

## SERVICE WORKS

## "UP ON TOP" NEWS

## The Best Roofs Actually Cost Less

The ultimate question for roofing is "What is the best roof"? The accountants will tell you it's simple "It's the one that lasts the longest". It is the roof that costs the least over its life. It really does not matter what material is used or how the roof is applied, the answer is the same. If the roof fails then the cost of a new roof is added to the cost.

When most Owners or Property Managers look at roofing they look at the materials and the system, and the only part of the cost that they consider is the initial cost. But the cost to install the roof is only a portion of the total cost of owning a roof.

The practice of examining the cost of owning a roof over its entire life is called life cycle cost analysis. This is the best way to compute the cost/value of a roofing system. A pertinent question

is "How long do you plan on owning the building"? If the answer is indefinitely, then the cost analysis should be for at least 20 years. The standard IRS depreciation for reroofing is 39 years. There are very few roof systems that are functional at the end of this life expectancy.

The next consideration is the changing value of a dollar over time. One common method for relating future expenses to today's costs is to use the T-bill rate, minus the inflation rate.

There are costs associated with other aspects of roofing, such as installation inspections, semi-annual inspections, the cost of leak related repairs, and so on. There are also routine maintenance expenses to consider, such as cleaning the drains, recaulking the counterflashings, and general housekeeping.

Another item that needs to be known is the relative life expectancy of the roofs in question. The most conservative approach is to use the warranty life as the service life. This is generally shorter than the real life, except when there is no routine maintenance done. Then the life may well be shorter than the warranty period.

A simple scenario to illustrate how these factors combine to produce a life cycle cost would be:

- A commodity grade roof with a 15 year warranty and a price of \$225,000
- A premium grade of roof with a 20 year warranty and a price of \$300,000

Let's assume the commodity grade roof will require \$1,000 in annual maintenance and the premium grade roof will require \$1,500 in annual maintenance but only in years 15 - 24. With this model the commodity grade roof system would have an annualized cost of \$16,000 and the premium system would have an annualized cost of \$13,125.

ASTM E-917 Standard Practice for Measuring Life Cycle Costs of Buildings and Building Systems provides owners with an excellent tool for comparing roofing options on a sound financial basis.

There are other factors that can be included in a model. These include a simple energy cost savings as well as the costs that are associated with leaks in the system. If a roof leaks, the wet areas have to be fixed, as does the damage inside the building. The additional energy costs can be considered as well.

There is also the cost associated with disrupting the operations of a facility to put a new roof on. This too should be added to the cost of the roof.

So, which of these roofs costs the owner the most money. Clearly, the higher up front cost of the premium grade system can be fully justified through the long term savings.

By looking at more than just the initial cost of the roof, the owner is making a better financial decision. More often than not the more expensive roof system initially is indeed less expensive over the life cycle.



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