

Grain Silo Selection Guide

How to choose between flat bottom, hopper bottom, cone and welded silos, and what to confirm before the foundation is poured.



Hefei Titan Machinery Co., Ltd. has supplied grain and food processing equipment since 2010, with a market network covering more than 40 countries and regions. Scope of supply includes design, fabrication, installation supervision, commissioning and after sales service.

All figures in this document are taken from TITAN model sheets. Capacities that depend on the crop or the contamination level are stated that way rather than averaged into a single number.

Construction And Materials

Item	Specification
Construction	Bolted corrugated hot dip galvanized sheets with vertical stiffeners
Zinc coating	275 g/m2, 300 g/m2 and 350 g/m2 plate, shell coating equivalent to 600 g/m2
Steel grade	Structural galvanized steel S350GD
Diameter range	2 m to 32 m, larger on request
Height to diameter ratio	Between 1:1.1 and 1:2
Capacity per silo	10 t to 15000 t
Battery capacity	1500 t to 20000 t for flat bottom groups
Fittings	Repair door, outside ladder with guard rings, access door, sweeper

What Actually Differs Between The Two

Both types use the same corrugated hot dip galvanized sheets, the same vertical stiffeners and the same bolted construction. The difference is underneath. A flat bottom silo sits on a slab and discharges through a centre outlet, with a sweeper auger clearing what gravity leaves behind. A hopper or cone bottom silo stands on a support structure and empties completely through the cone.

Capacity Is Where Flat Bottom Wins

Flat bottom silos carry the large volumes. The TITAN flat bottom range covers 1500 t to 20000 t, and a single silo holds between 10 t and 15000 t depending on diameter and eave height. Diameters run from 2 m to 32 m, with the height to diameter ratio normally held between 1:1.1 and 1:2. If your requirement is measured in thousands of tonnes, this is the type that gets you there for the least steel per tonne stored.

Complete Discharge Is Where Cone Bottom Wins

A cone empties itself. That matters when the stored product changes through the year, when residue would cross contaminate the next batch, or when you want to load a truck directly underneath the silo. The trade off is the support structure and the extra height, and less capacity for the same plot area.

The 12 Metre Rule For Foundations

There is a practical dividing line at 12 m of bin diameter. Below it, a cement cone base can be built under a flat bottom silo so that stored product unloads automatically by gravity. Above 12 m, a half cone base or a flat base is built instead, and a spiral sweeper finishes the discharge, because a half cone base cannot empty the silo completely on its own. A cement base costs somewhere in the middle and takes a longer construction period, which needs to be in the project schedule from the start.

Silo diameter	Base type	How it discharges
Under 12 m	Cement cone base	Automatic gravity discharge
Over 12 m	Half cone or flat base	Gravity flow, then spiral sweeper
Cone bottom silo	Support structure with cone	Complete gravity discharge

What To Check Before You Commit

Ask for the zinc coating weight, not just the word galvanized. TITAN flat bottom bins use 275, 300 and 350 g/m2 hot dip galvanized plate, with structural steel S350GD and coating equivalent to 600 g/m2 of zinc on the shell. Ask how the bolt holes are sealed, because that is where water gets in. Ask whether ladders, guard rings and access doors are included per silo, and whether a heat retaining layer is available if you store in a hot climate.

Silo Models On Offer

Silo type	Description
Corrugated Flat Bottom Steel Silo With Elevator	A flat bottom silo with its own filling equipment, supplied as one package: corrugated galvanized shell, vertical stiffeners, roof, ladders and the bucket elevator that fills it. The silo ships flat packed and ...
Assembly Galvanized Flat Bottom Silos for Corn Maize Grain Storage	Large diameter bolted silos built for maize and corn storage, where the capacity per square metre of yard matters more than anything else. Corrugated galvanized sheets are bolted ring by ring on a prepared slab...
Galvanized Steel Hopper Bottom Rice Paddy Grain Silo	A hopper bottom silo empties itself. The cone discharges the full contents by gravity, which suits paddy and rice stored in batches that change through the year and plants that want to load a truck or a conveyo...
Storage Silo for Wheat Flour Milling	Wheat storage built for a mill rather than for a trader. The silo holds wheat at a stable moisture so tempering behaves predictably, and the conveying route into the cleaning section is planned with the silo in...
Welding Type Silo for Liquid Material Storage	Not every stored material suits a bolted shell. Welded silos are built where the contents need a continuous sealed wall, typically liquid and fine powder material, and where the site can take a welded structure...
Poultry Feed Cone Granary	A cone bottom granary for finished feed and mash, sized for farms and feed plants that need the silo to empty completely between batches. The cone discharges by gravity into a conveyor, an auger or a delivery p...
Concrete Silo Project	Some sites store in concrete and process in steel. TITAN takes the project as a whole: the concrete cells built locally to drawing, and the cleaning, conveying, handling and control equipment supplied, installe...
Cone Bottom Silo With Concrete Foundation	TITAN assembled hopper bottom grain storage silo is made of high quality hot dip galvanized steel plate pressed into a wavy shape by special equipment, punched with standard connecting holes and joined with hig...
Flat Bottom Silos	Grain storage silos, also called grain storage bins, are the efficient and economical way to hold grain: they protect it from insects and outside influences and make handling manageable. The flat bottom range i...

Questions Buyers Ask

What silo capacity range can TITAN supply?

Flat bottom silos run from 1500 t to 20000 t per battery, and a single silo holds between 10 t and 15000 t depending on diameter and eave height. Larger volumes are built by combining silos into a group.

What diameters are available?

Silo diameters run from 2 m to 32 m and can be increased for special requirements. The ratio of height to diameter is normally kept between 1:1.1 and 1:2.

Do I need a concrete cone base or a flat base?

A cement cone base is used to unload by gravity when the capacity is large and the flat bin diameter is under 12 m. Above 12 m a half cone base or a flat base is built, and a spiral sweeper finishes the discharge.

How is the silo protected against rain and moisture?

Plates are hot dip galvanized, the roof uses a trapezoidal geometry sealed against the sidewall, and every bolt hole carries a waterproof daub belt with galvanized washers.

How does the silo ship?

Silos ship as flat packed corrugated sheets, stiffeners, bolts and accessories, which saves freight compared with a welded tank, and they are bolted together on your foundation.

Can the silo be insulated?

Yes. All TITAN steel silos can be designed and installed with a heat retaining layer for insulated grain storage.