Sugar Warehouse Capacity

Tonnes and bags of sugar a warehouse holds from the floor area, the share usable for stacks, the stack height and the stacking density.

Method: Volume × stacking density; usable share and density by practice

Input parameters

Unit system: SI

Parameter	Value	Unit
Floor area	3,000.0	m²
Share of floor usable for stacks	70.000	%
Stack height	6.0000	m
Stacking density of bagged sugar	800.00	kg/m³
Bag mass	50.000	kg

Calculated results

Parameter	Value	Unit
Capacity	10,080	t
Bags	201,600	

Notes for this case

- Floor load under the stacks is about 47 kPa: check it against the floor's rating.
- The usable share (70 %) and stacking density (800 kg/m³) defaults are typical figures, not from a cited source: use your own.

Formula and method

$$M = A\,u\,H\,\rho_s, \quad N_b = \left\lfloor \frac{M}{m_b} \right\rfloor$$

Variables

A	Floor area	m²
u	Share of floor usable for stacks	-
H	Stack height	m
ρ_s	Stacking density of bagged sugar	kg/m³
m_b	Bag mass	kg
M	Capacity	kg
N_b	Bags	-

Method and standards

Definitions.

Assumptions and limits

- Uniform stacks.
- The default usable share and stacking density are typical figures, not from a cited source.
- The floor load ρ_s H g is shown in a note; check it against the floor rating, especially for high stacks.

References

• Volume × stacking density; usable share and density by practice

Report details

Report reference	FCC-RNZF-XDWP (the same inputs always give the same reference)
Generated	17 November 2026, 19:50 UTC
Calculator	Sugar Warehouse Capacity
Method last reviewed	13 November 2026
Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/sugar-ethanol/centrifugals-sugar-house/sugar-warehouse-capacity

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.