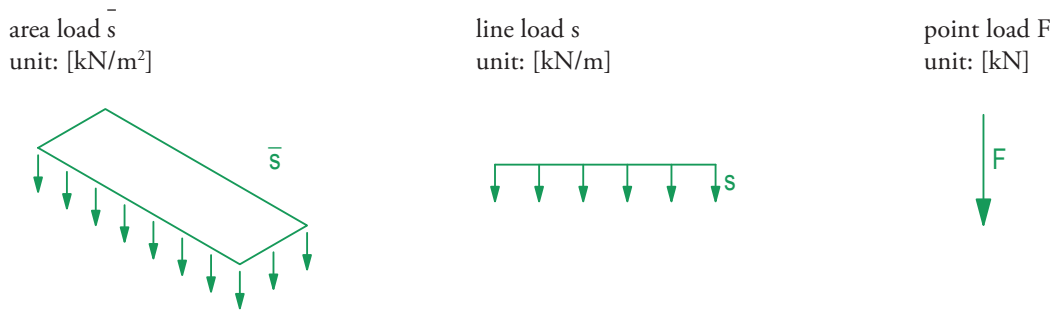


3.3

Loads

We distinguish between three different types of load: the point load, the line load and the area load. In order to recognise from the designation which type of load it is, point loads are indicated with capital letters, line loads with lower case letters and area loads with lower case letters with a line on top.

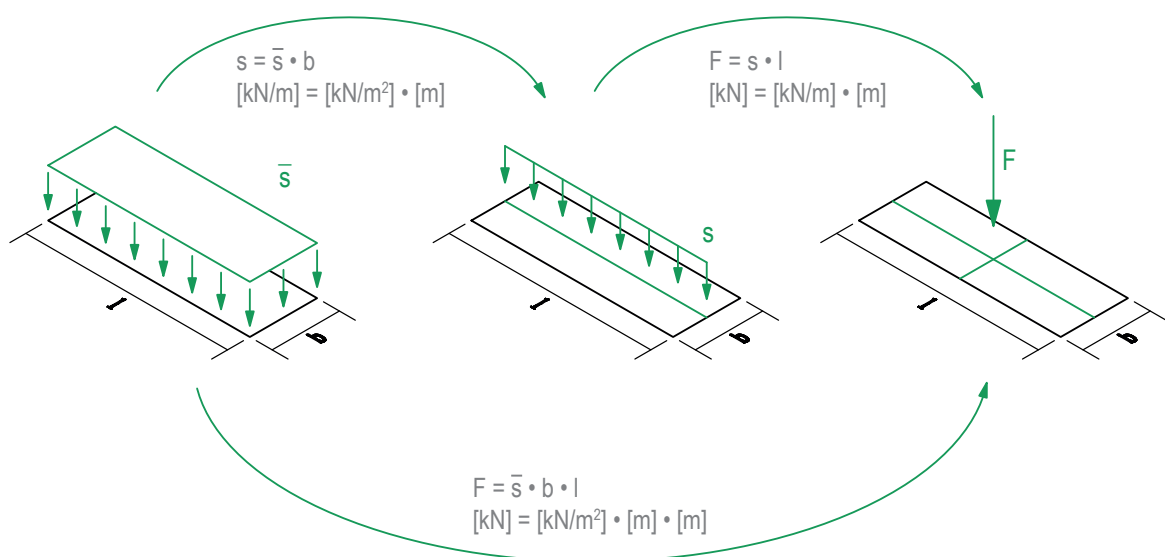


Conversion of different types of loads

Most forces result from area loads, such as the weight of a roof covering or a layer of snow, which act on the vertical elements over the entire area of a system. If the uniformly distributed load on a linear component of the structure, is to be determined, the area load is multiplied by the width of the tributary area. This results in the unit kN/m, i.e. the force per linear metre on the specifically considered linear element. This situation can be abstracted further by multiplying by the length of the tributary area, i.e. the length of the element. The result is a resulting point load which is applied centrally over the element.

To convert the area load \bar{s} to a line load s which has the same length l , we need to multiply \bar{s} with width b .

To convert the line load s to a point load F , we need to multiply s with the length l .



To convert area load \bar{s} to a point load F , we need to multiply \bar{s} with the width b and length l .