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Advantages of Concrete Silos Over Metal Welded or Bolted Silos

- Concrete silos are typically lower in cost than metal silos.
- Concrete silos have good resistance to corrosion. This includes both corrosion of internal walls due to the stored bulk solid and also external corrosion caused by moisture. Metal corrosion is a well known problem.
- No need for expensive painting of silos due to corrosion thus lowering operational cost.
- There is no concern about electrolytic effects at welds or liner connections.
- Careless detailing of metal walls may leave inward facing ledges or welds, which can obstruct flow and increase wall pressures. This is avoided with concrete.
- Concrete is better able to resist abrasive wear than most metals.
- Concrete is more robust and thus better able to withstand internal pressure loads and impact loads.
- Concrete has higher wall friction angles with most bulk solids than most metals. This results in higher frictional drag down the cylinder walls and hence lower pressures acting normal (i.e. perpendicular) to cylinder and hopper walls.
- There is no concern about weld quality or stress risers, such as bolted connections.
- There is no concern about leakage to the environment, which can be a problem when storing fine powders in bolted silos.

Conclusion: Concrete always beats steel!

For further information or lunch and learn presentations contact Marietta Silos 740-373-2822 or visit www.MariettaSilos.com or www.FlyAshSilo.com

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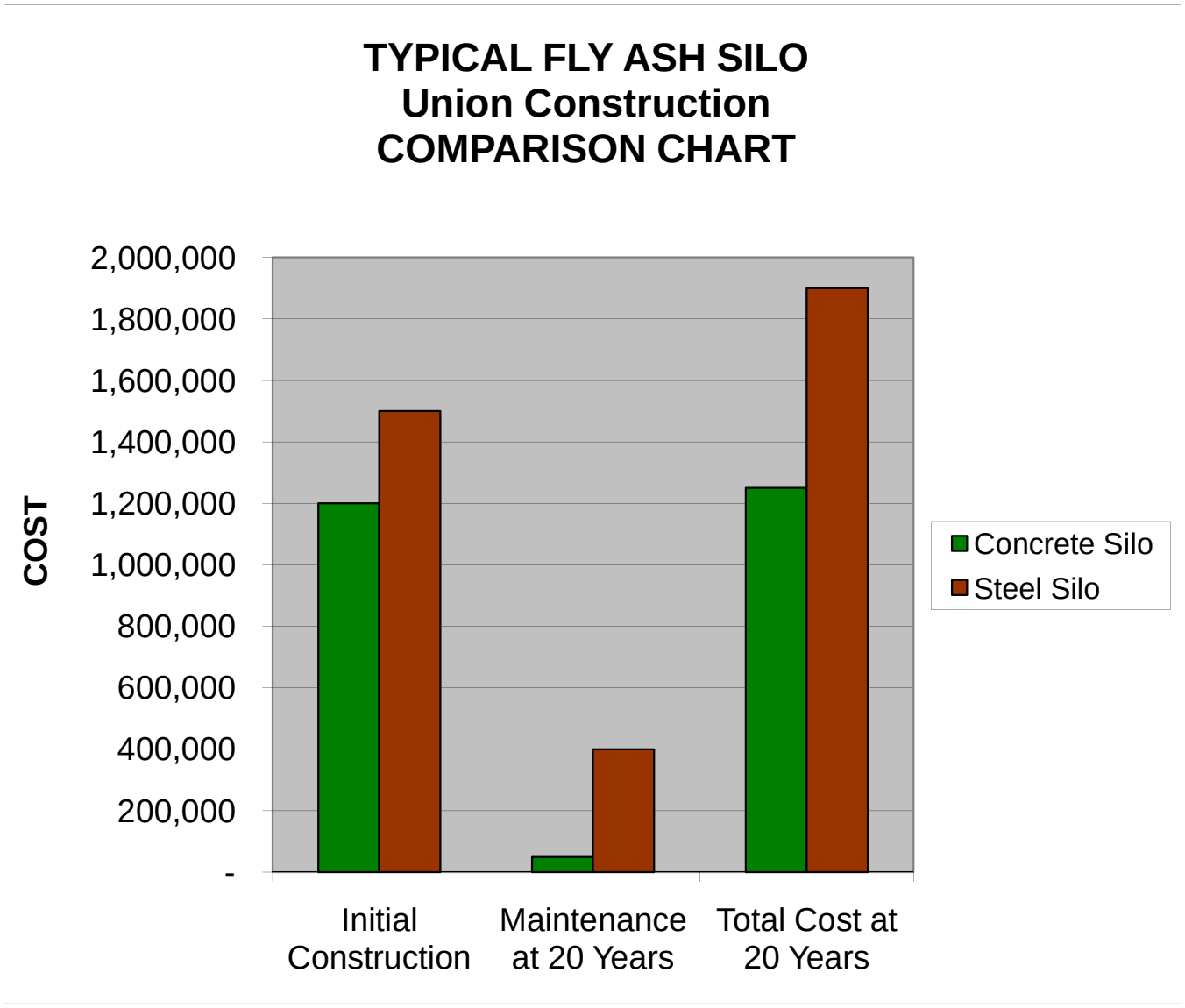
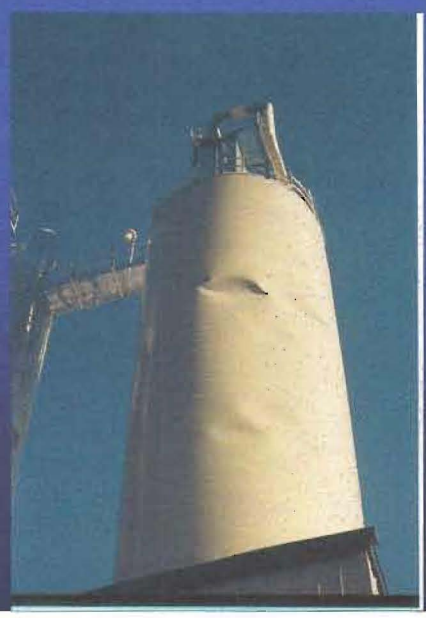

TYPICAL FLY ASH SILO
Union Construction
COMPARISON CHART
COST
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
Initial Construction
Maintenance at 20 Years
Total Cost at 20 Years
Concrete Silo
Steel Silo

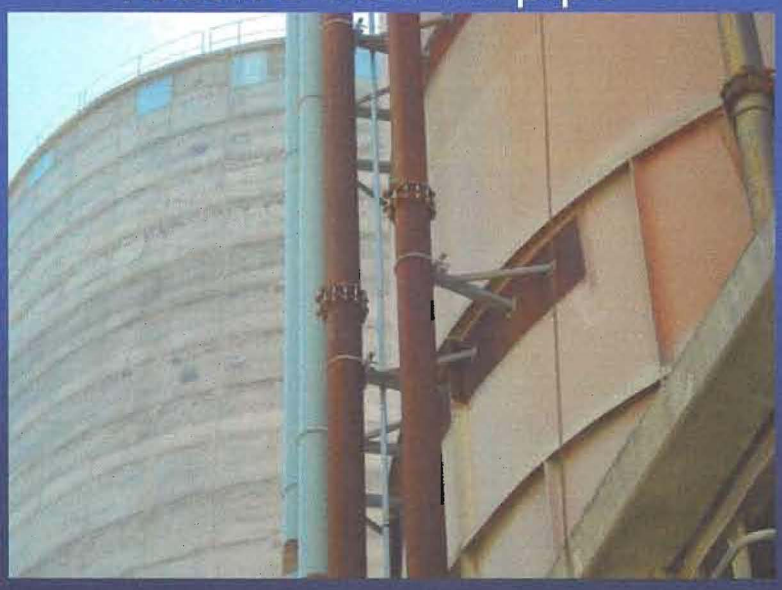
Ratholes formed in 60 ft. diameter fly ash silo which will cause a symmetrical flow problem

Denting in welded steel silo caused by eccentric withdrawal



Above photos courtesy of Jenike & Johanson, Inc. Used with persmission.

Welded steel silo needed stiffener to receive new fill pipe



Bending of welded steel silo wall and new stiffener

Corrosion just above hopper/cylinder junction that caused hopper to drop off

Above photo courtesy of Jenike & Johanson, Inc. Used with permission.

Welded steel silo rusting through allowing holes due to steel corroding

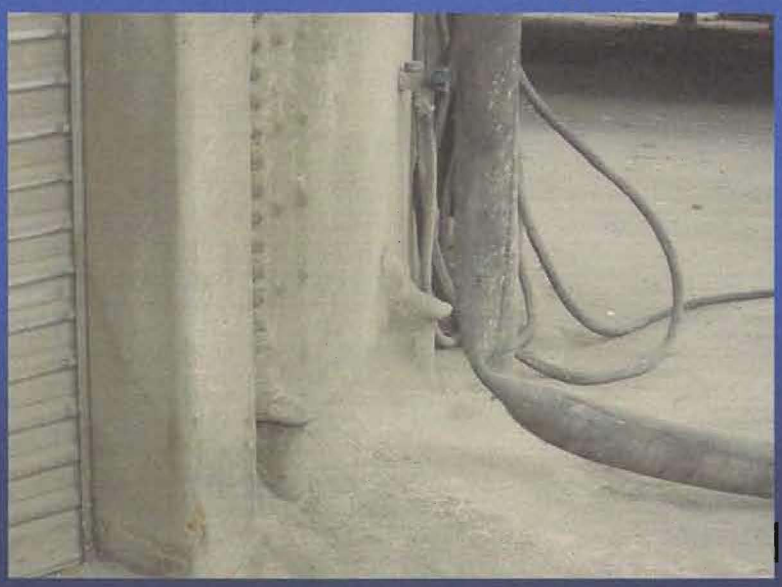
Failure of welded steel conical hopper storing limestone

Above photo courtesy of Jenike & Johanson, Inc. Used with permission.

Water leaking inside new bolted steel silo

Misaligned gasket on new bolted steel silo

Bolted steel silo leaking material



Steel silos need painting.
Painting delayed due to high cost.

Holes in bolted steel silo
due to corrosion