## ASHRAE Technical FAQ

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| ID | 58 |
| Question | What is the anticipated service life of my piece of equipment? |
| Answer | A recently completed ASHRAE research project initiated a Service Life and Maintenance Cost Database. This database can be accessed at http://xp20.ashrae.org/publicdatabase. The purpose of this database is to provide current information on service life and maintenance costs of typical HVAC equipment to assist engineers with owning and operating data to make decisions involving the life cycle and functionality of buildings. This database was established to provide sufficient up-to-date data to help provide a solid basis for these decisions.<br><br>Service life, as used in the 2015 ASHRAE Handbook – HVAC Applications, signifies the economic life of a particular system or component, or how long it remains in its original service application. End of service life may occur for many reasons, including: obsolescence, reduced reliability, excessive maintenance costs, changed system requirements, energy prices, environmental considerations, or failure. Since several of these variables are totally independent of the equipment or system design, they are nearly impossible to forecast at the outset of a project.<br><br>The term service life is often assumed by ASHRAE members to mean equipment life rather than economic life. The distinction between the two is not insignificant. An article discussing this issue, "Determining Equipment Service Life" was published in the August 2000 ASHRAE Journal.<br><br>Table 4, Comparison of Service Life Estimates, 2015 ASHRAE Handbook – HVAC Applications, gives information for a number of types of HVAC equipment. This data is based on a limited survey conducted in 1978. The user is cautioned that the data presented in this table is now almost 25 years old and doesn't reflect recent developments in manufacturing technology or the advent of microprocessor based control and diagnostics. Second, the table summarizes the responses from only 68 survey participants and is , therefore, of questionable statistical validity. Third, as indicated above, the term service life is often confused with equipment life causing the data to be widely misapplied. This is not to say, however, that the available information is not useful. Rather, it is important to understand the limitations of that information, and what it really represents. |

The handbook and the other publications may be purchased and/or individual chapters of the handbook may be purchased and downloaded on-line at our website, www.ashrae.org or by calling 1-800-527-4723 in the USA and Canada or 1-404-636-8400 worldwide.

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ASHRAE Pubs 2015 ASHRAE Handbook – HVAC Applications, Chapter A37

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Topic References service life, equipment

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| | Cognizant ASHRAE Committees | Refer to Organization |
|---|---|---|
| 1 | TC 7.8 | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

# ASHRAE Equipment Life Expectancy chart

ASHRAE is the industry organization that sets the standards and guidelines for most all HVAC-R equipment. For additional info about ASHRAE the website is www.ashrae.org .

| Equipment Item | Median Years |
|---|---|
| Air conditioners | |
| Window unit | 10 |
| Residential single or Split | |
| Package | 15 |
| Commercial through-the wall | 15 |
| Water-cooled package | 15 |
| Heat Pumps | |
| Residential air-to-air | 15 |
| Commercial air-to-air | 15 |
| Commercial water-to-air | 19 |
| Roof-top air conditioners | |
| Single-zone | 15 |
| Multi-zone | 15 |
| Boilers, hot water (steam) | |
| Steel water-tube | 24 (30) |
| Steel fire-tube | 25 (25) |
| Cast iron | 35 (30) |
| Electric | 15 |
| Burners | 21 |
| Furnaces | |
| Gas- or oil-fired | 18 |
| Unit heaters | |
| Gas or electric | 13 |
| Hot water or steam | 20 |
| Radiant Heaters | |
| Electric | 10 |
| Hot water or steam | 25 |

| Equipment Item | Median Years |
|---|---|
| Air terminals | |
| Diffusers, grilles, and registers | 27 |
| Induction and fan coil units | 20 |
| VAV and double-duct boxes | 20 |
| Air washers | 17 |
| Ductwork | 30 |
| Dampers | 20 |
| Fans | |
| Centrifugal | 25 |
| Axial | 20 |
| Propeller | 15 |
| Ventilating roof-mounted | 20 |
| Coils | |
| DX, water, or steam | 20 |
| Electric | 15 |
| Heat Exchangers | |
| Shell-and-tube | 24 |
| Reciprocating compressors | 20 |
| Packaged chillers | |
| Reciprocating | 20 |
| Centrifugal | 23 |
| Absorption | 23 |
| Cooling towers | |
| Galvanized metal | 20 |
| Wood | 20 |
| Ceramic | 34 |

| Equipment Item | Median Years |
|---|---|
| Air-cooled condensers | 20 |
| Evaporative condensers | 20 |
| Insulation | |
| Molded | 20 |
| Blanket | 24 |
| Pumps | |
| Base-mounted | 20 |
| Pipe-mounted | 10 |
| Sump and well | 10 |
| Condensate 15 | |
| Reciprocating engines | 20 |
| Steam turbines | 30 |
| Electric motors | 18 |
| Motor starters | 17 |
| Electric transformers | 30 |
| Controls | |
| Pneumatic | 20 |
| Electric | 16 |
| Electronic | 15 |
| Valve actuators | |
| Hydraulic | 15 |
| Pneumatic | 20 |
| Self-contained | 10 |