**Kirigami:**

K=2.393\*10^7 N/m (N=4, Force=1000\*10)

K=6.301\*10^6 N/m (N=8, Force=1000\*10)

Failure load:

1.506\*10^4 kN (N=4)

8.296\*10^3 kN (N=8)

4N:

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Total bars: 160

Total bar length: 86.52 m

Total CST area: 5.75 m^2

Bar weight: 66628.20 N

CST weight: 22139.94 N

Total self-weight: 88768.15 N

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8N:

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Total bars: 320

Total bar length: 174.37 m

Total CST area: 11.15 m^2

Bar weight: 134279.79 N

CST weight: 42932.24 N

Total self-weight: 177212.03 N

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**Origami:**

K=9.304\*10^6 N/m (N=4, Force=1000\*10)

K=2.404\*10^6 N/m (N=8, Force=1000\*10)

Failure load:

1.073\*10^4 kN (N=4)

1.072\*10^4 kN (N=8)

4N:

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Total bars: 56

Total bar length: 49.89 m

Total CST area: 4.00 m^2

Bar weight: 38418.42 N

CST weight: 15401.70 N

Total self-weight: 53820.12 N

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8N:

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Total bars: 112

Total bar length: 99.78 m

Total CST area: 8.00 m^2

Bar weight: 76836.84 N

CST weight: 30803.40 N

Total self-weight: 107640.24 N

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**Rolling:**

K=8.974\*10^6 N/m (N=4, Force=1000\*10)

K=2.361\*10^6 N/m (N=8, Force=1000\*10)

Failure load:

1.427\*10^4 kN (N=4, Force=1000\*10)

1.409\*10^4 kN (N=8, Force=1000\*10)

4N:

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Normal bars: 49

Actuator bars: 6

Total bars: 55

Total length of all bars: 36.50 m

Total area of all CST panels: 4.00 m^2

Total bar weight: 28111.56 N

Total CST panel weight: 15401.70 N

Total self-weight of the bridge: 43513.26 N

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8N:

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Normal bars: 101

Actuator bars: 14

Total bars: 115

Total length of all bars: 73.61 m

Total area of all CST panels: 8.00 m^2

Total bar weight: 56685.17 N

Total CST panel weight: 30803.40 N

Total self-weight of the bridge: 87488.57 N

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**Scissor:**

K=8.982\*10^6 N/m (N=4, Force=1000\*10)

K=2.572\*10^6 N/m (N=8, Force=1000\*10)

Failure load:

8.477\*10^3 kN (N=4, Force=1000\*10)

8.307\*10^3 kN (N=8, Force=500\*10)

4N:

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Total bars: 109

Total length of all bars: 50.941 m

Total area of all CST panels: 4.000 m^2

Total bar weight: 39229.00 N

Total CST panel weight: 15401.70 N

Total self-weight of the bridge: 54630.70 N

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8N:

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Total bars: 217

Total length of all bars: 100.882 m

Total area of all CST panels: 8.000 m^2

Total bar weight: 77687.91 N

Total CST panel weight: 30803.40 N

Total self-weight of the bridge: 108491.31 N

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**Truss Rolling:**

K=9.304\*10^6 N/m (N=4, Force=1000\*10)

K=2.404\*10^6 N/m (N=8, Force=1000\*10)

Failure load:

5.996\*10^3 kN (N=4, Force=1000\*10)

2.996\*10^3 kN (N=8, Force=1000\*10)

4N:

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Normal bars: 45

Actuator bars: 6

Total bars: 51

Total length of all bars: 42.55 m

Total area of all CST panels: 4.00 m^2

Total bar weight: 32763.57 N

Total CST panel weight: 15401.70 N

Total self-weight of the bridge: 48165.27 N

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8N:

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Normal bars: 93

Actuator bars: 14

Total bars: 107

Total length of all bars: 86.09 m

Total area of all CST panels: 8.00 m^2

Total bar weight: 66297.23 N

Total CST panel weight: 30803.40 N

Total self-weight of the bridge: 97100.63 N

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