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## A Life Cycle Costs Analysis of Terrazzo vs. other Floor-Finishes

The **National Terrazzo & Mosaic Association, Inc. (NTMA)** conducted an extensive study, compiling statistics from its' own membership, the Institutional Research Associates, U.S. Government Agencies, Sanitary Supply Organization and other agencies, to determine the average cost of installation, maintenance and replacement costs of various typical floors used in schools, hospitals, and other institutional facilities.

The following studies compares:

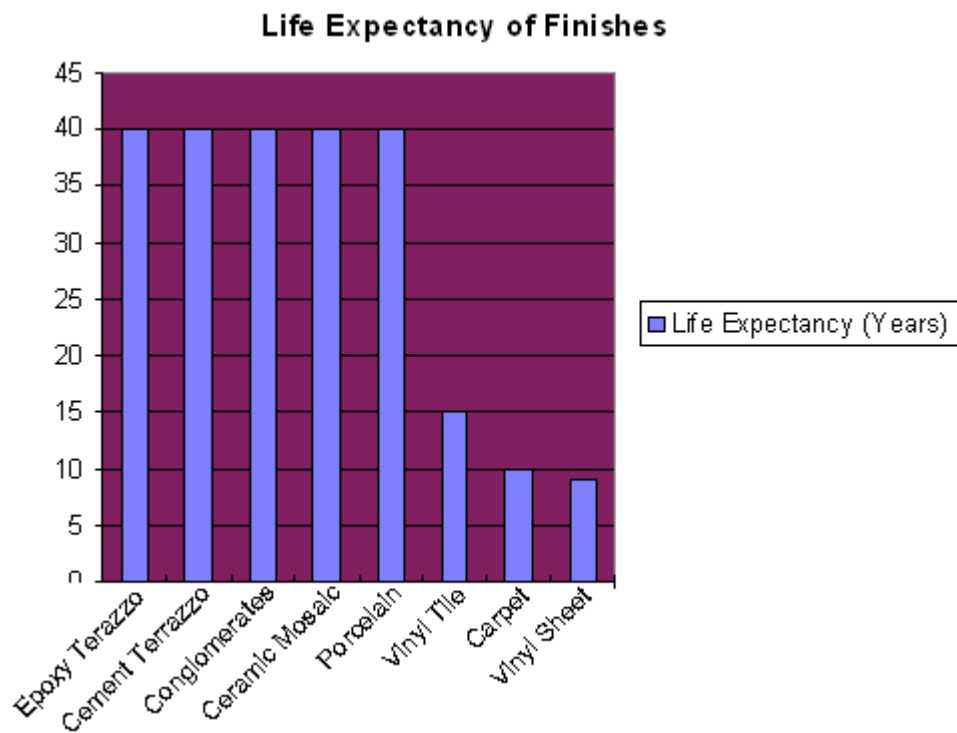
- [Terrazzo vs. Carpet](#)
- [Terrazzo vs. Hard Surface Tile](#)
- [Terrazzo vs. Vinyl Composition Tile](#)

Terrazzo has for years provided a beautiful finish that is both durable and easy to clean. In today's world of tightening new construction funding, there is increasing pressure on owners and general contractors to reduce construction costs. Finishes are often the first attempt at value engineering cost savings.

**Installed Costs** for epoxy- or cement bounded *terrazzo* is based on size, complexity of design, number of colors and details like curves. *Terrazzo* is one of the more expensive finishes when comparing the initial costs for the installation. Unfortunately, many value-engineering decisions are based only by the installed pricing rather than **Life Cycle Costing**. With a view, whether the different kind of flooring finishes represent **best value for money**, we have to see the life-cycle-costing, the life expectancy and the cost of maintainance.

## Life Expectancy of FLOOR-Finishes

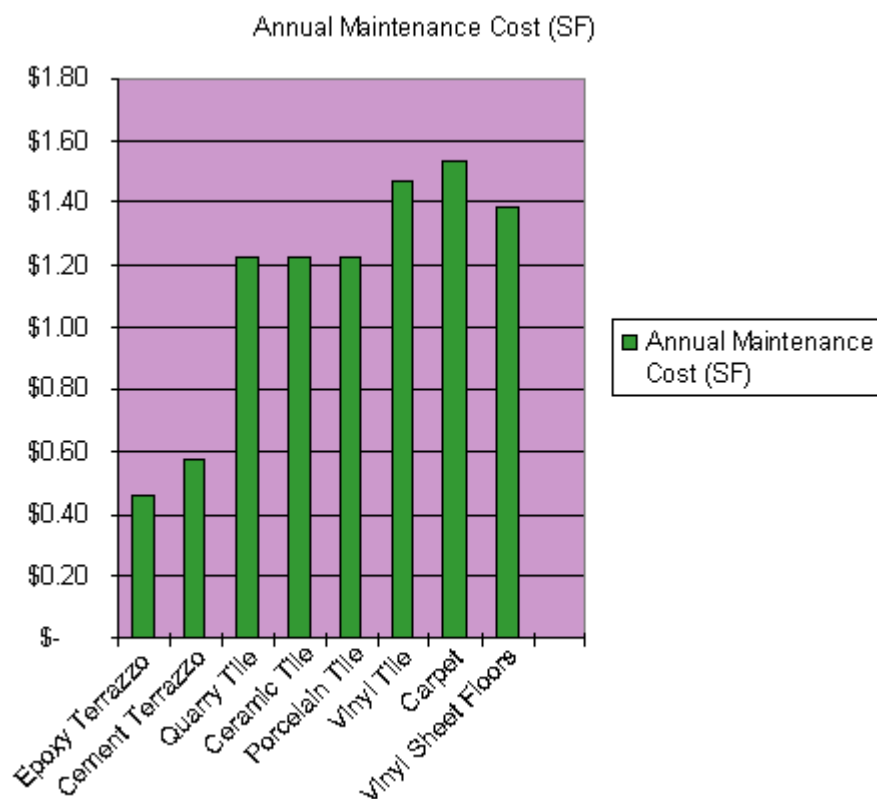
Both **Cement** and **Epoxy Terrazzo** Systems have demonstrated life expectancies of over 40 years. In many cases, old *terrazzo* systems can be refurbished very easy for a fraction of the original costs. This process is achieved by regrinding, grouting and finishing of the terrazzo to bring out the original grain.



## Maintenance cost of floor finishes

**Maintenance** of floor finishes is more difficult to quantify in many buildings, due to the multitude of finishes in any given building and the budget recording process. In buildings where these are studied, the impact of finishes on maintenance budgets is significant. When maintenance is evaluated over the life of a finish, *terrazzo* systems are the clear winner. When you speak to janitorial companies, they will tell you "*terrazzo finishes are the easiest floors to clean and to maintain.*"

Ceramic, porcelain and quarry tile products are very hard durable finishes with comparable life expectancies to *terrazzo*. However, the grout joints and lippage with these systems inevitably lead to higher maintenance costs. These grout joints also lead to sanitation and hygienic problems resulting from microbial growth. In addition, grout joints in hard surface systems create a noisy environment with rolling cart traffic.





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The final piece of information important in evaluating **Life Cycle Costs** is the **Replacement Value** of the finish. These figures will obviously be impacted by inflation and down time during renovations. For the purpose of this study, we assumed no inflation or opportunity cost for loss of space during renovations. Needless to say, floors requiring no replacement are clear winners.

When compiling the above information on Installation, Maintenance and Replacement Costs, we notice some striking conclusions. Maintenance is, by far, the greatest expense, yet many owners continue to focus on installed and replacement cost values.

Many owners are maintaining floors with a wax program, similar to VCT. Wax programs are expensive in the maintenance, over time the floors lose their luster due to wax buildup and improper use of strippers, which will dull the surface. It must be also paid attention that during the procedure of cleaning and disinfection with vinyl sheet floors and vinyl tiles the maintenance needs film forming cleaning products with waxing particles.

This film forming procedure also leads to hygienic problems resulting from microbial growth. Dust sticks through this filmforming cleaning procedure on the vinyl floor. Dust is especially in the range of hospitals the main porter of bacteria and germs. Traditional cleaning is with water, broom, rubber and vacuum cleaner. Dust is more or less swirled up through the room, but not taken completely away. A modern and effective cleaning and disinfection procedure is a dry cleaning process using cleaning cloths, which removes the dust completely away from the floor. The best and effective way is on smooth and non porous surfaces like the surface of an epoxy terrazzo.

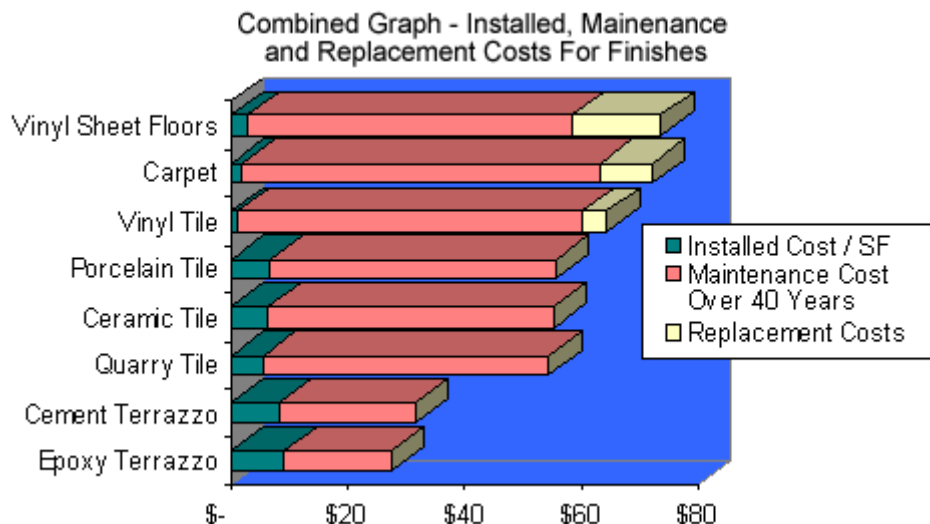
Schools, hospitals and municipal office buildings have long been viewed as icons or foundations for the communities where they are built. These structures over the years have been built with a life expectancy of 40, 60 and even 80 years. With increasing *limitations in raw materials*, and the increasing demands of *lower maintenance* coupled with *greater use and abuse*, make the building and finish selections more critical than ever.



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### The True Cost of Floor Finishes

The final chart shows the 40 year costs on an annualized basis. The **annual cost** for *Epoxy Terrazzo* is \$.68 / SF, while *Cement Terrazzo* is \$.78 / SF, The terrazzo finishes were the only finish under \$1.00 SF per year when evaluated over a 40 year life. (See next chart.) The annual cost for vinyl sheet floors are \$ 2.00 SF per year over 40 year life.



This chart does not include the cost for those time periods where other floors like vinyl sheet floors, vinyl tiles are replaced and the areas can not be used; e.g. in an intensive care unit of a hospital the loss per bed per day is 1.500 \$.

#### **Terrazzo is the clear choice for beauty, durability and fiscal responsibility for generations to come.**

The above figures are averages based on a large sampling of prices in many different cities, states and regions of the country. If you would like us to complete a Life Cycle Analysis of finishes using local market rates, please contact us, so we may complete a local analysis.

**Terrazzo Built With Craftsmanship Today  
For Generations To Come**