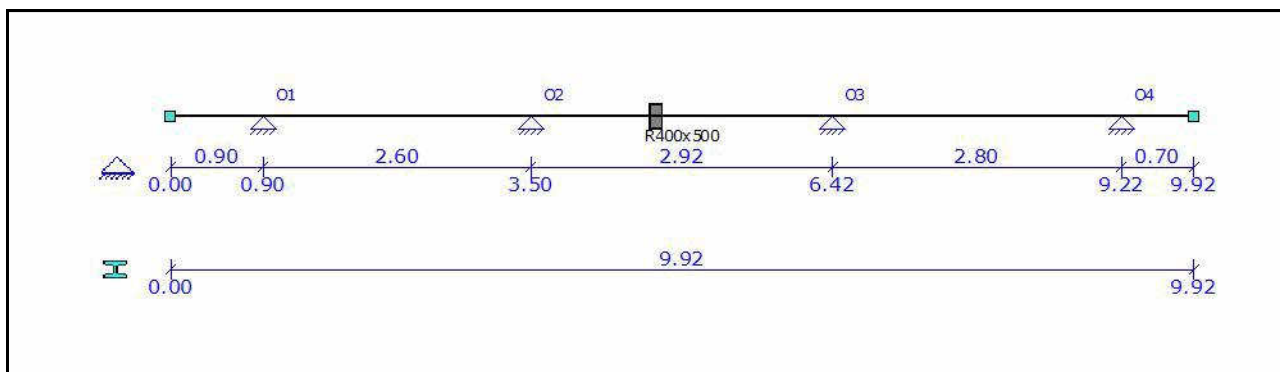


| | | | |
|------------|--|-------------------|------------|
| q1p.rep. : | dak : | $0,77 * 5,4 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 5,4 :$ | 51,8 kN/m |
| | b.g.g. : | $3,9 * 5,4 :$ | 21,1 kN/m |
| | bouwmuur : | $4,8 * 6,5 :$ | 31,2 kN/m |
| | fundering : | | 5,0 kN/m |
| | | | 111,3 kN/m |
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 5,4 :$ | 13,8 kN/m |
| | 1 ^e verdieping : | $2,55 * 5,4 :$ | 13,8 kN/m |
| | bgg : | $2,55 * 5,4 :$ | 13,8 kN/m |
| q2p.rep. : | bouwmuur : | $4,8 * 3,0 :$ | 14,4 kN/m |
| F1p.rep: | reactie ligger 3.5 | | 97,6 kN |
| F2p.rep: | 2 * reactie ligger 3.6 | | 70,6 kN |
| F3p.rep: | reactie ligger 3.1 | | 144,9 kN |

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingsen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|--------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 4 | 2 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(9,920) | R400x500 | 0 | 4.1667e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |
| m - | | ° | m4 - | | kN/m2 | C°m | kN/m |

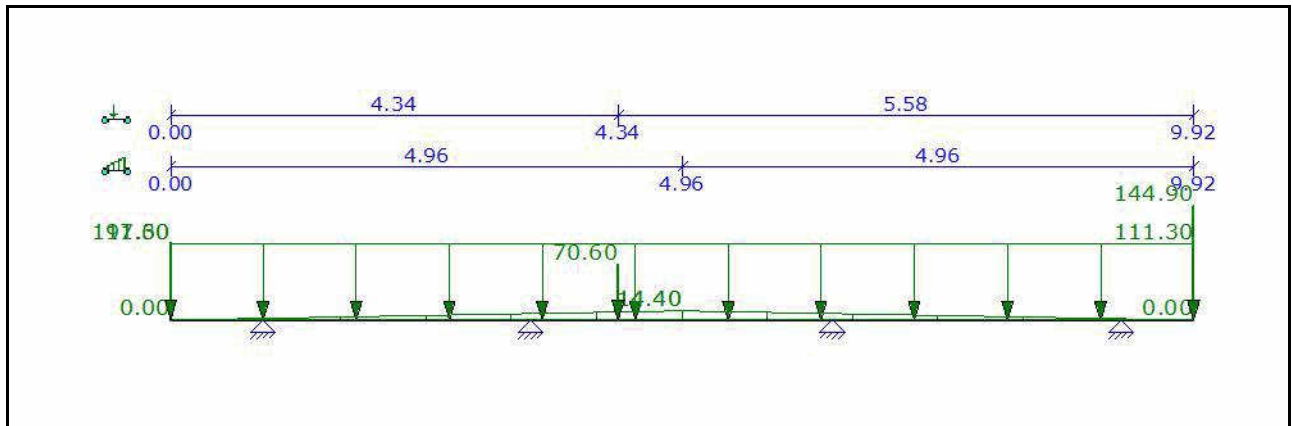
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 0,900 | vast | vrij |
| O2 | 3,500 | vast | vrij |
| O3 | 6,420 | vast | vrij |
| O4 | 9,220 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-------------------------|-------------|----------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 111,30 | 111,30 | 0,000 | 9,920(L) | Z S1 |
| q | 0,00 | 14,40 | 0,000 | 4,960 | Z S1 |
| q | 14,40 | 0,00 | 4,960 | 9,920(L) | Z S1 |
| F | 97,60 | | 0,000 | | Z S1 |
| F | 70,60 | | 4,340 | | Z S1 |
| F | 144,90 | | 9,920 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 1.488,62 | kN | | |
| - | - | - | m | m | - - |

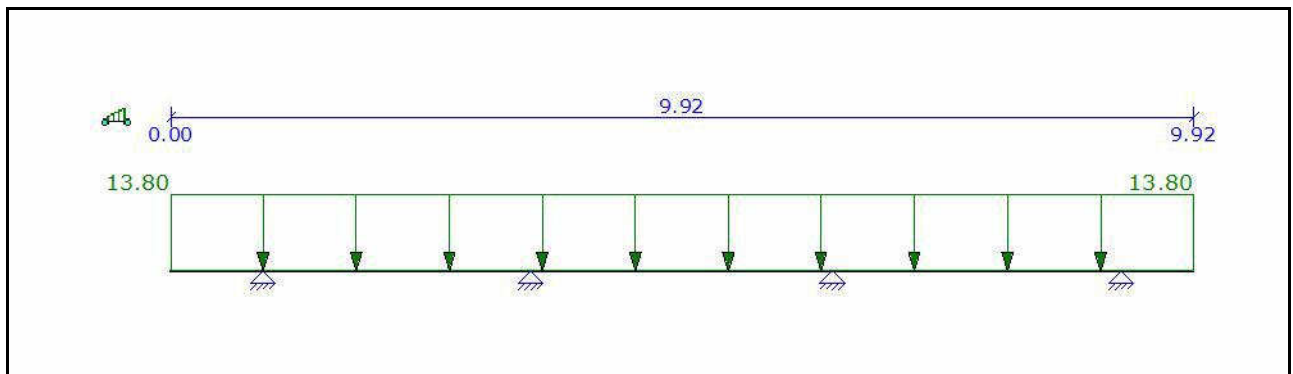
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.2: 2e verdieping | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | | |
| - | - | - | m | m | - - |

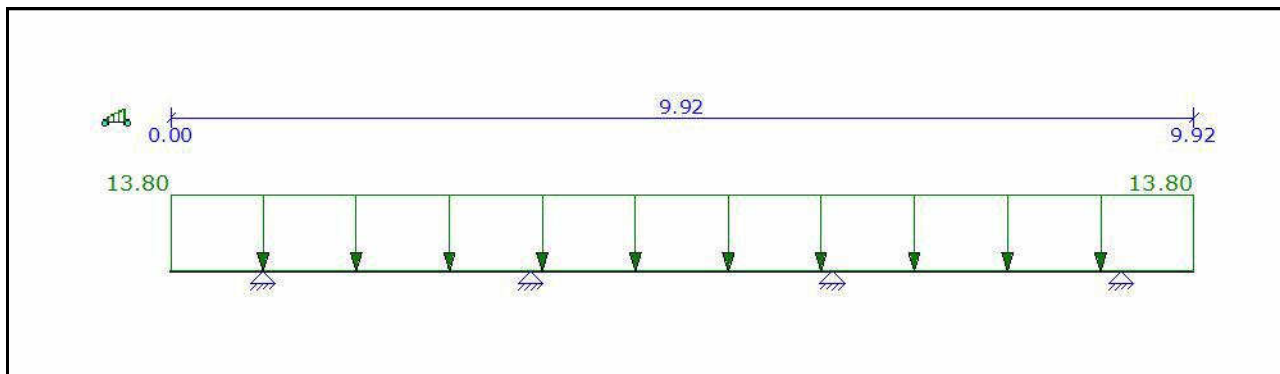
B.G.2: 2E VERDIEPING



B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-----------------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.3: 1e verdieping | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | | |
| - | - | - | m | m | - - |

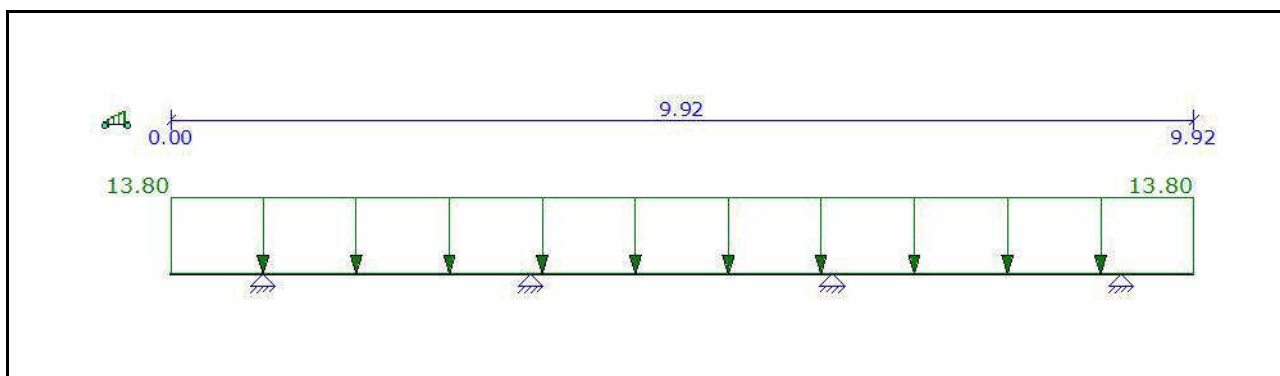
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|---------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 13,80 | 13,80 | 0,000 | 9,920(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | m | - - |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan n) | Fu.C.3 (Overslaan n) | Fu.C.4 | Fu.C.5 (Overslaan n) | Fu.C.6 (Overslaan n) | Fu.C.7 (Overslaan n) |
|-------|---------------|--------|----------------------------|----------------------------|--------|----------------------------|----------------------------|----------------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 2e verdieping | 0.30 |

| | | |
|-------|---------------|------|
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

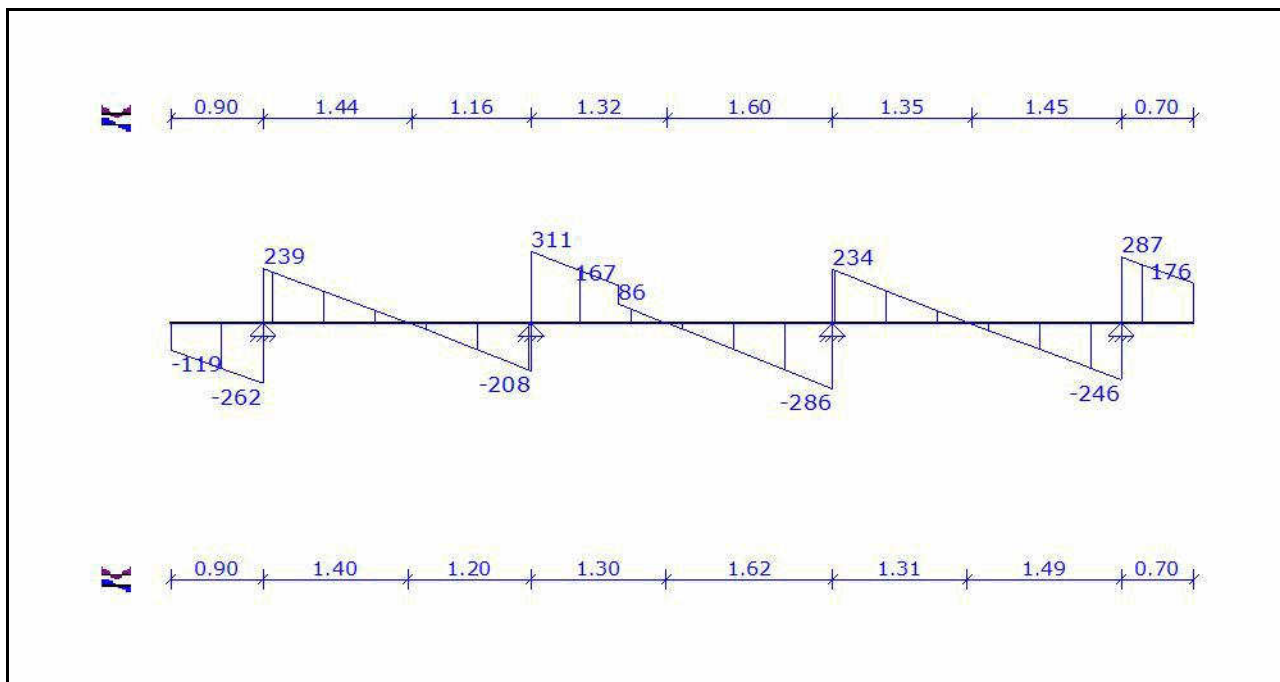
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|---------|------|--------|-----------------|------|
| B.G.1 | O1 | 0.900 | vast | vrij | -369.99 | 0.00 |
| B.G.1 | O2 | 3.500 | vast | vrij | -364.53 | 0.00 |
| B.G.1 | O3 | 6.420 | vast | vrij | -352.58 | 0.00 |
| B.G.1 | O4 | 9.220 | vast | vrij | -401.51 | 0.00 |
| | Som Reacties | | | | -1488.62 | |
| | Som Lasten | | | | 1488.62 | |
| B.G.2 | O1 | 0.900 | vast | vrij | -29.03 | 0.00 |
| B.G.2 | O2 | 3.500 | vast | vrij | -38.75 | 0.00 |
| B.G.2 | O3 | 6.420 | vast | vrij | -42.85 | 0.00 |
| B.G.2 | O4 | 9.220 | vast | vrij | -26.26 | 0.00 |
| | Som Reacties | | | | -136.90 | |
| | Som Lasten | | | | 136.90 | |
| B.G.3 | O1 | 0.900 | vast | vrij | -29.03 | 0.00 |
| B.G.3 | O2 | 3.500 | vast | vrij | -38.75 | 0.00 |
| B.G.3 | O3 | 6.420 | vast | vrij | -42.85 | 0.00 |
| B.G.3 | O4 | 9.220 | vast | vrij | -26.26 | 0.00 |
| | Som Reacties | | | | -136.90 | |
| | Som Lasten | | | | 136.90 | |
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
| B.G.4 | O1 | 0.900 | vast | vrij | -29.03 | 0.00 |
| B.G.4 | O2 | 3.500 | vast | vrij | -38.75 | 0.00 |
| B.G.4 | O3 | 6.420 | vast | vrij | -42.85 | 0.00 |
| B.G.4 | O4 | 9.220 | vast | vrij | -26.26 | 0.00 |
| | Som Reacties | | | | -136.90 | |
| | Som Lasten | | | | 136.90 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|--------|---------------------|---------|------|--------|-----------------|------|
| Fu.C.1 | O1 | 0.900 | vast | vrij | -494.14 | 0.00 |
| Fu.C.1 | O2 | 3.500 | vast | vrij | -519.75 | 0.00 |
| Fu.C.1 | O3 | 6.420 | vast | vrij | -520.10 | 0.00 |
| Fu.C.1 | O4 | 9.220 | vast | vrij | -519.27 | 0.00 |
| | Som Reacties | | | | -2053.26 | |
| | Som Lasten | | | | 2053.26 | |
| Fu.C.4 | O1 | 0.900 | vast | vrij | -496.57 | 0.00 |
| Fu.C.4 | O2 | 3.500 | vast | vrij | -505.69 | 0.00 |
| Fu.C.4 | O3 | 6.420 | vast | vrij | -497.80 | 0.00 |
| Fu.C.4 | O4 | 9.220 | vast | vrij | -530.39 | 0.00 |
| | Som Reacties | | | | -2030.45 | |
| | Som Lasten | | | | 2030.45 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

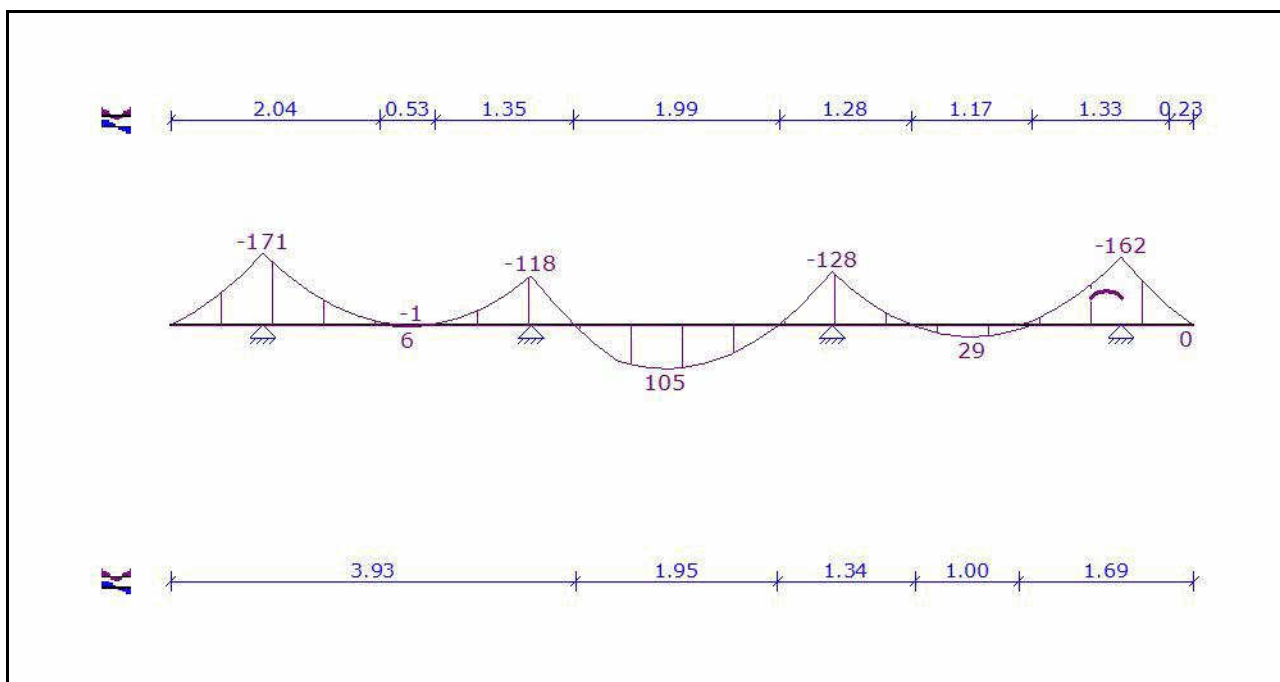
AFB. FU.C. DRWARKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staaf | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|-------|-------|
| S1 | P3 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 9.920 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|----------------------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | I.h.w. | 31.5 | 0 b,min: | 400 >= 100 NEN-EN1992-1-1#9.2(1) |

- - - - - mm mm -

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P3 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEGEVEN

| | | | | | | | | | | | Ligger 1 |
|----------|---------|---------|------------|----------|-------|----------|-----|----------|----------|----------|----------|
| | Positie | Oplegg. | Type | Afmeting | Staaf | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
| afgetopt | 0.900 | O1 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| | 3.500 | O2 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 6.420 | O3 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 9.220 | O4 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | | | | | | | | | | | |
| | m | - | - | m | - | m | - | kNm | kNm | - | - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|--------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.900 | 170.98 | 4R16 | | 2R10 | 949 | 961 | | 7,10 | 61,97 |
| 3.500 | 118.08 | 4R16 | | | 636 | 804 | | 10,57 | 159,42 |
| 6.420 | 127.92 | 4R16 | | | 693 | 804 | | 9,59 | 139,35 |
| 9.220 | 162.05 | 4R16 | | 2R10 | 894 | 961 | | 7,82 | 83,44 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|--------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 2.304 | 6.10 | 4R12 | | | 31 | 452 | | 27,72 | 300,00 |
| 4.805 | 104.94 | 4R12 | | 2R10 | 558 | 609 | | 8,50 | 93,76 |
| 7.767 | 29.35 | 4R12 | | | 150 | 452 | | 27,72 | 300,00 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE FLANKWAPENING

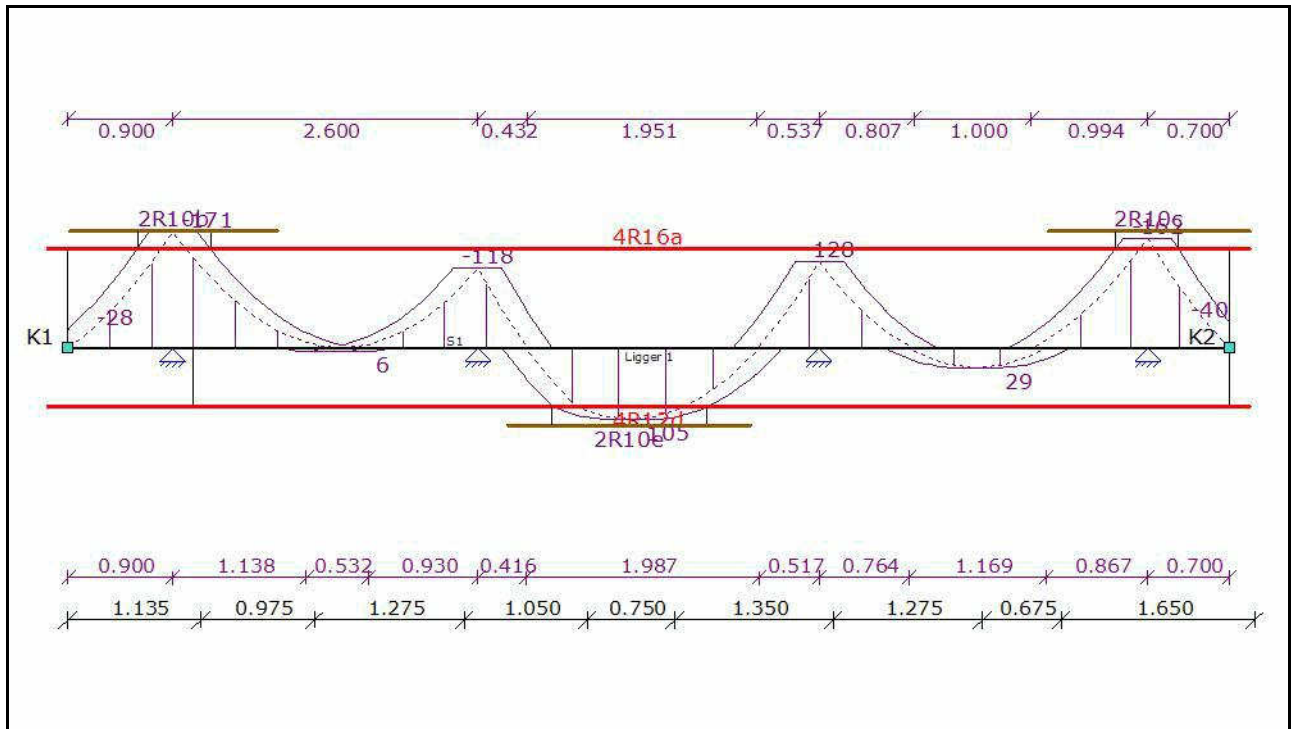
| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

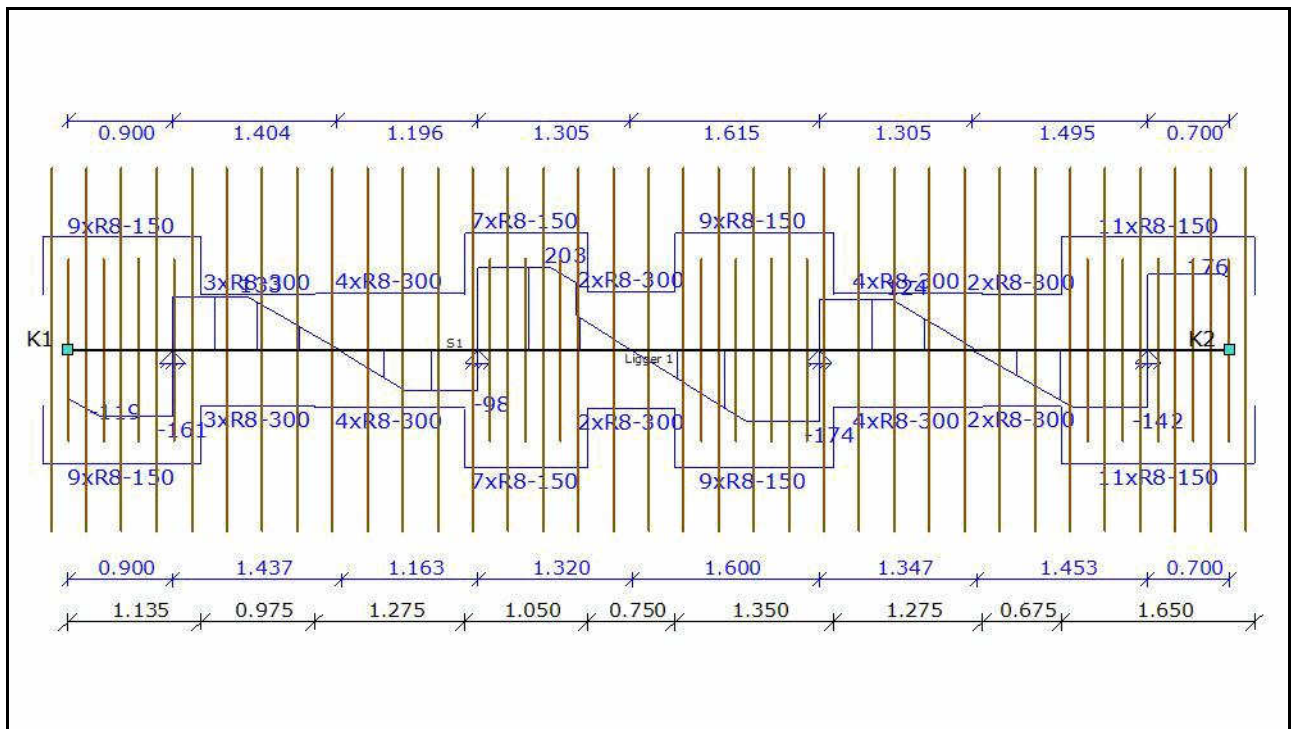
| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | VEDi | Ligger 1 |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------|----------|
| 0.000 | Rechts | 118.58 | R8-300 | 287 | 0 | 335 | 75.053 | 138.69 | 118.58 | N/B | N/B | |
| 0.271 | Links | 161.36 | R8-150 | 390 | 0 | 670 | 79.651 | 277.39 | 161.36 | N/B | N/B | |
| 1.529 | Rechts | 133.01 | R8-300 | 321 | 0 | 335 | 79.651 | 138.69 | 133.01 | N/B | N/B | |
| 2.871 | Links | 98.26 | R8-300 | 234 | 0 | 335 | 75.015 | 140.75 | 98.26 | N/B | N/B | |
| 4.129 | Rechts | 202.93 | R8-150 | 471 | 0 | 670 | 62.067 | 288.54 | 202.93 | N/B | N/B | |
| 5.791 | Links | 174.34 | R8-150 | 405 | 0 | 670 | 62.067 | 288.54 | 174.34 | N/B | N/B | |
| 7.049 | Rechts | 124.28 | R8-300 | 296 | 0 | 335 | 75.015 | 140.75 | 124.28 | N/B | N/B | |

| | | | | | | | | | | | |
|-------|--------|--------|--------|-----|----|-----|--------|--------|--------|-----|-----|
| 8.591 | Links | 141.70 | R8-150 | 342 | 0 | 670 | 79.651 | 277.39 | 141.70 | N/B | N/B |
| 9.849 | Rechts | 187.19 | R8-150 | 452 | 0 | 670 | 79.651 | 277.39 | 187.19 | N/B | N/B |
| 9.920 | Links | 176.05 | R8-150 | 425 | 0 | 670 | 75.053 | 277.39 | 176.05 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1

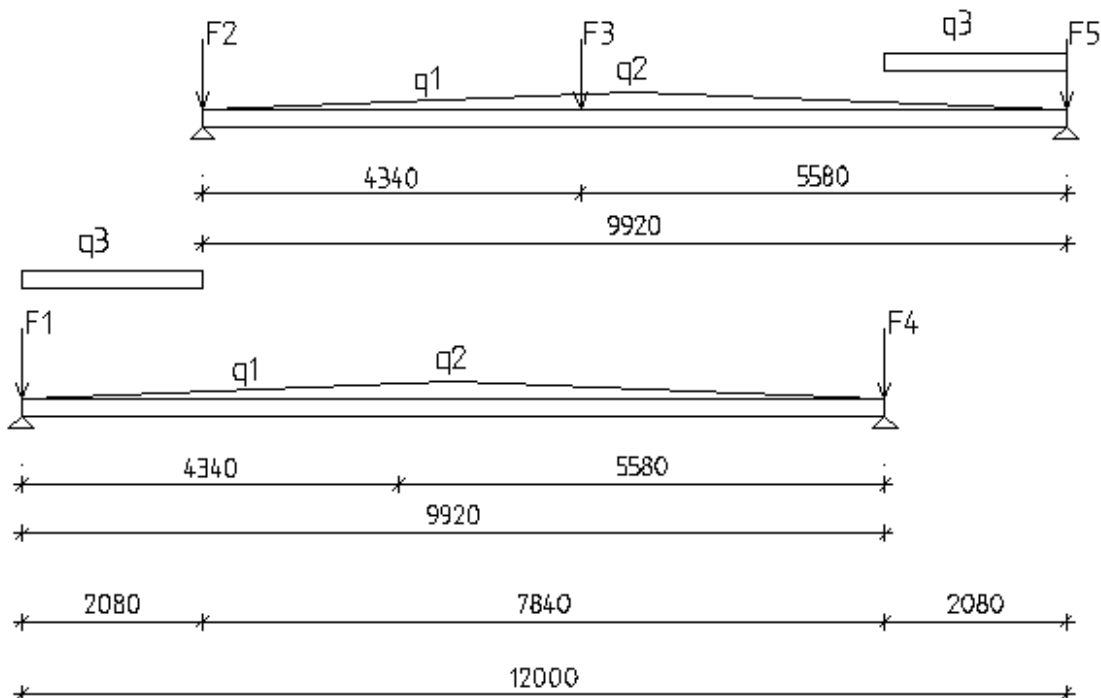


AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1



3.13 Bouwmuurbalk as 13

Bouwmuurbalk 13 is een combinatie van 2 kopgevelbalken.



| | | | |
|------------|--|-------------------|-----------------|
| q1p.rep. : | dak : | $0,77 * 2,7 :$ | 2,1 kN/m |
| | 1 ^e + 2 ^e verdieping : | $2 * 4,8 * 2,7 :$ | 25,9 kN/m |
| | b.g.g. : | $3,9 * 2,7 :$ | 10,5 kN/m |
| | bouwmuur : | $2,4 * 6,5 :$ | 15,6 kN/m |
| | fundering : | | <u>5,0 kN/m</u> |
| | | | 59,1 kN/m |

De andere q1.rep = 59,1-5,0 = 54,0 kN/m ivm dubbele fundatie anders

| | | | |
|------------|-----------------------------|----------------|-----------|
| q1v.rep. : | 2 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | 1 ^e verdieping : | $2,55 * 2,7 :$ | 6,9 kN/m |
| | b.g.g. : | $2,55 * 2,7 :$ | 6,9 kN/m |
| q2p.rep. : | bouwmuur : | $2,4 * 3,0 :$ | 7,2 kN/m |
| q3p.rep. : | metselwerk : | $2,0 * 7,0 :$ | 14,0 kN/m |
| F1p.rep: | reactie ligger 3.3 | | 83,2 kN |
| F2p.rep: | reactie ligger 3.5 | | 41,3 kN |
| F3p.rep: | reactie ligger 3.6 | | 35,3 kN |
| F4p.rep: | reactie ligger 3.2 | | 65,9 kN |

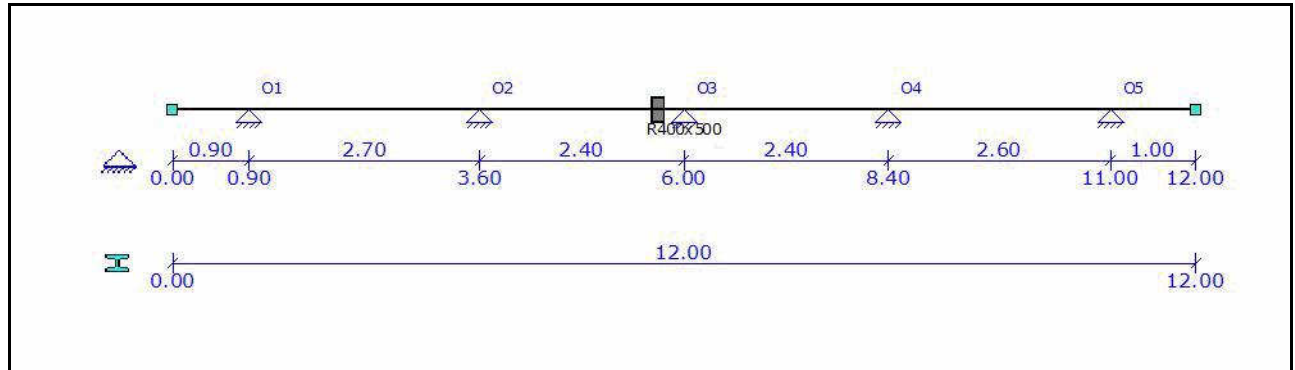
F5p.rep: reactie ligger 3.1

52,7 kN

CONSTRUCTIEGEGEVENS

| Projecttype | Staven | Opleggingen | Profielen | Bel.gev. | Bel.comb. |
|-------------|--------|-------------|-----------|----------|-----------|
| 1D-Ligger | 1 | 5 | 2 | 4 | 18 |

AFB. GEOMETRIE LIGGER



BALKGEOMETRIE

| Positie | Profielnaam | Hoek | Traagheidsmoment | Materiaal | E-Modulus | Uitzettingcoëff | Gewicht |
|-------------------|-------------|------|------------------|-----------|------------|-----------------|---------|
| 0,000 - L(12,000) | R400x500 | 0 | 4.1667e-03 | C20/25 | 3.0000e+07 | 10.0000e-06 | 5.00 |
| m - | | ° | m4 - | | kN/m2 | C°m | kN/m |

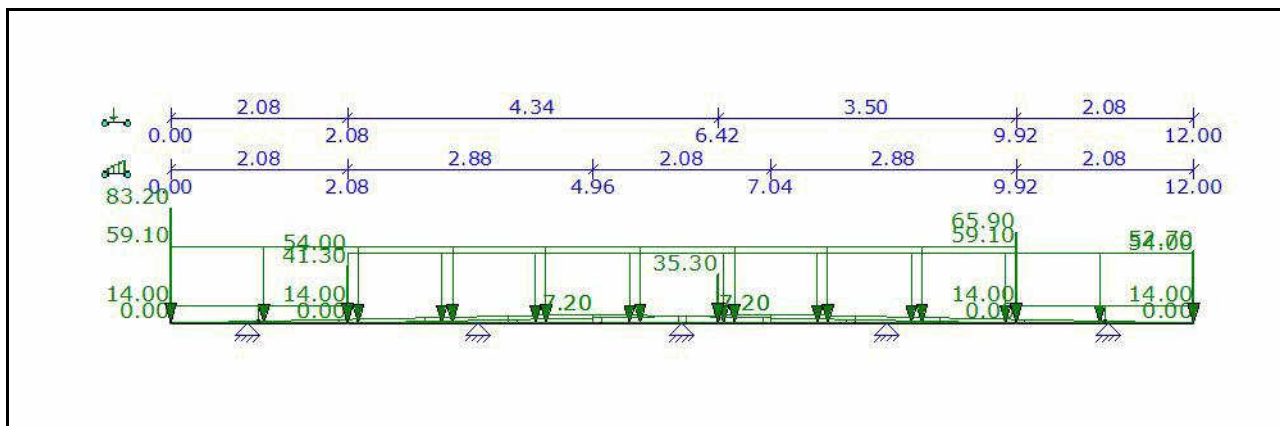
OPLEGGINGEN

| Oplegging | Positie | Z | Yr |
|-----------|---------|------|--------|
| O1 | 0,900 | vast | vrij |
| O2 | 3,600 | vast | vrij |
| O3 | 6,000 | vast | vrij |
| O4 | 8,400 | vast | vrij |
| O5 | 11,000 | vast | vrij |
| - | m | kN/m | kNmrad |

B.G.1: PERMANENT

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|-------------------------|----------------|-----------------------|--------------|-------------|-------------------------|
| B.G.1: Permanent | | | | | |
| q | 59,10 | 59,10 | 0,000 | 9,920 | Z S1 |
| q | 54,00 | 54,00 | 2,080 | 12,000(L) | Z S1 |
| q | 0,00 | 7,20 | 0,000 | 4,960 | Z S1 |
| q | 7,20 | 0,00 | 4,960 | 9,920 | Z S1 |
| q | 0,00 | 7,20 | 2,080 | 7,040 | Z S1 |
| q | 7,20 | 0,00 | 7,040 | 12,000(L) | Z S1 |
| q | 14,00 | 14,00 | 0,000 | 2,080 | Z S1 |
| q | 14,00 | 14,00 | 9,920 | 12,000(L) | Z S1 |
| F | 83,20 | | 0,000 | | Z S1 |
| F | 41,30 | | 2,080 | | Z S1 |
| F | 35,30 | | 6,420 | | Z S1 |
| F | 65,90 | | 9,920 | | Z S1 |
| F | 52,70 | | 12,000 | | Z S1 |
| Som lasten | X: 0,00 | kN Z: 1.530,02 | kN | | |
| - | - | - | m | m | - - |

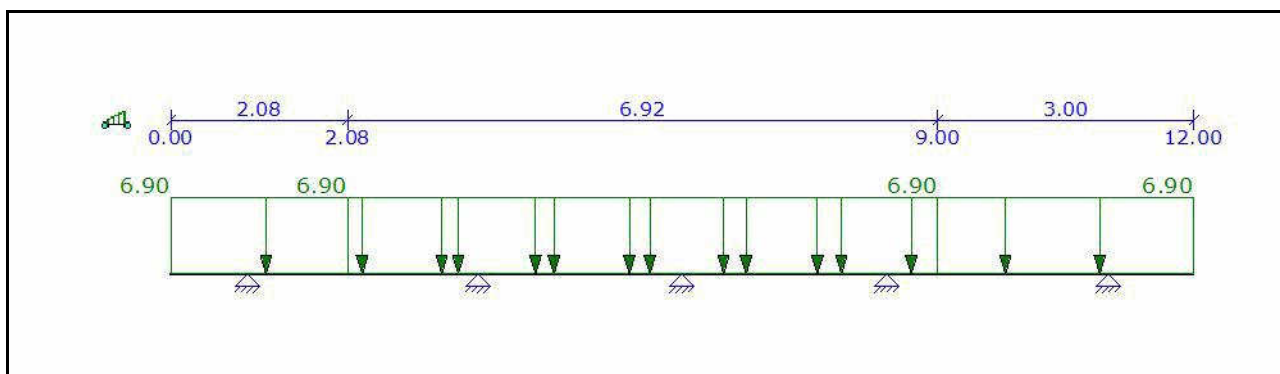
B.G.1: PERMANENT



B.G.2: 2E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.2: 2e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,000 | Z S1 |
| q | 6,90 | 6,90 | 2,080 | 12,000(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 130,55 | kN | | |
| - | - | - | m | m | - - |

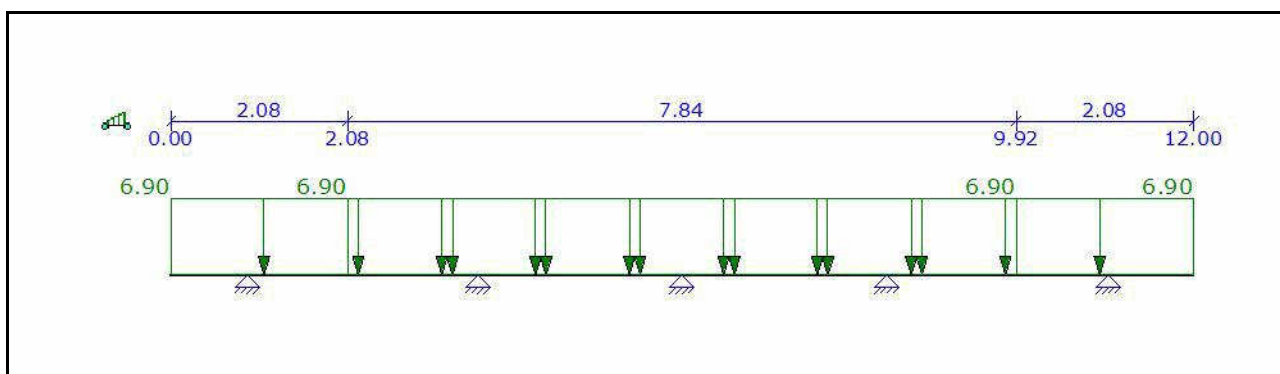
B.G.2: 2E VERDIEPING



B.G.3: 1E VERDIEPING

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------|-------------|--------------|--------------|-------------|-------------------------|
| B.G.3: 1e verdieping | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920 | Z S1 |
| q | 6,90 | 6,90 | 2,080 | 12,000(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | | |
| - | - | - | m | m | - - |

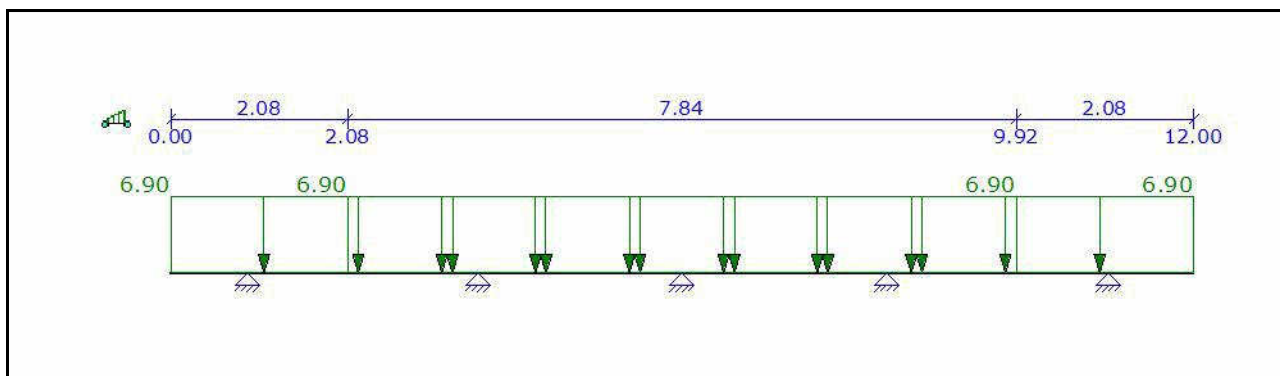
B.G.3: 1E VERDIEPING



B.G.4: BEGANE-GROND

| Type | Beginwaarde | Eindwaarde | Beginafstand | Eindafstand | Richting Staaf of knoop |
|----------------------------|----------------|---------------------|--------------|-------------|-------------------------|
| B.G.4: begane-grond | | | | | |
| q | 6,90 | 6,90 | 0,000 | 9,920 | Z S1 |
| q | 6,90 | 6,90 | 2,080 | 12,000(L) | Z S1 |
| Som lasten | X: 0,00 | kN Z: 136,90 | kN | m | - - |
| - | - | - | m | m | - - |

B.G.4: BEGANE-GROND



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fu.C.1 | Fu.C.2 (Overslaan) | Fu.C.3 (Overslaan) | Fu.C.4 | Fu.C.5 (Overslaan) | Fu.C.6 (Overslaan) | Fu.C.7 (Overslaan) |
|-------|---------------|--------|-----------------------|-----------------------|--------|-----------------------|-----------------------|-----------------------|
| B.G.1 | Permanent | 1.08 | 1.08 | 1.08 | 1.22 | 1.08 | 1.08 | 1.08 |
| B.G.2 | 2e verdieping | 1.35 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 | 0.54 |
| B.G.3 | 1e verdieping | 1.35 | 0.54 | 1.35 | 0.54 | 0.54 | 1.35 | 0.54 |
| B.G.4 | begane-grond | 0.54 | 1.35 | 1.35 | 0.54 | 0.54 | 0.54 | 1.35 |

KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Ka.C.(w1) | Ka.C.1 | Ka.C.2 | Ka.C.3 | Ka.C.4 |
|-------|---------------|-----------|--------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.40 | 1.00 | 0.40 | 0.40 |
| B.G.3 | 1e verdieping | - | 0.40 | 0.40 | 1.00 | 0.40 |
| B.G.4 | begane-grond | - | 0.40 | 0.40 | 0.40 | 1.00 |

FREQUENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Fr.C.(w1) | Fr.C.1 | Fr.C.2 | Fr.C.3 |
|-------|---------------|-----------|--------|--------|--------|
| B.G.1 | Permanent | 1.00 | 1.00 | 1.00 | 1.00 |
| B.G.2 | 2e verdieping | - | 0.50 | 0.30 | 0.30 |
| B.G.3 | 1e verdieping | - | 0.30 | 0.50 | 0.30 |
| B.G.4 | begane-grond | - | 0.30 | 0.30 | 0.50 |

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

| B.G. | Omschrijving | Qu.C.1 |
|-------|---------------|--------|
| B.G.1 | Permanent | 1.00 |
| B.G.2 | 2e verdieping | 0.30 |
| B.G.3 | 1e verdieping | 0.30 |
| B.G.4 | begane-grond | 0.30 |

B.G. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|-------|---------------------|---------|------|------|-----------------|------|
| B.G.1 | O1 | 0.900 | vast | vrij | -309.13 | 0.00 |
| B.G.1 | O2 | 3.600 | vast | vrij | -296.44 | 0.00 |
| B.G.1 | O3 | 6.000 | vast | vrij | -325.29 | 0.00 |
| B.G.1 | O4 | 8.400 | vast | vrij | -320.04 | 0.00 |
| B.G.1 | O5 | 11.000 | vast | vrij | -279.12 | 0.00 |
| | Som Reacties | | | | -1530.02 | |
| | Som Lasten | | | | 1530.02 | |
| B.G.2 | O1 | 0.900 | vast | vrij | -16.58 | 0.00 |
| B.G.2 | O2 | 3.600 | vast | vrij | -35.90 | 0.00 |

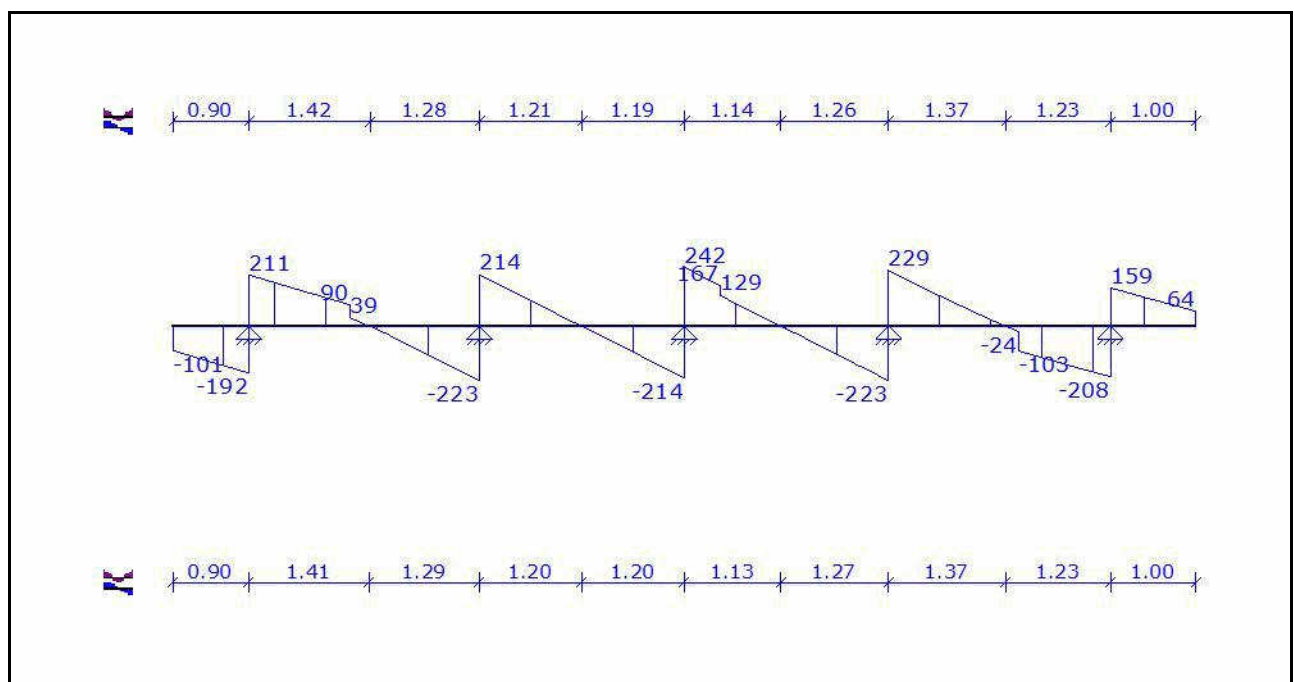
| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|---------------------|-----------|---------|------|--------|----------------|------|
| B.G.2 | O3 | 6.000 | vast | vrij | -32.80 | 0.00 |
| B.G.2 | O4 | 8.400 | vast | vrij | -29.85 | 0.00 |
| B.G.2 | O5 | 11.000 | vast | vrij | -15.42 | 0.00 |
| Som Reacties | | | | | -130.55 | |
| Som Lasten | | | | | 130.55 | |
| B.G.3 | O1 | 0.900 | vast | vrij | -16.54 | 0.00 |
| B.G.3 | O2 | 3.600 | vast | vrij | -36.17 | 0.00 |
| B.G.3 | O3 | 6.000 | vast | vrij | -31.68 | 0.00 |
| B.G.3 | O4 | 8.400 | vast | vrij | -35.14 | 0.00 |
| B.G.3 | O5 | 11.000 | vast | vrij | -17.37 | 0.00 |
| Som Reacties | | | | | -136.90 | |
| Som Lasten | | | | | 136.90 | |
| B.G.4 | O1 | 0.900 | vast | vrij | -16.54 | 0.00 |
| B.G.4 | O2 | 3.600 | vast | vrij | -36.17 | 0.00 |
| B.G.4 | O3 | 6.000 | vast | vrij | -31.68 | 0.00 |
| B.G.4 | O4 | 8.400 | vast | vrij | -35.14 | 0.00 |
| B.G.4 | O5 | 11.000 | vast | vrij | -17.37 | 0.00 |
| Som Reacties | | | | | -136.90 | |
| Som Lasten | | | | | 136.90 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

FU.C. OPLEGREACTIES

| B.C. | Oplegging | Positie | Z | Yr | Z | My |
|---------------------|-----------|---------|------|--------|-----------------|------|
| Fu.C.1 | O1 | 0.900 | vast | vrij | -387.93 | 0.00 |
| Fu.C.1 | O2 | 3.600 | vast | vrij | -437.37 | 0.00 |
| Fu.C.1 | O3 | 6.000 | vast | vrij | -455.91 | 0.00 |
| Fu.C.1 | O4 | 8.400 | vast | vrij | -452.78 | 0.00 |
| Fu.C.1 | O5 | 11.000 | vast | vrij | -355.47 | 0.00 |
| Som Reacties | | | | | -2089.46 | |
| Som Lasten | | | | | 2089.46 | |
| Fu.C.4 | O1 | 0.900 | vast | vrij | -402.42 | 0.00 |
| Fu.C.4 | O2 | 3.600 | vast | vrij | -418.62 | 0.00 |
| Fu.C.4 | O3 | 6.000 | vast | vrij | -447.15 | 0.00 |
| Fu.C.4 | O4 | 8.400 | vast | vrij | -442.91 | 0.00 |
| Fu.C.4 | O5 | 11.000 | vast | vrij | -366.21 | 0.00 |
| Som Reacties | | | | | -2077.31 | |
| Som Lasten | | | | | 2077.31 | |
| - | - | m | kN/m | kNmrad | kN | kNm |

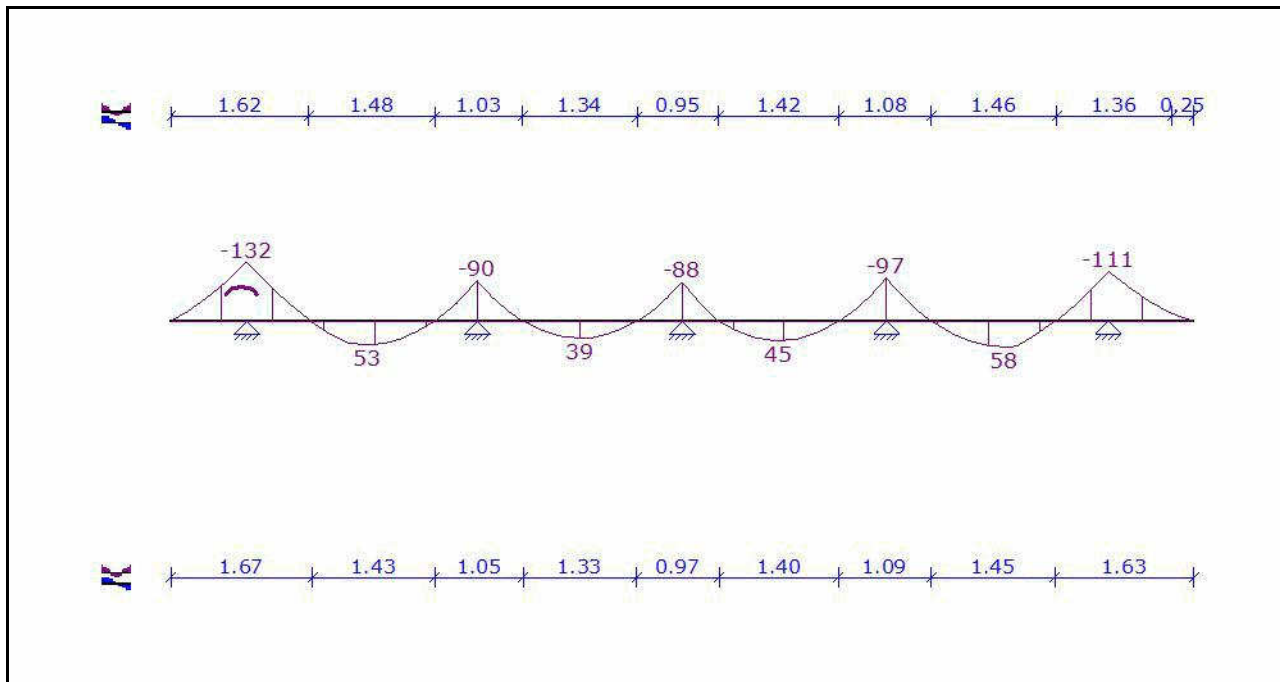
AFB. FU.C. DRWARSKRACHT (VZ) / SHEAR FORCE (VZ) OMHULLENDE

Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE

Fundamenteel Belastingscombinaties



BETON EIGENSCHAPPEN (NEN-EN1992-1-1+C2:2010/NB:2011)

| Naam | Waarde | Eenheden |
|--------------------|--------|----------|
| Hoek drukdiagonaal | 21.80 | ° |

CONSTRUCTIEDELEN

| Staal | Profiellabel | Profiel | Betonkwal. | Constr.Dl. | Type | Begin: | Eind: | Groep |
|-------|--------------|----------|------------|------------|--------|--------|--------|-------|
| S1 | P3 | R400x500 | C20/25 | Ligger 1 | Ligger | 0.000 | 12.000 | G1 |
| - | - | - | - | - | - | m | m | - |

GROEPGEGEVENS

| Groep | Constr.Dl. | Voorspanning | L1 | L2 | Staal | Fabric. | N.Kor. | Stortsl. | Toetsing afmeting |
|-------|------------|--------------|-----|-----|-------|---------|--------|----------|-----------------------|
| G1 | Ligger | Nee | N/A | N/A | B500A | Lh.w. | 31.5 | 0 | b,min: 400 >= 100 |
| - | - | - | - | - | - | - | mm | mm | NEN-EN1992-1-1#9.2(1) |

BRAND

| Groep | Label | Profiel | Constr. | Brandw. | Br.res. | Boven | Links | Onder | Rechts | Staal |
|-------|-------|----------|---------|---------|---------|-------|-------|-------|--------|-------|
| G1 | P3 | R400x500 | Ligger | Nee | 120 | Nee | Nee | Nee | Nee | Koud |
| - | - | - | - | - | min. | - | - | - | - | - |

KRUIP

| Groep | Cement | RV (%) | Ouderdom | Tijd T | Kruip type | Kruipcoeff. |
|-------|--------|--------|----------|--------|------------|-------------|
| G1 | S | 60 % | 28 Dagen | Inf | Berekend | 2.6 |
| - | - | - | - | - | - | - |

DEKKING

| Groep | Str.Class | Boven | | | Onder | | | | | | Zij- + Voorkant | | | | | | | | |
|-------|-----------|-------|-----|-------|-------|------|-------|------|-----|-------|-----------------|------|-------|------|-----|-------|-------|------|-------|
| | | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe | Mil. | Ruw | Met. | C,min | C,no | C,toe |
| G1 | S4 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 | XC2 | Nee | Norm. | 25 | 30 | 30 |
| - | - | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm | - | - | - | mm | mm | mm |

OPLEGGEVENS

| | Positie | Oplegg. | Type | Afmeting | Staaft | Afmeting | Mti | Mti bov. | Mti ond. | Dwarskr. | Moment |
|----------|---------|---------|------------|----------|--------|----------|-----|----------|----------|----------|--------|
| afgetopt | 0.900 | O1 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |
| afgetopt | 3.600 | O2 | Ronde paal | 0,350 | | | N/B | | | Afgetopt | Niet |

| | | | | | | | |
|----------|--------|----|------------|-------|-----|----------|-------|
| afgetopt | 6.000 | O3 | Ronde paal | 0,350 | N/B | Afgetopt | Niet |
| afgetopt | 8.400 | O4 | Ronde paal | 0,350 | N/B | Afgetopt | Niet |
| afgetopt | 11.000 | O5 | Ronde paal | 0,350 | N/B | Afgetopt | Niet |
| | m | - | - | m | - | kNm | kNm - |

LIGGER 1

DOORSNEDE BOVENWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|--------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 0.900 | 131.69 | 5R12 | | 1R16 | 712 | 767 | | 8,04 | 84,74 |
| 3.600 | 90.36 | 5R12 | | | 477 | 565 | | 10,39 | 149,79 |
| 6.000 | 87.76 | 5R12 | | | 462 | 565 | | 10,23 | 145,22 |
| 8.400 | 96.80 | 5R12 | | | 513 | 565 | | 8,90 | 106,92 |
| 11.000 | 111.22 | 5R12 | | 1R10 | 593 | 644 | | 8,32 | 89,38 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

DOORSNEDE ONDERWAPENING

| Positie | Md | Basis | Mod. | Bijleg | As,ben | As,toe | Scheurvorming | D,max | Ligger 1 S,max |
|---------|-------|-------|------|--------|--------|--------|---------------|-------|-------------------|
| 2.308 | 53.37 | 4R10 | | | 276 | 314 | | 10,28 | 140,09 |
| 4.809 | 39.40 | 4R10 | | | 202 | 314 | | 17,69 | 222,01 |
| 7.139 | 44.52 | 4R10 | | | 229 | 314 | | 13,43 | 189,39 |
| 9.775 | 58.46 | 4R10 | | 1R10 | 303 | 393 | | 11,12 | 156,84 |
| m | kNm | - | - | - | mm | mm | - | mm | mm |

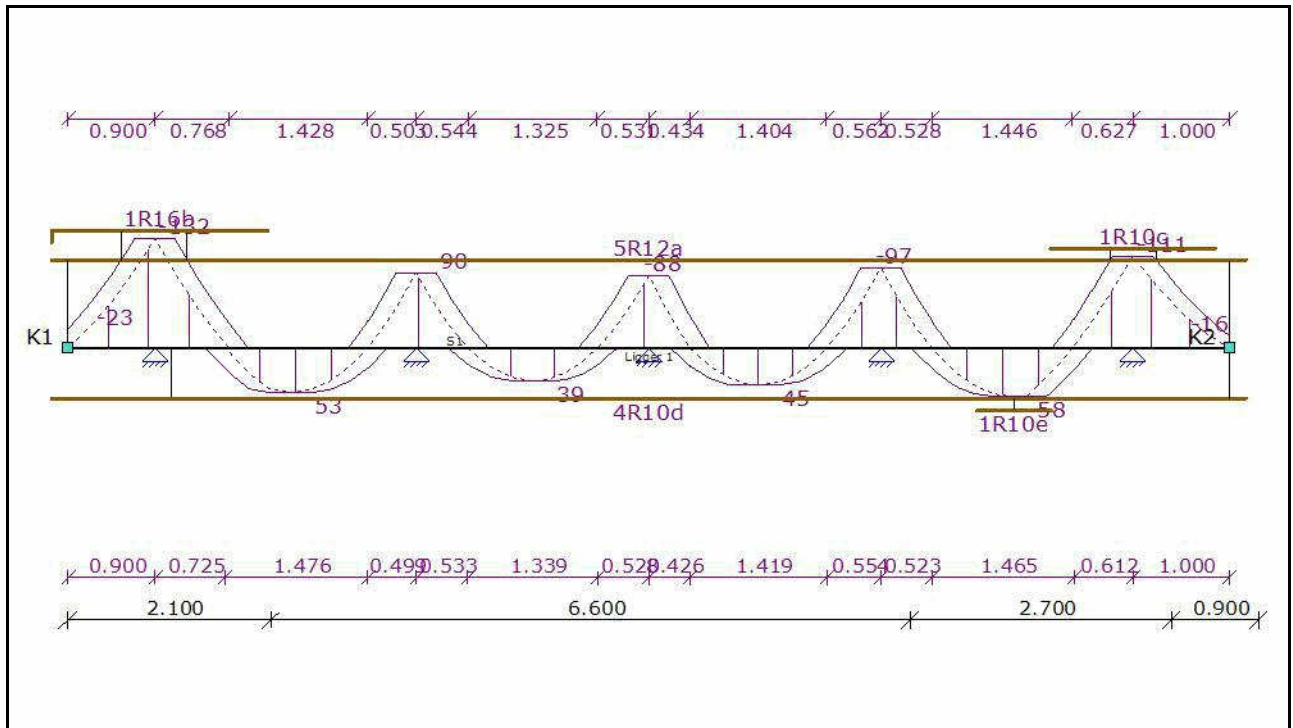
DOORSNEDE FLANKWAPENING

| Positie | Mx | Wapening | As,ben | As,toe | Ligger 1 |
|---------|------|----------|--------|--------|----------|
| 0.000 | 0,00 | 1R8 | 0 | 50 | |
| m | kNm | - | mm | mm | |

DOORSNEDE BEUGELWAPENING

| Positie | Zijde | Vd | Wapening | AsV;ben. | AsT;ben. | As,toe | Vrd;c | Vrd | Ved | VRdi | Ligger 1 VEdi |
|---------|--------|--------|----------|----------|----------|--------|--------|--------|--------|------|------------------|
| 0.000 | Rechts | 101.09 | R8-300 | 239 | 0 | 335 | 66.806 | 141.78 | 101.09 | N/B | N/B |
| 0.270 | Links | 128.11 | R8-300 | 303 | 0 | 335 | 73.936 | 141.78 | 128.11 | N/B | N/B |
| 1.530 | Rechts | 146.21 | R8-300 | 346 | 0 | 335 | 73.936 | 141.78 | 146.21 | N/B | N/B |
| 2.969 | Links | 113.64 | R8-300 | 256 | 0 | 335 | 61.281 | 148.70 | 113.64 | N/B | N/B |
| 4.231 | Rechts | 102.81 | R8-300 | 232 | 0 | 335 | 61.281 | 148.70 | 102.81 | N/B | N/B |
| 5.369 | Links | 100.40 | R8-300 | 226 | 0 | 335 | 61.281 | 148.70 | 100.40 | N/B | N/B |
| 6.631 | Rechts | 91.03 | R8-300 | 205 | 0 | 335 | 61.281 | 148.70 | 91.03 | N/B | N/B |
| 7.769 | Links | 112.18 | R8-300 | 253 | 0 | 335 | 61.281 | 148.70 | 112.18 | N/B | N/B |
| 9.031 | Rechts | 120.19 | R8-300 | 273 | 0 | 335 | 61.281 | 147.59 | 120.19 | N/B | N/B |
| 10.369 | Links | 146.84 | R8-300 | 333 | 0 | 335 | 61.281 | 147.59 | 146.84 | N/B | N/B |
| 11.631 | Rechts | 98.76 | R8-300 | 230 | 0 | 335 | 69.812 | 143.74 | 98.76 | N/B | N/B |
| 12.000 | Links | 64.03 | R8-300 | 0 | 0 | 335 | 66.850 | 143.74 | 64.03 | N/B | N/B |
| m | - | kN | - | mm | mm | mm | kN | kN | kN | kN | kN |

AFB. LANGSWAPENING. (AFBOUW) LIGGER 1



AFB. DWARSKRACHTWAPENING. (AFBOUW) LIGGER 1

