



# SOLUTIONS FOR AGRICULTURE AND BIOGAS

For guaranteed quality and optimum silage preservation







## WHY CHOOSE CBS BETON?

### Decades of experience in agriculture

In 1998, Henk Ciers started producing retaining walls under the name CBS Beton. The range was gradually expanded to include a wide selection of trench silo walls.

We have invested heavily in automation and employ some 200 motivated employees.

### Quality – Certificates – Service

Since our founding in the late 1990s, production in Wielsbeke has evolved enormously, in both quality and organisation.

We constantly work to meet the demands of the marketplace in terms of **quality** – we have our own lab where samples are taken from production every day. We also have the necessary **certificates**. And we have the enthusiasm required to continue to earn them.

And last but not least ... CBS Beton also offers a **comprehensive logistics service**, from loading your truck to organising deliveries to the job site, with or without positioning from the truck. You ask, we produce and deliver.







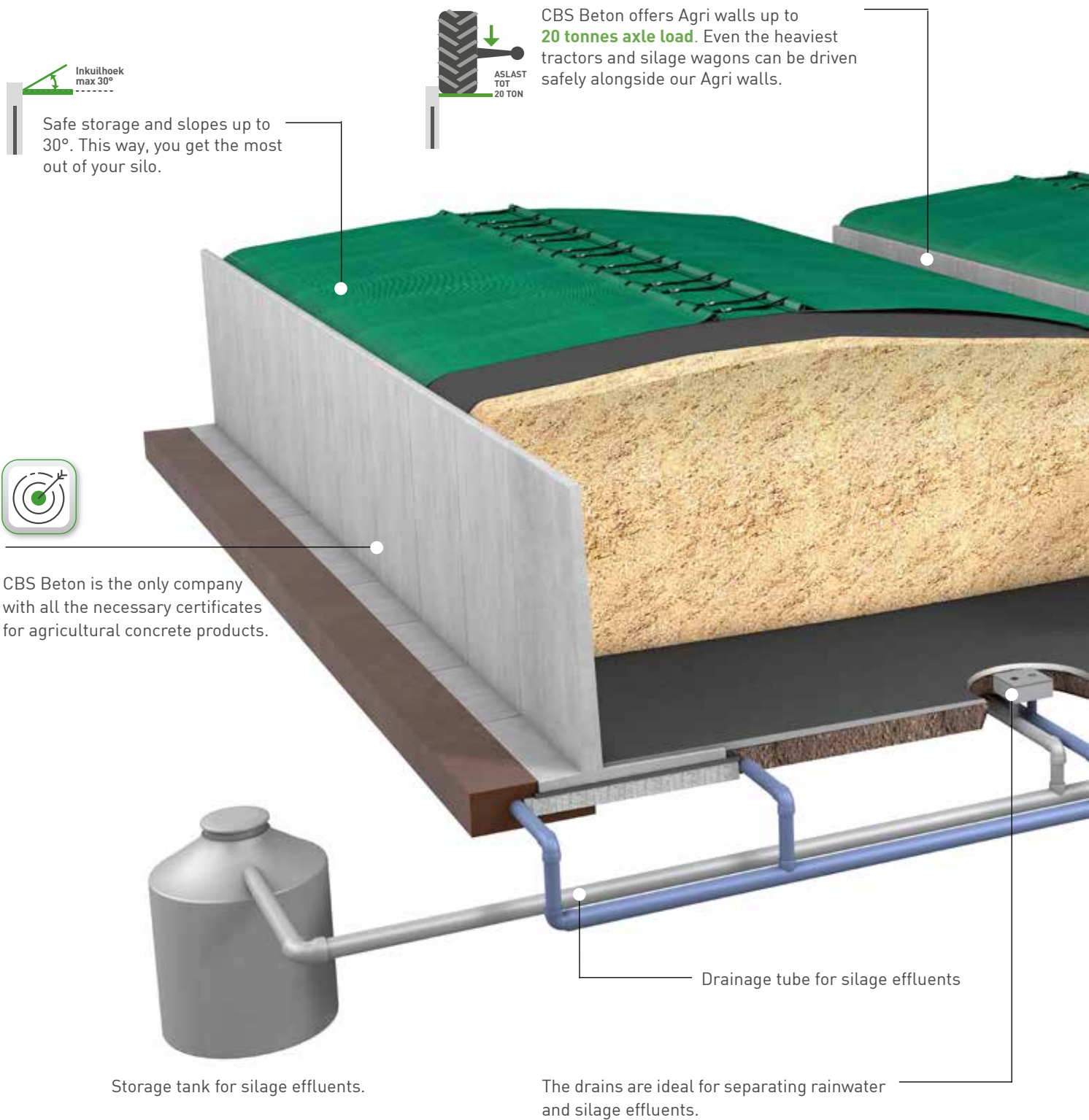
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# TRENCH SILO

Get the maximum return from your trench silo



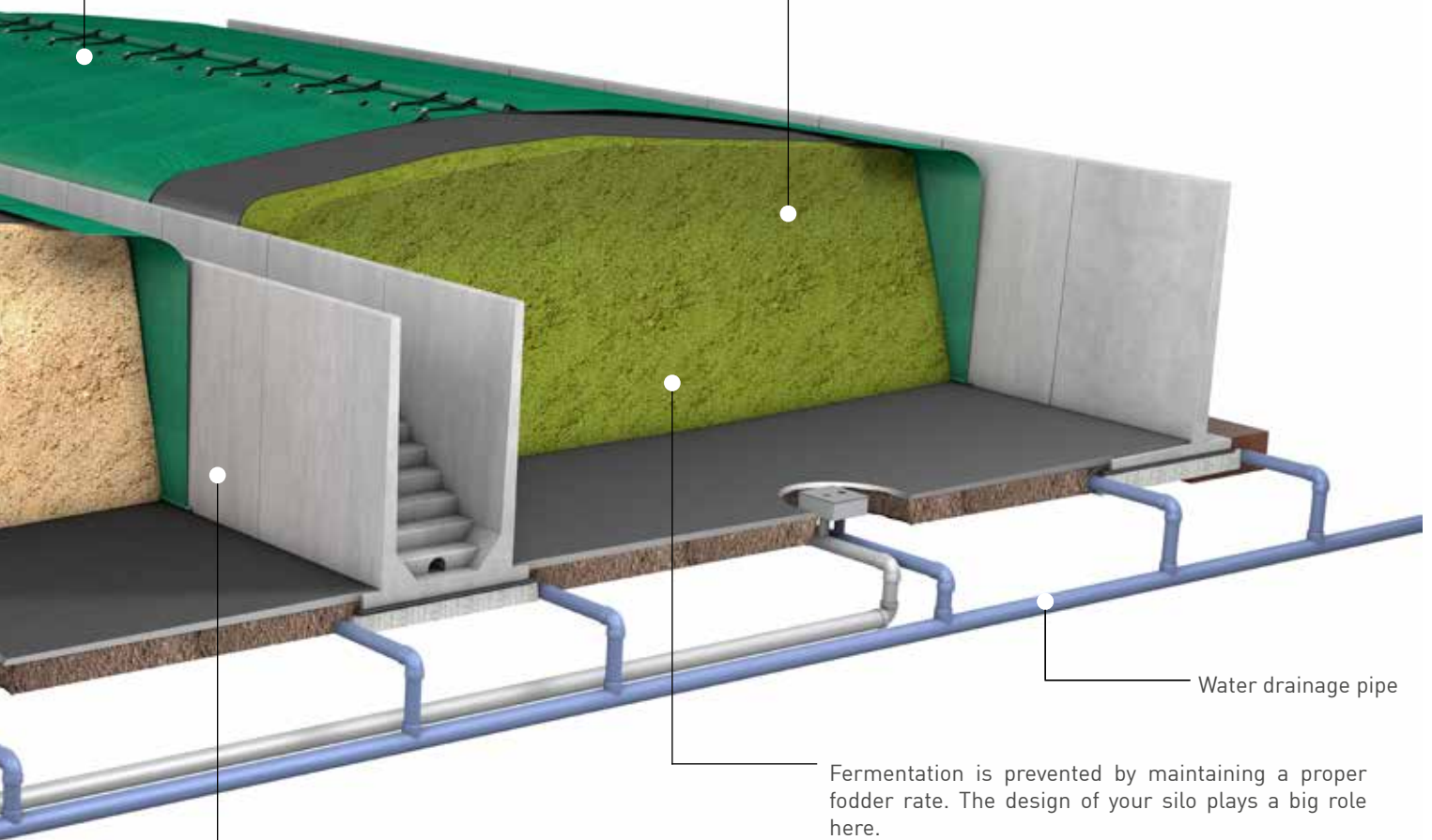


## Silage Safe

The Silage Safe cover system guarantees optimum preservation of your silage, combined with unique juice drainage. Besides being back-saving and ergonomic, it is also very efficient.



A dry matter content of 35 % on average ensures better fodder and therefore more milk.



Water drainage pipe

Maintain and check your trench silos at regular intervals.

Fermentation is prevented by maintaining a proper fodder rate. The design of your silo plays a big role here.

### What to consider when buying a trench silo?

- Which kind of silage will I ensile?
- What storage capacity do I need and are there future expansion plans?
- What load should the walls be able to handle?
- Which cover system do I want to use?
- How can I separate rainwater and silage effluents?
- How should the trench silo be orientated?
- What certificates are required?



# Standardization, design, production & quality control

## Did you know ...

CBS Beton is the **first manufacturer** to hold a **BENOR certificate** obtained for prefabricated agricultural concrete products in the wall and/or retaining wall elements category for silo and cellar walls. This certificate guarantees that all concrete elements are designed and produced to maximise their lifespan. Our walls also comply with all Belgian and European standards. CBS Beton has an in-house design and engineering office which allows us to develop an appropriate proposal to avoid surprises during the implementation of your project.

CBS Beton's concrete products are manufactured in accordance with **European concrete standard NBN EN 206: 2013 + A2: 2021** and **Belgian national supplement NBN B 15-001: 2018**.

**Our retaining walls are designed in accordance with the applicable standards.**

- NBN EN 1990: Eurocode 0 - Basis for structural design + national annex
- NBN EN 1991: Eurocode 1 - Loads on structures + national annexes
- NBN EN 1992: Eurocode 2 - Design and calculation of concrete structures + national annexes
- NBN EN 1997: Eurocode 7 - Geotechnical design + national annexes

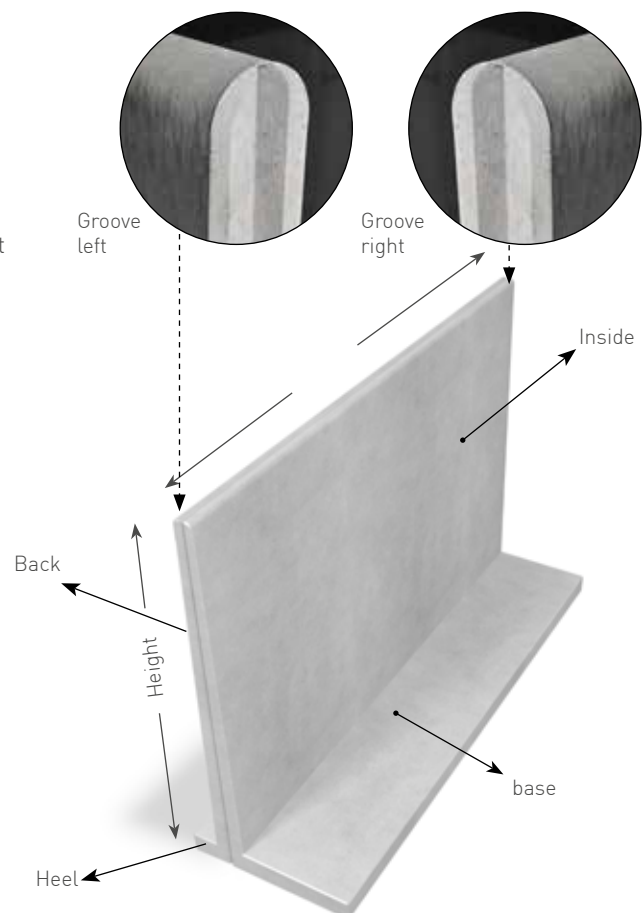
## Design principles

**Concrete strength class: high-strength concrete C60/75**  
**Environmental classes (NBN EN 206: 2013 + A2: 2021)**

- XC4: corrosion by carbonation, concrete with reinforcement exposed to air and moisture, alternately wet and dry
- XD3: attack by chlorides such as de-icing salt, alternating wet and dry
- XS3: tidal, splash and spray zone
- XF4: frost, with or without de-icing salts: high water saturation with de-icing salts
- XA3: highly aggressive chemical environment according to table 2 of NBN EN 206: 2013 + A2: 2021

**Environmental classes (NBN B 15-001:2018)**

- EE4: frost and de-icing salts (presence of locally thawed deicing water)
- ES4: sea environment: tidal and splash zone
- EA3: highly aggressive chemical environment





# Proper compaction

A high wheel pressure is vital for properly compacting your silage pit. The higher the axle load, the better the silage compaction. This applies to every pit: corn, grass or "lasagna". The higher the wheel pressure, the better the compaction.



## An edge distance of 0 cm!

Our silo walls are designed so you can drive right up to the edge. This allows the entire width of the silo to be used to compact the silage. This is the best way to preserve your silage.

## Axle load



The axle load is calculated by dividing the mass of the compactor by the number of axles (so usually by 2). At CBS Beton, all walls are calculated with an edge clearance of 0 cm so that you can drive over the full width of your silo. Here, CBS Beton meets the strictest standards. When choosing your new silo, it is very important to check both the axle load and the edge clearance.

The use of tandem and tridem combinations requires a special calculation. If you want to drive these machines to the edge, it is best to contact our engineering office.

## That is why you choose CBS Beton

- ✓ The factories of CBS Beton are certified according to the CE marking 2+. This means that the entire design and production chain is controlled by an externally recognized inspection organisation. As a result, all products are CE marked.
- ✓ All products are manufactured in certified high-strength concrete C60/75, which is the highest strength class in the market. Moreover, they meet the highest chemical class XA3 [EA3].
- ✓ All visible surfaces have a smooth surface. Through the use of self-compacting concrete, they are also very dense and meet the highest visibility class.
- ✓ Thanks to the unique single-phase pouring system, the wall-floor connections of the agri-walls are watertight.
- ✓ In our range, you will find walls with an axle load of up to 20 tons with edge distance 0 cm.
- ✓ The quality is also found on the inside. All reinforcement is produced in our own steel company CCS-Steel.
- ✓ Our installation service guarantees fast and professional installation. Your silo can be used immediately after installation.
- ✓ The kit service offers the right solution to seal your trench silo. This way, air and water are kept out of your trench silo. Our specialists are happy to propose a customized sealing system for you.





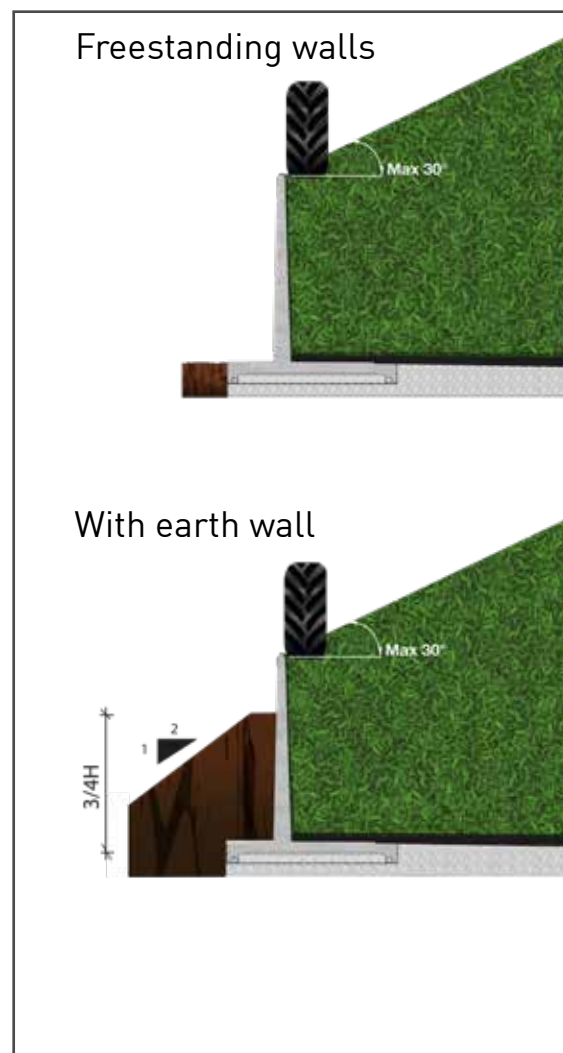
# OUTER AND INTERMEDIATE WALLS

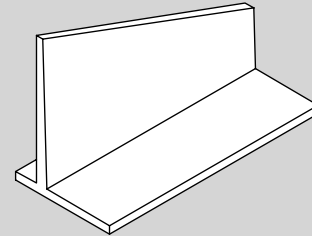


Axle loads on outer L-walls		
PRODUCT	FREESTANDING	WITH EARTH WALL
CLF10AM	7 ton	10 ton
CLF10A	10 ton	15 ton
CLAGRI	15 ton	20 ton
DLAGRI	20 ton	20 ton

Axle loads intermediate walls U&T	
PRODUCT	DOUBLE-LOADED
CTAM	7 ton
CTA	10 ton
CTAGRI	15 ton
CUAGRI	15 ton
ETAGRI	20 ton

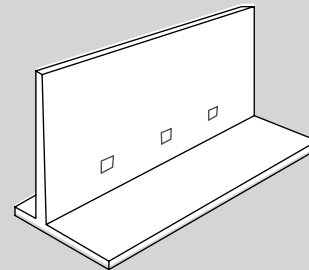
Axle loads intermediate & outer walls	
PRODUCT	DOUBLE-LOADED
CSAN	7 ton





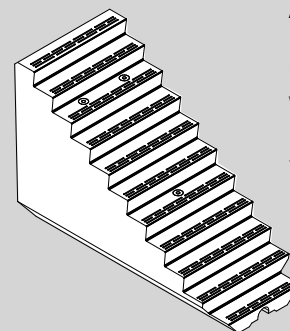
## BEVELLED WALLS

On request or according to design, our walls can be bevelled. Customisation is not a problem.



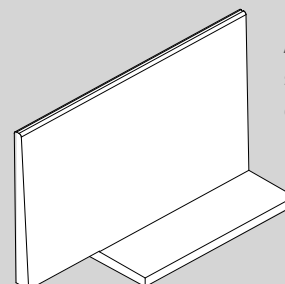
## WALLS WITH MAIZE BRACKETS

We can provide stainless steel maize brackets in the walls.



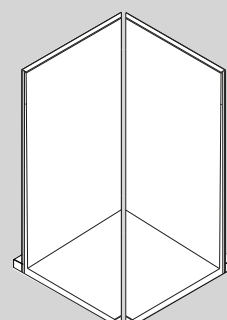
## AGRI STAIRS

Our U-walls can be fitted with stairs at the end. There is a recess for drainage at the bottom.



## CORNERS

Any desired corner is possible. Overlapping or mitred corners are used.







# PRESERVATION OF CORN, GRASS

# PRODUCTION OF BIOGAS

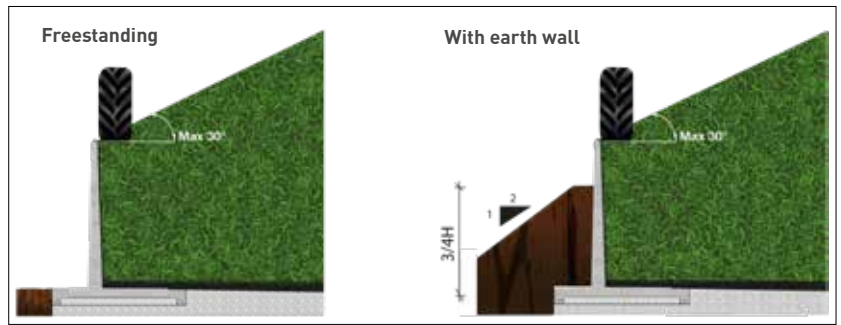


# AGRI L-WALLS

STORAGE: MAIZE, GRASS - BIOGAS PRODUCTION

Completely smooth

- Measuring and fitting possible
- Length adjustment
- With bevel
- Modification for corner formation



**MODIFIED/ADDITIONAL ELEMENTS**

Agri L-corner section

With bevel

2-piece corners

## AGRI L-WALLS FREESTANDING 7 TONS - 10 TONS AXLE LOAD WITH EARTH WALL

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
13159	CLF10AM 200x200	200	200	125	10,00	16,50	12,00	12,00	1757	2 x 2,5 T	groove - groove	C60/75
13160	CLF10AM 250x200	250	200	150	10,00	20,50	14,00	14,00	2367	2 x 2,5 T	groove - groove	C60/75
13161	CLF10AM 300x200	300	200	175	10,00	25,00	17,00	17,00	3165	2 x 5 T	groove - groove	C60/75
13360	CLF10AM 200x400	200	400	125	10,00	16,50	12,00	12,00	3519	2 x 2,5 T	groove - groove	C60/75
13359	CLF10AM 250x400	250	400	150	10,00	20,50	14,00	14,00	4768	2 x 2,5 T	groove - groove	C60/75

## AGRI L-WALLS FREESTANDING 10 TONS - 15 TONS AXLE LOAD WITH EARTH WALL

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
13156	CLF10A 200x200	200	200	140	10,00	16,50	12,00	12,00	1857	2 x 2,5 T	groove - groove	C60/75
13157	CLF10A 250x200	250	200	175	10,00	20,50	12,00	14,00	2540	2 x 2,5 T	groove - groove	C60/75
13158	CLF10A 300x200	300	200	210	10,00	25,00	12,00	17,00	3424	2 x 5 T	groove - groove	C60/75
13358	CLF10A 200x400	200	400	140	10,00	16,50	12,00	12,00	3718	2 x 2,5 T	groove - groove	C60/75
13357	CLF10A 250x400	250	400	175	10,00	20,50	12,00	14,00	5085	2 x 2,5 T	groove - groove	C60/75

## AGRI L-WALLS FREESTANDING 15 TONS - 20 TONS AXLE LOAD WITH EARTH WALL

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
10365	CLAGRI 139x500	139	500	105	12,00	15,00	14,00	15,00	3900	2 x 2,5 T	groove - groove	C60/75
10362	CLAGRI 164x500	164	500	105	12,00	15,00	14,00	15,00	4380	2 x 5 T	groove - groove	C60/75
10366	CLAGRI 189x500	189	500	135	12,00	16,00	14,00	15,00	5440	2 x 5 T	groove - groove	C60/75
10367	CLAGRI 214x500	214	500	135	12,00	16,00	14,00	15,00	5900	2 x 5 T	groove - groove	C60/75
10368	CLAGRI 264x400	264	400	180	12,00	20,00	14,00	15,00	6680	-	groove - groove	C60/75
12958	CLAGRIP 316x250	316	250	200	12,00	22,00	15,00	17,00	5256	-	groove - groove	C60/75
11966	CLAGRIP 423x200	423	200	250	12,00	30,00	22,00	24,00	6825	-	groove - groove	C60/75

## AGRI L-WALLS FREESTANDING 20 TONS AXLE LOAD WITH LONG HEEL

		HEIGHT CM	LENGTH CM	BASE CM	HEEL CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
13316	CLAGRIPPS 324x250	324	250	235	80	12,00	24,50	21,60	24,50	6868	-	groove - groove	C60/75
13317	CLAGRIPS 423x200	423	200	300	80,50	12,00	48,50	21,00	23,00	7485	-	groove - groove	C60/75

## AGRI L-WALLS FREESTANDING 20 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
12040	ELAGRIP 271x400	271	400	231	12,00	24,00	21,00	21,00	9138	-	groove - groove	C60/75
11817	ELAGRIP 324x250	324	250	270	12,00	27,00	24,00	24,00	7325	-	groove - groove	C60/75
12186	ELAGRIP 423x200	423	200	290	12,00	30,00	22,00	23,00	7150	-	groove - groove	C60/75

P At the bottom of the wall, greater concrete coverage on the reinforcement is provided for longer protection against acids = sacrificial layer.

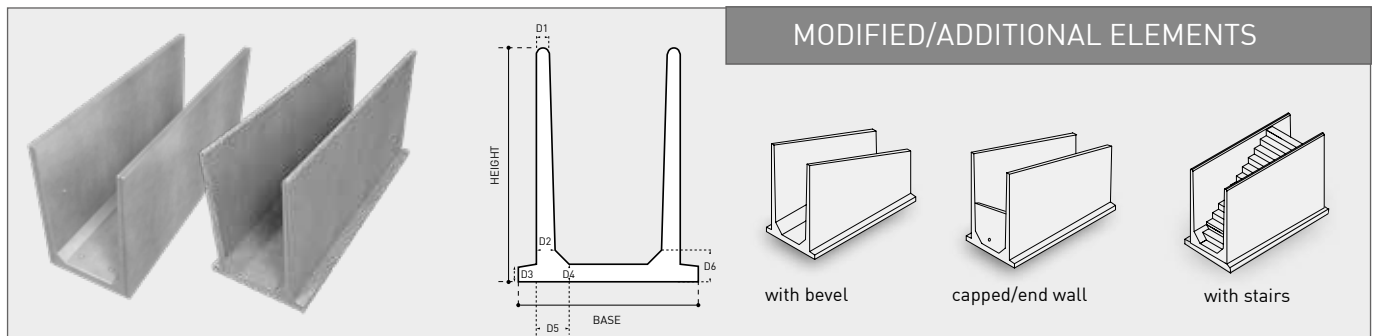
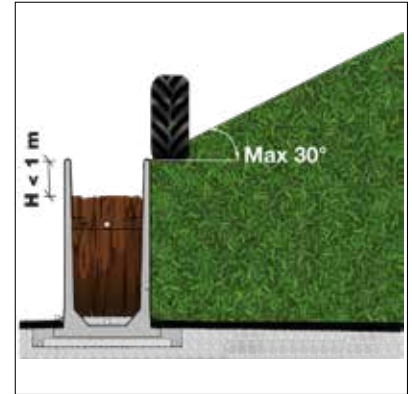


# AGRI U-WALLS

STORAGE: MAIZE, GRASS - BIOGAS PRODUCTION

Completely smooth

- Measuring and fitting possible
- Length adjustment
- With bevel
- 1 side enclosed as capped/end wall



## AGRI U-WALLS WITHOUT HEEL 15 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D4 CM	D5 CM	D6 CM	WEIGHT KG	LIFTING HOOKS KKA	CONNECTION	CONCRETE QUALITY
10398	CUXX 100x400	100	400	130	10,00	15,00	15,00	23,00	22,50	4085	4 x 2,5 T	groove - groove	C60/75
10636	CUAGRIM 200x400	200	400	130	10,00	15,00	15,00	27,50	27,00	6760	4 x 2,5 T	groove - groove	C60/75
11445	CUAGRI 214x400	214	400	130	10,00	15,00	15,00	30,00	24,50	7175	4 x 5 T	groove - groove	C60/75
12607	CUAGRIP 264x400	264	400	155	10,00	15,00	18,00	42,50	38,00	9683	4 x 5 T	groove - groove	C60/75
12704	CUAGRIP 316x250	316	250	156	10,00	17,00	18,00	27,80	26,00	6780	4 x 5 T	groove - groove	C60/75
12045	CUAGRIP 316x400	316	400	156	10,00	16,50	20,00	44,00	45,00	11562	4 x 5 T	groove - groove	C60/75

## AGRI U-WALLS WITH HEEL 15 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	D5 CM	D6 CM	WEIGHT KG	LIFTING HOOKS KKA	CONNECTION	CONCRETE QUALITY
11446	CUAGRIZ 214x400	214	400	170	10,00	15,00	14,00	15,00	30,00	35,00	7570	4 x 5 T	groove - groove	C60/75
12608	CUAGRIPZ 264x400	264	400	190	10,00	15,00	14,00	18,00	40,00	48,00	10400	4 x 5 T	groove - groove	C60/75
11825	CUAGRIPZ 316x400	316	400	191	10,00	16,50	16,00	20,00	41,50	50,00	12360	4 x 5 T	groove - groove	C60/75
12955	CUAGRIPZ 316x250	316	250	191	10,00	17,10	15,00	18,00	25,30	26,80	7240	4 x 5 T	groove - groove	C60/75

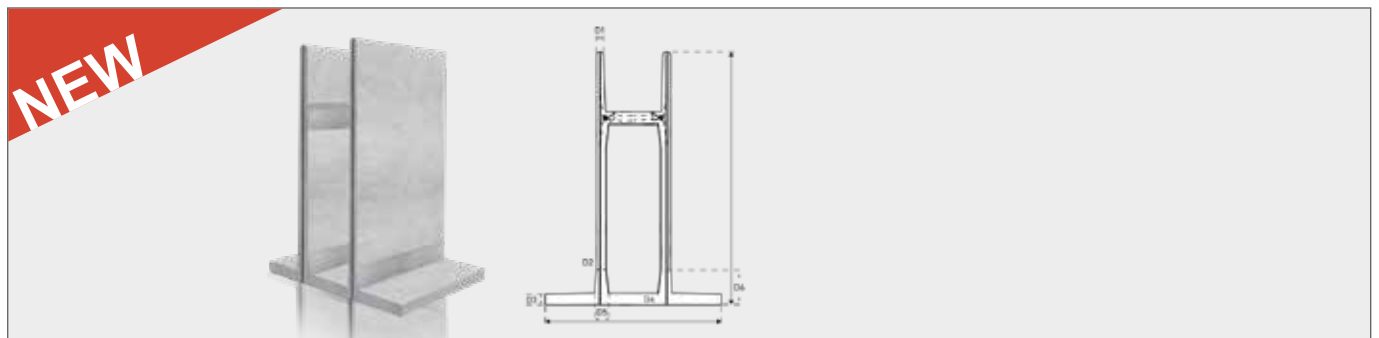
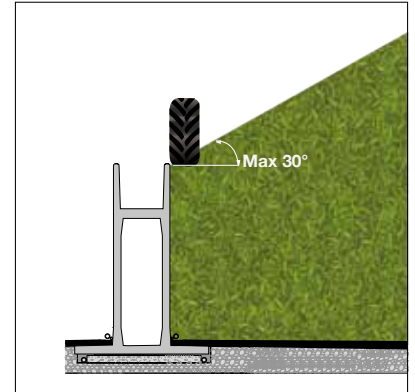
P At the bottom of the wall, greater concrete coverage on the reinforcement is provided for longer protection against acids = sacrificial layer.



# AGRI H-WALLS

STORAGE: MAIZE, GRASS - BIOGAS PRODUCTION

Completely smooth



## AGRI H-WALL UP TO 15 TONS AXLE LOAD

We have launched a new concrete element for the construction of trench silos. Thanks to these H elements, a trench silo can be built very easily and quickly. This is a free standing wall with circulation corridor which does not need to be filled with earth or sand.

### Features

- The H-walls do not need to be filled.
- Ideal for applying foil and/or a cover system for feed protection
- Practical for dividing existing silo
- Concrete quality C60/75

For placing the wall, the following lifting hooks and a lifting beam must be provided:

- 4 x KKA
- 4 x HBS RD24
- Lifting bar

The wall is suitable for an axle load of 15T with an edge distance of 0 cm. The customer provides his own stairs.



### AGRI H-WALL UP TO 15 TONS AXLE LOAD

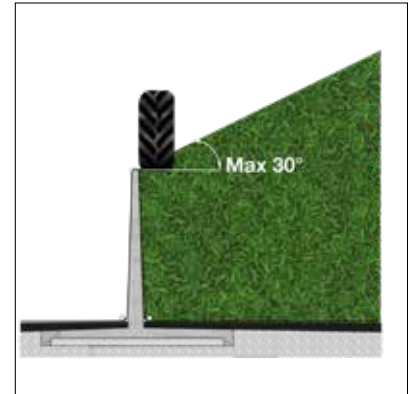
		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	WEIGHT KG	LIFTING HOOKS		CONNECTION	CONCRETE QUALITY
							KKA	HBS RD24		
13318	CUAGRIZH 316X250	316	250	250	10,00	7080	4 x 2,5	4 x HBS RD24	groove - groove	C60/75
12944	CUAGRIZH 423X250	423	250	295	12,00	12385	4 x 5	4 x HBS RD24	groove - groove	C60/75



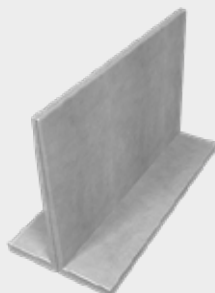
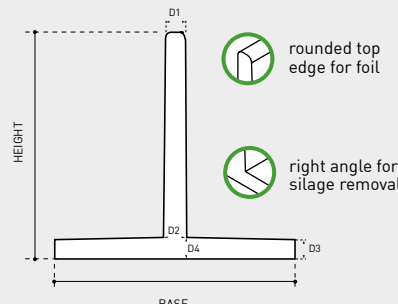
# AGRI T-WALLS

STORAGE: MAIZE, GRASS - BIOGAS PRODUCTION

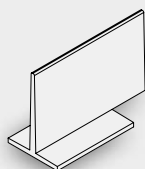
Completely smooth



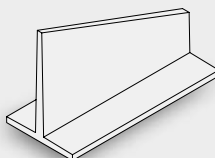
- Measuring and fitting possible
- Length adjustment
- With bevel
- Modification for corner formation

**MODIFIED/ADDITIONAL ELEMENTS**



slide-on T (for corner)



with bevel

## AGRI T-WALLS 7 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
11074	CTAGRIM 200x250	200	250	135	10,00	19,00	12,00	12,00	2340	4 x 2,5 T	groove - groove	C60/75
13014	CTAM 250x200	250	200	160	10,00	23,00	12,00	14,00	2486	4 x 2,5 T	groove - groove	C60/75
13341	CTAM 300x200	300	200	190	10,00	23,00	12,00	17,00	3421	4 x 2,5 T	groove - groove	C60/75

## AGRI T-WALLS 10 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
13013	CTA 250x200	250	200	160	10,00	23,00	12,00	14,00	2486	4 x 2,5 T	groove - groove	C60/75
13334	CTA 300x200	300	200	190	10,00	23,00	12,00	17,00	3421	4 x 2,5 T	groove - groove	C60/75

## AGRI T-WALLS 15 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
11478	CTAGRI 139x500	139	500	135	12,00	15,00	14,00	15,00	4426	4 x 2,5 T	groove - groove	C60/75
10499	CTAGRI 164x500	164	500	120	12,00	18,00	14,00	15,00	4980	4 x 2,5 T	groove - groove	C60/75
10501	CTAGRI 214x500	214	500	160	12,00	18,00	14,00	15,00	6800	-	groove - groove	C60/75
10382	CTAGRI 264x400	264	400	180	12,00	22,00	14,00	16,00	7000	-	groove - groove	C60/75
11811	CTAGRIP 316x250	316	250	200	12,00	25,00	16,00	18,00	5580	-	groove - groove	C60/75
13284	CTAGRIP 423x200	423	200	240	12,00	35,00	22,00	23,00	6930	-	groove - groove	C60/75

## AGRI T-WALLS 20 TONS AXLE LOAD

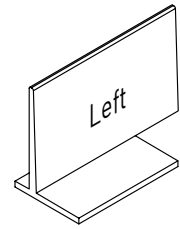
		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	D3 CM	D4 CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
11833	ETAGRIP 324x250	324	250	250	12,00	30	18	24,50	6840	-	groove - groove	C60/75
13219	ETAGRIP 423x200	423	200	300	12,00	35	22	23,00	7428	-	groove - groove	C60/75

P At the bottom of the wall, greater concrete coverage on the reinforcement is provided for longer protection against acids = sacrificial layer.

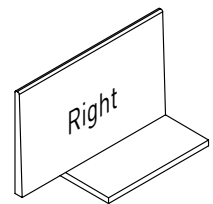
# CORNER SOLUTIONS FOR AGRI WALLS

## 1) Corner elements for L-walls

		HEIGHT CM	LENGTH CM	BASE CM	KKA	WEIGHT KG
10370	CLAGRIHL 139x485	139	485	105	2 x 2,5 T	3528
10372	CLAGRIHL 164x485	164	485	105	2 x 2,5 T	3930
10374	CLAGRIHL 189x484	189	484	135	2 x 5 T	4725
10376	CLAGRIHL 214x484	214	484	135	2 x 5 T	5142
10378	CLAGRIHL 264x380	264	380	180	-	5261

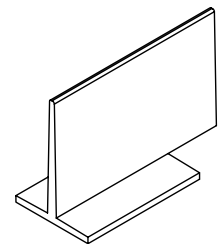


		HEIGHT CM	LENGTH CM	BASE CM	KKA	WEIGHT KG
10371	CLAGRIHR 139x485	139	485	105	2 x 2,5 T	3528
10373	CLAGRIHR 164x485	164	485	105	2 x 2,5 T	3930
10375	CLAGRIHR 189x484	189	484	135	2 x 5 T	4725
10377	CLAGRIHR 214x484	214	484	135	2 x 5 T	5142
10379	CLAGRIHR 264x380	264	380	180	-	5261



## 2) Corner elements for T-walls

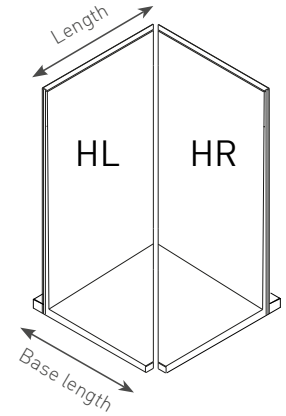
		HEIGHT CM	LENGTH CM	BASE CM	KKA	WEIGHT KG
11478	CTAGRIO 139x485	139	485	135	4 x 2,5 T	3962
10500	CTAGRIO 164x485	164	485	120	4 x 2,5 T	4416
10502	CTAGRIO 214x484	214	484	160	4 x 5 T	5718
10384	CTAGRIO 264x380	264	380	180	-	5666





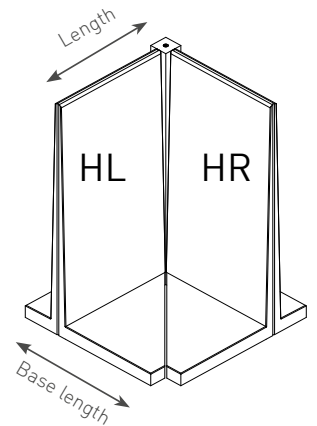
### 3) Two-part 90° corner (2 x 45°) for L-walls

		HEIGHT CM	LENGTH CM	BASE CM	WEIGHT KG
13011	CLAGRI <sup>P</sup> PHL 316x250	316	250	200	4664
13012	CLAGRI <sup>P</sup> HR 316x250	316	250	200	4664



### 4) Two-part 90° corner (2 x 45°) + corner column

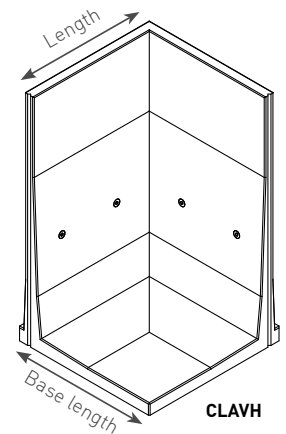
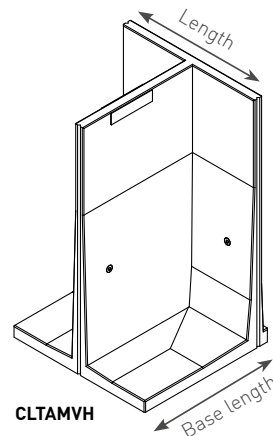
		HEIGHT CM	LENGTH CM	BASE CM	WEIGHT KG
13100	CLAGRI <sup>P</sup> PHL 423x200	423	200	250	6142
13101	CLAGRI <sup>P</sup> HR 423x200	423	200	250	6142



### 5) Fixed angle

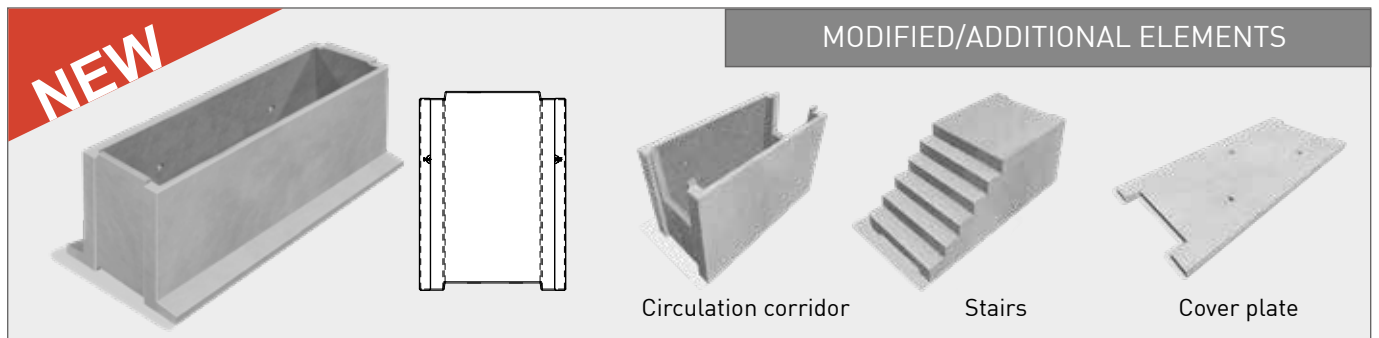
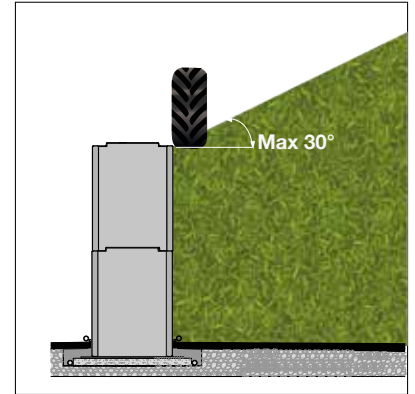
		HEIGHT CM	LENGTH CM	BASE CM	WEIGHT KG
13270	CLAVH 250x145	250	145	175	2960
13273	CLAMVH 250x145	250	145	150	2686
13268	CLTAVH 250x160	250	160	175	3036
13272	CLTAMVH 250x160	250	160	150	2908

These corner walls are only provided for our light range of trench silo walls: CLF10A(M) (page 11) and the CTA(M) (page 14)



# SILOBLOC

STORAGE: MAIZE, GRASS  
COMPLETELY SMOOTH



## NEW TRENCH SILO SYSTEM UP TO 10 TONS AXLE LOAD

The Silobloc system is a new system of blocks for the construction of trench silos. It represents an excellent alternative to traditional trench silo walls: they weigh less and are easy to stack. The elements are connected horizontally and vertically with a tongue-and-groove joint, so that the blocks form a stable whole. Before commissioning the trench silo, the bins should be filled with crushed stone or sand. Always check that the soil has sufficient bearing capacity.

### Features

- Quick and easy installation
- Walls can be raised afterwards
- Walls are connected horizontally and vertically with a tongue and groove joint
- Practical for dividing existing silo





# OUR SILOBLOC RANGE

## 1) SILOBLOC WITHOUT HEEL OR WITH CIRCULATION CORRIDOR, 10 TONS AXLE LOAD

1.1) **(CSBLOC)**  
Silobloc without heel



1.2) **(CSBLOCB)**  
Silobloc without heel with base plate



1.3) **(CSBLOCC)**  
Silobloc with circulation corridor

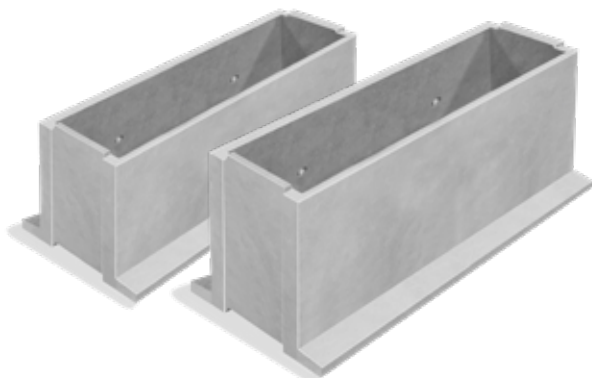


### SILOBLOC WITHOUT HEEL OR WITH CIRCULATION CORRIDOR, 10 TONS AXLE LOAD

		HEIGHT CM	LENGTH CM	WIDTH CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
13241	CSBLOC 120 107,5x250	107,5	250	120	1785	4 x 2,5 T	groove - groove	C60/75
13242	CSBLOC 120 157,5x250	157,5	250	120	2615	4 x 2,5 T	groove - groove	C60/75
13245	CSBLOCC 120 157,5x250	157,5	250	120	2355	4 x 2,5 T	groove - groove	C60/75
13331	CSBLOCB 120 107,5x250	107,5	250	120	2415	4 x 2,5 T	groove - groove	C60/75
13250	CSBLOCB 120 157,5x250	157,5	250	120	3250	4 x 2,5 T	groove - groove	C60/75

## 2) SILOBLOC WITH HEEL, 10 TONS AXLE LOAD

2.1) **(CSBLOCZ)**  
Silobloc with heel



2.2) **(CSBLOCZB)** Silobloc with heel and base plate

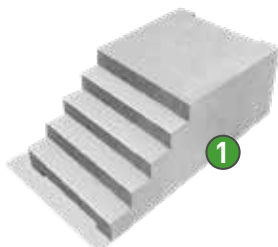


### SILOBLOC WITH HEEL, 10 TON AXLE LOAD

		HEIGHT CM	LENGTH CM	WIDTH CM	WEIGHT KG	LIFTING HOOKS	CONNECTION	CONCRETE QUALITY
13244	CSBLOCZ 120 107,5x250	107,5	250	180	2330	4 x 2,5 T	groove - groove	C60/75
13243	CSBLOCZ 120 157,5x250	157,5	250	180	3170	4 x 2,5 T	groove - groove	C60/75
13302	CSBLOCZB 120 107,5x250	107,5	250	180	3100	4 x 2,5 T	groove - groove	C60/75
13251	CSBLOCZB 120 157,5x250	157,5	250	180	3755	4 x 2,5 T	groove - groove	C60/75

### 3) SILOBLOC STAIRS

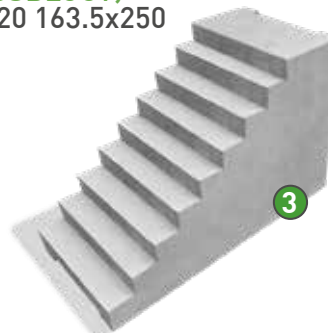
[CSBLOCT]  
120 93,5x250



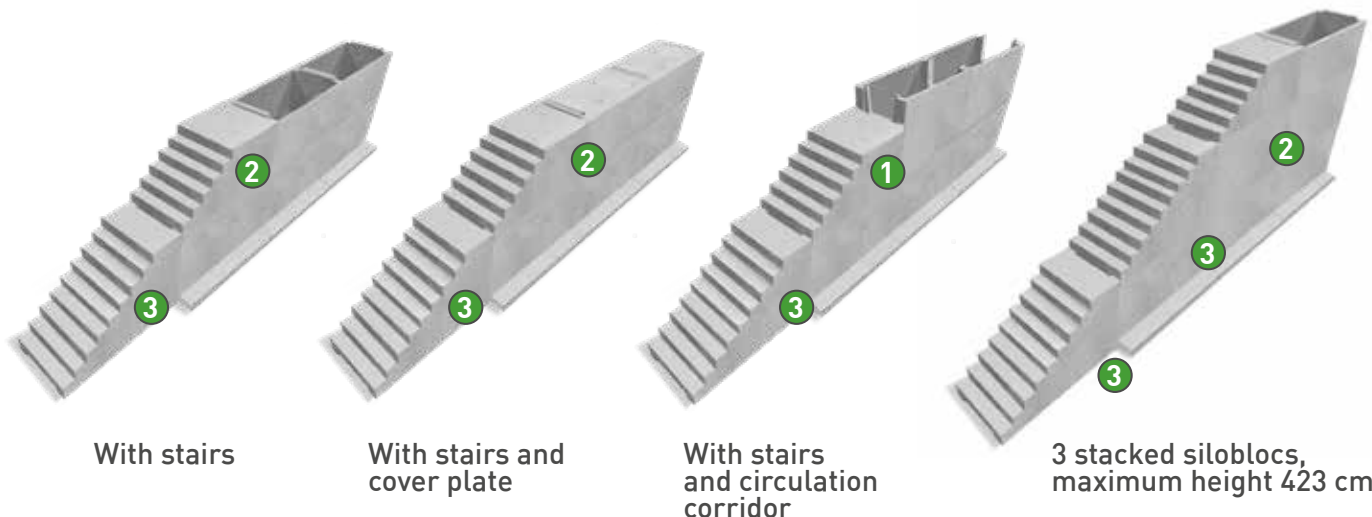
[CSBLOCT]  
120 111x250



[CSBLOCT]  
120 163.5x250



		SILOBLOC STAIRS					
		HEIGHT CM	LENGTH CM	WIDTH CM	WEIGHT KG	LIFTING HOOKS KKA	CONCRETE QUALITY
13247	CSBLOCT 120 93.5x250	93,5	250	120	1937	4 x 2,5 T	C60/75
13248	CSBLOCT 120 111x250	111	250	120	2090	4 x 2,5 T	C60/75
13249	CSBLOCT 120 163,5x250	163,5	250	120	3146	4 x 2,5 T	C60/75



**CAUTION!** To ensure your safety, we recommend installing a railing on the stairs. You cannot build a wall higher than 423 cm.

### 4) SILOBLOC COVER PLATE



Lifting keys for cover plates

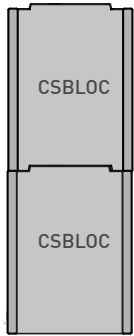


		SILOBLOC COVER PLATE					
		HEIGHT CM	LENGTH CM	WIDTH CM	WEIGHT KG	LIFTING HOOKS	CONCRETE QUALITY
13246	CSBLOCP 120 6x250	6	250	120	410	3 x 1,6 T	C60/75

## DIFFERENT ARRANGEMENTS OR COMBINATIONS

The advantage of the Silobloc system is the different possible arrangements. This allows you to increase the capacity of your silo over time by placing more blocks on top of each other, raising your wall to a **maximum height of 4.23 m**.

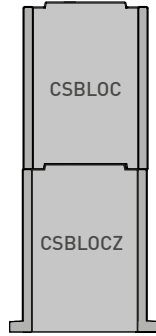
### 1.1) Silobloc without heel



Possible heights:

- 107,5 cm
- 157,5 cm
- $107,5 + 107,5 = 215$  cm

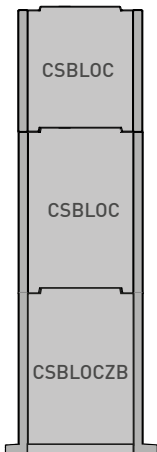
### 1.2) Silobloc with heel



Possible heights:

- $107,5 + 157,5 = 215$  cm
- $157,5 + 157,5 = 315$  cm

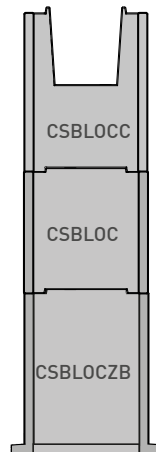
### 1.3) Silobloc with heel and base plate



Possible heights:

- $157,5 + 107,5 + 107,5 = 373$  cm
- $157,5 + 157,5 + 107,5 = 423$  cm

### 1.4) Silobloc with heel and circulation corridor



Possible heights:

- $157,5 + 107,5 = 265$  cm
- $157,5 + 157,5 = 315$  cm
- $157,5 + 107,5 + 107,5 = 373$  cm
- $157,5 + 157,5 + 107,5 = 423$  cm

## TYPES OF LIFTING HOOKS

See technical sheet for lifting hooks needed for different types of walls.

- Ball head anchors (1) = KKA





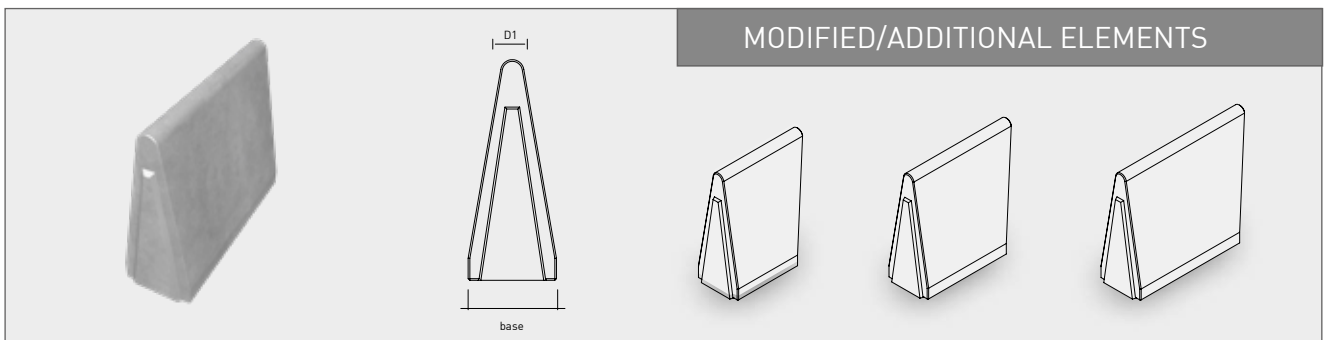
# TRENCH SILO BLOCKS

STORAGE: MAIZE, GRASS

Completely smooth

- Measuring and fitting possible
- Length adjustment
- Corner solutions

Storing on an existing floor without additional earthwork is possible with our robust A-blocks. The groove system combined with their own high weight keeps the elements in place. Due to the 80 cm width at the bottom, the blocks do not shift during ensiling. The maximum pit height is 2 m.



TRENCH SILO BLOCKS 2 TONS AXLE LOAD								
		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	WEIGHT KG	LIFTING HOOKS MRD24	CONCRETE QUALITY
11437	CAB 200x119	200	119	80	21,00	3011	1 x MRD24	C60/75
11436	CAB 200x159	200	159	80	21,00	4027	2 x MRD24	C60/75
11435	CAB 200x199	200	199	80	21,00	5045	2 x MRD24	C60/75
11434	CAB 200x239	200	239	80	21,00	6060	2 x MRD24	C60/75



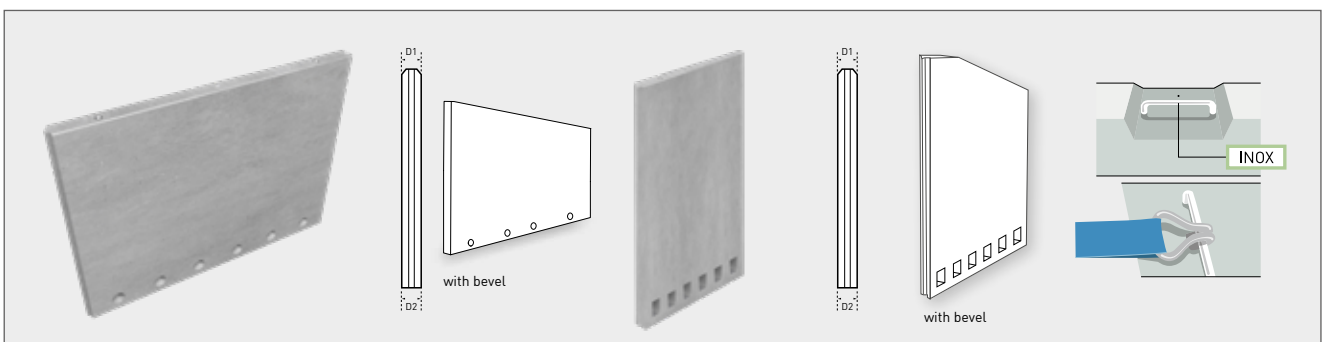
# CAST-IN-PLACE SILO WALLS

STORAGE OF MAIZE, GRASS, SOLID MANURE HEAP

1 side completely smooth-formed + 1 side smoothed

- Length adjustment
- Bevel

These walls are used to construct a trench silo or other storage area: the slabs are anchored by reinforcement bars via the openings at the bottom into the on-site poured bottom slab. The advantage of these elements is their tongue-and-groove connection and greater possibilities for customisation (length adjustment, chamfers).



## TRENCH SILO WALLS 7 TONS AXLE LOAD DOUBLE-LOADED

		TOTAL HEIGHT CM	USEFUL HEIGHT CM	LENGTH CM	D1 CM	D2 CM	WEIGHT KG	LIFTING HOOKS KKA	CONNECTION	CONCRETE QUALITY	CSBLOK CM
11922	CSAN 125x300	125	100	300	15	15	1360	2 x 2,5 T	tongue - groove	C60/75	22,5x30
11923	CSAN 150x300	150	125	300	15	15	1600	2 x 2,5 T	tongue - groove	C60/75	22,5x30
11924	CSAN 175x300	175	150	300	15	15	1900	2 x 2,5 T	tongue - groove	C60/75	22,5x30
11925	CSAN 200x300	200	175	300	15	15	2160	2 x 2,5 T	tongue - groove	C60/75	22,5x30
11926	CSAN 225x300	225	200	300	15	15	2480	2 x 2,5 T	tongue - groove	C60/75	22,5x30
12343	CSAN 250x300	250	225	300	15	15	2755	2 x 2,5 T	tongue - groove	C60/75	22,5x30
11927	CSAN 280x225	280	250	225	16	16	2432	2 x 2,5 T	tongue - groove	C60/75	22,5x30
11928	CSAN 340x225	340	300	225	16	16	2962	2 x 2,5 T	tongue - groove	C60/75	22,5x30

### Placement instructions

H	d	H*	Bar guards, for concrete opening		Ø	L
			B	B		
125	25	100	70	2x60	1Ø14	125
150	25	125	70	2x60	1Ø14	125
175	25	150	70	2x60	1Ø14	125
200	25	175	80	2x65	1Ø16	135
225	25	200	80	2x65	1Ø16	135
250	25	225	80	2x65	1Ø16	135
280	30	250	100	2x75	1Ø16	155
340	40	300	100	2x80	1Ø16	165

\*useful height



## ACCESSORIES FOR TRENCH SILO WALLS: CS SET BLOCKS

- 1 - You have 2 options for securing panels:  
**A** - cast base (to be provided by customer) + block and bolt  
 OR  
**B** - prefabricated levelling block + wooden wedges
- 2 - Iron for holes
- 3 - SIKAFLEX OR SILICONE jointing agent  
 Silicone is a commonly used grout to seal the joints after wall installation.  
 Alternatively, Sikaflex can be used; it seals even better and has a longer lifespan.

Order and place your adjustment blocks in advance to prepare your yard for installation!

Up to a height of 340 cm

- H 22.5 x W 30 x L 45 cm



From a height of 340 cm

- H 42 x W 30 x L 150 cm



### SET BLOCKS

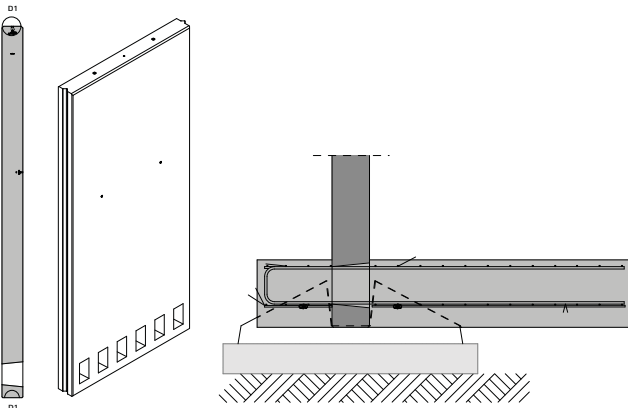
		HEIGHT CM	LENGTH CM	WIDTH CM	WEIGHT KG	LIFTING HOOKS KKA	CONCRETE QUALITY
12182	CSBLOK 22,5x30	22,5	45	30	41	-	C60/75
12920	CSBLOK 42x30	42	150	30	263	2 x 1,3 T	C60/75

### TRENCH SILO WALLS 8 TONS AXLE LOAD SINGLE-LOADED

		TOTAL HEIGHT CM	USEFUL HEIGHT CM	LENGTH CM	D1 CM	D2 CM	WEIGHT KG	LIFTING HOOKS MRD24	CONNECTION	CONCRETE QUALITY	CSBLOK CM
11541	CSA 445x200	445	400	200	25	25	5285	2 x MRD24	tongue - groove	C60/75	42x30
11543	CSA 555x200	555	500	200	25	25	6680	2 x MRD24	tongue - groove	C60/75	42x30

### TRENCH SILO WALLS 8 TONS AXLE LOAD DOUBLE-LOADED

		TOTAL HEIGHT CM	USEFUL HEIGHT CM	LENGTH CM	D1 CM	D2 CM	WEIGHT KG	LIFTING HOOKS MRD24	CONNECTION	CONCRETE QUALITY	CSBLOK CM
11542	CSAD 445x200	445	400	200	25	25	5325	2 x MRD24	tongue - groove	C60/75	42x30
11544	CSAD 555x200	555	500	200	25	25	6745	2 x MRD24	tongue - groove	C60/75	42x30



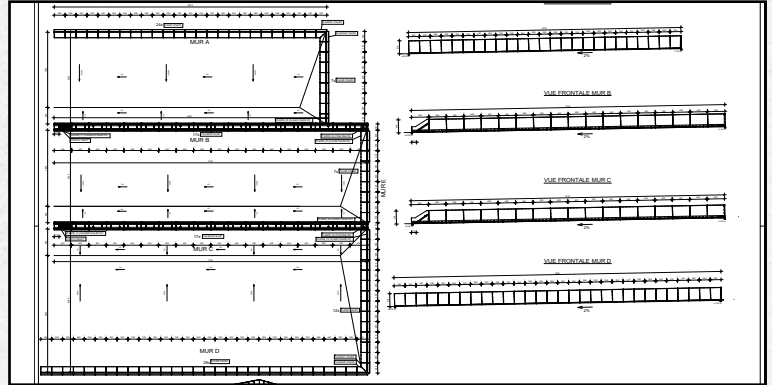


# FULLY FINISHED TRENCH SILO

CBS Beton handles the entire coordination for you.

## 1) Advice and design

A design is first prepared for the construction of complex trench silos.



## 2) Foundation

For the installation of silo walls, a solid foundation with sufficient bearing capacity for the walls being installed is required. The contractor is responsible for the design of the foundation.



## 3) Placement

The walls are installed by CBS Beton's own professional installation service. We can install up to 200 linear meters per day.



## 4) Finish

Spacer battens are placed between the walls and then sealed with caulking. For walls placed next to each other, we apply a Sikaflex joint sealing product using a caulking gun.

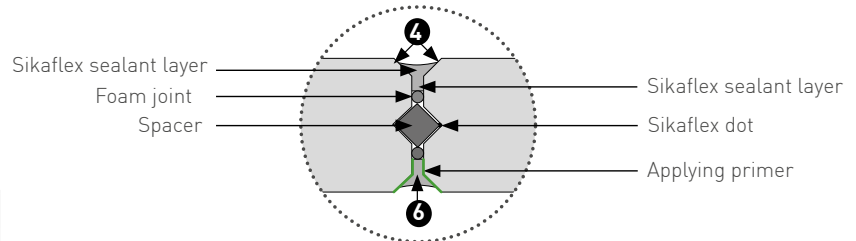


## How do we go about sealing?

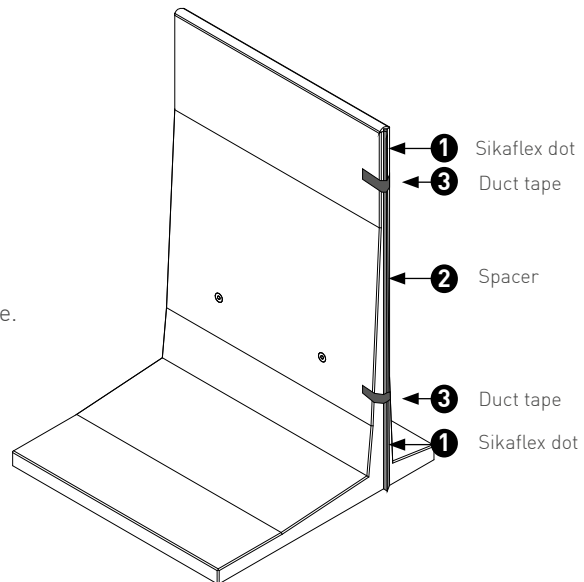
The sealing process uses spacers because the walls are not placed against each other.



Groove-groove connection



- 1) Apply a dot of Sikaflex above and below the groove.
- 2) Place the spacer in the groove.
- 3) Apply duct tape along 1 side to fix the spacer in place.
- 4) Place the 2 concrete elements against each other.
- 5) Remove the duct tape up to the groove.
- 6) Place the foam joint.
- 7) Applying primer on the concrete of the joint.
- 8) Seal the joint.



## 5) Pouring the floor

Asphalt and concrete require a solid foundation to ensure the load-bearing capacity of the pavement. With a well-compacted foundation in place, asphalt and concrete can be poured on virtually any substrate.





# 2 STORAGE OF GRAIN AND TUBER CROPS

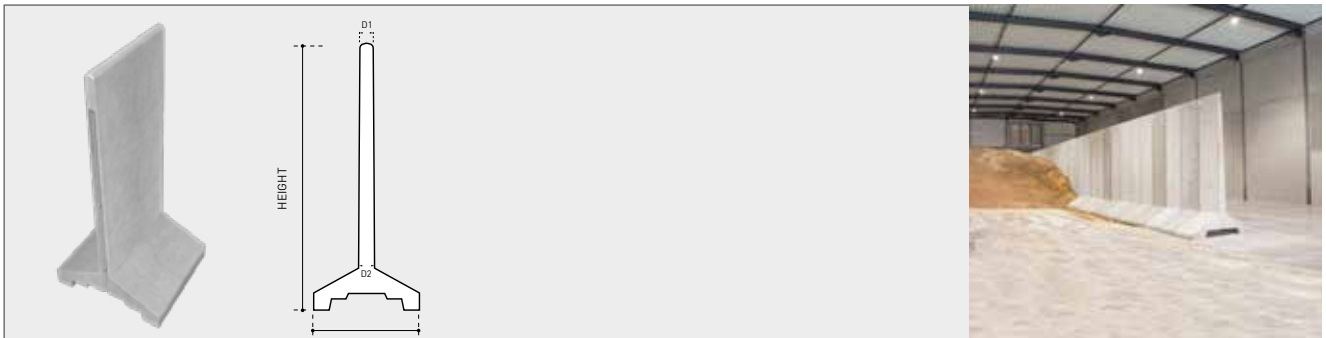




# GRAIN T

STORING GRAIN, ONIONS AND POTATOES  
COMPLETELY SMOOTH

The Grain T-wall is used for storing loose materials, e.g. grain and potatoes, and is suitable for use on an existing floor slab. The advantages: flexibility, high stability and easy to move with a forklift truck.



## GRAIN T'S UP TO 4M

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	WEIGHT KG	LIFTING HOOKS RTA	CONNECTION	CONCRETE QUALITY
10694	CTGRA 300x125	300	125	140	10	16	2018	1 x 1,25 T	tongue - groove	C60/75
10691	CTGRA 400x100	400	100	200	10	24	2818	2 x 2,5 T	tongue - groove	C60/75

## GRAIN T'S FROM 5M

		HEIGHT CM	LENGTH CM	BASE CM	D1 CM	D2 CM	WEIGHT KG	LIFTING HOOKS		CONNECTION	CONCRETE QUALITY
								MRD24	MRD42		
11917	CTGRA 500x100	500	100	240	24	50	6694	3 x MRD24	1 x MRD42	tongue - groove	C60/75
11844	CTGRA 600x100	600	100	295	24	50	9657	3 x MRD24	1 x MRD42	tongue - groove	C60/75

MRD24 to raise the wall and MRD42 to straighten the wall.



Anti-slip mats for grain T-walls are only used up to a height of 4 m.

Only for T-walls of 4 meters in height, installed on a smooth concrete floor, rubber anti-slip mats should be provided to prevent the walls from shifting. For heights of 5 and 6 meters, a fixing kit is provided for chemical anchoring in the concrete floor.



# 3 ROUND STORAGE TANKS FOR LIQUID MANURE AND BIOGAS





## Use and characteristics

Round storage tanks made of prefabricated concrete elements are used for manure storage, digestion, as water buffers, and more. The tongue and groove system combined with tensioned steel cables ensures the liquid-tightness of your silo.

Our silos vary in diameter from 5 to 45 meters and in height from 3 to 8 meters. We can manufacture tanks up to 12,750 cubic meters. Depending on the requirements and preferences of the customer, CBS Beton advises and guides in the construction, expansion, or modification of storage facilities.

## Placement

- Groundwork preparation by CBS Beton or by the customer
- Pouring of the floor
- Application of a joint band for waterproof sealing between the floor and the ring beam
- Placement of the elements on the cured floor slab
- Application of special mortar between the walls for a waterproof finish
- Tensioning of the steel cables in a first phase
- Bringing the steel cables to final tension in a second phase
- Pouring of the ring beam to connect the floor slab and the prefab elements

## Advantages

- Flexible and swift installation
- Increased stability and liquid tightness due to the combination of tensioning steel cables with the tongue and groove system



## Why a silo roof?

- No rainwater ingress into the silo and resistance to external weather influences
- Elimination of odor issues and reduction of the release of hazardous substances
- Precise assembly



# SILO VOLUMES & INTERNAL DIAMETERS

\*Panel width 1.56 m

\*Panel width 2.40 m

*Panel width 1.56 m					*Panel width 2.40 m					
H 3 M	H 4 M	H 5 M	H 6 M*		H 6 M*		H 7 M		H 8 M	
VOLUME (m <sup>3</sup> )				INTERNAL DIAMETER	VOLUME (m <sup>3</sup> )	INTERNAL DIAMETER	VOLUME (m <sup>3</sup> )	INTERNAL DIAMETER	VOLUME (m <sup>3</sup> )	INTERNAL DIAMETER
76	101	126	387	9,06	387	9,06	452	9,06	484	8,78
89	119	148	455	9,83	455	9,83	531	9,83	562	9,46
104	138	173	528	10,58	528	10,58	616	10,58	645	10,14
119	159	199	606	11,34	606	11,34	707	11,34	735	10,81
136	182	227	689	12,09	689	12,09	804	12,09	830	11,49
154	206	257	778	12,85	778	12,85	908	12,85	930	12,17
173	231	289	872	13,6	872	13,60	1017	13,6	1037	12,84
194	258	323	972	14,36	972	14,36	1134	14,36	1149	13,52
215	287	359	1077	15,12	1077	15,12	1257	15,12	1267	14,20
238	317	396	1188	15,88	1188	15,88	1386	15,88	1390	14,87
261	348	435	1303	16,63	1303	16,63	1520	16,63	1519	15,55
286	381	476	1425	17,39	1425	17,39	1663	17,39	1654	16,22
312	416	519	1551	18,14	1551	18,14	1810	18,14	1795	16,90
339	452	564	1683	18,9	1683	18,90	1964	18,9	1941	17,58
367	489	611	1820	19,65	1820	19,65	2123	19,65	2093	18,25
396	528	659	1963	20,41	1963	20,41	2290	20,41	2250	18,93
427	568	710	2112	21,17	2112	21,17	2464	21,17	2414	19,60
458	610	762	2264	21,92	2264	21,92	2641	21,92	2583	20,28
491	654	816	2422	22,67	2422	22,67	2826	22,67	2758	20,95
524	698	872	2589	23,44	2589	23,44	3021	23,44	2938	21,62
559	745	929	2758	24,19	2758	24,19	3218	24,19	3124	22,30
595	792	989	2934	24,95	2934	24,95	3423	24,95	3316	22,97
632	842	1050	3113	25,7	3113	25,70	3632	25,7	3514	23,65
670	892	1114	3299	26,46	3299	26,46	3849	26,46	3820	24,66
709	944	1179	3492	27,22	3492	27,22	4074	27,22	4032	25,33
749	998	1245	3687	27,97	3687	27,97	4302	27,97	4250	26,01
791	1053	1314	3890	28,73	3890	28,73	4538	28,73	4473	26,68
833	1110	1385	4095	29,48	4095	29,48	4778	29,48	4702	27,36
877	1168	1457	4309	30,24	4309	30,24	5027	30,24	4937	28,03
922	1227	1532	4529	31	4529	31,00	5284	31	5177	28,70
968	1289	1608	4750	31,75	4750	31,75	5421	31,40	5423	29,38
1015	1351	1686	4981	32,51	4981	32,51	5656	32,07	5675	30,05
1063	1415	1765	5213	33,26	5213	33,26	5897	32,75	5932	30,73
1112	1481	1847	5454	34,02	5454	34,02	6142	33,42	6195	31,40
1162	1548	1931	5700	34,78	5700	34,78	6392	34,10	6464	32,07
1214	1616	2016	5949	35,53	5949	35,53	6647	34,77	6739	32,75
1266	1686	2103	6206	36,29	6206	36,29	6907	35,44	7019	33,42
1320	1757	2192	6465	37,04	6465	37,04	7173	36,12	7305	34,10
1375	1830	2283	6733	37,8	6733	37,80	7442	36,79	7596	34,77
1431	1905	2376	7007	38,56	7007	38,56	7718	37,47	7894	35,44
1488	1980	2470					7998	38,14	8197	36,12
1556	2058	2567					8283	38,81	8505	36,79
1605	2136	2665					8573	39,49	8820	37,47
1665	2217	2765					8868	40,16	9140	38,14
1727	2298	2867					9168	40,84	9466	38,81
1789	2382	2970					9473	41,51	9797	39,49
1852	2466	3076					9782	42,18	10135	40,16
1918	2553	3183					10097	42,85	10478	40,84
1984	2640	3293					10417	43,53	10825	41,51
2051	2729	3404					10742	44,20	11179	42,18
2119	2820	3517					11063	43,53	11539	42,85
2188	2912	3632					11397	44,20	11905	43,53
2258	3006	3748							12276	44,20
									12635	43,53
									13017	44,20

# LIFTING HOOKS

See technical sheet for lifting hooks needed for different types of walls.

- Ball head anchors (1) = KKA
- Ring transport anchors (2) = RTA
- Screw anchors = MRD24 - MRD42 (3)



# ACCESSORIES

## JUICE SEPARATOR FOR FORAGE SILOS



(CSAPAF 57X110)

The juice separator has the following external dimensions: a length of 110 cm, a width of 50 cm, and a height of 57 cm. It has a 12 cm thick lid on top, along with a drainage grate and a manhole cover. Each unit weighs 475 kg.

**Operation:**

A bypass facilitates the separation of concentrated silo juices from those mixed with rainwater. The slowest, most concentrated flows are directed to a storage pit. During heavy rainfall, water flows faster, causing it to spill over the partition into the bypass. This water is less concentrated and can be discharged when it meets the discharge standards.

**Characteristics:**

- ✓ The concrete juice separator is manufactured in concrete quality C50/60 for environmental class: XA3 - XC.
- ✓ A juice separator includes a certified, stainless steel lifting provision.
- ✓ The juice separator is made in one piece.



JUICE SEPARATOR						
		HEIGHT CM	LENGTH CM	WIDTH CM	WEIGHT KG	CONCRETE QUALITY
12227	CSAPAF	57	110	50	475	C50/60

# THE MANUAL FEED COVER SYSTEM SILAGE SAFE



## Silage Safe

The innovative Silage Safe cover system allows you to move your silage in and out in a simple and labour-saving way.

Covering and opening your silage is often a physically demanding and time-consuming job. The method of covering also affects the quality of the silage.

Covering your silage airtight in an efficient way is therefore very important. The Silage Safe system allows you to cover your silage accurately and with minimal physical effort before rain arrives.





# Silage Safe user manual



1 Do the parts not match the packing slip or do you have questions about the installation? Please contact CBS Beton.



2 Split the material into 2 groups. Group 1: half of the tarpaulins, PVC and steel tubes and all tensioning straps. This is for the left silo wall, seen from the pit entrance. Group 2: the other half of the tarpaulins, PVC and steel tubes and all buckles. This is for the right silo wall, seen from the pit entrance.



3 Start with group 1: lay a tarpaulin with the openings up and put the PVC pipe in the bottom hem, with the sleeve on the right.



4 Put the steel tube in the right hem; estimate the pit height. Put the tension straps around the tube at the openings. Do this for all the tarpaulins in group 1.



5 Lay a Group 2 tarpaulin with the openings facing up. Put the PVC pipe in the bottom hem, with the sleeve on the left.



6 Put the steel tube in the right hem and place the buckles at the openings. Do this for all the tarpaulins in group 2.



7 Lay the tarpaulins from group 1 over the left wall (seen from pit entrance), with the sleeve facing forward. Slide the tubes together. Always make sure that the rear tarpaulin overlaps the tarpaulin facing it. Do the same on the right side with the tarpaulins from group 2.



8 Lay the plastic over the walls (see over). Provide 10-20 cm clearance on the floor.



9 You can now ensile. Do this as round as possible for optimal tensile stress, with no room for oxygen.



10 Pull the plastic and then the tarpaulins over the pit. Connect all the tension straps with the buckles and pull the tarpaulins together.



11 Use the stainless steel tensioner: place the base of the tensioner behind the steel tube where the tensioning belt is attached. Pass the belt through the opening of the tensioner. Pull the tensioner towards you and repeat. Do this for all belts. Re-tension 1 and 3 weeks after ensiling to compensate for silage compaction.



12 Connect the 2 red PVC pipes to the grey PVC pipes at the pit entrance as marking and for rainwater drainage.

# THE AUTOMATIC FORAGE COVER SYSTEM

## EASY SILAGE

### **EASY SILAGE**

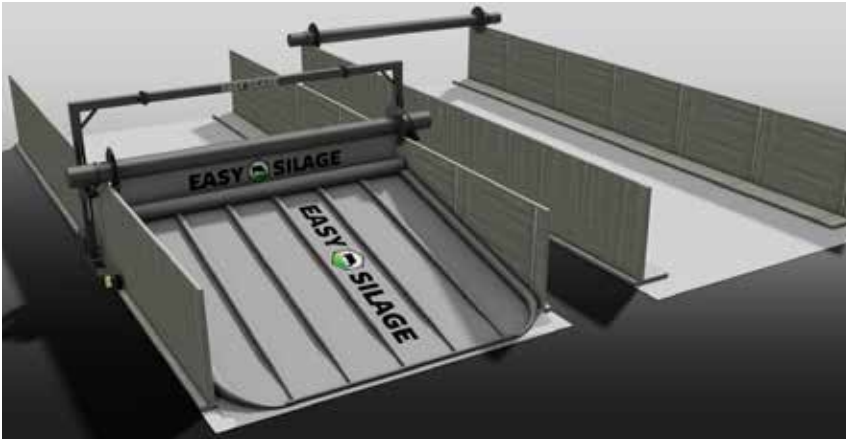
With the automatic Easy Silage Portal cover system, dairy farmers optimize their forage storage by utilizing a sealing tarpaulin and water system that perfectly seals the forage. By quickly and effectively sealing the forage, you can convert it into a high-quality product.

Covering or uncovering your trench silo can be done by one person. Our smart cover system features self-correcting steering, fully automatic operation with a remote control powered by rechargeable batteries, which are charged by solar panels. The Easy Silage portal systems are suitable for standalone trench silos up to 100 meters long and 25 meters wide, and they are easy to operate with a remote control. The portal system itself spans up to 26 meters wide. As each farm is unique, a custom cover system is tailored to fit.

#### **FEATURES OF EASY SILAGE:**

- Constant optimal quality of forage
- Height adjustable
- Faster and more efficient silage covering and uncovering: ready within 30 minutes
- Fully automatic covering and unrolling with remote control
- Equipped with a filling water system in the tarpaulin to prevent it from flying away
- Cost-saving in labor and materials
- Return on investment within 5 years

## 4 types of solutions



If you have **multiple silos next to each other**, it is best to use the **portal system with a switchable roller**. This system is designed for silos with a **maximum width of 17 meters**. With this setup, the farmer can operate the silo he is currently unloading from and the silo he wishes to fill simultaneously with one machine. The space **between the silos should be at least 1.5 meters** to allow the cover machine to drive along the silo walls.

### 1) Portal system

The portal system is suitable for silos with a width of up to 26 meters. The machine drives alongside the silo walls. Standard features - LED lighting - steering correction - CE certification.



### 2) Portal system with switchable roller

This innovative system is designed for dairy farmers with multiple silos. It is intended for silos with a maximum width of 17 meters. With this system, the farmer can simultaneously operate the silo from which they are unloading and the silo they wish to fill using a single machine.



### 3) Railsystem

The rail system runs in a channel on the silo wall. It is mounted on the wall using special brackets, which require the poured walls of the silo to be at least 20 cm thick. Additionally, there is the option to adjust the height of the machine, allowing you to drive underneath the roller while filling the silo.



### 4) Nicolaes D.drive

The entire power unit of the machine can be fully disconnected and used for multiple portals. The unit (dolly) is equipped with all the components necessary for driving and controlling the machine. This dolly can be easily attached and detached by one person and moved from one silo to another with ease.







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We would like to point out that the information and notes in this technical catalog do not constitute a complete and definitive description. Rather, they are intended as supplementary to the generally recognized rules of construction technology that the expert user must observe and as an explanation of the installation and use of our products. Furthermore, we would like to emphasize that our products should only be used and installed by competent individuals, and special attention should be given to the proper handling and storage of our goods. We are always available to assist you with the necessary advice and tips.