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CEMAX SILO-CLEAN SYSTEM (safe silo cleaning)

Ever since materials have been stored in silos and bunkers etc., the problems associated with build-up, contamination and infestation have caused major headaches.

For many years, a solution had been sought that would be efficient, cost effective and most importantly, **SAFE**.

Over the last 16 years, *Australian Silo Clean Pty Ltd* has been continuously developing a process that fulfilled this criteria.

Previous methods to clean silos and bins have included,

1. **Explosives** - The consequences speak for themselves.
2. **Human Entry** - Using hand-held equipments or machines are potentially dangerous and today, under most circumstances, actual entry into the silo is contrary to Government Regulations under the Confined Space Legislation.
3. **High Pressure Wet Cleaning** - In industries such as coal, the creation of sludge due to washing down the storage silo and in turn the dry fine dust created by the drying sludge have always prompted concern due to the environmental hazards both produce. With food and chemicals, the problems of rust, bacterial growth and dangerous reactions can also take place due to this method of cleaning.

The System process uses compressed air and the only safety procedures that have to be adhered to are that of normal operating practices when using compressed air.



Silos from 1 to 25,000T have been cleaned using the *The System*. They ranged from both round to square in shape, bunkers and tanks, with construction from materials as varied as concrete, steel, corrugated iron, fiberglass and fabric.

Products able to be cleaned down can vary in particle size, consistency and density, from flour to mineral ores, coal, cement, sugar, stock feed, wood chip, fly ash and grains.

The System of cleaning can handle build-ups extending from several hundred kg of contaminating dust on the roof and walls of a silo to total chokes of hundreds of tonnes with products varying in consistency from soft or sticky to those resembling concrete.

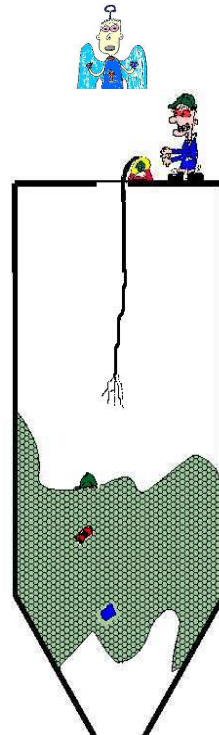
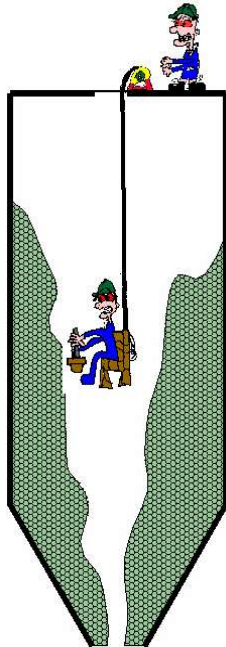
Products that are potentially explosive, hazardous or toxic can be safely removed by this method of cleaning with little to no direct contact.

Regular or programmed cleaning can maintain maximum silo capacity, operational efficiency, reduce contamination and eliminate infestation.

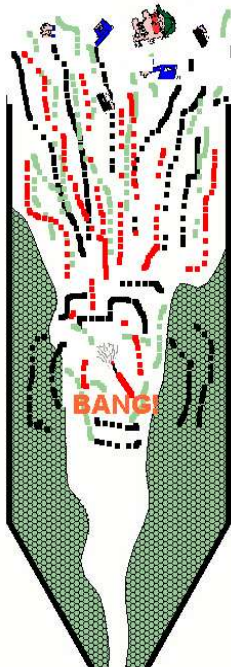
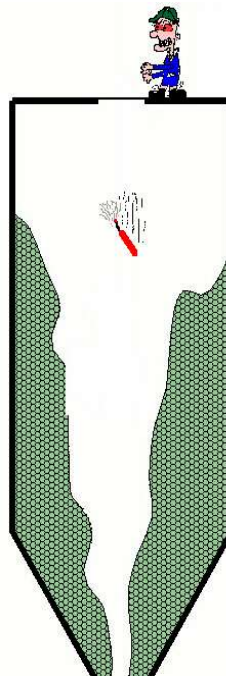
For most applications on a single silo operation, factory air of 250cfm at 100psi would be adequate for cleaning requirements. For more difficult products, larger silos or simultaneous, multi silo clean downs, air at larger volumes and pressures is required with the employment of a mobile compressor usually necessary.

The System operation is extremely cost effective due to the quick set up time, speed of operation and the fact that 2 men can clean 2, 3 or even 4 silos simultaneously depending on silo size, product, problems and plant layout.

SOME COMMON & DANGEROUS PROCEDURES

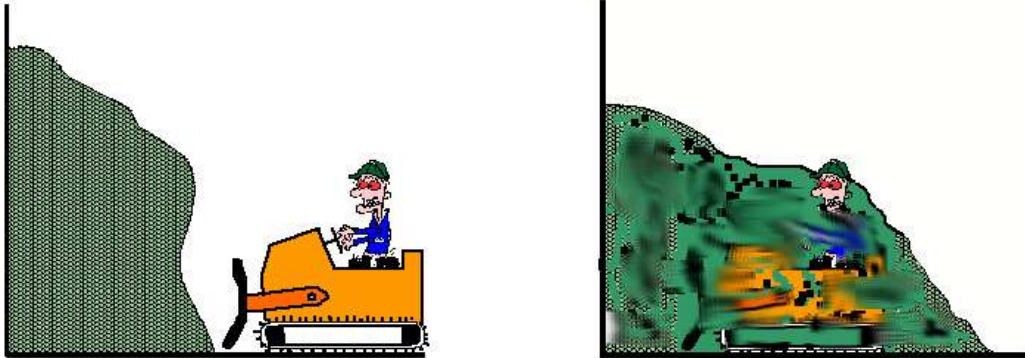


Lowering-in Men

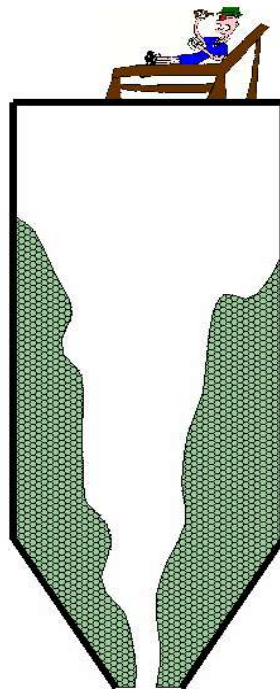


Explosives

CEMAX



Machines



OUR SYSTEM



CLIENT BASE (BY AUSTRALIAN SILO CLEAN PTY LTD)

<i>Cement</i>	Australian Cement	Blue Circle Cement	Adelaide Brighton Cement
	B.G.C. Cement	Cement Australia	Malaysian Cement Bhd
	Sunstate Cement	Queensland Cement	Northern Cement
<i>Minerals</i>	A.C.I. Glass	BHAS	Copper Mines of Tasmania
	M.I.M.	Pasminco	Penrice Soda
	R.G.C. Minerals		
<i>Coal</i>	Flinders Power	Leigh Creek Coalfield	Queensland Alumina
	Red Head Colliery		
<i>Wood Chip</i>	APM		
<i>Sugar</i>	Coca Cola Amatil	CSR Sugar	Sugar Australia
<i>Stockfeed</i>	Coprice Feeds	Inghams Enterprises	Milne Feeds
	Ridley Corp	Riverina Stockfeeds	Steggles
	Wesfeeds		
<i>Flour, Food & Grain</i>	Arnotts Biscuits	Buttercup Bakeries	Coprice Feeds
	Country Bake	Defiance Milling	Gazelle Foods
	Goodman Fielder Mills	Graincorp	Karls Bakery
	Kelloggs	Nestle	Paradise Foods
	Sanatarium	Starch Australia	Tip Top Bakeries
	Uncle Tobys	Weston Biscuits	Weston Milling



MATERIALS

Cement	Grains	Plaster
Minerals	Flours	Chemicals
Sands	Protein Meals	Plastics
Ores	Coffee	Dusts
Glass Cullet	Sugar	Hay
Woodchip	Nuts	Detergents
Coal	Liquids	Seeds
Cottonseed	Foods	

Silos have been effectively cleaned down to regain 100% capacity after 20-30 years of continuous build up.

In many cases, product that has been “written off” many years previously can be re-cycled.

CASE HISTORIES

Case History 1

A cement company used a 900t silo to store “off specification” cement. This cement was directly from the mill and until such time as rigid specifications were met was run into this silo for storage pending recycling through the kiln and milling process.

As it was in constant use for many years, possibly as many as thirty, it had been impossible to clean out, although manual dipping revealed that a build up of product had reduced the silo’s capacity dramatically. In 1998, a dedicated “off spec” bin had been commissioned and *Australian Silo Clean* was requested to clean out the silo, ready for use for finished products.



During the space of 10 days, 750 tonnes of material was removed, 600 tonnes in powdered form for storage, pending recycling, the balance being dumped on site as being non-reclaimable at that stage. This was achieved with very little dust hazard and with only two operators utilizing the *Australian Silo Clean* system. The silo was inspected on completion of the work and was OK for human entry, which was required to inspect and, if necessary, repair the air pads. The walls, cone and importantly, the underside of the roof were clear of hazardous build up.

Case History 2

Another cement company utilized a 750 tonne silo purely for bagging. Over a period of time, the available capacity shrunk to only 300 tonnes. *Australian Silo Clean* were approached to remove 200 tonnes of the build up, enabling the company to utilize the extra capacity and give them a "comfort zone" in case of delivery problems. The parameters were that loosened product could only be taken away after bagging had ceased, also any product removed had to be of a consistency to pass through the existing air slide system prior to being side lined for recycling. The time allowed was 40 hours.

After 40 hours, the job had progressed with so few problems that the company requested that a full clean be carried out. 79 hours later, the silo was returned to its original 750 tonne capacity. Although not in the original programme, *Australian Silo Clean* were asked to remain on site and start cleaning the adjacent silo "While you are here!"