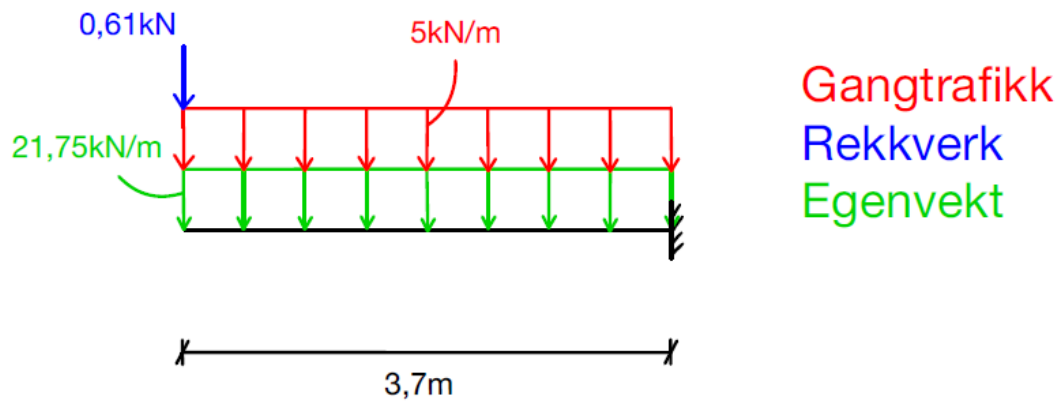


## VEDLEGG 5

### MOMENTDIAGRAMMER I BRUKSGRENSETILSTAND

## TVERRETNING VED AKSE B, C OG D

### FELT 1



Jevnt fordelt last:  $M_{innspenning} = \frac{1}{2} * q * L^2$  (Aalberg, Clausen og Larsen, 2003, tabell 3.3)

Punktlast på enden:  $M_{innspenning} = P * L$  (Aalberg, Clausen og Larsen, 2003, tabell 3.3)

### Egenlast:

$$M_{innspenning} = \frac{1}{2} * 21,75 * 3,7^2 = 148,88 \text{ kNm}$$

### Gangtrafikk:

$$M_{innspenning} = \frac{1}{2} * 5 * 3,7^2 = 34,23 \text{ kNm}$$

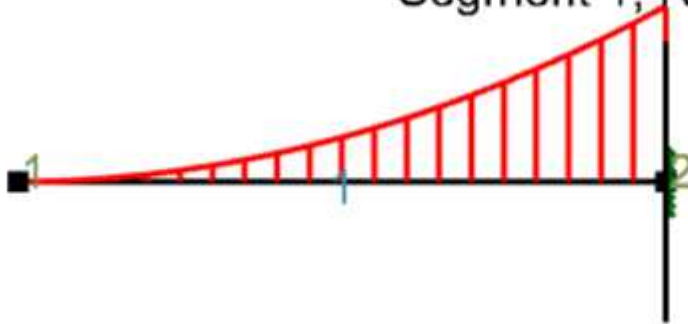
### Rekkverk:

$$M_{innspenning} = 0,61 * 3,7 = 2,26 \text{ kNm}$$

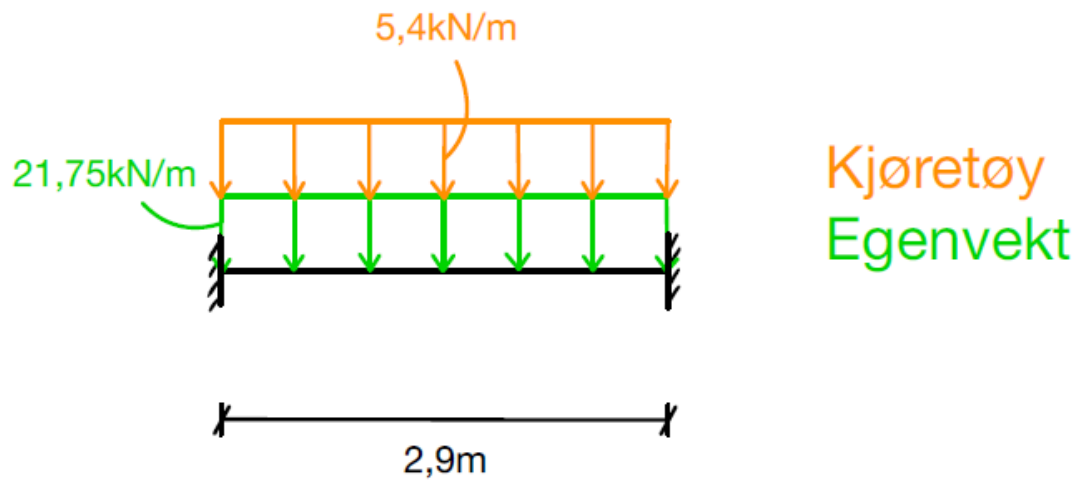
### Total belastning:

$$M_{innspenning, totalt} = 148,88 + 34,23 + 2,26 = 185,37 \text{ kNm}$$

$M = 185,36 \text{ kN}\cdot\text{m}$   
Segment 1, Rel.  $x = 1,00$



### FELT 2 OG 3



$$M_{felt} = \frac{1}{24} * q * L^2 \quad (\text{Aalberg, Clausen og Larsen, 2003, tabell 3.2})$$

$$M_{innspenning} = \frac{1}{12} * q * L^2 \quad (\text{Aalberg, Clausen og Larsen, 2003, tabell 3.2})$$

#### Egenlast:

$$M_{felt} = \frac{1}{24} * 21,75 * 2,9^2 = 7,62 \text{ kNm}$$

$$M_{innspenning} = \frac{1}{12} * 21,75 * 2,9^2 = 15,24 \text{ kNm}$$

#### Trafikklast:

$$M_{felt} = \frac{1}{24} * 5,4 * 2,9^2 = 1,89 \text{ kNm}$$

$$M_{innspenning} = \frac{1}{12} * 5,4 * 2,9^2 = 3,78 \text{ kNm}$$

#### Total belastning:

$$M_{felt} = 7,62 + 1,89 = 9,51 \text{ kNm}$$

$$M_{innspenning} = 15,24 + 3,78 = 19,02 \text{ kNm}$$

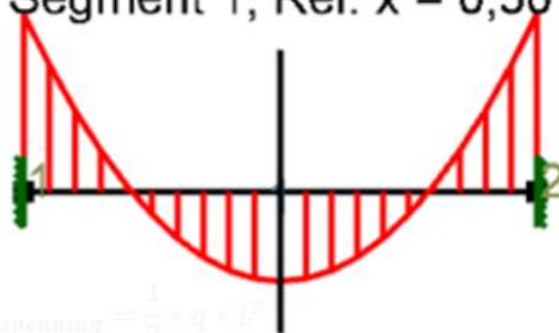
$M = 18,98 \text{ kN}\cdot\text{m}$

Segment 1, Rel.  $x = 0,00$

$M = 9,56 \text{ kN}\cdot\text{m}$

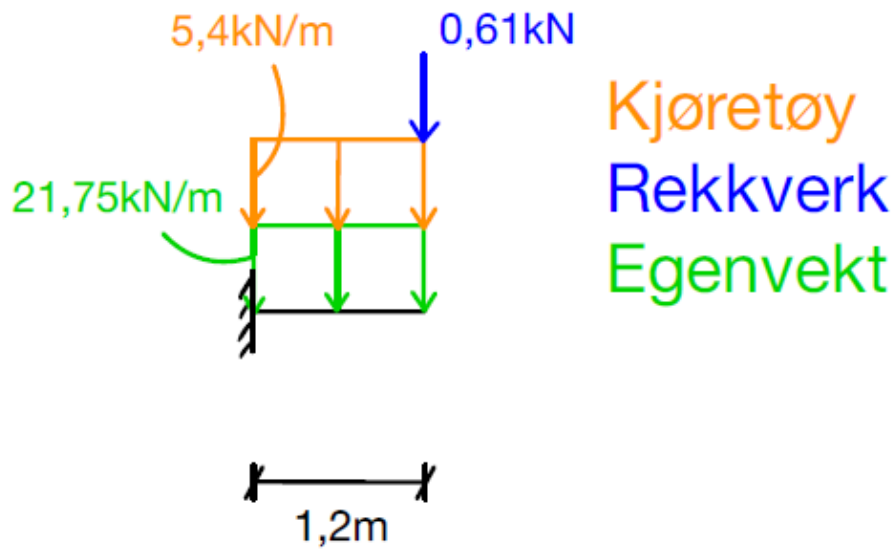
Segment 1, Rel.  $x = 0,50$

erretning felt 4



Jevnt fordelt last:  $M_{\text{innspenning}} = \frac{1}{2} \cdot q \cdot l^2$

#### FELT 4



Jevnt fordelt last:  $M_{innspenning} = \frac{1}{2} * q * L^2$  (Aalberg, Clausen og Larsen, 2003, tabell 3.3)

Punktlast på enden:  $M_{innspenning} = P * L$  (Aalberg, Clausen og Larsen, 2003, tabell 3.3)

#### Egenlast:

$$M_{innspenning} = \frac{1}{2} * q * L^2$$

$$M_{innspenning} = \frac{1}{2} * 21,75 * 1,2^2 = 15,66 \text{ kNm}$$

#### Trafikklast:

$$M_{innspenning} = \frac{1}{2} * q * L^2$$

$$M_{innspenning} = \frac{1}{2} * 5,4 * 1,2^2 = 3,89 \text{ kNm}$$

#### Rekkverk:

$$M_{innspenning} = P * L$$

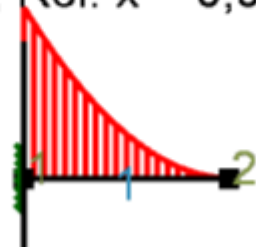
$$M_{innspenning} = 0,61 * 1,2 = 0,73 \text{ kNm}$$

Total belastning:

$$M_{innspenning} = 15,66 + 3,89 + 0,73 = 20,28 \text{ kNm}$$

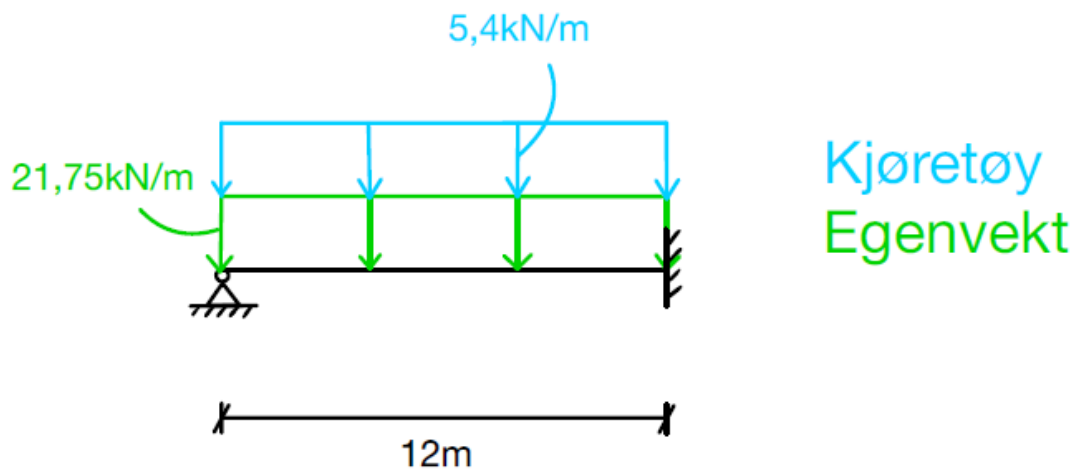
M = 20,28 kN·m

Segment 1, Rel. x = 0,00



## LENGDERETNING I KJØREFELT 1

### FELT 1 OG 4



$$M_{felt} = \frac{9}{128} * q * L^2 \quad (\text{Aalberg, Clausen og Larsen, 2003, tabell 3.2})$$

$$M_{innspenning} = \frac{1}{8} * q * L^2 \quad (\text{Aalberg, Clausen og Larsen, 2003, tabell 3.2})$$

#### Egenlast:

$$M_{felt} = \frac{9}{128} * 21,75 * 12^2 = 220,22 \text{ kNm}$$

$$M_{innspenning} = \frac{1}{8} * 21,75 * 12^2 = 391,50 \text{ kNm}$$

#### Trafikklast:

$$M_{felt} = \frac{9}{128} * 5,4 * 12^2 = 54,68 \text{ kNm}$$

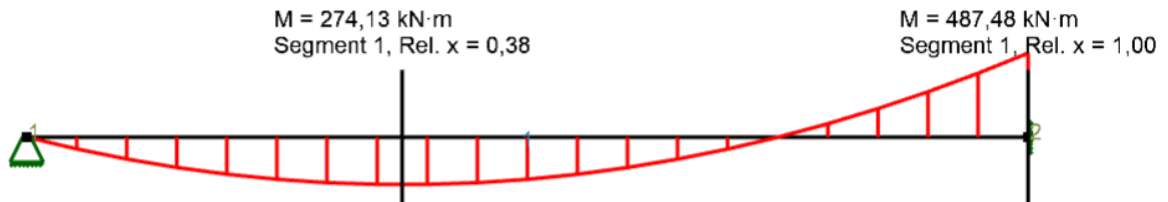
$$M_{innspenning} = \frac{1}{8} * 5,4 * 12^2 = 97,20 \text{ kNm}$$



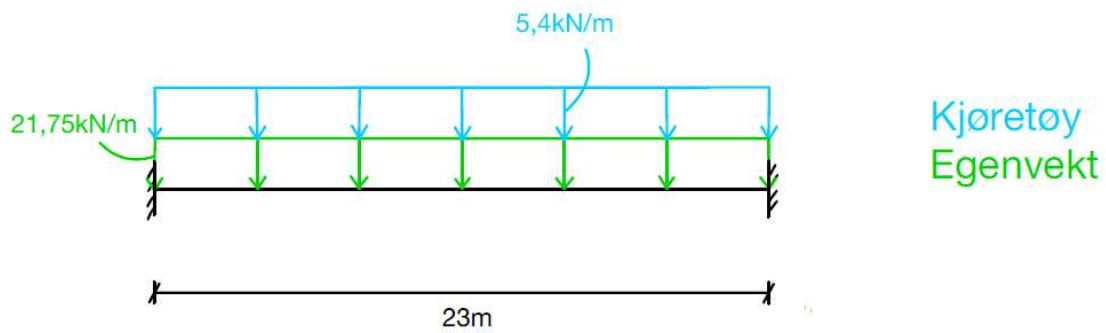
Total belastning:

$$M_{felt} = 220,22 + 54,68 = 274,89 \text{ kNm}$$

$$M_{innspenning} = 391,50 + 97,20 = 488,70 \text{ kNm}$$



## FELT 2 OG 3



$$M_{felt} = \frac{1}{24} * q * L^2 \quad (\text{Aalberg, Clausen og Larsen, 2003, tabell 3.2})$$

$$M_{innspenning} = \frac{1}{12} * q * L^2 \quad (\text{Aalberg, Clausen og Larsen, 2003, tabell 3.2})$$

### Egenlast:

$$M_{felt} = \frac{1}{24} * 21,75 * 23^2 = 479,41 \text{ kNm}$$

$$M_{innspenning} = \frac{1}{12} * 21,75 * 23^2 = 958,81 \text{ kNm}$$

### Trafikklast:

$$M_{felt} = \frac{1}{24} * 5,4 * 23^2 = 119,03 \text{ kNm}$$

$$M_{innspenning} = \frac{1}{12} * 5,4 * 23^2 = 238,05 \text{ kNm}$$

### Total belastning:

$$M_{felt,total} = 479,41 + 119,03 = 598,43 \text{ kNm}$$

$$M_{innspenning,total} = 958,81 + 238,05 = 1196,86 \text{ kNm}$$

