Appendix C.

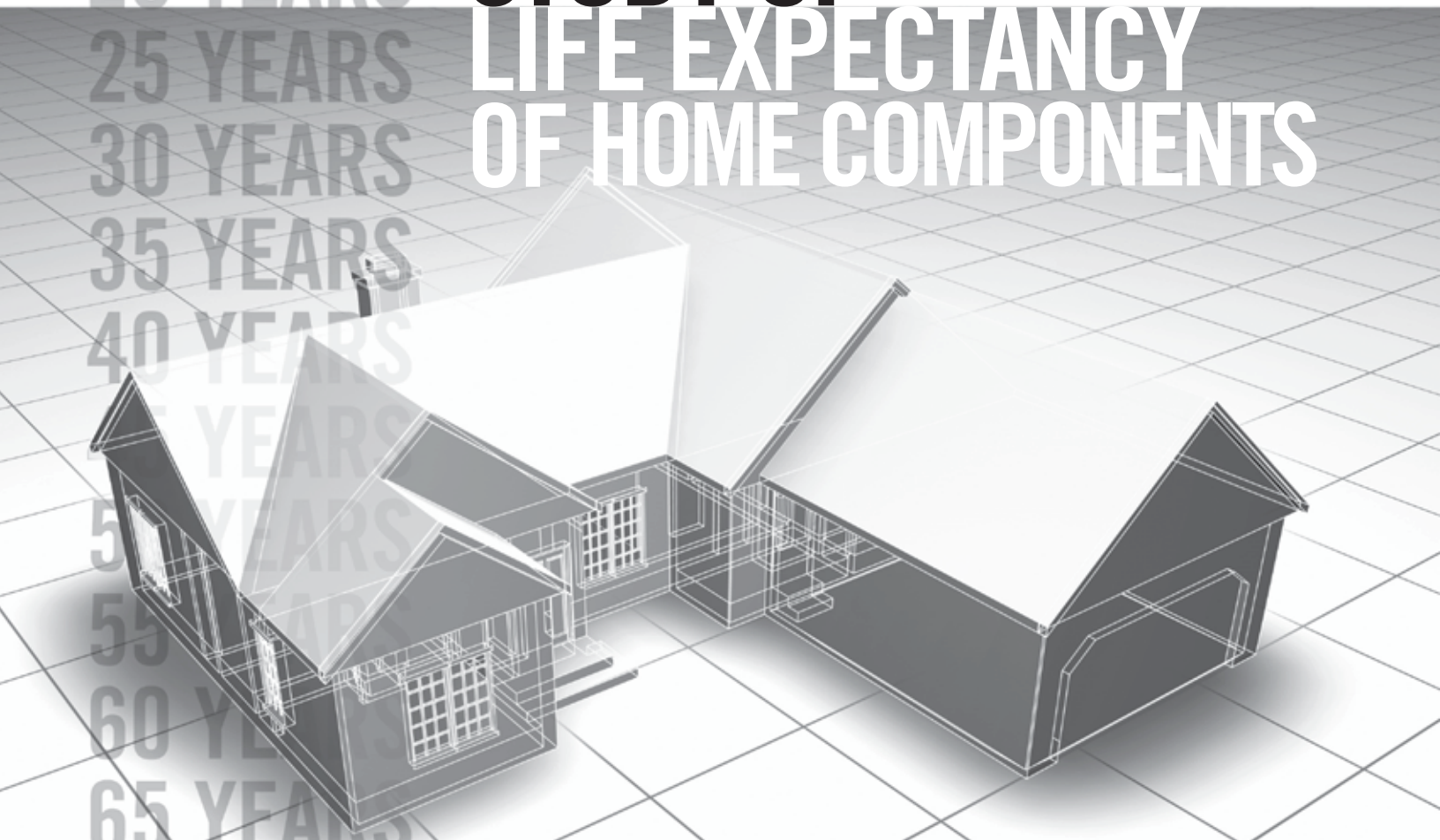
LIFE EXPECTANCY OF BUILDING MATERIALS REFERENCES

C-1 National Association of Home Builders Study of Life Expectancy of Home Components

5 YEARS
10 YEARS
15 YEARS
20 YEARS
25 YEARS
30 YEARS
35 YEARS
40 YEARS
50 YEARS
55 YEARS
60 YEARS
65 YEARS
70 YEARS
75 YEARS
80 YEARS
85 YEARS
90 YEARS
95 YEARS
100 YEARS

National Association of Home Builders /
Bank of America Home Equity

STUDY OF LIFE EXPECTANCY OF HOME COMPONENTS



NAHB
National Association of Home Builders

Bank of America

FEBRUARY 2007

National Association of Home Builders/ Bank of America Home Equity Study of Life Expectancy of Home Components

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National Association of Home Builders/
Bank of America Home Equity
Study of Life Expectancy of Housing Components

INTRODUCTION

The life expectancies of the components of a home depend on the quality of installation, the level of maintenance, weather and climate conditions, and the intensity of use. Some components may remain functional but become obsolete due to changing styles and preferences or improvements in newer products while others may have a short life expectancy due to intensive use.

The average life expectancy for some components has increased during the past 35 years because of new products and the introduction of new technologies, while the average life of others has declined. NAHB's last such study on the life expectancy of housing components was published in *Housing Economics* in August 1993.

U.S. HOUSING STOCK

The 2005 American Housing Survey by the U.S. Census Bureau shows that there are more than 124 million homes in the housing stock, with a median age of 32 years. About one-third of the housing stock was built in 1960 or earlier. About 10 percent was built in the 1960s, and another 20 percent was built in the 1970s. Of the remainder, 13 percent was built in the 1980s, another 13 percent was built in the 1990s, and 8 percent in the first years of the 21st century.

Of the total stock of 124.3 million housing units, about 109 million are occupied housing units, 11.6 million are vacant and about 4 million are seasonal. Two-thirds of all units in the nation's housing stock are single-family detached or attached, 8 percent are in buildings with 2 to 4 units, and about 17 percent are in buildings with 5 or more units. The remaining 7 percent of the stock is in HUD-code homes.

About 18 percent of the occupied housing stock is in the Northeast, 23 percent is in the Midwest, 37 percent is in the South, and 21 percent is in the West.

THE STUDY

In the summer of 2006, NAHB conducted a comprehensive telephone survey of manufacturers, trade associations and researchers to develop information about the longevity of housing components.

Many of the people interviewed emphasized that the life expectancy of housing components is greatly affected by the quality of maintenance. They also noted that changing consumer preferences can result in products being replaced long before -- or after -- the end of their practical life expectancy.

This article provides a synopsis of the survey results (Table 1).

[Note: This report should be used as a general guideline only. None of the information in this report should be interpreted as a representation, warranty or guarantee regarding the life expectancy or performance of any individual product or product line. Readers should not make buying decisions and/or product selections based solely on the information contained in this report.]

Findings

Appliances

The life expectancy of a typical appliance depends to a great extent on the use it receives. Moreover, appliances are often replaced long before they are worn out because changes in styling, technology and consumer preferences make newer products more desirable. Of the major appliances in a home, gas ranges have the longest life expectancy: 15 years. Dryers and refrigerators last about 13 years. Some of the appliances with the shortest lifespan are: compactors (6 years), dishwashers (9 years) and microwave ovens (9 years).

Cabinetry and Storage

Kitchens are becoming larger and more elaborate, and together with the family room, modern kitchens now form the "great room." Great rooms are not only a place to cook, but also a space where people gather to read, eat, do homework, surf the Internet and pay bills. Kitchen cabinets are expected to last up to 50 years, medicine cabinets for 20+ years, and garage/laundry cabinets for 100+ years. Closet shelves are expected to last for a lifetime.

Concrete and Masonry

Masonry is one of the most durable components of a home. Chimneys, fireplaces, and brick veneers can last a lifetime, and brick walls have an average life expectancy of more than 100 years.

Countertops

Natural stone countertops, which are less expensive than a few years ago, are gaining in popularity and are expected to last a lifetime. Cultured marble countertops have a life expectancy of about 20 years.

Decks

Because they are subject to a wide range of conditions in different climates, the life expectancy of wooden decks can vary significantly. Under ideal conditions, they have a life expectancy of about 20 years.

Doors

Exterior fiberglass, steel and wood doors will last as long as the house exists, while vinyl and screen doors have a life expectancy of 20 and 40 years, respectively. Closet doors are expected to last a lifetime, and French doors have an average life of 30 to 50 years.

Electrical and Lighting

Copper plated wiring, copper clad aluminum, and bare copper wiring are expected to last a lifetime, whereas electrical accessories and lighting controls are expected to last 10+ years.

Engineered Lumber

Floor and roof trusses and laminated strand lumber are expected to last a lifetime, and engineered trim is expected to last 30 years.

Faucets and Fixtures

Kitchen sinks made of modified acrylic will last 50 years, while kitchen faucets will work properly for about 15 years. The average life of bathroom shower enclosures is 50 years. Showerheads last a lifetime, while shower doors will last about 20 years. Bath cabinets and toilets have an unlimited lifespan, but the components inside the toilet tank do require some maintenance. Whirlpool tubs will function properly for 20 to 50 years, depending on use.

Flooring

All natural wood floorings have a life expectancy of 100 years or more. Marble, slate, and granite are also expected to last for about 100 years, but can last less due to a lack of maintenance. Vinyl floors last up to 50 years, linoleum about 25 years, and carpet between 8 and 10 years (with appropriate maintenance and normal traffic).

Footings and Foundations

Poured as well as concrete block footings and foundations last a lifetime, assuming they were properly built. Termite proofing of foundations will last about 12 years if the chemical barriers put in place during construction are left intact. Waterproofing with bituminous coating lasts 10 years, but if it cracks it is immediately damaged. Concrete or cast iron waste pipes are expected to last 100 years or more.

Framing and Other Structural Systems

Framing and structural systems have extended longevities: poured-concrete systems, timber frame houses and structural insulated panels will all last a lifetime. Wall panels and roof and floor trusses will similarly last a lifetime. Softwood, hardboard, and plywood last an average of 30 years, while OSB and particleboard are expected to function properly for 60 years.

Garages

Garage door openers are expected to last 10 to 15 years, and light inserts for 20 years.

Home Technology

Home technology systems have various life expectancies. While a built-in audio system will last 20 years, security systems and heat/smoke detectors have life expectancies of 5 to 10 years. Wireless home networks and home automation systems are expected to work properly for more than 50 years.

Heating, Ventilation, and Air Conditioning (HVAC)

Heating, ventilation, and air conditioning systems require proper and regular maintenance in order to work efficiently, but even in the best case scenarios most components of such systems only last 15 to 25 years. Furnaces on average last 15-20 years, heat pumps 16 years, and air conditioning units 10-15 years. Tankless water heaters last more than 20 years, while an electric or gas water heater has a life expectancy of about 10 years. Thermostats usually are replaced before the end of their 35-year lifespan due to technological improvements.

Insulation and Infiltration Barriers

As long as they are not punctured, cut, or burned and are kept dry and away from UV rays, the cellulose, fiberglass, and foam used in insulation materials will last a lifetime. This is true whether the insulation was applied as loose fill, house wrap, or batts/rolls.

Jobsite Equipment

Ladders are expected to last a lifetime, and life expectancy of lifts is about 8 to 10 years.

Molding and Millwork

Custom millwork will last a lifetime, and all stairs – circular and spiral stairs, prebuilt stairs and attic stairs – are expected to last a lifetime.

Paint, Caulks and Adhesives

Both interior and exterior points can last for 15 years or longer, however home owners often paint more frequently.

Panels

Hardboard panels and softwood panels are expected to last 30 years, while oriented strand board and particleboard have a life expectancy of 60 years. Wall panels are expected to last a lifetime.

Roofing

The life of a roof depends on local weather conditions, proper building and design, material quality, and adequate maintenance. Slate, copper, and clay/concrete roofs have the longest life expectancy – over 50 years. Roofs made of asphalt shingles last for about 20 years while roofs made of fiber cement shingles have a life expectancy of about 25 years, and roofs made of wood shakes can be expected to last for about 30 years.

Siding and Accessories

Outside materials typically last a lifetime. Brick, vinyl, engineered wood, stone (both natural and manufactured), and fiber cement will last as long the house exists. Exterior wood shutters are expected to last 20 years, depending on weather conditions. Gutters have a life expectancy of more than 50 years if made of copper and for 20 years if made of aluminum. Copper downspouts last 100 years or more, while aluminum ones will last 30 years.

Site and Landscaping

Most landscaping elements have a life expectancy of 15 to 25 years. Sprinklers and valves last about 20 years, while underground PVC piping has a lifespan of 25 years. Polyvinyl fences are designed to last a lifetime, and asphalt driveways should last between 15 and 20 years.

Tennis courts can last a lifetime if recoated; most coatings last 12 to 15 years. The concrete shell of a swimming pool is expected to last over 25 years, but the interior plaster and tile have life expectancies of about 10 to 25 years.

Walls, Ceilings and Finishes

Walls and ceilings last the full lifespan of the home.

Windows and Skylights

Aluminum windows are expected to last between 15 and 20 years while wooden windows should last upwards of 30 years.

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
1. APPLIANCES		
Exhaust Fan	10	
Compactors	6	
Dishwashers	9	
Disposers, Food Waste	12	
Dryers, Electric	13	
Dryers, Gas	13	
Freezers	11	
Microwave Ovens	9	
Ranges, Electric	13	
Ranges, Gas	15	
Range/Oven Hoods	14	
Refrigerators, Compact	9	
Refrigerators, Standard	13	
Washers	10	
Water Heaters, Electric	11	
Water Heaters, Gas	10	
Air-Conditioners, Room	10	
Air-Conditioners, Unitary	15	
Boilers, Electric	13	
Boilers, Gas	21	
Dehumidifiers	8	
Furnaces, Warm-Air, Electric	15	
Furnaces, Warm-Air, Gas	18	
Furnaces, Warm-Air, Oil	20	
Heat Pumps	16	
Humidifiers	8	
Note: Life expectancy is based on first-owner use.		
Source: Appliance Magazine, Sep 2005 issue, Grainger		
2. CABINETRY & STORAGE		
Cabinet Lines		
Bath Cabinets	Lifetime	
Entertainment Centers/Home Office	10	
Garage/Laundry Cabinets	100+	
Kitchen Cabinets	50	
Medicine Cabinets	20+	
Manufacturing Types		
Modular/Stock	50	
Closet systems		
Closet Shelves	Lifetime	
Source: Wellborn Cabinet, Zaca, Timberlake Cabinet Co., Wellborn Cabinet, Moduline, Canyon Creek Cabinet Co., Easyclosets.com, Wellborn Cabinet		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
3. CONCRETE & MASONRY		
Brick	100+	
Veneer	Lifetime	
Caulking (for sealer)	2-20	
Source: General Shale Brick, NHACP and NCSG, Sashco Sealants		
4. COUNTERTOPS		
Cultured Marble	20	
Natural Stone	Lifetime	
Tile	Lifetime	
Wood	Lifetime	
Source: Rynone, Buffalo stone, Architectural Products by Outwater, Formica Corp, Gibco Services, Florida Tile Industries, United States Ceramic Tile Co., National Hardwood Flooring & Moulding		
5. DECKS		
Wood	20	Dry areas last 20-25, South 10-15, North 20-30.
Deck Planks	25	
Source: Decks.com, Timbertech		
6. DOORS		
Exterior Doors		
Fiberglass	Lifetime	
Screen	40	Pine 20 yrs, Cedar 40 yrs, Mahogany 60 yrs
Steel, Fire-Rated	Lifetime	
Vinyl	20	
Wood	Lifetime	
Interior Doors		
French	30 to 50	
Closet	Lifetime	
Source: Fiberframe, Neoporte, Timeline Vinyl Products/ Timeline Vinyl Windows, Victoriana East, Coppa Woodworking Inc., Marvin Windows and Doors, Kestrel		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
7. ELECTRICAL & LIGHTING		
Accessories	10+	
Lighting Controls	10+	
Copper Wiring		
Copper Plated	Lifetime	If used in a non-corrosive environment.
Copper Clad Aluminum	Lifetime	
Bare Copper	Lifetime	
Source: Lutron Electronics, Lighting Controls Association, Copper Development Assoc.		
8. ENGINEERED LUMBER		
Engineered Trim	30	
Laminated Strand Lumber	Lifetime	
Laminated Veneer Lumber	30+	
Trusses, Floor	Lifetime	
Trusses, Roof	Lifetime	
Source: Engineered Wood Association, Georgia Pacific Corp., Georgia Pacific Corp., Lumber Specialties		
9. FAUCETS & FIXTURES		
Accessible/ADA Products	Lifetime	
Faucets, Bar/Hospitality	15	
Faucets , Kitchen Sinks	15	
Faucets, Lavatory	20+	
Faucets, Tub/Shower	20+	
Faucets, Toilets/Bidets	10	Wear issues depending on use, new cartridges or seals.
Saunas/Steam Rooms	15-20	
Shower Doors	20+	
Shower Enclosures/Modules	50	
Showerheads	Lifetime	
Toilets/Bidets	Lifetime	The components inside toilet tank and valves that operate bidet will require occasional maintenance.
Whirlpool Tubs	20-50	Lifespan of the rotating engine depends on the use made of the tub.
Sinks: Kitchen & others		
Enamel Steel	5-10	
Modified Acrylic	50	
Soapstone	100+	
Source: Delta Faucet Co., Grohe, Kohler Co., Moen, Plexicor (part of Karran), Toto USA, Acquinox, Alumax, Alsons, Karran, Green Mountain Soapstone Corp., Saunastore		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
10. FLOORING		
All Wooden Floors	Lifetime	
Bamboo	Lifetime	
Brick Pavers	100+	
Carpet	8-10	
Concrete	50+	
Engineered Wood	50+	
Exotic Wood	Lifetime	
Granite	100+	
Laminate	15-25	
Linoleum	25	
Marble	100+	
Slate	100	
Tile	75-100	
Vinyl	50	
Other Domestic Wood	Lifetime	
Terrazo	75+	
Source:Marble Institute of America, Berg & Berg, Dal-Tile Corp, Floortec, National Wood Flooring Association, General Shale Brick, Masland Carpets, Beaulieu of America, Concrete Designs, Formica Corp, Linoleumstore.com, DePaoli Mosaic, Monarch Ceramic Tile		
11. FOOTINGS & FOUNDATIONS		
Poured Footings and Foundations	Lifetime	
Concrete Block	Lifetime	Properly built foundations last indefinitely.
Termite Proofing	12	"Pre-treatment during construction: longevity of treatment depends on disturbance or not of the chemical barriers in place."
Bituminous Coating Waterproofing	10	If it cracks, it is immediately damaged.
Pargeting with Ionite	20-30	It's not typical in a residential setting. Its downfall is when it cracks.
Baseboard System	50	
<u>Plumbing</u>		
Concrete Waste Pipe	100	
Cast Iron Waste Pipe	100	
Source: Dry Up Basement, Unexco, Cast Iron Soil Pipe Institute, American Concrete Pipe Association, National Ready Mixed Concrete Assoc, Quikrete		
12. FRAMING &OTHER STRUCTURAL SYSTEMS		
Poured-Concrete Systems	Lifetime	
Structural Insulated Panels	Lifetime	
Timber Frame Homes	Lifetime	
Source: ConForm Pacific, NGS Materials, Post & Beam Factory		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
13. GARAGES		
Garage Door Openers	10-15	
Light Inserts	20	
Source: Wayne-Dalton Corp.		
14. HOME TECHNOLOGY		
Audio, Built-in	20	
Heat/Smoke Detectors	<10	National Fire Alarm Code requires that detectors be replaced every 10 years.
Home Automation Systems	Lifetime	
Home Networks, Wireless	50+	
Security Systems	5-10	
Source: LiteTouchHome Director, ADT and Slomin's Home Security, Home Director, Home Seer		
15. HVAC		
Air Conditioners	10-15	
Air Quality Systems	15	
Boilers	13-21	
Dehumidifiers	8	
Ducting	10	
Furnaces	15-20	
Heat Pumps	16	
Heat Recovery Ventilators	20+	
Thermostats	35	
Ventilators	7	
Water Heaters, Tankless	20+	
Electric Radiant Heater	40	
Hot Water or Steam Radiant Heater	15+	
Diffusers, Grilles, and Registers	25	
Induction and Fan-Coil Units	10-15	
Dampers	20+	
DX, Water, or Steam	20	
Electric	15	
Shell-and-Tube	20	
Molded Insulation	Lifetime	Not usually used residentially.
Burners	<10	Oil burners need more maintenance and don't last as long as gas burners.
Source: CenterPoint Energy and Trane Residential system Group, Smarter Way Inc., CenterPoint Energy, Air Quality Engineering, CenterPoint Energy and Luxaire Unitary Products Group, Association of Home Appliance Manufacturers, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Econar, Lomanco, Honeywell, American Society of Heating, Refrigerating and Air-Conditioning Engineers, EWC Controls, Fantech, No. American Insulation Manufacturers Assoc.US Dept. of Energy, Radiant Electric Heat, Radiantec, Radiantec, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Power Flame Inc., Appliance Magazine		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
16. INSULATION & INFILTRATION BARRIERS		
Insulation Material		
Cellulose	100+	
Fiberglass	Lifetime	
Foam	Lifetime	
Insulation Type		
Batts/Rolls	Lifetime	
House Wrap	Lifetime	
Loose Fill	Lifetime	
Source: DuPont, National Fiber, Johns Manville, RHH Foam Systems, No. American Insulation Manufacturer Association		
17. JOBSITE EQUIPMENT		
Ladders	Lifetime	
Lifts	8-10	
Source: Putnam Rolling Ladder Co., Genie Industries		
18. MOLDING & MILLWORK		
Custom Millwork	Lifetime	
Stair Parts	Lifetime	
Stairs, Circular & Spiral	Lifetime	
Stairs, Prebuilt	Lifetime	
Stairs, Attic	Lifetime	
Source: York Spiral StairAzek, Authentic Pine Floors, Century Architectural Specialties, StairWorld, National Hardwood Flooring & Moulding		
19. PAINTS, CAULKS, & ADHESIVES		
Adhesives		
Roofing	7	
Paints & Stains		
Paint, Exterior	15+	
Paint, Interior	15+	Depends on whether or not it is washable paint.
Source: The Sherwin-Williams Co.,Slate Savers, Tamko Roofing Products, Dutch Boy Paints		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
20. PANELS		
Hardboard	30	
Oriented-Strand Board	25-30	
Particleboard	60	
Plywood	60	
Softwood	30	
Underlayment, Flooring	25	
Wall Panels	Lifetime	
Source: Georgia Pacific Corp., NGS Materials, Weyerhaeuser, James Hardie Building Products		
21. ROOFING		
Material		
Aluminium Roof Coating	3-7	
Fiber Cement	25	
Asphalt	20	
Modified Bitumen	20	
Copper	Lifetime	
Simulated Slate	50	
Wood	30	
Clay/Concrete	Lifetime	
Slate	50+	
Coal and Tar	30	
Source: Gardner-Gibson, Maxitile, National Roofing Contractors Association, GAF Material Corp., Asphalt Roofing Manufacturer's Association, Johns Manville, Metal Roof Specialties, Nycore, Authentic roof, 208 Shake&Shingle, The Northern Roof Tile Sales Co., Universal Marble & Granite, Slate Savers, Koppers, Northern Elastomeric, EcoStar, Metals USA, GAF Material Corp.		

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
22. SIDING & ACCESSORIES		
<u>Material</u>		
Brick	Lifetime	
Engineered Wood	Lifetime	
Fiber Cement	Lifetime	
Manufactured Stone	Lifetime	
Stone	Lifetime	
Stucco	50-100	
Vinyl	Lifetime	
<u>Related Accessories</u>		
Soffits/Fascias	50	This time period applies for fascia in fiber-cement only.
Trim	25	
<u>Shutters</u>		
Wood/Exterior	20	
Wood/Interior	15+	
Aluminium/Interior	10+	Sun can cause the strings to break.
<u>Gutters and Downspouts</u>		
Copper	50+	
Aluminium	20	
Galvanized Steel	20	
Downspouts (Aluminum)	30	
Downspouts (Copper)	100	
Source: Boral Bricks, APA, GAF Material Corp., James Hardie Building Products, Boulder Creek Stone and Brick, Owens Corning, Genstone Enterprises, El Rey Stucco, Heartland Building Products, Azek, James Hardie Building Products, Blinds.com, Vixen Hill Mfg. Co., Yost Mfg. & Supply, Berger Building Products, Guttersupply.com, (Rain Trade Corp. division)		
23. SITE & LANDSCAPING		
Asphalt Driveway	15-20	
Polyvinyl Fences	Lifetime	
Clay Paving	Lifetime	
Underground PVC Piping	25	
Valves	20	
Sprinklers	20	Usually made obsolete by advances in technology.
Controllers	15	Lifespan given for areas not prone to lighting strikes.
<u>Tennis Court</u>		
Fast-Dry Green	Lifetime	

Table 1: Life Expectancy of Different Products/Items/Materials in the Home

	Life in Years	Comments
23. SITE & LANDSCAPING (Continued)		
Asphalt with Acrylic Coating	12-15	Age before requiring major work. Requires recoating every 5-7 years.
Asphalt with Acrylic Cushion Coating	12-15	Age before requiring major work. Requires recoating every 5-7 years.
American Red Clay	Lifetime	
Fast-Dry with Subsurface Irrigation Red or Green	Lifetime	Maintenance: average 10 minutes a day per court.
Swimming pool		
General	Lifetime	
Concrete Shell	25+	
Interior Finish/Plaster	10-15	
Interior Finish/Pebble-tec	25-35	
Interior Finish/Tile	15-25	
Cleaning Equipment	7-10	
Decking	15	
Waterline Tile	10	
Source: Paddock Pools, Patios & Spas, Boral Bricks, Accurate Tennis, Aquatic Technology, Huyser, Digger Specialties, Inc., Aquatech Pools - Society of Professional Builders, Inyo Pool Products, Omega Pool Structures, Inc.		
24. WALLS, CEILINGS, & FINISHES		
Accoustical Ceiling	Lifetime	Moisture or movement can affect lifespan.
Ceiling Suspension	Lifetime	
Ceramic Tile	Lifetime	
Standard Gypsum	Lifetime	
Source: Interceramicusa, United States Gypsum Co., Messmers Inc., DAP		
25. WINDOWS, SKYLIGHTS, & GLASS		
Glass & Glazing Materials		
Window Glazing	10+	
Windows		
Aluminum/Aluminus Clad	15-20	
Wood	30+	Some parts of the window may have to be replaced, so lifespan may vary.
Source: Polygal, Gallina USA, LLC, Allied Window		

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C-2 DCA Office of Affordable Housing 2011 Expected Useful Life Table

EXPECTED USEFUL LIFE TABLE

SITE SYSTEMS 50+ = "long-lived" systems		FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Basketball Courts		15	25	
Built Improvements (playgrounds/site furniture)		20	20	
Catch Basin		40	40	
Cold Water and Sewer Lines		40	40	
Compactors		15	15	
DHW/Supply/Return		30	30	
Dumpsters		10	10	
Dumpster Enclosures		10	10	Fence only
Earthwork		50+	50+	
Electrical Distribution Center		40	40	
Emergency Generator		15	15	
Fencing				
	Chain Link	40	40	
	Wrought iron	50+	50+	
	Stockade	12	12	
	Post & Rail	25	25	
Gas Lines		40	40	
Heating Supply/Return		40	40	
Incinerators		50+	50+	
Irrigation Syatems		30	30	
Lift Station		50	50	
Mail Facilities		10	10	
Landscaping		50+	50+	
Parking				
	Asphalt	25	25	Resurface
	Gravel	15	15	Pave with asphalt or concrete
Pedestrian Paving				
	Bituminous	15	15	Resurface
	Concrete	30	30	Replace
Retaining Walls				
	Concrete	20	20	Fill cracks/repoint
	Masonry	15	15	Fill cracks/repoint
	Wood	15	15	Replace
	Stone	15	15	Fill cracks/repoint
Roadways				
	Asphalt (sealing)	5	5	Seal
	Asphalt	25	25	Resurface
	Gravel	15	15	Pave with asphalt or concrete
Sanitary Treatment		40	40	
Site Electrical Main		40	40	
Site Gas Main		40	40	
Site Lighting		25	25	
Site Power Distribution		40	40	

EXPECTED USEFUL LIFE TABLE

SITE SYSTEMS 50+ = "long-lived" systems		FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Site Sanitary Lines		40	40	
Site Sewer Main		40	40	
Site Water Main		40	40	
Storm Drain Lines		40	40	
Swimming Pool				
	Deck	15	15	Resurface
	Mech'l Equipment	10	10	
Tennis Courts		15	15	Resurface
Transformer		30	30	
Water Tower		50+	50+	
BUILDING ARCHITECTURE **50+ = "long-lived" systems**		**FAMILY CONSTR.**	**ELDERLY CONSTR.**	**ACTION = REPLACE UNLESS NOTED**
Appurtenant Structures				
	Porches	50	50	Paint @ 5 years
	Wood Decks	20	20	Paint @ 5 years
	Storage Sheds	30	30	Paint @ 5 years
	Greenhouses	50	50	
	Carports	40	40	
	Garages	50+	50+	
Basement Stairs		50+	50+	
Building Mtd. Exterior Lighting		10	10	
Building Mtd. HID Lighting		10	20	
Bulkheads		10	20	
Canopies				
	Wood/Metal	40	40	Replace
	Concrete	20	20	Re-roof
Ceilings, exterior or open		5	5	Paint
Chimney		25	25	Paint
Common Area Doors		50+	50+	
Common Area Floors				
	Ceramic/Tile/ Terrazzo	50+	50+	Replace
	Wood (Strip/Parquet)	30	30	Replace/sand & finish
	Resilient Floor (tile/sheet)	15	15	Replace
	Carpet	7	7	Replace
	Concrete	50+	50+	
Common Area Railings		20	20	
Common Area Ceilings				
	Concrete	50+	50+	Paint 5-8 years
	Acoustic Tile/DW/Plaster	10	10	Replace
Common Area Countertop/sink		20	20	

EXPECTED USEFUL LIFE TABLE

BUILDING ARCHITECTURE 50+ = "long-lived" systems		FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Common Area Dishwasher		15	15	
Common Area Disposal		5	5	
Common Area Walls		15	25	Paint 5-8yrs
Exterior Common Doors				
	Aluminum & Glass	30	30	Door Only
	Solid Core (wood or metal)	25	25	Door Only
	Automatic	15	30	Door & Mechanism
Exterior Stairs				
	Wood	10	20	Replace
	Filled metal pan	30	30	Replace
	Concrete	50+	50+	Replace
Exterior Unit Doors		10	15	Replace
Exterior Walls				
	Cementitious (mfgr) siding	20	20	Prep & Paint
	Brick or block	40	40	Repoint
	Stone veneer (brownstone)	20	20	Waterproof & Caulk
	Glass Block	15	15	Recaulk
	Granite block	40	40	Repoint
	Metal/glass curtainwall	10	10	Recaulk
	Precast Concrete panel	30	30	Recaulk
	Vinyl siding	10	15	Replace
	Wood siding/shingles	10	15	Prep & Paint/Stain
	Plywood/stucco	5	10	Prep & Paint/Stain
Fire escapes		40	40	Resecure
Foundations		50+	50+	
Hatches/Skylights				
	Access hatch	30	30	
	Smoke hatch/skylight	50+	50+	
Insulation/Wall		50+	50+	
Interior Lighting		15	25	
Interior Railings		15	20	
Kitchen Cabinets	(wood construction)	15	20	
Local HVAC				
	Electric fan coil	20	20	
	Electric heat/AC	15	15	
	Gas furnace/split DX AC	20	20	
	Heat pump w/suppl.electric	15	15	
	Heat pump water source	20	20	
	Hydronic fan coil	30	30	
	Hydronic heat/electric AC	20	20	
Mail Facilities		10	30	
Parapet Wall		50+	50+	
Penthouse		25	25	New Door & Pointing

EXPECTED USEFUL LIFE TABLE

BUILDING ARCHITECTURE 50+ = "long-lived" systems	FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Public Bathroom Accessories	7	7	
Public Bathroom Fixtures	15	15	
Radiation			
Hydronic (basebd or freestand)	50	50	
Electric Baseboard	25	25	
Electric Panel	20	20	
Roof Railings	10	10	Repaint
Refrigerator, common area	10	15	
Residential Galss Doors			
Sliding	10	15	
French	20	30	
Roof Covering			
Wood shingles	20	20	
Asphalt shingles	20	20	
Built up (BUR)	20	20	(Subject to Waiver)
Membrane	20	20	(Subject to Waiver)
Preformed metal	40	40	
Shingles (slate, tile, clay etc)	30	30	
Roof Drainage Exterior (gutter & fascia)	10	25	Replace
Roof Drainage Interior (drain covers)	30	30	Replace
Roof Structure	50+	50+	
Slab	50+	50+	
Service Doors	25	25	
Soffits			
Wood	5	5	Repair/Repaint
Aluminum or vinyl	10	15	Replace
Stair Structure	50+	50+	
Storm/Screen Doors	7	15	
Storm/Screen Windows	10	20	
Waterproofing Foundation	50+	50+	
Window Security	15	25	
Windows (frames & glazing)	20	30	
Wood Floor Framing	20	20	
Bath Accessories	10	15	
Bath Fixtures (sink, toilet, tub)	15	20	
Closet Doors	10	20	
Countertop & Sink	10	20	
Dishwasher	10	15	
Disposal	5	8	
Electric Fixtures	10	20	
Hallway Door	15	30	Door only
Heat Detectors	20	20	

EXPECTED USEFUL LIFE TABLE

DWELLING UNITS 50+ = "long-lived" systems		FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Interior Doors		15	30	Door only
Interior Stairs		30	30	
Kitchen Cabinets	(wood construction)	20	25	
Living Area Ceilings				
	Concrete	50+	50+	Replace (Paint 5-8yr)
	Acoustic Tile/DW/Plaster	10	20	
Living Area Floors				
	Ceramic/Tile/Terrazzo	20	30	Replace
	Wood (strip/parquet)	15	20	Replace part/refinish
	Resilient Flooring	10	15	Replace
	Carpet	7	10	Replace
	Concrete	50+	50+	Replace
Living Area Walls		20	30	Replace (Paint 5-8yr)
Local HVAC				
	Electric fan coil	20	20	
	Electric heat/AC	15	15	
	Evap. condensor (swamp coole	20	20	
	Gas furnace, split DX AC	20	20	
	Heat pump w/suppl. electric	15	15	
	Heat pump, water source	20	20	
	Hydronic fan coil	30	30	
	Hydronic heat/electric AC	20	20	
Range		15	20	
Rangehood		10	15	
Refrigerator		10	15	
Smoke/Fire Detectors		5	10	
Unit Air Conditioning		10	15	
Unit Electric Panel		50+	50+	
Unit Level Boiler		25	25	
Unit Buzzer/Intercom		20	30	
Unit Level DHW		10	10	
Unit Level Hot Air Furnace		25	25	
Unit Radiation				
	Hydronic or steam (baseboard or freestanding)	30	30	
	Electric Baseboard	25	25	
Unit Vent/Exhaust		15	15	
Unit Wiring		30	30	
Vanities	(wood construction)	10	20	
Window covering		3 (20yr)	3 (20yr)	Material/user specific

EXPECTED USEFUL LIFE TABLE

MECHANICAL/ELECTRICAL 50+ = "long-lived" systems	FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Central Unit Exhaust, roof mtd	15	15	
Chilled Water Distribution	50+	50+	
Chilling Plant	15	25	
Compactor	15	15	
Cooling Tower	25	25	
Electrical Switchgear	50+	50+	
Electrical Wiring	30	30	
Elevator, Controller, dispatcher	15	20	
Elevator, Cab	15	20	Rebuild interior
Elevator, Machinery	30	30	
Elevator, Shaftway Doors	20	30	Replace gibs & rollers
Elevator, Shaftways			
Hoist rails, cables, travelling	25	25	
Hydraulic piston & levelling	25	25	Resleeve piston
Emergency Alarm System			
Call Station	10	15	
Emergency Generator	35	35	
Emergency Lights	8	10	Battery operated
Evaporative Cooler	15	15	
Fire Pumps	20	20	Pump motor
Fire Suppression	50+	50+	Piping
Gas Distribution	50+	50+	Piping
Heat Sensors	15	15	
Heating Risers & Distribution	50+	50+	
Heating Water Controller	15	15	
Hot & Cold Water Distribution	50	50	
HVAC			
Cooling only	15	15	
Heat only	15	15	
Heating & Cooling	10	15	
Master TV System	10	10	
Outdoor Temperature Sensor	5	10	
Sanitary Waste & Vent System	50+	50+	
Sewage Ejectors	50	50	
Buzzer/Intercom, central panel	10	15	
Smoke & Fire Detection System, central panel	15	15	
Sump Pump			
Residential	7	7	Replace
Commercial	15	15	Replace motor
Water Softening & Filtration	15	15	
Water Tower	50+	50+	
Boiler Room Equipment			
Blowdown & Water Treatment	25	25	
Boiler Room Pipe Insulation	w/boiler	w/boiler	

EXPECTED USEFUL LIFE TABLE

MECHANICAL/ELECTRICAL 50+ = "long-lived" systems		FAMILY CONSTR.	ELDERLY CONSTR.	ACTION = REPLACE UNLESS NOTED
Boiler Room Piping		w/boiler	w/boiler	
Boiler Room Valves		15	15	Repack valves
Boiler Temperature Controls		w/boiler	w/boiler	
Boilers	Oil-fired, sectional	22	22	
	Gas/dual fuel, sectional	25	25	
	Oil/gas/dual fired, low MBH	30	30	
	Oil/gas/dual fired, high MBH	40	40	
	Gas fired atmospheric	25	25	
	Electric	20	20	
Building Heating Water Temperature Controls				
	Residential	12	12	
	Commercial	15	15	
Combustion Air	Duct w/fixed louvers	30	30	Replace
	Motor louver & duct	25	25	Replace motor
	Make-up air	25	25	Replace fan/preheater
Compressors		15	15	
Condensate & Feedwater				
	Feedwater only (hydronic)	10	10	
	Condensate & feedwater (stear	w/boiler	w/boiler	
DHW Circulating Pumps		by size	by size	
DHW Generation				
	Tank only, dedicated fuel	10	10	
	Exchanger in storage tank	15	15	
	Exchanger in boiler	15	15	
	External tankless	15	15	
	Instantaneous	10	10	
DHW Storage Tanks	Small (up to 150gals)	12	12	Replace
	Large (over 150gals)	7	7	Point Tank Lining
Domestic Cold Water Pumps		15	15	
Fire Supression		50+	50+	
Flue Exhaust		w/boiler	w/boiler	
Free Standing Chimney		50+	50+	
Fuel Oil Storage		25	25	
Fuel Transfer System		25	25	
Heat Exchanger		35	35	
Heating Water Circulating Pumps		by size	by size	
Line Dryers		15	15	
Motorized Valves		12	12	
Outdoor Temp Sensor		10	10	
Pneumatic lines & Controls		30	30	
Purchased Steam Supply Station		50+	50+	
Solar Hot Water		20	20	Replace collectr panels

C-3 Fannie Mae Estimated Useful Life Tables

APPENDIX F – ESTIMATED USEFUL LIFE TABLES

These Estimated Useful Life Tables for multifamily property systems and components are intended to represent standardized average estimated useful life ("EUL") values and are not intended to replace the professional judgment of the PCA Consultant in determining the Effective Age and Remaining Useful Life of the systems and components at the Property. The PCA Consultant should consider preventive maintenance practices, as well as environment, geographic, resident, and other factors when determining Effective Age and Remaining Useful Life of the systems and components of a multifamily Property. In addition to providing guidance on EUL values typically considered capital expenditure items, the EUL tables may include items that are typically considered general maintenance and repair items to be handled by in-house maintenance staff.

Estimated Useful Life (EUL) Tables

FLATWORK, PARKING AREAS AND WALKWAYS	**Multifamily / Coop**	**Seniors**	**Students**
Asphalt pavement	25	25	25
Asphalt seal coat	5	5	5
Concrete pavement	50	50	50
Curbing, asphalt	25	25	25
Curbing, concrete	50	50	50
Parking, stall striping	5	5	5
Parking, gravel surfaced	15	15	15
Security gate (site ingress/egress) - rolling gate / lift arm	10	10	10
Sidewalk, asphalt	25	25	25
Sidewalk, brick paver	30	30	30
Sidewalk, concrete	50	50	50

SITE LIGHTING	**Multifamily / Coop**	**Seniors**	**Students**
Building mounted exterior lighting	10	10	10
Building mounted High Intensity Discharge (HID) lighting	10	20	10
Lighting (pole mounted)	25	25	25

SITE FENCING AND RETAINING WALLS	**Multifamily / Coop**	**Seniors**	**Students**
Bulkhead (barrier) / partition wall /embankment	10	20	10
Fencing, chain-link (4' height)	40	40	40
Fencing, concrete masonry unit (CMU)	30	30	30
Fencing, dumpster enclosure (wood)	12	15	10
Fencing, PVC (6' height)	25	25	25
Fencing, Tennis Court (10' height)-Chain link	40	40	40
Fencing, wood privacy (6' height)	15	20	10
Fencing, wrought iron (4-6' height and decorative)	50	50	50
Retaining walls, 80 lb block type	50	50	50
Retaining walls, concrete masonry unit (CMU) with brick face	40	40	40
Retaining walls, timber (railroad tie)	25	25	25

STRUCTURAL FRAME AND BUILDING ENVELOPE			
BUILDING STRUCTURES	**Multifamily / Coop**	**Seniors**	**Students**
Carports	40	40	40
Canopy, concrete	50	50	50
Canopy, wood / metal	40	40	40
Garages	50	50	50
Storage Sheds	30	30	30
Penthouse (mechanical room)	50	50	50

FOUNDATIONS	**Multifamily / Coop**	**Seniors**	**Students**
Foundations	50+	50+	50+
Waterproofing (foundations)	50+	50+	50+

FRAMING	**Multifamily / Coop**	**Seniors**	**Students**
Brick or block	40	40	40
Precast concrete panel (tilt-up)	40	40	40
Wood floor frame	50+	50+	50+

BUILDING ENVELOPE / CLADDING / EXTERIOR WALL FINISHES	**Multifamily / Coop**	**Seniors**	**Students**
Aluminum Siding	40	40	40
Brownstone	40	40	40
Brick or Stone Veneer	50+	50+	50+
Cement-board siding (Hardi-plank)/ Cementitious (mfgr) siding	45	45	45
Exterior Insulation Finishing Systems (EIFS)	20	20	20
Glass block	40	40	40
Granite block	40	40	40
Insulation, wall	50+	50+	50+
Metal/ glass curtain wall	30	30	30
Painting, Exterior	5-10	5-10	5-10
Pre-cast concrete panel	45	45	45
Stucco systems	50+	50+	50+
Vinyl siding	25	25	25
Wood shingle/ clapboard/ plywood, stucco, composite wood	20	20	20

ROOF SYSTEMS	**Multifamily / Coop**	**Seniors**	**Students**
Asphalt shingle (3-tab)	20	20	20
Built-up roof - Ethylene Propylene Diene Monomer (EPDM) / Thermoplastic Polyolefin (TPO)	20	20	20
Metal	40	40	40
Parapet wall	50+	50+	50+

Caps, copings (aluminum/ terra-cotta) - Parapet	25	25	25
Roof drainage exterior (gutter/ downspout)	10	10	10
Roof drainage interior (drain covers)	30	30	30
Roof railing	25	25	25
Roof structure	50+	50+	50+
Roof hatch	30	30	30
Roof skylight	30	30	30
Slab	50+	50+	50+
Slate, clay, concrete tile	40	40	40
Soffits (wood/ stucco)	20	20	20
Soffits (aluminum or vinyl)	25	25	25
Wood shingles (cedar shake)	25	25	25

DOORS AND WINDOWS	**Multifamily / Coop**	**Seniors**	**Students**
Exterior common door, aluminum and glass	30	30	30
Exterior common door, solid core wood or metal clad	25	25	25
Exterior unit door, solid wood/ metal clad	25	30	20
Residential Sliding Glass Doors	25	30	20
Residential French Glass Doors	25	30	20
Ceilings, open or exterior	30	30	30
Service door (roof)	25	30	20
Storm/ screen doors	7	10	5
Storm/ screen windows	10	15	7
Windows (frames and glazing), vinyl or aluminum	30	30	30

APPURTENANCES	**Multifamily / Coop**	**Seniors**	**Students**
Chimney	40	40	40
Exterior stairs, wood	15	20	15
Exterior stairs, metal pan- concrete filled	30	30	30
Exterior stairs, concrete	50	50	50
Fire Escapes	40	40	40
Porches, concrete	50	50	50
Wood Decks	20	20	20

AMENITIES	**Multifamily / Coop**	**Seniors**	**Students**
Basketball court	25	25	25
Mail kiosk	10	15	10
Mail facility, interior	20	25	20
Pool deck	15	15	15
Pool/ spa plaster liner	8	8	8
Tennis court / basketball court surface (paint markings)	5	7	5

Tennis court Surface (acrylic emulsion)	10	12	10
Tot-lot (playground equipment)	10	15	10
Tot-lot, uncompressed ground cover	2+	3+	2+

MECHANICAL/ELECTRIC/ PLUMBING SYSTEMS			
WATER DISTRIBUTION AND DOMESTIC HOT WATER SYSTEMS	**Multifamily / Coop**	**Seniors**	**Students**
Feedwater only (hydronic)	10	10	10
Condensate and feedwater (steam)	Included in boiler	Included in boiler	Included in boiler
Cooling Tower	25	25	25
DHW Circulating Pumps	by size	by size	by size
Domestic Hot Water (DHW) - supply / return	30	30	30
Tank only, dedicated fuel	10	10	10
Exchanger in storage tank	15	15	15
Exchanger in boiler	15	15	15
External tankless	15	15	15
Instantaneous (tankless type)	10	10	10
Domestic Hot Water Storage Tanks, Small (up to 150 gallons)	15	15	15
Domestic Hot Water Storage Tanks, Large (over 150 gallons)	15	15	15
Domestic Cold Water Pumps	15	15	15
Heating Water Circulating Pumps	by size	by size	by size
Heating Water Controller	15	15	15
Hot and Cold Water Distribution	50	50	50
Solar Hot Water	20	20	20
Water Softening and Filtration	15	15	15

SANITARY WASTE AND VENT	**Multifamily / Coop**	**Seniors**	**Students**
Purchased Steam Supply Station	50+	50+	50+
Sanitary Waste and Vent System	50+	50+	50+
Sewage Ejectors	50	50	50

SUMP PUMP	**Multifamily / Coop**	**Seniors**	**Students**
Residential Sump Pump	7	7	7
Commercial Sump Pump	15	15	15

HEATING/COOLING SYSTEM AND CONTROLS	**Multifamily / Coop**	**Senior**	**Student**
Pad/ roof condenser	20	20	20
A/C window unit or through wall	10	10	10

Evaporative Cooler	15	15	15
Fan coil unit, electric	20	20	20
Fan coil unit, hydronic	30	30	30
Furnace (electric heat with A/C)	20	20	20
Furnace (electric heat with A/C)	20	20	20
Furnace (gas heat with A/C)	20	20	20
Packaged terminal air conditioner (PTAC)	15	15	15
Packaged HVAC (roof top units)	20	20	20
Heat pump condensing component	20	20	20
Heater, electric baseboard	25	25	25
Heater, wall mounted electric or gas	20	20	20
Hydronic heat/ electric A/C	20	20	20
Line Dryers	15	15	15
Master TV System	10	10	10
Motorized Valves	12	12	12
Outdoor Temperature Sensor	10	10	10
Pneumatic lines and Controls	30	30	30

BUILDING HEATING WATER TEMPERATURE CONTROLS	**Multifamily / Coop**	**Seniors**	**Students**
Chilled Water Distribution	50+	50+	50+
Chilling Plant	15	15	15
Cooling Tower	25	25	25
Fuel Oil Storage	25	25	25
Fuel Transfer System	25	25	25
Gas Distribution	50+	50+	50+
Heat Sensors	15	15	15
Heat Exchanger	35	35	35
Heating Risers and Distribution	50+	50+	50+

VENTILATION SYSTEMS	**Multifamily / Coop**	**Seniors**	**Students**
Combustion Air, Duct with fixed louvers	30	30	30
Combustion Air, Motor louver and duct	25	25	25
Flue Exhaust	w/boiler	w/boiler	w/boiler
Free Standing Chimney	50+	50+	50+

ELECTRICAL SYSTEMS	**Multifamily / Coop**	**Seniors**	**Students**
Common area	15	15	15
Buzzer/Intercom, central panel	20	20	20
Central Unit Exhaust, roof mounted	15	15	15
Compactors	15	15	15
Dumpsters	10	10	10

Electrical distribution center	40	40	40
Electric main	40	40	40
Emergency Generator	25	25	25
Gas lines	40	40	40
Gas main	40	40	40
Heating supply/ return	40	40	40
Power distribution	40	40	40
Transformer	30	30	30

BOILER ROOM EQUIPMENT	**Multifamily / Coop**	**Seniors**	**Students**
Blowdown and Water Treatment	25	25	25
Boiler Room Pipe Insulation	Included in boiler	Included in boiler	Included in boiler
Boiler Room Piping	Included in boiler	Included in boiler	Included in boiler
Boiler Room Valves	15	15	15
Boiler Temperature Controls	Included in boiler	Included in boiler	Included in boiler

VERTICAL TRANSPORTATION - ELEVATORS	**Multifamily / Coop**	**Seniors**	**Students**
Electrical Switchgear	50+	50+	50+
Electrical Wiring	30	30	30
Elevator, Controller, dispatcher	15	20	10
Elevator, Cab	15	20	10
Elevator, Machinery	30	30	30
Elevator, Shaft-way Doors	20	20	20
Elevator, Shaft-way Hoist rails, cables, traveling	25	25	25
Elevator, Shaft-way Hydraulic piston and leveling	25	25	25

BOILERS	**Multifamily / Coop**	**Seniors**	**Students**
Oil-fired, sectional	22	22	22
Gas/ dual fuel, sectional	25	25	25
Oil/ gas/ dual fired, low MBH	30	30	30
Oil/ gas/ dual fired, high MBH	40	40	40
Gas fired atmospheric	25	25	25
Electric	20	20	20

FIRE SAFETY AND FIRE PROTECTION SYSTEMS	**Multifamily / Coop**	**Senior**	**Student**
Call station	10	15	10
Emergency Generator	25	25	25

Emergency Lights	8	10	5
Fire Extinguisher	10	15	5
Fire Pumps	20	20	20
Fire Suppression	50+	50+	50+
Smoke and Fire Detection System, central panel	15	15	15

INTERIOR ELEMENTS (COMMON AREA / DWELLING UNIT)			
INTERIOR / COMMON AREA FINISHES	**Multifamily / Coop**	**Seniors**	**Students**
Common area doors, interior (solid wood/ metal clad)	20	20	20
Common area floors, ceramic / quarry tile, terrazzo	50+	50+	50+
Common area floors, wood (strip or parquet)	30	30	30
Common area floors, resilient tile or sheet	15	15	15
Common area floors, carpet	5	5	5
Common area floors, concrete	50+	50+	50+
Common area railing	20	20	20
Common area ceiling, concrete	50+	50+	50+
Common area ceiling, acoustic tile (drop ceiling), drywall / plaster	10	10	10
Common area countertop and sink	20	20	20
Common area, refrigerator	10	10	10
Common area dishwasher	15	15	10
Common area disposal	5	7	3
Common area kitchen cabinets, wood	15	20	10
Common area walls	15	25	10
Interior railings	20	25	15
Interior lighting	15	20	10
Public bathroom accessories	7	12	5
Public bathroom fixtures	15	20	10

DWELLING FIRE, SAFETY AND SECURITY	**Multifamily / Coop**	**Seniors**	**Students**
Unit Smoke/Fire Detectors *	5	5	5
Unit Carbon Monoxide Detectors *	5	5	5
Unit Buzzer/Intercom	20	20	20

*Tested annually, batteries changed annually.

DWELLING UNIT CEILINGS	**Multifamily / Coop**	**Seniors**	**Students**
Concrete	50+	50+	50+
Acoustic Tile / Drywall / Plaster	10	15	10

DWELLING UNIT FIXTURES	Multifamily / Coop	Senior	Student
Bathroom: Vanity	10	15	10
Bathroom: Fixtures / Faucets	15-20	20+	15-20
Bathroom: Fiberglass Bath / Shower	20	25	18
Bathroom: Toilet	50+	50+	40
Bathroom: Toilet Tank Components	5	5	5
Bathroom: Vent / Exhaust	10	10	10
Interior Doors	15	30	10
Kitchen: Cabinets (wood construction)	20	25	15
Kitchen: Cabinets (particle board)	15	20+	13
Kitchen: Dishwasher	5-10	10-12	5-8
Kitchen: Microwave	10	12	8
Kitchen: Range	15	25	15
Kitchen: Range-hood	10	20	10
Kitchen: Refrigerator	10	20	10
Window covering	3	5	1+

DWELLING UNIT FLOORS	Multifamily / Coop	Senior	Student
Ceramic / Tile / Terrazzo	20	25	20
Wood (strip/ parquet)	15	20	20
Resilient Flooring	10	15	7
Carpet	7	10	3+
Concrete	50+	50+	50+

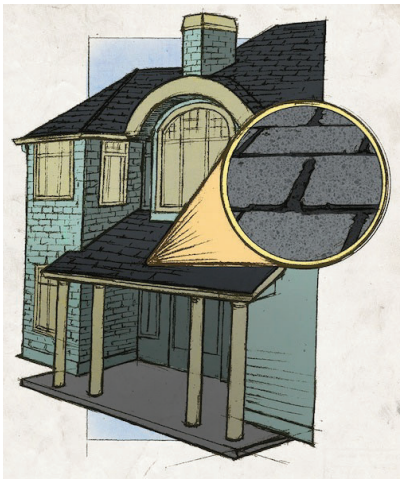
DWELLING UNIT HVAC AND MECHANICAL EQUIPMENT	Multifamily / Coop	Senior	Student
A/C window unit or through wall	10	10	10
Evaporative cooler	15	15	15
Fan coil unit, electric	20	20	20
Fan coil unit, hydronic	30	30	30
Furnace (electric heat with A/C)	20	20	20
Furnace (gas heat with A/C)	20	20	20
Packaged terminal air conditioner (PTAC)	15	15	15
Packaged HVAC (roof top unit)	15	15	15
Heat pump condensing component	15	15	15
Heater, electric baseboard	25	25	25
Heater, wall mounted electric or gas	20	20	20
Hydronic heat/ electric AC	20	20	20
Unit Electric Panel	50+	50+	50+
Unit Level Boiler	25	25	25
Unit Level Domestic Hot Water	10	15	10

Unit Level Hot Air Furnace	25	25	25
Unit Radiation - Steam/ Hydronic (baseboard or freestanding)	30	30	30
Unit Wiring	30	30	30

C-4 International Association of Certified Home Inspectors Standard Estimated Life Expectancy Chart for Homes

InterNACHI's Standard Estimated Life Expectancy Chart for Homes

The following chart details the predicted life expectancy of appliances, products, materials, systems and components. (For homes located in Florida and the surrounding coastal region, please refer to InterNACHI's Florida Estimated Life Expectancy Chart for Homes.)



Consumers, inspectors, and professionals advising their clients should note that these life expectancies have been determined through research and testing based on regular recommended maintenance and conditions of normal wear and tear, and not extreme weather or other conditions, neglect, over-use or abuse. Therefore, they should be used as guidelines only, and not relied upon as guarantees or warranties.

Full-color, downloadable version to include with inspection reports.

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Surface preparation and paint quality are the most important determinants of a paint's life expectancy. Ultraviolet (UV) rays via sunshine can shorten life expectancy. Additionally, conditions of high humidity indoors or outdoors can affect the lifespan of these components, which is why they should be inspected and maintained seasonally.

ADHESIVES, CAULK & PAINTS	YEARS
Caulking (interior & exterior)	5 to 10
Construction Glue	20+
Paint (exterior)	7 to 10
Paint (interior)	10 to 15
Roofing Adhesives/Cements	15+
Sealants	8
Stains	3 to 8

Appliance life expectancy depends to a great extent on the use it receives. Furthermore, consumers often replace appliances long before they become worn out due to changes in styling, technology and consumer preferences.

APPLIANCES	YEARS
Air Conditioner (window)	5 to 7
Compactor (trash)	6
Dehumidifier	8
Dishwasher	9

Disposal (food waste)	12
Dryer Vent (plastic)	5
Dryer Vent (steel)	20
Dryer (clothes)	13
Exhaust Fans	10
Freezer	10 to 20
Gas Oven	10 to 18
Hand Dryer	10 to 12
Humidifier (portable)	8
Microwave Oven	9
Range/Oven Hood	14
Electric Range	13 to 15
Gas Range	15 to 17
Refrigerator	9 to 13
Swamp Cooler	5 to 15
Washing Machine	5 to 15
Whole-House Vacuum System	20

Modern kitchens today are larger and more elaborate. Together with the family room, they now form the "great room."

CABINETRY & STORAGE	**YEARS**
Bathroom Cabinets	50+

Closet Shelves	100+
Entertainment Center/Home Office	10
Garage/Laundry Cabinets	70+
Kitchen Cabinets	50
Medicine Cabinet	25+
Modular (stock manufacturing-type)	50

Walls and ceilings last the full lifespan of the home.

CEILINGS & WALLS	**YEARS**
Acoustical Tile Ceiling	40+ (older than 25 years may contain asbestos)
Ceramic Tile	70+
Concrete	75+
Gypsum	75
Wood Paneling	20 to 50
Suspended Ceiling	25+

Natural stone countertops, which are less expensive than they were just a few years ago, are becoming more popular, and one can expect them to last a lifetime. Cultured marble countertops have a shorter life expectancy, however.

COUNTERTOPS	**YEARS**
Concrete	50

Cultured Marble	20
Natural Stone	100+
Laminate	20 to 30
Resin	10+
Tile	100+
Wood	100+

Decks are exposed to a wide range of conditions in different climates, from wind and hail in some areas, to relatively consistent, dry weather in others. See FASTENERS & STEEL section for fasteners.

DECKS	**YEARS**
Deck Planks	15
Composite	8 to 25
Structural Wood	10 to 30

Exterior fiberglass, steel and wood doors will last as long as the house, while vinyl and screen doors have a shorter life expectancy. The gaskets/weatherstripping of exterior doors may have to be replaced every five to eight years.

DOORS	**YEARS**
Closet (interior)	100+
Fiberglass (exterior)	100+
Fire-Rated Steel (exterior)	100+
French (interior)	30 to 50

Screen (exterior)	30
Sliding Glass/Patio (exterior)	20 (for roller wheel/track repair/replacement)
Vinyl (exterior)	20
Wood (exterior)	100+
Wood (hollow-core interior)	20 to 30
Wood (solid-core interior)	30 to 100+

Copper-plated wiring, copper-clad aluminum, and bare copper wiring are expected to last a lifetime, whereas electrical accessories and lighting controls, such as dimmer switches, may need to be replaced after 10 years. GFCIs could last 30 years, but much less if tripped regularly.

Remember that faulty, damaged or overloaded electrical circuits or equipment are the leading cause of house fires, so they should be inspected regularly and repaired or updated as needed.

ELECTRICAL	**YEARS**
Accessories	10+
Arc-Fault Circuit Interrupters (AFCIs)	30
Bare Copper	100+
Bulbs (compact fluorescent)	8,000 to 10,000+ hours
Bulbs (halogen)	4,000 to 8,000+ hours
Bulbs (incandescent)	1,000 to 2,000+ hours
Bulbs (LED)	30,000 to 50,000+ hours

Copper-Clad Aluminum	100+
Copper-Plated	100+
Fixtures	40
Ground-Fault Circuit Interrupters (GFCIs)	up to 30
Lighting Controls	30+
Residential Propane Backup Generators	12
Service Panel	60
Solar Panels	20 to 30
Solar System Batteries	3 to 12
Wind Turbine Generators	20

Floor and roof trusses and laminated strand lumber are durable household components, and engineered trim may last 30 years.

ENGINEERED LUMBER	**YEARS**
Engineered Joists	80+
Laminated Strand Lumber	100+
Laminated Veneer Lumber	80+
Trusses	100+

Fastener manufacturers do not give lifespans for their products because they vary too much based on where the fasteners are installed in a home, the materials in which they're installed, and the local climate and environment. However, inspectors can use the

guidelines below to make educated judgments about the materials they inspect.

FASTENERS, CONNECTORS & STEEL	YEARS
Adjustable Steel Columns	50+
Fasteners (bright)	25 to 60
Fasteners (copper)	65 to 80+
Fasteners (galvanized)	10+
Fasteners (electro-galvanized)	15 to 45
Fasteners (hot-dipped galvanized)	35 to 60
Fasteners (stainless)	65 to 100+
Steel Beams	200+
Steel Columns	100+
Steel Plates	100+

Flooring life is dependent on maintenance and the amount of foot traffic the floor endures.

FLOORING	YEARS
All Wood Floors	100+
Bamboo	100+
Brick Pavers	100+
Carpet	8 to 10
Concrete	50+

Engineered Wood	50+
Exotic Wood	100+
Granite	100+
Laminate	15 to 25
Linoleum	25
Marble	100+
Other Domestic Wood	100+
Slate	100
Terrazzo	75+
Tile	75 to 100
Vinyl	25

Concrete and poured-block footings and foundations will last a lifetime, assuming they were properly built. Waterproofing with bituminous coating lasts 10 years, but if it cracks, it is immediately damaged.

FOUNDATIONS	**YEARS**
Baseboard Waterproofing System	50
Bituminous-Coating Waterproofing	10
Concrete Block	100+
Insulated Concrete Forms (ICFs)	100

Permanent Wood Foundation (PWF; treated)	75
Post and Pier	20 to 65
Post and Tensioned Slab on Grade	100+
Poured-Concrete Footings and Foundation	100+
Slab on Grade (concrete)	100
Wood Foundation	5 to 40

Framing and structural systems have extended longevities; poured-concrete systems, timber-frame houses, and structural insulated panels will all last a lifetime.

FRAMING	**YEARS**
Log	80 to 200
Poured-Concrete Systems	100+
Steel	100+
Structural Insulated Panels (SIPs)	100+
Timber Frame	100+

The quality and frequency of use will affect the longevity of garage doors and openers.

GARAGES	**YEARS**
Garage Doors	20 to 25
Garage Door Openers	10 to 15

Home technology systems have diverse life expectancies and may have to be upgraded due to evolution in technology.

HOME TECHNOLOGY	YEARS
Built-In Audio	20
Carbon Monoxide Detectors*	5
Doorbells	45
Home Automation System	5 to 50
Intercoms	20
Security System	5 to 20
Smoke/Heat Detectors*	less than 10
Wireless Home Network	5+

* Batteries should be changed at least annually.

Thermostats may last 35 years but they are usually replaced before they fail due to technological improvements.

HVAC	YEARS
Air Conditioner (central)	7 to 15
Air Exchanger	15
Attic Fan	15 to 25
Boiler	40
Burner	10+

Ceiling Fan	5 to 10
Chimney Cap (concrete)	100+
Chimney Cap (metal)	10 to 20
Chimney Cap (mortar)	15
Chimney Flue Tile	40 to 120
Condenser	8 to 20
Dampers	20+
Dehumidifier	8
Diffusers, Grilles and Registers	25
Ducting	60 to 100
Electric Radiant Heater	40
Evaporative Cooler	15 to 25
Furnace	15 to 25
Gas Fireplace	15 to 25
Heat Exchanger	10 to 15
Heat Pump	10 to 15
Heat-Recovery Ventilator	20
Hot-Water and Steam-Radiant Boiler	40
Humidifier	12
Induction and Fan-Coil Units	10 to 15

Thermostats	35
Ventilator	7

As long as they are not punctured, cut or burned and are kept dry and away from UV rays, cellulose, fiberglass and foam insulation materials will last a lifetime. This is true regardless of whether they were installed as loose-fill, housewrap, or batts/rolls.

INSULATION & INFILTRATION BARRIERS	**YEARS**
Batts/Rolls	100+
Black Paper (felt paper)	15 to 30
Cellulose	100+
Fiberglass	100+
Foamboard	100+
Housewrap	80+
Liquid-Applied Membrane	50
Loose-Fill	100+
Rockwool	100+
Wrap Tape	80+

Masonry is one of the most enduring household components. Fireplaces, chimneys and brick veneers can last the lifetime of the home.

MASONRY & CONCRETE	**YEARS**
Brick	100+

Insulated Concrete Forms (hybrid block)	100+
Concrete Masonry Units (CMUs)	100+
Man-Made Stone	25
Masonry Sealant	2 to 20
Stone	100+
Stucco/EIFS	50+
Veneer	100+

Custom millwork and stair parts will last a lifetime and are typically only upgraded for aesthetic reasons.

MOLDING, MILLWORK & TRIM	**YEARS**
Attic Stairs (pull-down)	50
Custom Millwork	100+
Pre-Built Stairs	100+
Stair Parts	100+
Stairs	100+

The lifetime of any wood product depends heavily on moisture intrusion.

PANELS	**YEARS**
Flooring Underlayment	25
Hardboard	40

Particleboard	60
Plywood	100
Softwood	30
Oriented Strand Board (OSB)	60
Wall Panels	100+

The quality of plumbing fixtures varies dramatically. The mineral content of water can shorten the life expectancy of water heaters and clog showerheads. Also, some finishes may require special maintenance with approved cleaning agents per the manufacturers in order to last their expected service life.

PLUMBING, FIXTURES & FAUCETS	**YEARS**
ABS and PVC Waste Pipe	50 to 80
Accessible/ADA Handles	100+
Acrylic Kitchen Sink	50
Cast-Iron Bathtub	100
Cast-Iron Waste Pipe (above ground)	60
Cast-Iron Waste Pipe (below ground)	50 to 60
Concrete Waste Pipe	100+
Copper Water Lines	70
Enameled Steel Kitchen Sink	5 to 10+

Faucets and Spray Hose	15 to 20
Fiberglass Bathtub and Shower	20
Gas Lines (black steel)	75
Gas Lines (flex)	30
Hose Bibs	20 to 30
Instant (on-demand) Water Heater	10
PEX	40
Plastic Water Lines	75
Saunas/Steam Room	15 to 20
Sewer Grinder Pump	10
Shower Enclosure/Module	50
Shower Doors	20
Showerheads	100+ (if not clogged by minerals or other deposits)
Soapstone Kitchen Sink	100+
Sump Pump	7
Toilet Tank Components	5
Toilets, Bidets and Urinals	100+
Vent Fan (ceiling)	5 to 10
Vessel Sink (stone, glass, porcelain, copper)	5 to 20+

Water Heater (conventional)	6 to 12
Water Line (copper)	50
Water Line (plastic)	50
Water Softener	20
Well Pump	15
Whirlpool Tub	20 to 50

Radon mitigation systems have but one moving part: the radon fan.

RADON SYSTEMS	YEARS
Air Exchanger	15
Barometric Backdraft Damper/Fresh-Air Intake	20
Caulking	5 to 10
Labeling	25
Manometer	15
Piping	50+
Radon Fan	5 to 8

The life of a roof depends on local weather conditions, building and design, material quality, and adequate maintenance. Hot climates drastically reduce asphalt shingle life. Roofs in areas that experience severe weather, such as hail, tornadoes and/or hurricanes, may also experience a shorter-than-normal lifespan overall, or may incur isolated damage that requires repair in order to ensure the service life of the surrounding roofing materials.

ROOFING	YEARS
Aluminum Coating	3 to 7
Asphalt (architectural)	30
Asphalt Shingles (3-tab)	20
BUR (built-up roofing)	30
Clay/Concrete	100+
Coal and Tar	30
Copper	70+
EPDM (ethylene propylene diene monomer) Rubber	15 to 25
Fiber Cement	25
Green (vegetation-covered)	5 to 40
Metal	40 to 80
Modified Bitumen	20
Simulated Slate	10 to 35
Slate	60 to 150
TPO	7 to 20
Wood	25

Exterior siding materials typically last a lifetime. Some exterior components may require protection through appropriate paints or sealants, as well as regular maintenance. Also, while well-maintained and undamaged flashing can last a long time, it is their

connections that tend to fail, so seasonal inspection and maintenance are strongly recommended.

SIDINGS, FLASHING & ACCESSORIES	YEARS
Aluminum Gutters, Downspouts, Soffit and Fascia	20 to 40+
Aluminum Siding	25 to 40+
Asbestos Shingle	100
Brick	100+
Cementitious	100+
Copper Downspouts	100
Copper Gutters	50+
Engineered Wood	100+
Fiber Cement	100+
Galvanized Steel Gutters/Downspouts	20
Manufactured Stone	100+
Stone	100+
Stucco/EIFS	50+
Trim	25
Vinyl Gutters and Downspouts	25+
Vinyl Siding	60
Wood/Exterior Shutters	20

Site and landscaping elements have life expectancies that vary dramatically.

SITE & LANDSCAPING	YEARS
American Red Clay	100+
Asphalt Driveway	15 to 20
Brick and Concrete Patio	15 to 25
Clay Paving	100+
Concrete Walks	40 to 50
Controllers	15
Gravel Walks	4 to 6
Mulch	1 to 2
Polyvinyl Fencing	100+
Sprinkler Heads	10 to 14
Underground PVC Piping	60+
Valves	20
Wood Chips	1 to 5
Wood Fencing	20

Swimming pools are composed of many systems and components, all with varying life expectancies.

SWIMMING POOLS	YEARS
Concrete Shell	25+

Cover	7
Diving Board	10
Filter and Pump	10
Interior Finish	10 to 35
Pool Water Heater	8
Vinyl Liner	10
Waterline Tile	15+

Aluminum windows are expected to last between 15 and 20 years, while wooden windows should last nearly 30 years.

WINDOWS	**YEARS**
Aluminum/Aluminum-Clad	15 to 20
Double-Pane	8 to 20
Skylights	10 to 20
Vinyl/Fiberglass Windows	20 to 40
Window Glazing	10+
Wood	30+

Note: Life expectancy varies with usage, weather, installation, maintenance, and quality of materials. This list should be used only as a general guideline and not as a guarantee or warranty regarding the performance or life expectancy of any appliance, product, system or component.

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