

LIFE CYCLE COST COMPARISON – MYTH VS FACT

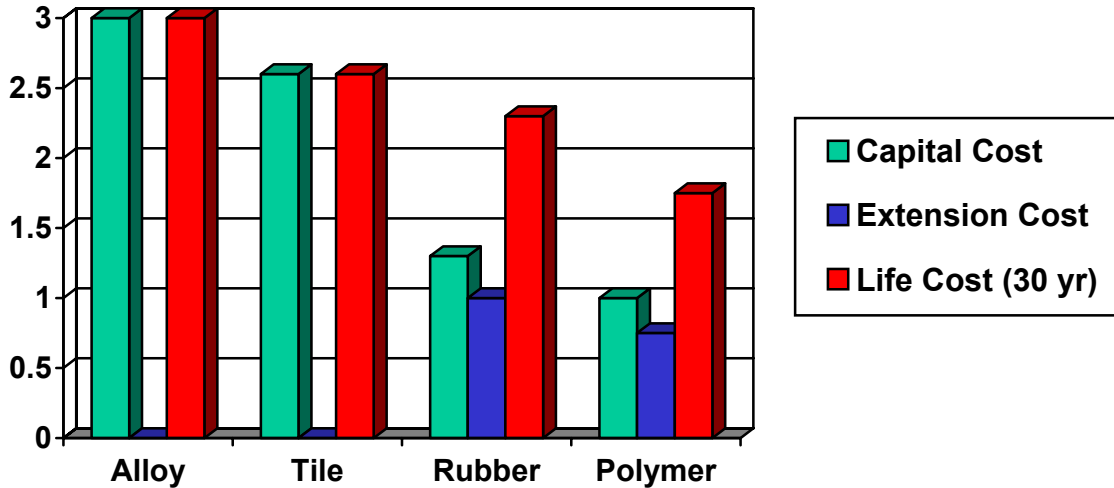
Since 1926, CEILCOTE innovations and development of protective lining, coating, flooring and grout systems have provided reliable solutions for industry, worldwide. Life expectancy of our polymer linings is typically 15 to 20 years + before major re-work is required. When re-work is necessary, it may not mean total system replacement. In most cases the lining systems can be refurbished by replacement of topcoat layers to significantly extend service life of the system.



COST COMPARISON – Materials of Construction for Wet Flue Gas Desulfurization Absorbers

The graph presented below compares the cost impact of several alternative materials of construction used for WFGD Absorber vessels, operating in flue gas conditions containing 50,000 ppm chlorides or greater, over a 30-year operating life based on the following criteria.

1. Capital cost values include substrate materials, lining materials where applicable, and field erection/installation
2. Comparative cost values are based on 2003 estimates
3. Alloy reference is based on solid Alloy C-276 (UNS N10276) construction
4. Tile reference is based on tile lined concrete construction
5. Rubber reference is based on rubber lined carbon steel construction with extension cost for one complete re-lining during the 30 year Absorber operation life
6. Polymer reference is based on polymer lined carbon steel with extension cost for one partial re-line (refurbishment) during the 30 year Absorber operation life



SERVICE LIFE OF COMMON IMMERSION SERVICE LININGS

The following chart compares four common lining system designs that have been successfully used for the protection of FGD Equipment and related tanks and vessels in worldwide applications. Other custom designs and/or combination systems are readily available from CEILCOTE to meet a wide range of operating service conditions.

Steel Vessel Immersion Linings Comparison			
Product Type	Thickness	Temperature Limit	Life Expectancy
Sprayed Flake Filled Coating	40 mils (1.0 mm)	140°F (60°C)	6-10 years
Trowel/Sprayed Flake Filled Lining	60 mils (1.5 mm)	180°F (82°C)	10-15 years
Troweled Fabric Reinforced Lining	140 mils (3.5 mm)	160°F (71°C)	15-20 years
Troweled Flake Reinforced Lining	80 mils (2.0 mm)	210°F (99°C)	15-20 years

** 100% solid polymer systems available to meet environmental requirements*

TYPICAL PRODUCT APPLICATION AREAS

CEILCOTE Corrosion Control products have been successfully used in wide variety of Power Industry applications for over 50 years with specific concentration in Coal Fired Plants (with FGD systems) in the last **30+ years**. The chart presented below highlights some typical lining and coating system designs that have been successfully used in various plant application areas.

Typical Lining & Coating Applications in Power Plants						
	Flake Filled	Flake Filled	DualFlake	Flake Glass	AR* Lining	CB** Lining
Areas of Use are Highlighted	Coating	Coating	Lining	Lining	System	System
	40 mils	60 mils	60 mils	80 mils	160 mils	80-140 mils
	(1.0 mm)	(1.5 mm)	(1.5 mm)	(2.0 mm)	(4.0 mm)	(2.0-3.5 mm)
Major FGD Equipment						
Steel Absorber Modules						
Concrete Absorber Modules						
Flue Gas Ducts						
Gas To Gas Heaters						
Bag House Compartments						
Auxiliary Tanks						
Suspended Solids Content: 0-15%						
Suspended Solids Content: 15-35%						
Suspended Solids Content: > 35%						
Concrete Structures						
Trenches (Low - No Abrasion)						
Sumps (Low - No Abrasion)						
Trenches (Moderate - High Abrasion)						
Sumps (Moderate - High Abrasion)						
WWT Tanks & Structures						
Secondary Containment Areas						
* AR - refers to Abrasion Resistant ** CB - refers to Crack-Bridging						

WARRANTY

CEILCOTE has been industry’s partner in corrosion problem solving for decades. As a pioneer in polymer linings, coatings, flooring and grout, we have become an important arm of the electric utility industry. **CEILCOTE** offers lining systems **guaranteed** for up to **ten (10) years** with life spans of 15 to 20 years and beyond in some applications. In addition to high performance polymer systems, CEILCOTE offers Project Management, QA/QC Services and Full Turnkey Installations with Performance Warranty. For information on unit responsibility, contact CEILCOTE (877-234-5268).

CAPABILITIES

CEILCOTE’s performance success is not just a claim it is a reality. Over 10 million square feet of Ceilcote polymer systems have been installed for the power industry since 1972. CEILCOTE can meet the needs for your WFGD Power Plants, Combined Cycle Facilities, as well as Co-Generation and Dry Scrubber Systems.

Our capabilities span the globe with CEILCOTE offices and sales representation strategically located in major industrial centers in North America, Europe, Asia and beyond.



OPTIONS

Inside and out, from the bottom of the sump to the top of the stack, CEILCOTE products help you control potential corrosion problems. Typical areas exposed to chemical attack that require corrosion protection are the scrubbers/absorbers, sumps, trenches, secondary containment areas, ductwork, gas-gas heaters, stack flues, bag-house compartments, thickeners, auxiliary tanks (slurry, feed, recycle, ball mill, etc.), D.I. water areas and water & wastewater treatment facilities.



CEILCOTE has developed heavy-duty linings, high build coatings, chemical resistant flooring and polymer grouting materials to meet your needs. For more information, please contact CEILCOTE.

Important Note

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to law) any loss or damage arising out of the use of the product. WE HEREBY DISCLAIM ANY WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.

Issue date: 24/10/07

✘ International and all product names mentioned in this publication are trademarks of, or licensed to, Akzo Nobel.

© Akzo Nobel

www.ceilcotecc.com
www.international-pc.com