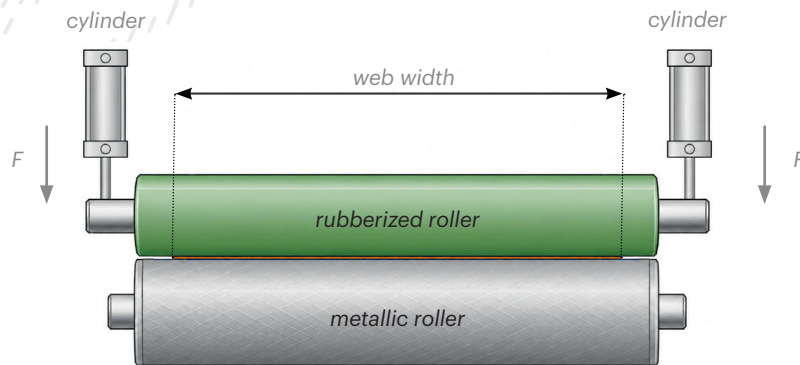


LINEAR LOAD CALCULATION GUIDE

The purpose of this calculation form is to determine the linear load applied on the covering. To select the appropriate covering, we need to convert the hydraulic or pneumatic cylinders pushing force into a linear load.



The force generated by one cylinder is calculated as follows:

Force (F) = Pressure × Cylinder section

or:

F in daN = Pressure in bar × Cylinder section in cm²

The cylinder section is calculated using the cylinder diameter:

Cylinder section = $\pi \times D^2 / 4$

When two cylinders are used, which is usually the case, the force generated by one cylinder must be multiplied by 2.

Example based on the drawing above:

Data

Pressure = 6 bar

Cylinder diameter = 63 mm = 6.3 cm

Web width = 1200 mm = 120 cm

Cylinder section

Cylinder section = $\pi \times 6.3^2 / 4$

Cylinder section = 31.2 cm²

Force per cylinder

Force = 6 × 31.2

Force = 187 daN

Total applied force

As there are 2 cylinders, the total applied force is:

F = 187 × 2 = 374 daN

The data to be provided to the covering company is the force per linear centimetre:

374 daN / 120 cm = 3.1 daN/cm

Important notes:

- If several web widths are used, always calculate with the narrowest web width at the same pressure.
- The position of the pushing roller has an influence on the real force applied. If the pushing roller is positioned above the web, the weight of this roller must be added.

Case of cantilever loads:

In the case of cantilever loads, the real force must be corrected according to the lever ratio:

Real force = F × a / b

Option 1: if a > b, as shown in the drawing, the force increases.

Option 2: if a < b, the force decreases.

