

GENERAL INFORMATION

Regarding hinge load values
Reference value **40 kg**

Overview of load values for hinges

The following table provides you an overview of the maximum load value for the individual hinge type, taking the interaction of width and height of the door as well as the hinge gap into account.

Assuming a reference value with door leaf dimensions of 1000 x 2000 mm (W x H), the use of 2 hinges and a hinge gap of 1435 mm, the permissible load values change with different width and height ratios.

Green: load value = reference value, **Orange:** load value < reference value.

↑ Hinge gap in mm	2000	40	40	40	40	40	40	40	40	40	
	1950	40	40	40	40	40	40	40	40	40	
	1900	40	40	40	40	40	40	40	40	40	
	1850	40	40	40	40	40	40	40	40	40	
	1800	40	40	40	40	40	40	40	40	39	
	1750	40	40	40	40	40	40	40	39	38	
	1700	40	40	40	40	40	40	39	38	36	
	1650	40	40	40	40	40	40	38	37	35	
	1600	40	40	40	40	40	39	37	36	34	
	1550	40	40	40	40	39	38	36	35	33	
	1435	40	40	40	38	36	35	33	32	31	
			900	950	1000	1050	1100	1150	1200	1250	1300
			→ Leaf width in mm								

The hinge gap dimensions according to DIN 18101 must be taken into account for standardised door elements.

The specifications above are guidelines. Especially in the case of borderline load requirements, please approach us.

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Selection criteria

When selecting or deciding on a hinge, the load alone is already often viewed as being identical to the weight of the door. However, the hinge load can often be several times the door weight, caused by various influential factors.

Even taking these various criteria into account, an additional reserve should always still be included when selecting the hinge. Especially in public buildings where extra loads are incurred due to the high opening frequency and stress which is not always calculable (kindergarten, barracks etc.), sufficiently dimensioned hinges should be used even if this would not have been necessary merely based on the door weight as such.

Finally, a hinge is also only as good as its later machining. Therefore, proper fitting and expert installation are absolutely necessary. Only correctly fitted hinges are able to fulfil the intended function.

The material stability of the construction element to be fitted and friction locking with the masonry or stud frame forms the basis for the hinge's respective function. If questions regarding the correct selection of hinges arise in certain cases, we are more than happy to help you.

The following criteria must be taken into account for hinge selection in order to avoid consequential damages:

Location (<i>residential building, public building, school, administration, barracks, kindergarten etc.</i>)
The element's material type
Opening frequency
Door dimensions (<i>e.g. excess widths</i>)
Hinge positioning
Hinge installation
Doors opening outwards (<i>porches</i>)
Door stoppers
Door closers
Wall jambs
etc.

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Third hinge

In addition to the factors named above, the use of a 3rd hinge can also influence the load value decisively. However, in this case it must be taken into account that the value provided cannot be multiplied by a factor of 1.5 offhand. The load value is only influenced positively if a 3rd hinge is used in the upper third. SIMONSWERK recommends the use of a 3rd hinge 370 mm under the upper hinge (taking the upper hinge reference line as a reference). This increases load value defined by approx. 30%.

Doors with excess widths

SIMONSWERK building hinges are generally geared for the load values specified, whereby you should observe that the load values diminish percentagewise from a door width of 100 cm with a constant hinge gap in the dimension in which the door width of 100 cm is exceeded (e.g. door width 125 cm = load value minus 25%). The prerequisite for this is always precise and proper fitting in accordance with the SIMONSWERK installation instructions.

The following load specification for SIMONSWERK hinges refer to a maximum door weight whilst taking the named influential factors into account for hinge loads.

All specifications are based on the following references:

Door leaf dimensions	1000 x 2000 mm
Use of	2 hinges
Hinge gap	1435 mm