

Calculation stanchion

Calculation of forces in the supports when used properly

Load distribution based on 3 stanchions

65% main stanchion and 17,5% each side stanchion

shock factor for acceleration forces 1,1

quality of concrete C20/25 or higher, to ensure the pull out forces of the anchor

stanchion height [mm] H	1200
ground clearance [mm] h	201
platform [mm] BxL	800 x 1000
payload [kg] FL	300
weight [kg]	100

Forces in main stanchion

pull out force each screw [N] F2	5338
ground surface pressure [N/mm ²] F1	1,4

incl. shock factor

5872
1,5

Moment in tube shape

force wheel holder[N] FA	2697
force wheel holder [N] FB	-2697
max moment [Nmm] M	1224543

incl. shock factor

2967
-2967
1346997

Modulus tube shape

Values from Voest Alpine Stahl data sheet

tube shape 60x60x4 [mm ³]	14520
tube shape 60x60x3 [mm ³]	11710
stresses 60x60x4 [N/mm ²]	93
stresses 60x60x3 [N/mm ²]	115

(Material S355J2G3)

(Material 1.4301)

permissible stresses [N/mm ²]	355
permissible stresses [N/mm ²]	360

safety factor 60x60x4	3,8
safety factor 60x60x3	3,1

(safety factor **2,25** from DIN EN 81-40 table 2-3)

Ascendor installation recommendations

steel anchors for stanchions

Fischer steel anchor FBN2 M12

