Designation: E 2156 – 01

Standard Guide for Evaluating Economic Performance of Alternative Designs, Systems, and Materials in Compliance with Performance Standard Guides for Single-Family Attached and Detached Dwellings[1]

This standard is issued under the fixed designation E 2156; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

This guide on economics is part of a set which together presents a complete performance guide for specifying and evaluating single-family attached and detached dwellings. The complete set in the series, when finished, is to include the following attributes:

A Structural Safety and Serviceability
B Fire Safety
C Accident Safety
D Health and Hygiene
E Indoor Air Quality
F Light
G Acoustics
H Durability
I Accessibility
J Security
K Economics
L Functionality
M Aesthetics
N Adaptability
O Maintainability
P Sustainability

The series provides a framework for specifying and evaluating qualities of building products and systems to meet user needs without limiting ways and means. The format for this series of standard guides includes performance statements that consist of four components—Objectives, Criteria, Evaluation, and Commentary (O-C-E-C)—which together provide a systematic performance-based approach for the intended purpose.

Each standard guide in the set presents a collection of information and a series of options available to the specifier. The standard guides include examples of performance statements that may be used for the specification and evaluation of residential designs, materials, products, components, subsystems, and systems.

1. Scope

1.1 *What This Guide Does*—This guide helps designers, builders, home owners, and other stakeholders to identify and evaluate benefits and costs in order to make efficient choices between two or more traditional alternatives and between traditional alternatives and new-technology products, systems, materials, and designs. It directs the users to ASTM classifications, practices, adjuncts, and computer programs that implement the appropriate economic method to evaluate these benefits and costs in making technology choices. The focus, however, is on a nine-step process for using two ASTM practices—life-cycle costing (LCC), E 917, and the analytical hierarchy process (AHP), E 1765—to measure and evaluate the economic and overall performance of investments in single-family attached and detached dwellings. This guide contains three appendixes. The first two are designed to help users identify and evaluate benefits and costs. Appendix X1 contains a classification of benefits and a methodology for estimating these benefits. Appendix X2 contains a classification of costs and a methodology for estimating these costs. Appendix X3

[1] This guide is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.66 on Performance Standards for Dwellings.

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