EUROPORTS

Risks of hot spots in Agro Cargo Quality and Fire issues

New Orleans – 20th of May 2025

Table of content

General information / assumptions

- **Definition of limit temperatures for grain and rapeseed (as per agreement with customer)**

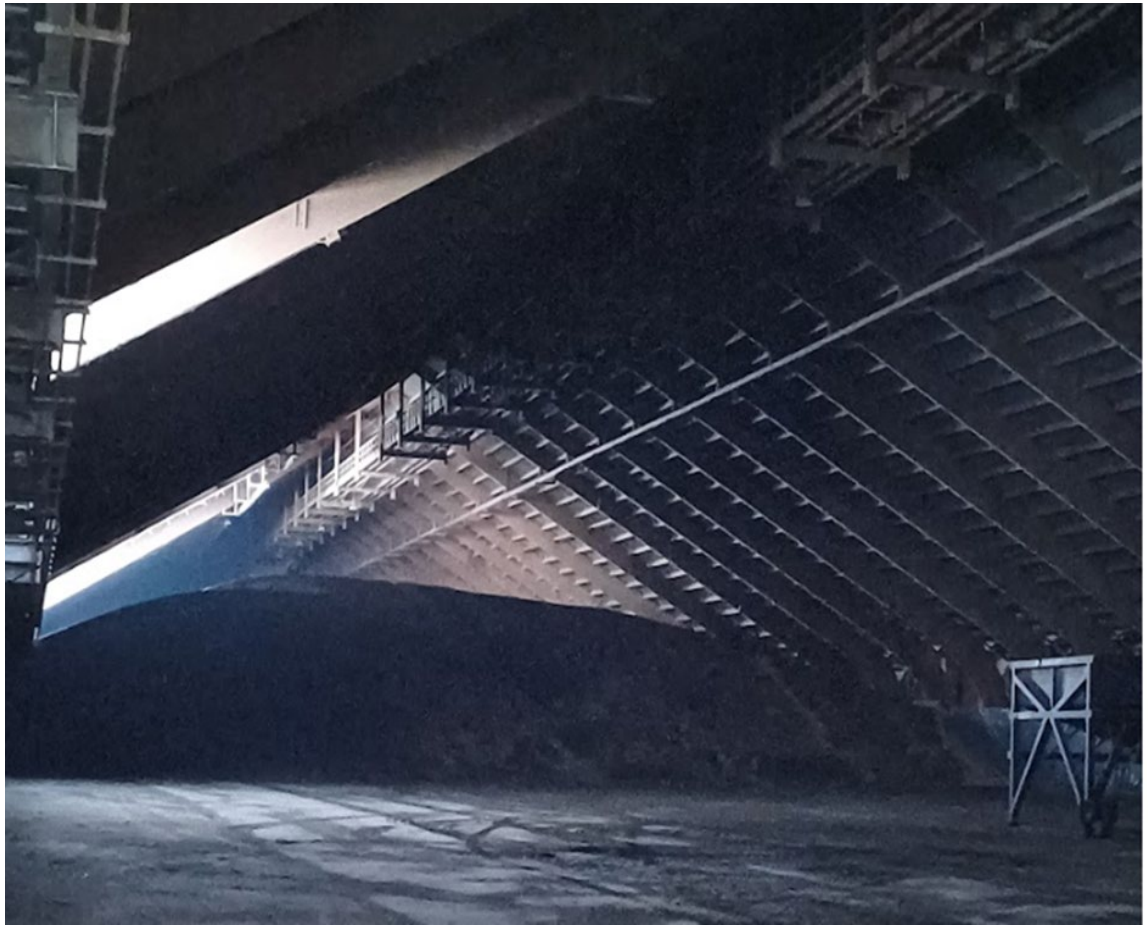
	Cereals	Rapeseed	Soya meal
Harmless	up to 30 °C (86 F°)	up to 25 °C (71 F°)	up to 30 °C
Customer information	from 30 °C	from 25 °C	from 40 °C (104 F°)
Mandatory requirement of measures by the customer	from 45 °C (113 F°)	from 40 °C	from 50 °C (122 F°)

Humidity ranges	< 70%	OK
	= 70%	Alert
	> 85%	Action

EUROPORTS

Type of storages

Flat Silo’s

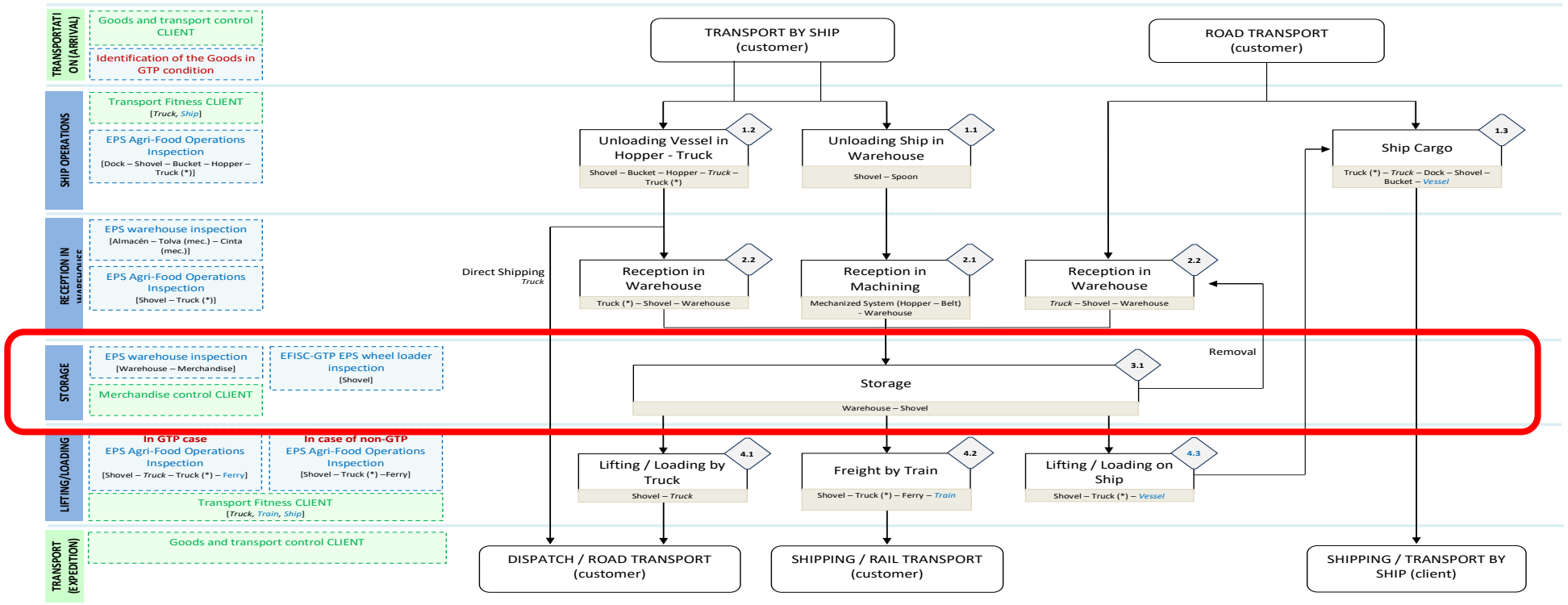


Vertical Silo’s

EUROPORTS

Preventive measures

- Short / Long Term storage
- Flow chart – actions to be taken during the process



LEGEND

Phases	Inspections	Stages	Equipment
PHASES CONTROLLED BY EUROPORTS	Inspections carried out by EUROPORTS	Stages of EPS responsibility	Shovel – Truck – Truck (*)
CUSTOMER-CONTROLLED PHASES	Inspections carried out by CLIENT	Stages of CLIENT's responsibility	SUBCONTRACTED by EUROPORTS; Owned / Contracted by CLIENT; Owned by EUROPORTS or rented

3.1 Systematic storage is carried out in SECURE Warehouses: GTP goods with NO GTP will not be stored in any warehouse (in addition, the EPS-IT T CLEANING procedure "warehouse cleaning program and record" guarantees that when a warehouse is emptied, it is thoroughly cleaned)

4.1 The customer shall systematically notify **the identification of the batches as FCA or non-GTP** / without the requirement of visual inspection by Euroports. In the event that the goods are **notified by the customer as GTP,** the due inspection of the truck container will be carried out before dispatch (point 4.1).

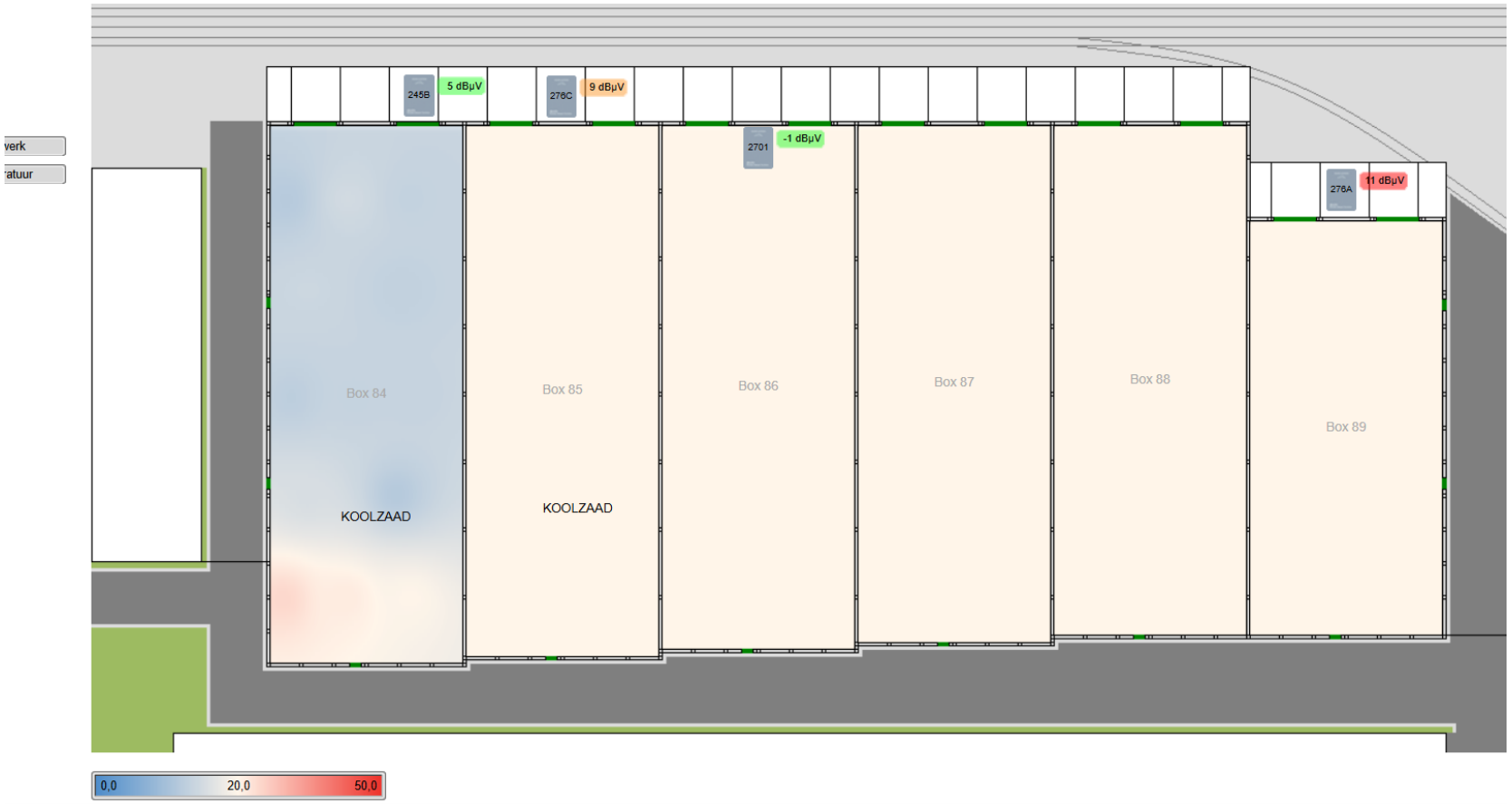
Revision 3: 05/03/2023

EUROPORTS

Preventive measures and monitoring

- Tools for monitoring

logisphere.sensite-solutions



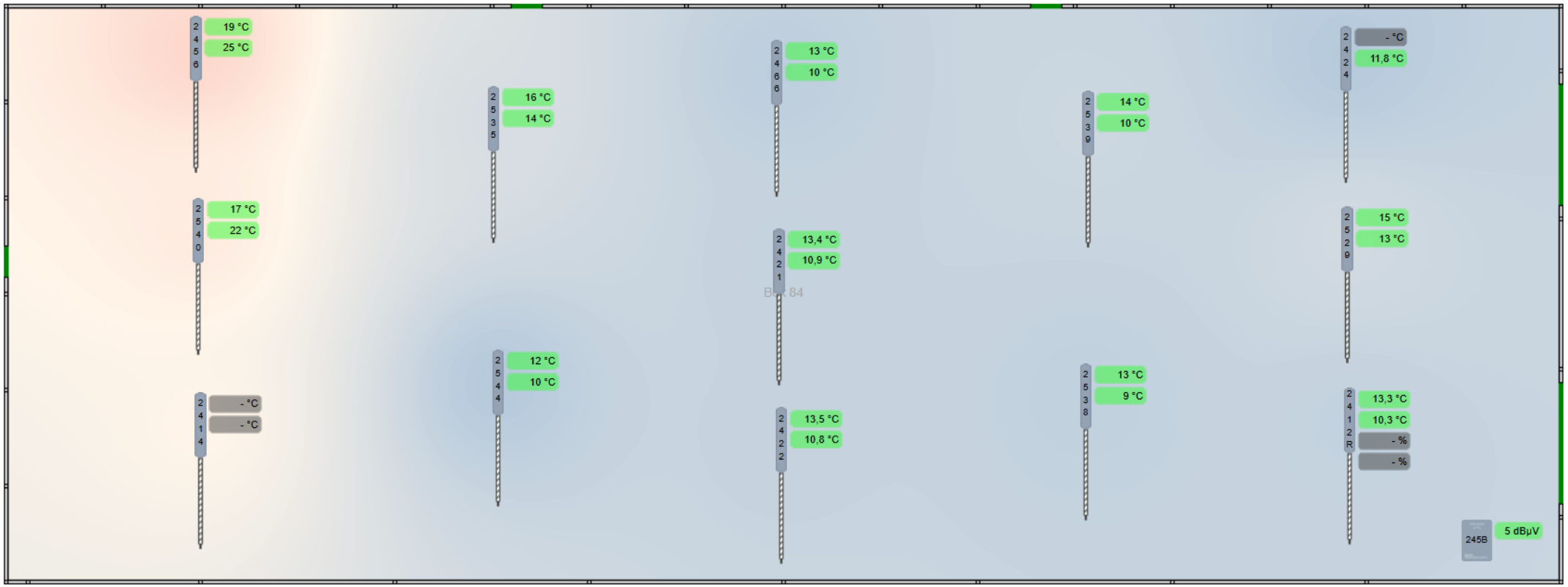
EUROPORTS

Sensite solutions

BOX 84 - MV ANNA MARIA + MV NORD VIND

04/05/2025

- Kaai 850
- Box 84
- Box 85
- Box 86
- Box 87
- Box 88
- Box 89
- Netwerk
- Apparatuur
- Kaai 270



EUROPORTS

EUROPORTS

Sensite soluti

Kaai 850

Kaai 270

Kaai 518

Apparatuur

Sensor	Ontvangst	Leeftijd
Probe 2411 Midden	- dBµV	-
Probe 2411 Onder	- dBµV	-
Probe 2411 RH	- dBµV	-
Probe 2412 Midden	33 dBµV	00:08:44
Probe 2412 Onder	35 dBµV	00:02:56
Probe 2412 RH	- dBµV	-
Probe 2413 Midden	32 dBµV	00:07:11
Probe 2413 Onder	29 dBµV	00:03:04
Probe 2414 Midden	- dBµV	03:00:12
Probe 2414 Onder	- dBµV	-
Probe 2415 Midden	- dBµV	-
Probe 2415 Onder	- dBµV	-
Probe 2416 Midden	29 dBµV	00:29:20
Probe 2416 Onder	36 dBµV	00:15:24
Probe 2417 Midden	29 dBµV	00:02:31
Probe 2417 Onder	29 dBµV	00:05:07
Probe 2418 Midden	- dBµV	-
Probe 2418 Onder	- dBµV	-
Probe 2419 Midden	36 dBµV	00:16:08
Probe 2419 Onder	37 dBµV	00:13:27
Probe 2420 Midden	- dBµV	-
Probe 2420 Onder	- dBµV	-

Sensor	Ontvangst	Leeftijd
Probe 2421 Midden	20 dBµV	00:09:46
Probe 2421 Onder	27 dBµV	00:01:33
Probe 2422 Midden	24 dBµV	00:04:09
Probe 2422 Onder	25 dBµV	00:15:12
Probe 2423 Midden	34 dBµV	00:03:38
Probe 2423 Onder	35 dBµV	00:07:21
Probe 2424 Midden	- dBµV	-
Probe 2424 Onder	21 dBµV	00:49:44
Probe 2425 Midden	- dBµV	-
Probe 2425 Onder	- dBµV	-
Probe 2426 Midden	31 dBµV	00:10:42
Probe 2426 Onder	31 dBµV	00:01:10
Probe 2427 Midden	25 dBµV	00:07:09
Probe 2427 Onder	31 dBµV	00:11:56
Probe 2428 Midden	39 dBµV	00:15:52
Probe 2428 Onder	42 dBµV	00:15:19
Probe 2429 Midden	- dBµV	-
Probe 2429 Onder	- dBµV	-
Probe 2430 Midden	31 dBµV	00:10:03
Probe 2430 Onder	34 dBµV	00:00:07
Probe 2452 Midden	- dBµV	-
Probe 2452 Onder	- dBµV	-

Sensor	Ontvangs	Leeftijd
Probe 2453 Midden	- dBµV	-
Probe 2453 Onder	- dBµV	-
Probe 2454 Midden	- dBµV	-
Probe 2454 Onder	- dBµV	-
Probe 2455 Midden	30 dBµV	00:09:06
Probe 2455 Onder	25 dBµV	00:16:24
Probe 2456 Midden	26 dBµV	00:11:26
Probe 2456 Onder	24 dBµV	00:15:00
Probe 2457 Midden	- dBµV	-
Probe 2457 Onder	- dBµV	-
Probe 2458 Midden	- dBµV	-
Probe 2458 Onder	- dBµV	-
Probe 2459 Midden	- dBµV	-
Probe 2459 Onder	- dBµV	-
Probe 2460 Midden	- dBµV	-
Probe 2460 Onder	- dBµV	-
Probe 2461 Midden	35 dBµV	00:08:05
Probe 2461 Onder	40 dBµV	00:08:50
Probe 2462 Midden	29 dBµV	00:05:22
Probe 2462 Onder	27 dBµV	00:04:58
Probe 2463 Midden	28 dBµV	00:06:45
Probe 2463 Onder	22 dBµV	00:25:50

Sensor	Ontvangst	Leeftijd
Probe 2464 Midden	- dBµV	-
Probe 2464 Onder	- dBµV	-
Probe 2465 Midden	- dBµV	-
Probe 2465 Onder	- dBµV	-
Probe 2466 Midden	27 dBµV	00:02:57
Probe 2466 Onder	27 dBµV	00:15:43
Probe 2467 Midden	24 dBµV	00:09:02
Probe 2467 Onder	29 dBµV	00:14:26
Probe 2468 Midden	- dBµV	-
Probe 2468 Onder	- dBµV	-
Probe 2469 Midden	- dBµV	-
Probe 2469 Onder	- dBµV	-
Probe 2515 Midden	33 dBµV	00:15:12
Probe 2515 Onder	30 dBµV	00:06:49
Probe 2515 RH	22 dBµV	00:12:54
Probe 2516 Midden	35 dBµV	00:09:22
Probe 2516 Onder	38 dBµV	00:13:13
Probe 2516 RH	29 dBµV	00:10:03
Probe 2517 Midden	- dBµV	-
Probe 2517 Onder	- dBµV	-
Probe 2517 RH	- dBµV	-

Sensor	Ontvangst	Leeftijd
Probe 2528 Midden	29 dBµV	00:08:05
Probe 2528 Onder	34 dBµV	00:02:50
Probe 2529 Midden	32 dBµV	00:01:33
Probe 2529 Onder	31 dBµV	00:04:10
Probe 2530 Midden	27 dBµV	-
Probe 2530 Onder	29 dBµV	00:04:20
Probe 2531 Midden	32 dBµV	00:14:08
Probe 2531 Onder	35 dBµV	00:08:28
Probe 2532 Midden	- dBµV	-
Probe 2532 Onder	- dBµV	-
Probe 2533 Midden	22 dBµV	00:13:32
Probe 2533 Onder	30 dBµV	00:07:41
Probe 2534 Midden	30 dBµV	00:09:22
Probe 2534 Onder	26 dBµV	00:13:56
Probe 2535 Midden	21 dBµV	00:11:36
Probe 2535 Onder	14 dBµV	00:19:31
Probe 2536 Midden	- dBµV	-
Probe 2536 Onder	- dBµV	-
Probe 2537 Midden	- dBµV	-
Probe 2537 Onder	- dBµV	-
Probe 2538 Midden	35 dBµV	00:15:00
Probe 2538 Onder	33 dBµV	00:07:05

Sensor	Ontvangst	Leeftijd
Probe 2539 Midden	29 dBµV	00:13:21
Probe 2539 Onder	36 dBµV	00:00:46
Probe 2540 Midden	24 dBµV	00:46:43
Probe 2540 Onder	25 dBµV	00:11:12
Probe 2541 Midden	- dBµV	-
Probe 2541 Onder	- dBµV	-
Probe 2542 Midden	- dBµV	-
Probe 2542 Onder	- dBµV	-
Probe 2543 Midden	26 dBµV	00:16:44
Probe 2543 Onder	37 dBµV	00:09:19
Probe 2544 Midden	24 dBµV	00:16:04
Probe 2544 Onder	26 dBµV	00:02:38
Probe 2545 Midden	23 dBµV	00:03:04
Probe 2545 Onder	29 dBµV	00:00:29
Probe 2546 Midden	37 dBµV	00:08:39
Probe 2546 RH	35 dBµV	00:03:13
Probe 2546 Onder	34 dBµV	00:05:32
Probe 2547 Midden	- dBµV	-
Probe 2547 RH	- dBµV	-
Probe 2547 Onder	- dBµV	-

EUROPORTS


Kaai 850
Kaai 270
Kaai 518
Netwerk
2701 -1 dBµV
245B 6 dBµV
273E - dBµV
2730 - dBµV
2734 - dBµV
276A 10 dBµV
276C 9 dBµV
Moisture Content Canola —

Necessary tools for measurement

All silo cells are equiped with one measuring pendulum with 8 measuring points each.

Temperature ranges	Measuring interval
In principle	once a week
Cells (grain, soya meal) with measuring point above 40 °C	daily
Cells (rapeseed) with measuring point above 35 °C	daily
Cells connected to the cooling system	2x weekly

EUROPORTS

Others

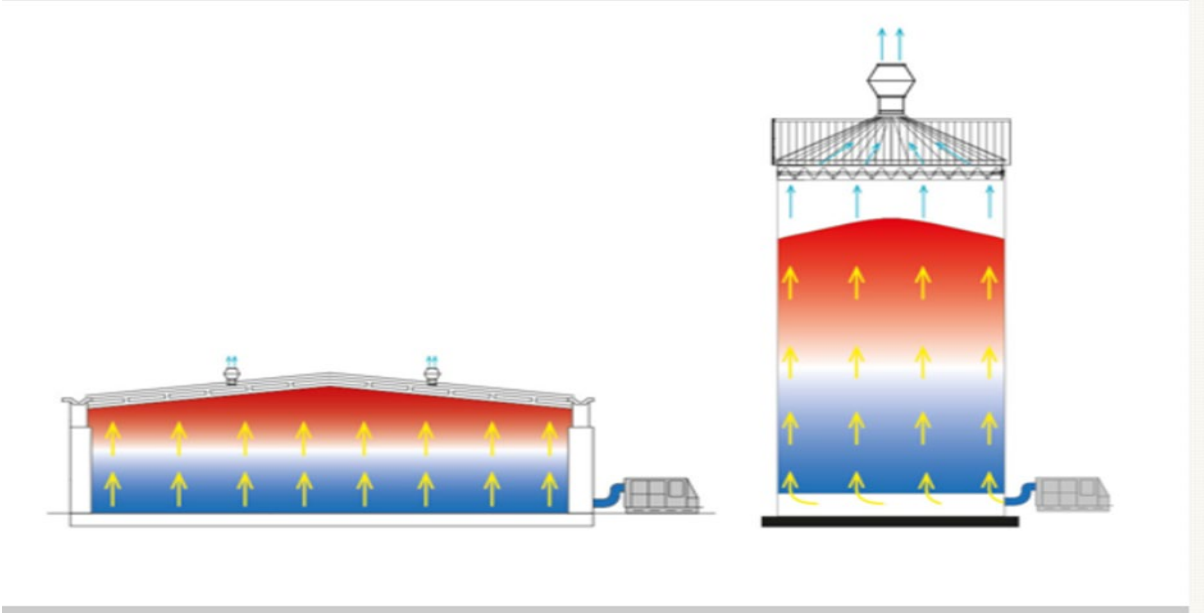
EUROPORTS

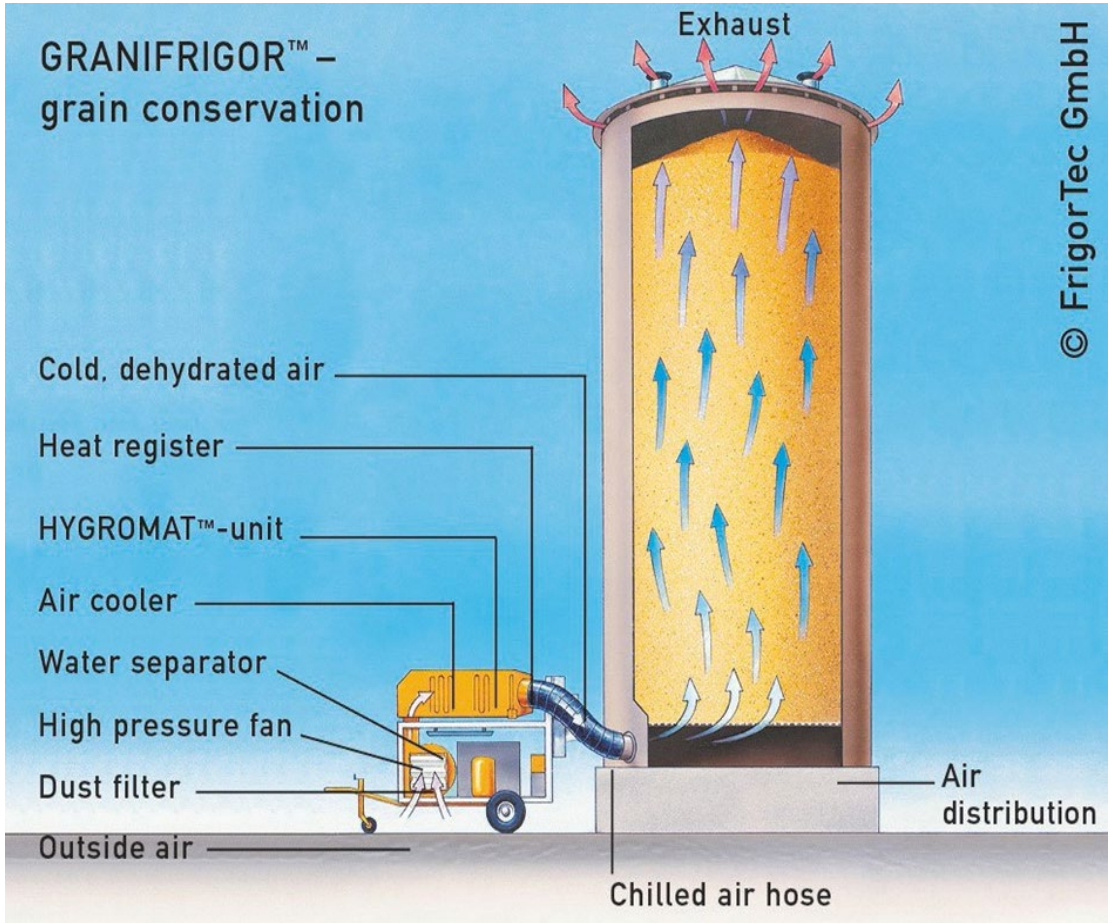
Different main causes of heating

- Humidity - Moisture
- Insects
- Water infiltration

Actions to be taken

- Outsourcing/loading
- Relocation
- Cooling with dedicated equipment
- Remove cargo out of the silo
- Ventilation



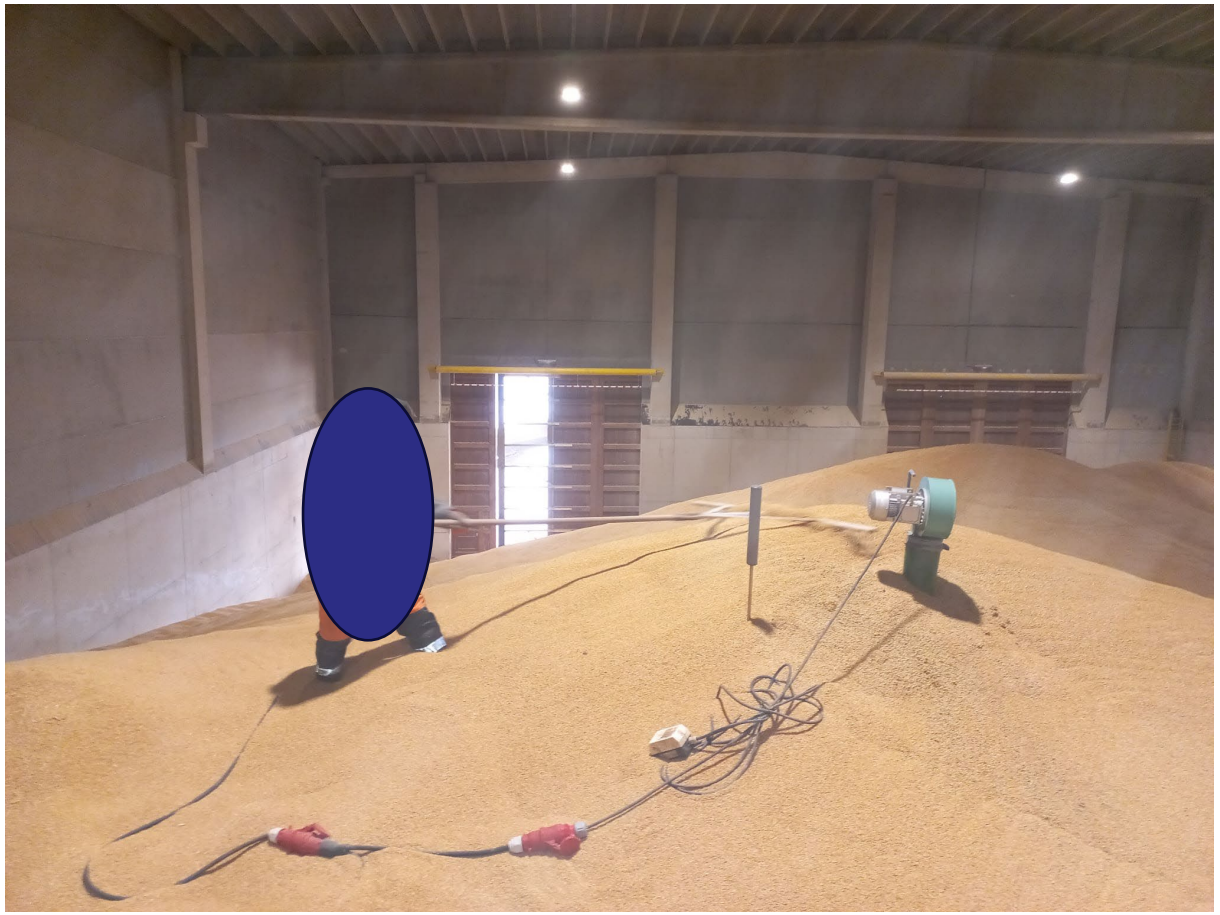


EUROPORTS

Cooling down the product into the silo’s

- Grain cooling through cooled and dehumidified air blowing, allows the rapid lowering of temperatures, thus preventing the spread of mould, flora, insects, significantly slowing the metabolism of the grain itself.
- At a temperature of 15°C (59 F°) or less, insects become dormant and no longer damage the stored grain.
- Grain stored at a temperature of +10°C/ +12°C (50/54 F°) produces a quantity of heat, carbon dioxide, water loss,
  - 4 times less than grain stored at +20°C (68F°)
  - 15 times less thangrain stored at +30°C (86F°)
  - 50 times less than grain stored at +40°C (104F°)
- The importance of quickly lowering grain temperature to less than +18°C / +20°C is therefore clear, also in order to slow its metabolism and therefore significantly reduce weight loss.

EUROPORTS



Remove cargo out of the silo (hot spot)

EUROPORTS

Remove cargo out of the silo (water infiltration)

EUROPORTS


why
when
who
where
what
why
QUESTIONS
who
how
where
what
how
why