

## Calculating Warehouse space

---

The size of warehouse required for an operation is determined by the maximum quantity, in tonnage and volume, of supplies to be stored there at any one time. This quantity is determined by the number of beneficiaries, the lead-time needed to replenish the warehouse, the type of distribution system and the frequency of the distributions (e.g., monthly, weekly, etc.).

- Grain (rice, maize), flour, bagged sugar 2m<sup>3</sup>
- Medicines (average for bulk shipments and medical kits) 3m<sup>3</sup>
- Vegetable oil in drums or tins 1.5-2m<sup>3</sup>
- Blankets in pressed bales (approximately 700) 4-5m<sup>3</sup>
- Blankets in un-pressed bales 8-10m<sup>3</sup>
- Clothes (in bails) 7-10m<sup>3</sup>
- Tents (approximately 25 family tents) 4-5m<sup>3</sup>
- Kitchen utensils in 35-40kg boxes 4.5m<sup>3</sup>

When calculating storage requirements, only 70 per cent of the total warehouse's surface capacity should be considered as available for actual storage space. The remaining 30 per cent is used to ensure proper ventilation, passageways, handling space and repackaging areas.

### Sample: area calculation

For 100 tonnes of rice with a storage height equal to two metres:

1 tonne of rice = 2m<sup>3</sup>

100 tonnes of rice = 200m<sup>3</sup>

Maximum stacking height for grains: 2m high

Required surface area: 100m<sup>2</sup>

Total warehouse space needed: 100m<sup>2</sup> + (100m<sup>2</sup> × 30%) = 130m<sup>2</sup>

Moreover, it should be noted that it is either impossible or impractical to fill a warehouse to the roof, nor is it recommended. Therefore, storage capacity should be calculated at least a metre below the actual height of the warehouse ceiling. Additionally, to avoid damage to the goods or the risk of stacks toppling over, few items can or should be stacked higher than 2.5m.

## Calculating Warehouse space

---

### Warehouse capacity calculation formula

{length x width x (height – 1 m)} x 70 per cent = approximate storage capacity of warehouse

Note: Stacks must be at least 1 m from the ceiling and not exceed a maximum of 2.5m or the maximum floor-load indicated in the warehouse contract

When calculating warehouse capacity, it should also be noted that no more weight than that which is specified in the warehouse leasing contract can be stacked per square metre of floor space. Refer to the section on stacking for more information on floor-load limitations.

### Warehouse capacity

- Only 70 per cent of the warehouse space can be used to store goods.
- There are height, weight and floor-load limitations to how high goods can be stacked.