



SILOS AND EQUIPMENT

Quality, strength and efficiency
– a silo for your specific project...





Standard equipment for the Sukup silos

- Big inlet with lid at the top of the silo
- Roof ladder with railing and non-skid steps
- Chemical anchor bolts for precise and strong anchoring
- Flexible sealant between silo and foundation
- Large external access door fitted with safety device
- Large external ladder with safety cage
- Internal inspection ladder
- Large roof manhole with safety railing and safety switch



- Sukup quality product from USA
- **EUROCODES approved**
- Silo diameter: 4.6 m – 47,5 m
- Height of the silo wall: 4.5 m – 26.8 m
- Capacity from 51 t to 34.720 t of wheat with external stiffeners
- Strong construction
- Designed with regards to the Eurocode
- Grain storage at a low price
- Well-tested construction
- Galvanized steel construction
- Minimum work efforts during filling and unloading
- Spiral staircase and roof ladder
- Rest platform and accessibility that comply with the regulations

The silos are delivered in industrial quality with strong external stiffeners and delivered in sections for easy and quick on-site assembly. The roof is designed in light-weight sections with shaped stiffeners for stiffness and easy assembly.

The silos are extremely strong and can therefore be fitted with catwalks and conveyor systems without the need of additional stiffening. Aeration and drying equipment including floors, fans, roof vents, stirring system, loading and unloading equipment, external level sensors, equipment for temperature monitoring are available options.

To get the best possible aeration, a fully perforated floor can be supplied. The floors are available for either grain or rapeseed. The rapeseed floor can also be used for aerating grain.

To control the storage stability of the grain, temperature monitoring devices are available. The temperature should be measured in different locations and different heights in the silo.





▶ Sizes

Sukup silo program covers many different sizes and for every purpose. Smaller and larger silos than shown in the table are available.

On the back side of this brochure are shown a few examples. Ask us for more information to cover the complete program.

For more details please check www.sukup-eu.com

▶ News

The world's largest stirring silo

Content with stirring 1.616 t.

Diameter 60 feet = 18.24 m.

Height: 14.58 m.

This unique silo comes with 5 stirring augers to ensure a perfect mixing of the dried grain and a homogenous quality of the dried crops.

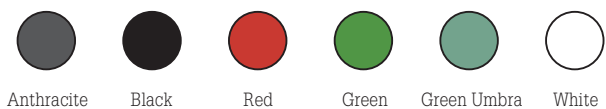


▶ When the colour matters...

Sukup silos are also available with a painted surface. The hot dip galvanized silo sheets are degreased where-upon they are painted with a durable powder coating.

You may choose between all standard 1.625 RAL colors – this means that we can always adapt the silo project to your specific requirement.

RAL colours:



Anthracite Black Red Green Green Umbra White





▶ Sukup Stirring System

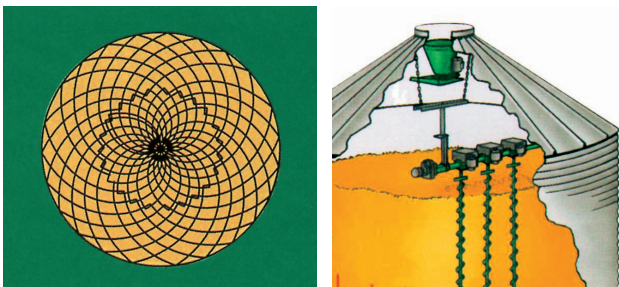
With the Sukup stirring system you can easily dry and store moist grain in up to 7,5 m grain depth in our outdoor storage bins.

The drying process must be activated as soon as an even grain layer (0.5-1 m) is in the bin.

Warm air is introduced through the fully perforated floor. The lowest grain layer is dried during constant stirring via the 2 – 5 pcs. vertical stirring augers mounted on the horizontal cross-tube. Uniform drying of the grain is achieved by the action of the vertical augers stirring back and forth along the horizontal cross-tube.

The cross tube rotate slowly horizontal around the silo. This forces the down augers to move in and out on the cross tube. The down augers rotate and bring the dried grain from the bottom of the silo to the top. This secures a complete mixing of the crop.

- Drying of storage silos
- Homogeneous drying
- Large capacity
- Simple operation
- Even distribution in the silo
- Minimal maintenance
- Well-proven and patented equipment
- Simple construction and design
- Complete mixing of different grains
- Minimum operational effort required



All stirring systems are CE-approved and preassembled and tested at Sukup's own workshop in Hedensted.

▶ Fan and Heating

The fan must be powerful enough to push the air through the grain layer. All heating sources normally used for drying grain in flat storage can be used. This can be oil, gas, hot water etc.

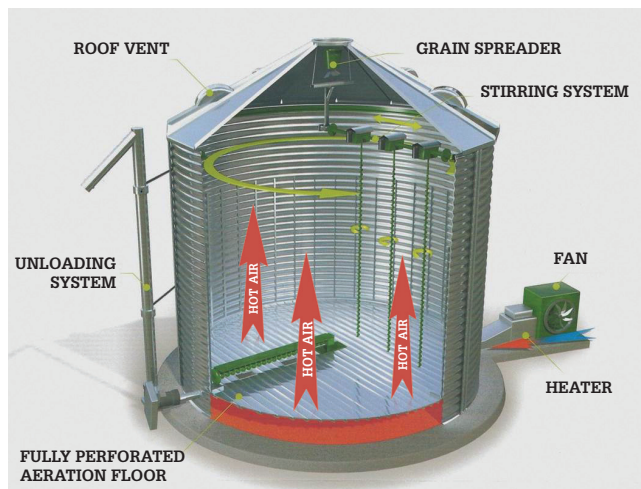
▶ Grain Spreader

In order to ensure an efficient and even distribution of the grain in the silo, a grain spreader is mounted directly below the inlet at the top of the bin. The grain spreader adjustment is infinitely variable to spread the grain evenly and homogeneously in the silo.

▶ Stirring System

The system has a horizontal hanging cross tube with 2-5 down augers, which ensure complete stirring and mixing of grain in the silo. Warm air is supplied while the silo is being stirred, thereby achieving a completely uniform drying of the grain.

The airflow through the grain is increased by up to 33 % because of the stirring. When the grain is stirred, "wet" spots in the bin are avoided. It is also possible to make a perfect mixture of e.g. barley and wheat in the silo.





Unloading system

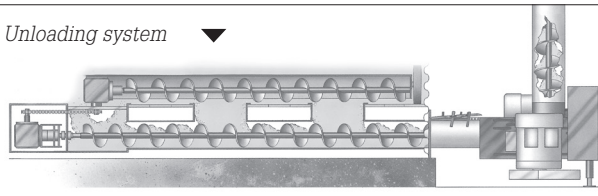
The Sukup unloading system for steel silos consist of an unloading auger with a drive unit, a center sump and a number of intermediate sumps operated by an external handle.

The drive unit is available in 3 different models:

(1) a horizontal drive unit with an extension facility, (2) a 25° incline drive unit or (3) a vertical drive unit to enable vertical unloading directly into a truck or conveyor system.

In addition to the unloading auger, a sweep auger can be mounted which enables the silo to self-empty almost 100 %.

Unloading system ▼



- Flexible construction
- For silos with a diameter from 4.6 to 32.0 m
- Available in 6" (152 mm), 8" (203 mm) and 10" (254 mm) augers
- Capacities up to 35, 65 and 100 tons/h

Sukup HD-Floors

Sukup HD-Floors is delivered with half of the distance between the stiffeners, which in return results in a significantly stronger flooring than traditional aeration floors.

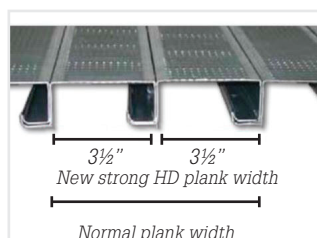
All Sukup HD-Floors is delivered with improved clearing by the fan opening, this result in lesser air resistance and gives a better aeration of the crops.

The HD-Floors can be delivered with Ø2,39mm and Ø1,27mm perforations, suitable for grain and rape seeds.

SuperWave™ Supports ▼

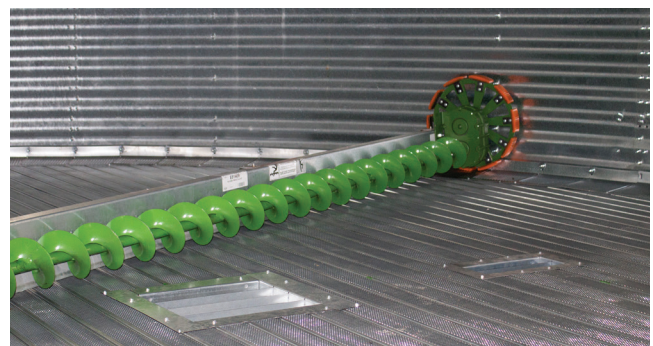


Sukup HD-floor ▼



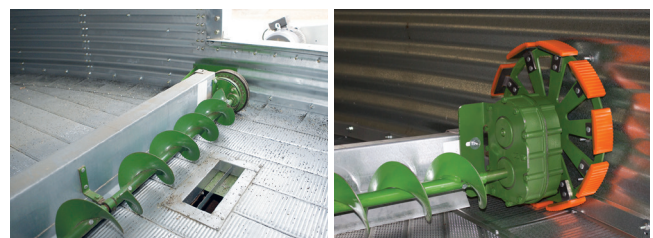
Emptying the silo

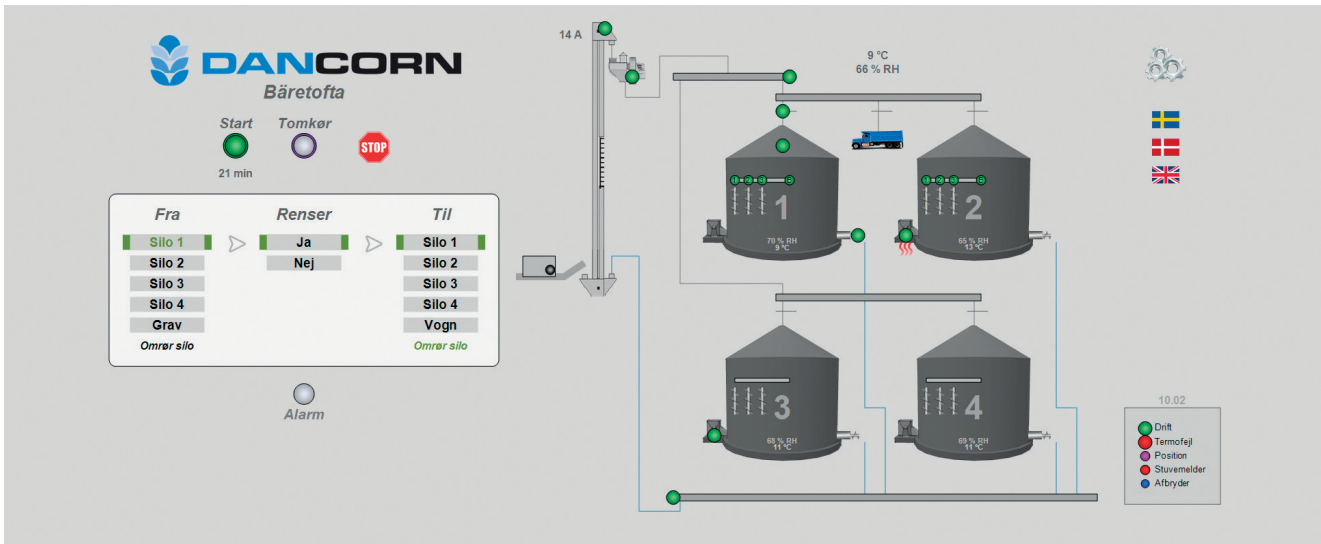
- The unloading auger is activated, the centre sump is opened with the remote control. The centre sump leaves a cone of grain in the silo.
- The intermediate sumps are opened with the remote control and the grain above the sweep auger unloads.
- The sweep auger is activated. After only one rotation, the silo is almost 100 % empty.
- Sukup unload systems are as standard delivered with extra big emergency outlet close to the silo center outlet.



Sukup sweep auger mounted with the standard wheel ▼

The sweep auger can also be delivered with extra reduced speed on the drive wheel, ratio 16:1 ▼





Sukup Control Panels

A good Sukup silo installation includes a control panel adapted to your specific wishes and requirements. Our control panels are available for all project sizes from one single silo to large commercial installations with conveyor system and dryer.

All control panels are tested before delivery in order to make sure that everything works perfectly. All control panels are manufactured according to the Danish legislation.

Sukup control panels:

- Standard control panel for simple installations
- PLC / PC solutions for all silo installations with several silos and conveyor system

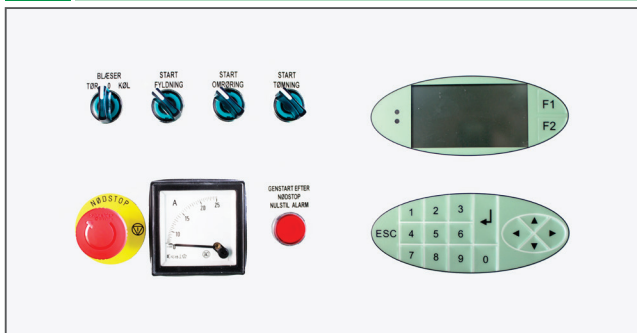
Contains starters for fan, grain spreader, stirring system, unloading system and the option to build in a starter for 3 external motors. Including time management of the stirring system and unloading system and the option to control the heating source.



Silo installation with a shed for control panel, distribution board and enough space for a table for crop analysis equipment etc. You can easily inspect the space and intake pit.



Standard control panel for drying silo



Display with an overview

Touch screen for control panels for Sukup silo installations are available in many sizes adapted to your specific requirements. The large screen gives you a perfect overview of all operations of the silo installation.

PLC / PC control panel for all sizes of silo installations with more silos and conveyor system.

Advanced control panel with touch screen from which the whole installation can be controlled and observed. Including starters for all motors of the installation. Flows are shown and started from the user surface.

Sukup control panels give you opportunity to:

- Go into more detailed overviews showing the control of the intermediate processes of the installation
- Read historic operational data
- Build in e.g. temperature surveillance in storage silos
- Remote control / surveillance of the installation from your office through the Internet
- Get access to troubleshooting, service and updating of the program via the Internet.



Sukup Hopper silo

- Designed and manufactured in the USA
- Diameter from 4.57 to 10,97 m
- Capacity from 59 to 1.730 tons of wheat
- Volume from 78 to 2.277 m³
- 45° / 60° cone shaped hopper

Extra Accessories:

- Strong Roller-Gate outlet slide
- External ladder with safety cage
- Roof ladder to the top of the silo
- Inspection door in the roof sheet
- Inspection door in the sidewall sheet
- Inspection door in the cone sheet

Sukup hopper silo is an excellent wet holding silo for Sukup dryers, truck loading silo and self emptying storage silo.

The hopper silo is made of galvanized sheets in order to extend its lifetime. The hopper silo is delivered with a top ring on which an industrial lid for e.g. conveyor system or catwalk can be mounted.

With its 78 cm the rack-and-pinion steered Roller-Gate outlet slide on the hopper silo ensures sufficient space for mounting conveyor system.



Accessories

Standard roof vents on the roof, industrial lid as well as full level sensors.



Sizes - Silo

Diameter

Volume weight 0.76 ton/m³. With max. 6% compression in higher grain layers. Require refilling after drying.

Silo diameter (m)	7,32	9,14	10,97	12,80	14,60	16,41	18,24
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Eave Height 6,73 m

Type	2406	3006	3606	4208	4806	5406	6006
Silo total height	8,93	9,47	10,11	10,64	11,17	11,79	12,34
Max. Content (ton)	246	393	578	803	1069	1391	1751
With aeration (ton)	235	376	554	770	1026	1336	1684
With stirring (ton)	194	302	435	592	770	963	1142

Eave Height 7,85 m

Type	2407	3007	3607	4207	4807	5407	6007
Silo total height	10,05	10,59	11,23	11,76	12,29	12,90	13,46
Max. Content (ton)	283	451	663	917	1220	1581	1985
With aeration (ton)	272	434	639	884	1177	1526	1919
With stirring (ton)	230	359	518	705	917	1163	1379

Eave Height 8,97 m

Type	2408	3008	3608	4208	4808	5408	6008
Silo total height	11,17	11,71	12,35	12,88	13,41	14,02	14,58
Max. Content (ton)	320	510	745	1033	1369	1770	2220
With aeration (ton)	309	493	721	1000	1326	1717	2153
With stirring (ton)	266	416	601	818	1064	1355	1616

Sizes – Hopper silo

Diameter 4,57

Type	1503	1504	1505	1506	1507	1508	1509	1510	1511
Hopper silo total height	7,85	8,69	9,80	10,92	12,03	13,15	14,26	15,38	16,49
Max. content (m ³)	78,2	97,5	116,7	136,0	155,2	174,5	193,8	213,0	232,3
Max. Content (ton)	59,5	74,1	88,7	103,3	118	132,6	147,3	161,9	176,5

Diameter 5,49

Type	1803	1804	1805	1806	1807	1808	1809	1810	1811
Hopper silo total height	8,69	9,52	10,64	11,75	12,84	13,98	15,10	16,19	17,33
Max. content (m ³)	118,4	146,2	173,9	201,6	229,3	257,1	257,1	312,5	340,3
Max. Content (ton)	90,0	111,1	132,2	153,2	174,3	195,4	195,4	237,5	258,6

Diameter 6,40

Type	2103	2104	2105	2106	2107	2108	2109	2110	2111
Hopper silo total height	9,42	10,26	11,37	12,49	13,60	14,72	15,83	16,95	18,06
Max. content (m ³)	169	206,7	244,5	282,2	320,0	357,7	395,5	433,5	471,0
Max. Content (ton)	128,4	157,1	185,8	214,5	243,2	271,9	300,5	329,2	357,9

Above models are examples only. Ask us for more information to cover the complete program.

For more details please check www.sukup-eu.com

