

“My decision on storage was simple after visiting farms in Germany where I saw stores that had been up for over 20 years. They were as good as new. When I saw these the only option for me was to go for stainless steel for the appearance and extended lifespan. A store that will see through my sons farming career”

Mr Peter May,  
New Common Farm, East Yorkshire, UK

I am very pleased with my Finrone 304store, it has the whole package from residual value, strength, aesthetic appearance and being environmentally friendly. Exactly the solution I needed to tick all my requirements. A maintenance and corrosion free store I would recommend to any farmer.

Mr John Rigby, W. Rigby & Son Ltd,  
Highfield Farm, Buxworth, UK



# FINRONE 304STORE™

## ABOVE GROUND STAINLESS STEEL STORES



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Only Life Time Solution

Turnkey Farm to Store

Maintenance & Corrosion Free

Upto 1.75million Gallons

Easily Relocated & Versatile Application

# Stainless Steel Above-Ground Slurry Stores

Easy build above-ground agricultural storage offering a durable, flexible and cost effective solution for farms of all sizes

## AGRICULTURE STORAGE SOLUTIONS

- Stainless steel grade 304 is manufactured by adding chromium by at least 18% (also grade 316 available as an option)
- Stainless steel is a single material that provides a more stable structure at varying temperatures compared to competitors that use a combination of materials with different properties.
- Structurally designed to meet all relevant British (BS 5502), European and International Standards
- Only non-corrosive materials used
- Range of capacities to suit individual requirements up to 1.2 million gallons
- Design options to extend capacity at a later stage
- Unique assembly and joint design in which sealant is used only for its sealant properties and not to protect against corrosion



- Design enables store to be back-filled up to 1m after construction if required
- Base design maximises storage compared to competitors
- Can be designed to accommodate a cover
- Each store (including base) is certified by a Chartered Engineer. This may be a requirement for government grant schemes.



## COVERS

Covers are normally fitted during store assembly but can also be fitted retrospectively as the standard base is designed to support a cover at a later stage. Advantages of cover:

- increases storage capacity by eliminating rainwater. Also without a cover there is a requirement for a free-board allowance i.e. the store cannot be filled right to the top due to wind disturbance at the surface which could lead to spillage.
- reduces ammonia emissions and therefore reduces smell
- meets legislative requirements e.g. IPPC

### Features of Cover

- Polyester coated with PVC-P
- UV resistant
- High tensile strength
- Resistant to tearing
- Colours – green or silver



Full project management from site excavation to final build Assembled on-site by Finrone Systems highly trained and specialised team

## What is Stainless Steel Grade 304?

Stainless Steel Grade 304 is manufactured by adding chromium by at least 18%.

## Why choose a Stainless Steel Store?

### Resistant to Corrosion

Stainless steel is naturally protective due to the manufacturing process where a high level of chromium is added along with nickel to give stainless steel its unique properties. These properties make it resistant to farm liquids, slurries, effluents and acids produced during slurry storage. If scratched or damaged this does not have any effect on the anti-corrosive properties

### Strength

The mechanical properties of stainless steel gives it a much greater strength than other materials. This enables thinner sheets to be used and still provide higher strength than other steel materials.

### Long Term Value

Long term value - Stainless steel may be more expensive initially, but the extra value is offset by the durability and longevity of the steel, and significant

cost savings are achieved in the long run. Therefore, when the total life cycle costs are considered, stainless steel is often the least expensive option.

### Aesthetic Appearance

The smart, easily maintained surface of stainless steel provides a modern and attractive appearance. Stainless steel grade 304 has a matt, light grey appearance which will remain unchanged and will remain smart and tidy over its long lifespan.

### Environmentally Friendly

Stainless steel is 100% recyclable. The longevity of stainless is the result of its composition and, therefore, it has a natural corrosion resistance. Nothing is applied to the surface. It does not need additional systems to protect the base metal, the metal itself will last. Stainless steel needs less maintenance and is more hygienic than other corresponding materials.



## Tank Options and Sizes Available

Gallons (000s)	Cubic metres	Tank Type	Tank Diameter	Tank Height Metres	Tank Floor Area M²	Gallons (000s)	Cubic metres	Tank Type	Tank Diameter	Tank Height Metres	Tank Floor Area M²
101	455	15.2	13.89	3.00	158.14	325	1460	19.4	17.6	6.00	251.65
115	517	16.2	14.82	3.00	179.55	326	1468	22.3	30.38	4.50	335.89
130	584	17.2	15.75	3.00	202.32	357	1603	23.3	21.3	4.50	366.44
132	595	14.3	12.97	4.50	138.3	360	1618	20.4	18.53	6.00	278.48
146	655	18.2	16.67	3.00	226.18	388	1747	24.3	22.23	4.50	398.67
152	682	15.3	13.89	4.50	158.14	397	1783	21.4	19.45	6.00	306.35
162	730	19.2	17.6	3.00	251.65	422	1896	25.3	23.16	4.50	432.26
173	776	16.3	14.82	4.50	179.55	435	1957	22.4	20.38	6.00	335.89
177	793	14.4	12.97	6.00	138.3	475	2138	23.4	21.3	6.00	366.44
180	809	20.2	18.53	3.00	278.48	518	2329	24.4	22.23	6.00	398.67
195	877	17.3	15.75	4.50	202.32	562	2528	25.4	23.16	6.00	432.26
198	891	21.2	19.45	3.00	306.35	601	2733	26.4	24.08	6.00	455.52
202	909	15.4	13.89	6.00	158.14	648	2948	27.4	25.01	6.00	491.27
218	979	22.2	20.38	3.00	335.89	697	3170	28.4	25.93	6.00	528.32
219	982	18.3	16.67	4.50	226.18	748	3400	29.4	26.86	6.00	566.72
230	1035	16.4	14.82	6.00	179.55	800	3639	30.4	27.79	6.00	606.46
238	1069	23.2	21.3	3.00	366.44	855	3886	31.4	28.72	6.00	647.60
244	1095	19.3	17.6	4.50	251.65	911	4140	32.4	29.64	6.00	690.04
259	1164	24.2	23.23	3.00	398.67	969	4403	33.4	30.57	6.00	733.83
260	1169	17.4	15.75	6.00	202.32	1,028	4674	34.4	31.49	6.00	779.01
270	1214	20.3	18.53	4.50	278.48	1,090	4953	35.4	32.42	6.00	825.50
281	1264	25.2	23.16	3.00	432.26	1,153	5240	36.4	33.35	6.00	873.33
292	1310	18.4	16.67	6.00	226.18	1,218	5535	37.4	34.27	6.00	922.50
298	1337	21.3	19.45	4.50	306.35	1,522	6,920	37.5	34.27	7.50	922.50

For base size add 1.2m to tank diameter / Additional sizes available on request

# Turn-key Solutions

As part of Finrone Systems service to our customers we provide turn-key farm solutions from green-field to a finished farm storage system. We can also advise on various mixing systems, pumps and on the most effective way to transfer slurry from existing underground stores

## BASE DESIGN AND CONSTRUCTION

When deciding on a site for your store the following points need to be considered:

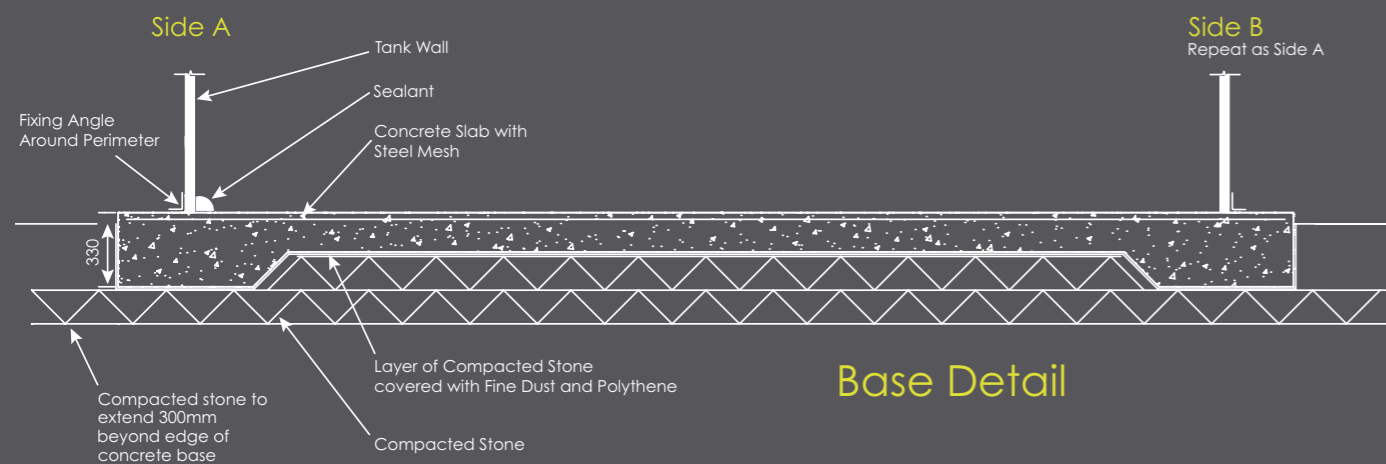
- Ground composition and consistency e.g. does your proposed site contain rock which is not always suitable
- Site accessibility for construction and slurry handling
- Sites that are not level need careful consideration and may require extra base design specifications

The store is built on top of the base which has a number of advantages – maximises storage and can be more easily removed in the event of relocation.

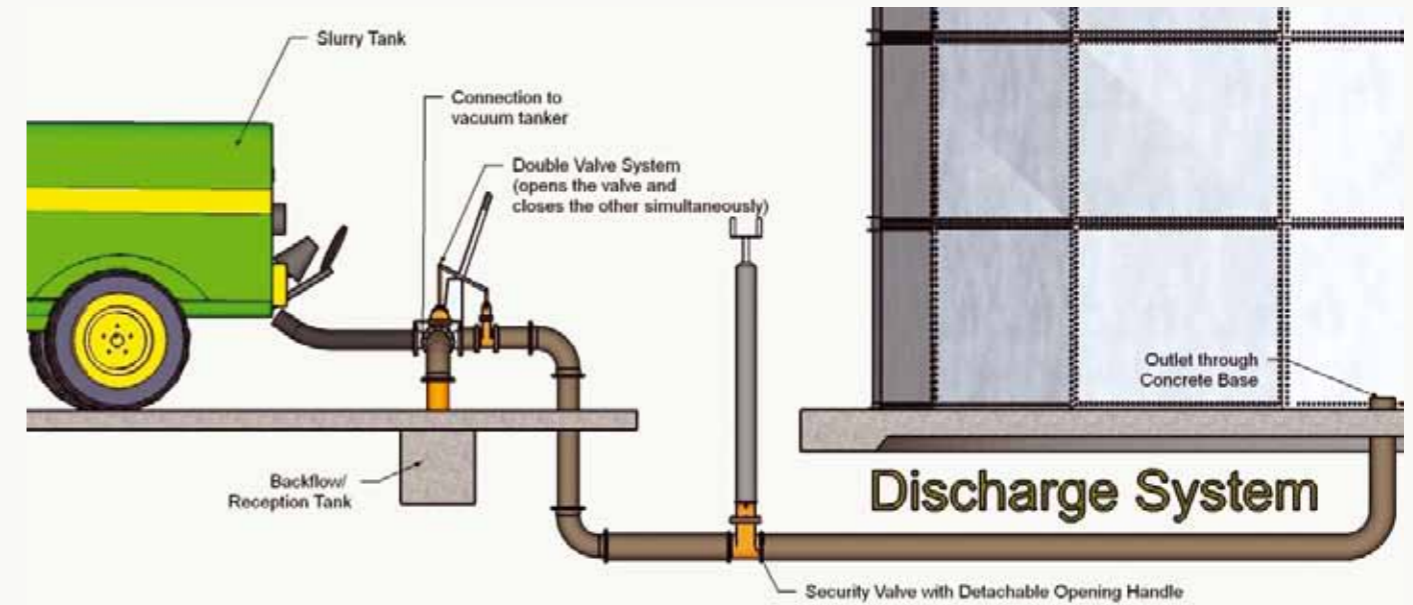
Standard base is designed to support the weight of the cover at a later stage, or to extend the tank height up to 6m if required.



Base during concrete-laying



Base Detail



## FILLING AND EMPTYING OPTIONS



**Filling:**  
The store is normally filled through a 125mm fill-pipe that goes over the top of the store and bends downwards into the store at 135°. This fill-pipe is open-ended.



The options available for transferring slurry to the fill-pipe and into the store are as follows:

- Underground PVC pipe or overground flexible pipe with slurry normally transferred from existing buildings via a tractor-driven lobe pump.
- Tractor and vacuum tanker
- Pumped from a reception tank through fill-pipe

### Emptying:

The main system used by Finrone Systems customers for emptying stores is the unique valve system where the discharge pipe runs under the base through a security valve leading to a 2-way valve. The 2-way valve provides a connection point for the slurry tanker or umbilical system.

This provides a totally enclosed transfer system thereby reducing smells. A small backflow/reception tank collects the remainder of the slurry that is left in the slurry pipe after the tanker is filled and the valve has been closed

Finrone Systems can also provide the conventional method for emptying through a reception tank alone, without the enclosed valve system

### Benefits of the combined valve / reception tank

- Unlike systems using only a reception tank, they require no management during filling
- Reduces the risk of slurry spillage
- Can be integrated into the enclosed mixing system with lobe pump. This provides a more powerful mixing system which can be left unsupervised.



## MIXING SYSTEMS

Finrone Systems stores are suitable for all types of mixing systems. Essential to any above-ground slurry store is a good mixing system to prevent crusting and sedimentation. The mixing system is integrated into the store during assembly. Unique to the Finrone Systems storage system is the stainless steel double jetters which are supplied with slurry through a tractor-driven lobe pump.

### Jetter Mixing System

The Finrone Systems double jetter system is the most popular mixing system used. This is the only system that can enable the farmer to direct the mixing jetstream consistently to a precise point. It also has the following features:

- Simple mechanism for switching between top or bottom nozzle
- Directable on both horizontal and vertical planes

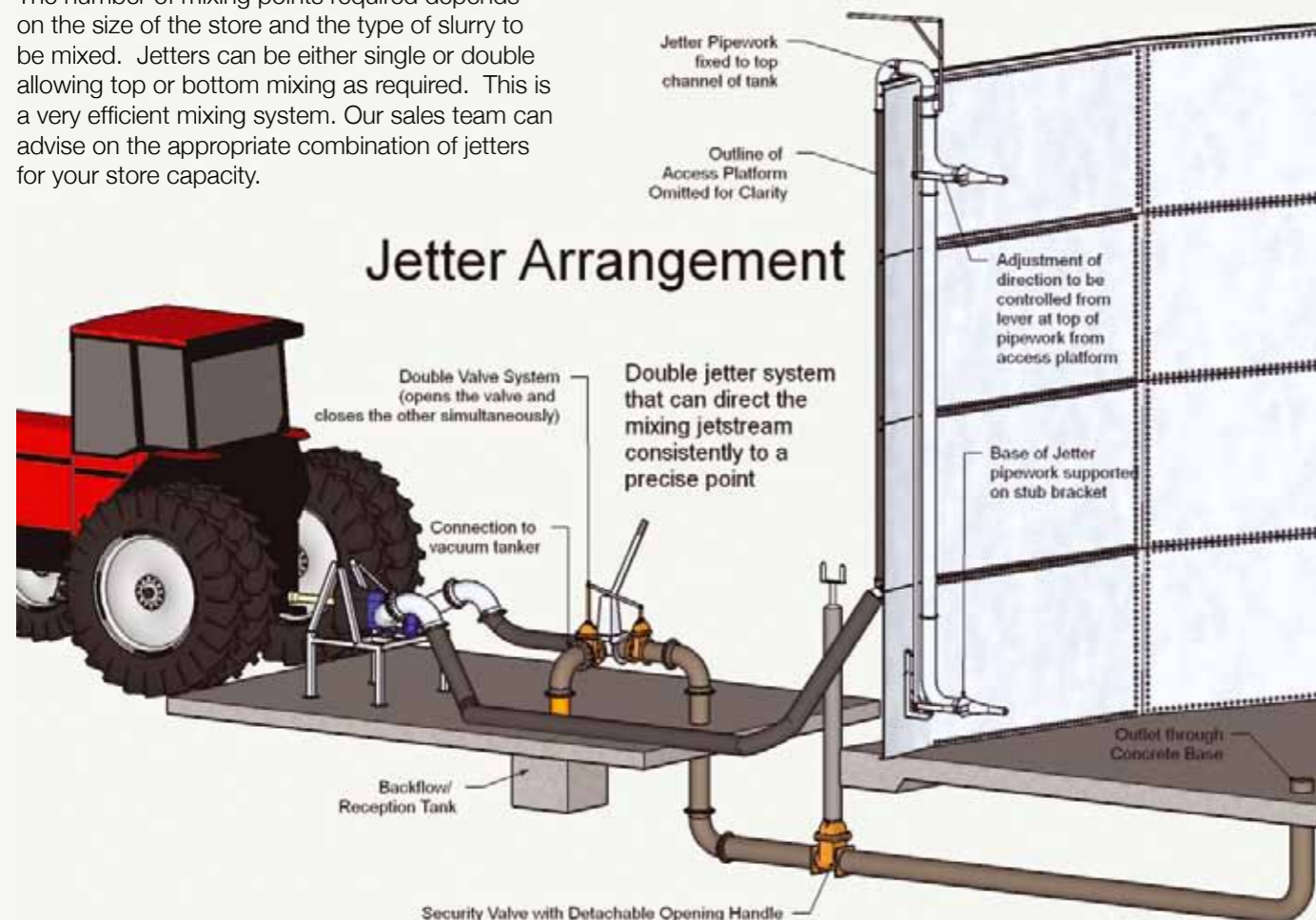
- Jetter mixing system specified according to the diameter of the store
- Robust and easy to operate
- Durable (made from stainless steel grade 304) and reliable
- No maintenance requirements
- Economical, effective mixing system

An integral part of the mixing system is a tractor-driven lobe pump. This pump is a most efficient way to transfer slurry and can also be used with an umbilical spreading system.



The jetter system is fitted to the walls of the tank and slurry is pumped from the valve outlet, through the jettors using a rotary lobe pump. The jettors can be angled either horizontally or vertically depending on the depth of slurry in the tank.

The number of mixing points required depends on the size of the store and the type of slurry to be mixed. Jettors can be either single or double allowing top or bottom mixing as required. This is a very efficient mixing system. Our sales team can advise on the appropriate combination of jettors for your store capacity.



### Tractor-Driven Lobe Pump

- Self-priming
- Valveless
- Simple reversible design to allow change of flow
- Design allows on-farm maintenance
- Robust
- Powerful and can lift slurry from a depth of up to 6m and can pump up to 40,000 gallons/hour to a distance of 1,000m
- Engineered to a high standard
- Requires only a low horse-power tractor for operation.

### 3-Phase Electric Submersible Mixer

- Mixing can be set up through an automated control panel as required. This is the only automated mixing system.
- Height adjustable
- Angled by a rotatable stainless steel slide rail
- 3 sizes available to suit a wide range of store diameters
- highly efficient and effective mixing system



### Platform and Ladder

Each store can be fitted with at least one platform and ladder (depending on size and number of mixing points) to allow adjustment of mixers and for store and slurry inspection. The platform is designed with safety rails and the ladder is detachable to prevent children climbing up to the store.

### Tractor Driven PTO Mixer

- Requires 85hp tractor
- Simple system which is suitable for smaller stores and bottom mixing
- Does not require electricity
- Low maintenance with sealed bearings
- Available galvanised or stainless steel