

Carpet is a cost effective flooring choice

CRI has looked at several studies that compare initial cost, plus installation and maintenance. These studies are based on school installations where wear is constant and hard, and where the recommended maintenance procedures have been used and the appropriate commercial carpet and commercial vinyl composition tile (VCT) products were selected at the time of installation. The most current Floor Covering Installation Cost Comparison is based on 22 years of service, comparing carpet and VCT per square foot.

LIGHT TO MEDIUM TRAFFIC AREAS	CARPET	VCT
Initial Materials plus installation	\$2.11	\$0.89
Carpet removal and disposal cost at the 11-year period	\$0.22	N/A
Carpet reinstalled (materials plus installation at 11-year period)	\$2.53*	N/A
TOTAL COST OF FLOOR COVERING SYSTEM FOR 22 YEARS	\$4.86	\$0.89
Cost of cleaning and maintenance for 22 years, including labor, cleaning supplies, equipment, and equipment maintenance	\$12.20	\$23.81
TOTAL USE-LIFE COST FOR 22 YEARS	\$17.06	\$24.70**
* 20% inflation		
** +plus 31%		

HEAVY TRAFFIC AREAS	CARPET	VCT
Initial materials plus installation	\$2.11	\$0.89
Carpet removal and disposal cost at the 11-year period	\$0.22*	N/A
Carpet reinstalled (materials plus installation at 11-year period)	\$2.53**	N/A
TOTAL COST OF FLOOR COVERING SYSTEM FOR 22 YEARS	\$4.86	\$0.89
Cost of cleaning and maintenance for 22 years, including labor, cleaning supplies, equipment, and equipment maintenance	\$13.43	\$37.93
TOTAL USE-LIFE COST FOR 22 YEARS	\$18.29	\$38.82***

* \$0.22 sq. ft. is about \$2.00 per sq. yd. Many contractors install commercial carpet for \$0.40 per square foot or \$3.60 per yard.

** 20% for inflation is figured in here. Even at 100 percent, it would not make that much difference in the conclusion drawn from this study.

*** +plus 53%

Floor Covering Maintenance
Cost Comparison
Example from a school environment

LIGHT TO MEDIUM TRAFFIC AREAS

CARPET	Frequency Per School Year	Minutes Per 1000 sq. ft.	School Year Total Minutes per 1000 sq. ft.	Cost per School Year \$ per sq. ft.
Vacuuming*	180 (daily)	12	2160	\$0.3521
Spot Removal**	72 (2x wk)	12	864	\$0.1408
Rinse Cleaning***	2 (May, Oct)	45	90	\$0.0147
Deep Cleaning****	3 (Aug, Dec, Mar)	90	270	\$0.0440
Chemical Costs				\$0.0031
TOTAL			3384	\$0.5547

* Anticipates thorough vacuuming 3x weekly and entry/high traffic vacuuming 2x weekly. Failure to accomplish vacuuming routinely, especially in entry areas, is a major mistake that leads to soil buildup in all areas, and ultimately in diminished flooring investment life. In other words, maintain 5% of the building area well and you can cut maintenance time in the other 95% by 1/3 to 1/2.

** Worst case, failure to spot clean carpet only results in unsightly appearance; not slip-fall hazards. This schedule provides 24 minutes per week per 1000 sf. Most of this probably will be done as needed for major problems, or once a week. It envisions time for light cleaning in entry areas and is almost as much time as it takes for a "rinse" cleaning.

*** Interim maintenance cleaning (hot water rinse) not only maintains aesthetics, it also extends the investment use-life, while prolonging the interval between deep cleanings.

**** Carpet is the largest horizontal surface in a building and the collection point for everything that falls out of the air. To use appearance as the criteria for cleaning intervals for any floor covering is not only foolish, but it may be downright unhealthy. Further, more frequent cleaning prolongs flooring investment life.

VINYL COMPOSITION TILE	Frequency Per School Year	Minutes Per 1000 sq. ft.	School Year Total Minutes per 1000 sq. ft.	Cost per School Year \$ per sq. ft.
Dust Mopping	*180 (daily)	6	1080	\$0.1760
Spot Removal	**180 (daily)	6	1080	\$0.1760
Wet Mopping	108 (3x wk)	30***	3240	\$0.5281
Spray Burnishing	18 (EO-Wk)	30****	540	\$0.0880
Scrub/Recoat	2 (Dec, Mar)	120	240	\$0.0391
Strip/Finish	1 (Aug)	300	300	\$0.0489
Chemical Costs				\$0.0260
TOTAL			5726	\$1.0821

* Based on 36-wk/5-day school year. Gritty soil, if not removed daily, will damage VCT finish, causing the need for increased frequency for Spray Buffing, Scrub/Recoat or Strip/Refinish. Unlike carpet, particles on hard flooring have no place to go, thus abrading the hard finish, not to mention the adverse effect on IEQ.

** Spot mopping is a band-aid on the problem, rather than a cure. It must be performed when spills occur, first to avoid slip-fall hazards, and second, before soiling can be tracked to larger areas.

*** There are 4 categories of wet mopping, depending on how aggressive the technician needs to be. This number assumes light soiling and 2000 square feet per hour (1000 in 30 minutes).

**** The speed here depends on the equipment used; e.g., a 175-rpm machine, which most in-house custodians use, produces about 1250 sf per hour, whereas a 1500-rpm burnisher produces about 3000 sf/hr. This figure assumes about 2000 sf/hr., which may be optimistic.

If the above schedules for dust, spot and wet mopping are not maintained, plan to increase considerably the need for Spray Buffing, Scrub/Recoat or Strip/Refinish.

HEAVY TRAFFIC AREAS

CARPET	Frequency Per School Year	Minutes Per 1000 sq. ft.	School Year Total Minutes per 1000 sq. ft.	Cost per School Year \$ per sq. ft.
Vacuuming	180 (daily)	*10	1800	\$0.2934
Spot Removal	180 (daily)	8	1440	\$0.2347
Rinse Cleaning	2 (Oct, May)	60	120	\$0.0196
Deep Cleaning**	3 (Aug, Dec, Mar)	120	360	\$0.0587
Chemical Costs				\$0.0040
TOTAL			3720	\$0.6104

* (Ref. notes under moderate soil schedule above) Realistically, most vacuuming will be concentrated in entry and channelized traffic flow areas. Time is largely dependent on the amount of furniture present and the width of the vacuum head.

** Although the frequency of cleaning remains the same as for light-to-medium traffic areas, time spent cleaning is increased by 25%.

VINYL COMPOSITION TILE	Frequency Per School Year	Minutes Per 1000 sq. ft.	School Year Total Minutes per 1000 sq. ft.	Cost per School Year \$ per sq. ft.
Dust Mopping	180 (daily)	8	1440	\$0.2347
Spot Removal	180 (2x wk +)*	8	1440	\$0.2347
Wet Mopping	108 (3x wk)	45**	4860	\$0.7922
Spray Burnishing ***	36 (1x wk)	48	1728	\$0.2817
Scrub/Recoat	5 (Sp/Nv/Fb/Ap)	120	600	\$0.0978
Strip/Finish	1 (Jul)	300	300	\$0.0489
Chemical Costs				\$0.0340
TOTAL			10,368	\$1.724

* Quick response to spills on hard surfaces is essential because they do not absorb moisture like carpet. In addition to spreading the residue, there are safety (slip-fall) issues to consider.

** Although the number of wet moppings is the same as light-to-moderate traffic, time has been increased from 30 to 45 minutes. Otherwise, we just move the dirt around, which increases the need for "Scrub and Recoat" or even refinishing.

*** **Spray buffing is not a cleaning procedure.** Absent the scrub/recoat procedure that follows, floors gradually turn brown as soil particles are fused with finish.

Based on ISSA (International Sanitary Supply Association) cleaning rates schedule : 36 weeks
 Labor : \$9.76 per hour

VCT emits VOCs (plasticizers) throughout its usable life, unlike carpet. Once these plasticizers are exhausted (no longer emit), the flooring becomes brittle and must be replaced.

This use-phase cost analysis was prepared by Jeff Bishop, Certification Board Chairman, Institute of Inspection, Cleaning and Restoration Certification, Vancouver, WA. March, 2002.

Industry experts urge specifiers to develop realistic maintenance and installation budgets.

When carpet underperforms because it was poorly installed or maintained, it becomes a needless replacement expense. A realistic life of carpet includes appropriate, consistent maintenance and should reflect the years the carpet is expected to be on the floor, rather than the length of time it will take for the carpet to wear out. Renovation and scheduled refurbishing of the facility generally occur even if the carpet is not worn out.

For an accurate assessment of life-cycle costs, specifiers should base their analysis on total-use costs, taking into consideration the initial cost of installed carpet, its useful life based on its durability and appearance retention, installation costs, maintenance expenses that include labor, cleaning supplies and equipment, plus removal costs. Life use costing calculates the true cost of carpet over time to determine the best value for the money.

An inexpensive carpet cannot match the performance and appearance retention of a better grade. To select an affordable carpet that will meet every expectation, specifiers should work closely with the manufacturer. Many times, unfortunately, a carpet is installed just because it is inexpensive. A poor choice, based on price alone, for a moderate traffic area, simply will not provide the best value. Looking at total cost of ownership to determine the relative value of a better grade of carpet is the best idea. Specifiers should establish a realistic budget in the beginning and then challenge manufacturers to meet that performance level for the budgeted purchase price.