

# GRAIN STORAGE FACT SHEET

## SILO BUYER'S GUIDE

The decision of which silo to buy can be daunting, mainly because it's a 20+ year investment and not a purchase that is easily returned or traded-in if it proves unsuitable. The following information will help identify the key features to look for when purchasing silos.

### KEY POINTS

- ▶ Buying silos is a significant, long-term investment – take the time to make the right choice.
- ▶ Consider the storage requirements for the next 20 years – not just the next season.
- ▶ For reliable insect control and grain quality maintenance, choose a gas-tight sealable storage, which also has aeration.
- ▶ Gas-tight sealable storage must meet the Australian Standard AS2628.



PHOTO: BEN WHITE, KONIDIN GROUP

**Choose carefully:** While all silos are made to store grain and 'do the job', some will enable superior grain quality management than others.

### Quality in – quality out

Maintaining grain quality during storage relies on the ability to control moisture, temperature and insects. It makes sense to look for storage with aeration cooling as well as being gas-tight sealable for effective fumigation.

While aeration cooling won't reduce grain moisture significantly, it will prevent moisture migration and lower grain temperature. Properly managed aeration cooling provides cool, uniform conditions throughout the storage, which discourages pest infestation and mould growth and maintains grain quality. An added benefit of aeration is that it can be used to ventilate a silo after fumigation in one day, rather than waiting five days.

### Insect pest control

Western Australia has given up access to contact pesticides long ago and the eastern states are under increasing pressure to follow suit to protect our markets. This puts added pressure on fumigants, mainly phosphine, to control pests during

storage. In order to control pests at all life stages (eggs, larvae, pupae, adult) and prevent further resistance, phosphine and other fumigants are only effective in a gas-tight storage.

### A little maintenance goes a long way

In the same way that all farm machinery needs regular maintenance to keep it working reliably, so do silos, especially gas-tight sealable silos. A small gas leak can mean the difference between a successful fumigation and insects surviving, leading to loads being rejected upon receipt.

Grain hygiene is the other important maintenance component. Well designed silos won't have areas that trap grain and dust making them quick and easy to clean.

### Find a safe bet

The WHS (previously OH&S) spotlight continues to shine on agricultural industries

and is undoubtedly here to stay. Consider silos that meet state WHS requirements and more importantly can be safely operated by everyone on site. While some silos come without ladders, mould and insects are often found in the top of a silo before they can be detected at ground level. The main options are to have an WHS compliant ladder, use a safety harness or build a platform that spans along the top of a line of silos.



PHOTO: CHRIS NEWMAN, STORED GRAIN SERVICES

**Safety saves lives:** Consider the safety features of a silo, a little extra investment could save a worker or your life.

## SILO PURCHASE CHECKLIST

	BRAND OR OPTION		
	A	B	C
<b>DOES THE SILO</b>			
Meet the Australian Standard 2628 for gas-tight sealing? That is, the five-minute half-life pressure test. If not, it cannot be used for successful fumigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In order to meet a five-minute half-life pressure test, the silo must have:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ a pressure (oil) relief valve large enough to suit the silo and with gauge markings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ system to add air to perform a pressure test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ rubber seals made of high-density EPDM (ethylene-propylene-diene-monomer) rubber with a strong memory and UV resistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ lasting seals incorporated between sheet joints, rivets, screws and bolts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ seals that are not compromised under weight when the silo is full	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ sealing plates over the aeration fan inlets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Include aeration cooling fans capable of 2-3 litres per second per tonne with ducting to distribute the airflow evenly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▶ If intended for aeration drying, the silos must have airflow of 15-25l/s/t and lots of ventilation openings at the top, which can be sealed shut for fumigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have ground-opening lids? (Check if the lids can be gas-tight sealed from the ground or whether they have to be locked down from the top of the silo.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allow easy access at ground level for cleaning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have an easy-to-clean design, including in aeration ducting and in-floor aeration ducting on flat-bottom silos?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Include an WHS compliant ladder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprised of a sturdy steel construction on the base if cone bottom, have strong weldments and a galvanised or quality paint finish.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Include a sealed recirculation system if it's larger than 150 tonne? If it does, ensure it's UV stabilised and won't compromise the sealability of the silo now or in years to come.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a sealed ground application chamber for phosphine? If it does, the chamber must be large and have either passive or active, sealed recirculation to carry the gas out of the chamber so it doesn't reach explosive concentration levels in a confined space.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a 'sight glass' or a remote level sensor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**Seal the deal:** A gas-tight, sealable silo is the only way to ensure a successful fumigation.

PHOTO: BEN WHITE, KONMINI GROUP

## FURTHER READING

### Grain Storage Facilities (Booklet)

1800 11 00 44  
ground-cover-direct@canprint.com.au  
www.storedgrain.com.au;  
www.storedgrain.com.au/grain-storage-facilities

## GRAIN STORAGE SPECIALISTS

### National hotline

1800 weevil (1800 933 845)

### QLD and northern NSW, Philip Burrill

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### Southern NSW, VIC, SA and TAS, Peter Botta

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### WA, Ben White

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## GRDC PROJECT CODE

**PRB0001**

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