This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: E2129 – 18

Standard Practice for Data Collection for Sustainability Assessment of Building Products[1]

This standard is issued under the fixed designation E2129; 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.

1. Scope

1.1 This practice covers a set of instructions for collecting data to be used in assessing the sustainability of building products for use in both commercial and residential buildings.

1.1.1 There are many features of a building that contribute to sustainability; one of them is the selection of products for use in a building. Other key features influencing sustainability include, but are not limited to: overall efficiency of the design of the building, the impact the building has on the habits of the occupants, and the impact the building has on the microclimate and macroclimate. This practice addresses sustainability issues related to building products. This practice does not address sustainability issues related to overall building design, site selection, building operations, or other features influencing sustainability.

1.1.2 While it is recommended that users rely on professional judgment informed by both environmental expertise and specific knowledge of the intended use of the product, this practice provides no instruction as to interpretation of the data obtained. Interpretation of the data obtained is the responsibility of the user of this practice.

1.1.3 This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This practice is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "standard" in the title means only that the document has been approved through the ASTM consensus process.

1.2 This practice is organized according to the Construction Specifications Institute's (CSI) MasterFormat[2] sections to promote consistency in the evaluation of building products.

1.2.1 CSI MasterFormat version 1995 is used to organize information in Table 2. Appendix X1 provides a cross reference comparison to CSI MasterFormat 2004.

1.3 This practice includes general, comprehensive data requirements. Depending upon the building product, certain data requirements may not apply given the unique characteristics of the product and the potential environmental impacts related to the intended use of the product. Depending upon the building product, certain data requirements may need to be added as appropriate to the unique characteristics of the product and the potential environmental impacts related to the intended use of the product.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[3]

C618 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

C989/C989M Specification for Slag Cement for Use in Concrete and Mortars

C1240 Specification for Silica Fume Used in Cementitious Mixtures

D5359 Specification for Glass Cullet Recovered from Waste for Use in Manufacture of Glass Fiber

D6400 Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities

[1] This practice is under the jurisdiction of ASTM Committee E60 on Sustainability and is the direct responsibility of Subcommittee E60.01 on Buildings and Construction.

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[2] The term "MasterFormat" and the MasterFormat logo are trademarks of Construction Specifications Institute (CSI).

[3] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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TABLE 1 General Questions

	Question	Yes or No	N/A	U/K	Comments
DIVISION 1—GENERAL REQUIREMENTS					
Criterion No. 1–Materials (Product Feedstock)					
1.1	Have efforts (such as mining management, site restoration, and so forth) been made to minimize or avoid negative environmental impacts, or both, (such as impact to rare or endangered resources or species, releases of toxic chemicals or hazardous air pollutants, and so forth) in obtaining raw materials for this product? If yes, describe these efforts.				
1.2	Is the product a recycled content product? If YES, indicate what percentage of the product is recycled and differentiate between pre-consumer and post-consumer recycled content.				
1.3	If applicable, does the recycled content product contain the percentage of recovered materials recommended by the United States Environmental Protection Agency's (EPA) Comprehensive Procurement Guidelines?				
1.4	Is the product 100% recyclable? If NO, please indicate what percentage of the product is recyclable.				
1.5	Is the product a biobased product (that is, agricultural or forestry material)? If YES, please indicate the source and biobased content percentage. If percentage refers to a component rather than the entire product, please specify.				
1.6	Is the product made from a renewable resource? If YES, indicate the renewable cycle time and what percentage of the product that resource represents.				
1.7	Does the product, in the specified condition of use, meet U.S. EPA's National Volatile Organic Compound (VOC)?				
1.8	Does the product in the specified condition of use, meet the requirements of South Coast Air Quality Management District for content of VOCs?				
1.9	Is this product covered by an environmental product declaration (EPD) that conforms to ISO 14025, ISO 14040, ISO 14044, and EN 15804 or ISO 21930 and does it have at least a cradle-to-gate scope? If YES, please indicate if EPD is product specific and how the sender of this questionnaire could obtain a copy of the EPD.				
Criterion No. 2–Manufacturing					
2.1	Has the manufacturer taken steps to minimize the use of nonrenewable energy from the point at which raw materials are gathered to the point at which the final product is transported to the building site? If yes, describe these measures.				
2.2	Is any of the waste produced in making this product reclaimed on-site? If yes, what percentage of the waste is reclaimed? Of the waste that is not reclaimed on-site, how is that waste handled?				
2.3	Does the process for manufacturing this product avoid the use of listed substances above the levels that would require reporting under the U.S. EPA's Toxics Release Inventory?[A] If NO, indicate how much of each substance is released per unit of product.				
2.4a	Does the process for manufacturing the product avoid the addition of substances listed in the National Toxicology Program's (NTP) Report on Carcinogens?[B]				
2.4b	If substances listed in the NTP's Report on Carcinogens are added directly in the manufacturing process or are reported by suppliers on Material Safety Data Sheets (MSDS), do the concentrations fall below levels required to be reported under federal regulations on the products' MSDS? If NO, indicate the substance, classification and concentration per unit of product.				
2.5	Have any recent improvements been made to limit negative environmental impacts relating to the manufacturing process? If YES, describe the benchmark against which the improvements are measured and the degree of improvement.				
2.6	If water is used during the production process, have water conservation or recycling measures, or both, been initiated? If yes, describe the measures and what percentage of the total water usage they address.				
2.7	Has the manufacturer undertaken any of the following actions? If yes, indicate when the action(s) was (were) taken and describe the benchmark against which the improvements are measured and the degree of improvement.				
2.7a	Redesigned a production process to decrease greenhouse gas emissions?				
2.7b	Redesigned a production process to decrease liquid effluents?				
2.7c	Redesigned a production process to utilize less toxic materials?				
2.7d	Substituted safer solvents in a production process?				
2.7e	Instituted more stringent dust controls?				
2.7f	Installed smoke-stack particulate collectors or gas scrubbers?				
2.7g	Installed or improved in-plant solid and toxic waste reduction programs?				
2.8	Does the manufacturing facility comply with or exceed applicable occupational, health, and safety requirements?				
Criterion No. 3–Operational Performance of Installed Product					
3.1	If applicable, does the product qualify for an EPA ENERGY STAR[C] Program rating or meet the energy efficiency recommendations of the Department of Energy's (DOE) Federal Energy Management Program?[D]				
3.2	Describe the product's energy efficiency impacts.				
3.3	Describe routine maintenance procedures for the product.				
3.4	How long will the product last in the building if maintained properly with routine maintenance procedures?				
3.5	Does the manufacturer provide detailed instructions with the product upon delivery to the job site for the proper use and maintenance required in order to ensure that this product will last this long?				

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TABLE 1 *Continued*

	Question	Yes or No	N/A	U/K	Comments
Criterion No. 4–Indoor Environmental Quality[E]					
4.1	Is there any other information about how this product contributes to indoor environmental quality (positively or negatively, for example, acoustical properties, lighting, potential risks to workers during application, and so forth) that has not already been reported, but that sender of this questionnaire should know? If YES, describe. (If this product is not intended to be used in the indoor environment or to interface with the occupants, indicate N/A.)				
Criterion No. 5–Corporate Environmental Policy					
5.1	Does the manufacturer have a written environmental policy? If YES, indicate how the sender of this questionnaire could obtain a copy of this policy upon request.				
5.2	Does the manufacturer have a reclamation program or any other program in place to facilitate the recycling or reuse of its product by accepting return of the product at the end of its useful life? If NO, comment on the environmental impact of the product as a waste material. If yes, comment on how much of the product is actually reused or recycled at the end of the product's useful life.				
5.3	Does the manufacturer have a program in place to reduce the amount of the product's packaging? If YES, describe.				
5.4	Does the manufacturer have a program in place to facilitate the return, reuse, recycling, or composting of the product's packaging? If YES, describe.				
5.5	Does the manufacturer provide information on the service life of the product or encourage the use of professional guidelines to determine the service life of the product?				
5.6	Does the manufacturer provide information regarding natural disaster mitigation, such as performance of the product during a natural disaster or appropriate response after a natural disaster?				
5.7	Is documentation available to support the product's environmental claims? If YES, please indicate how copies may be obtained upon request.				
5.8	Is there other information, for which you could provide objective evidence, about the environmental quality of the building product you offer that you would like taken into consideration? If YES, describe the information and indicate how copies of this evidence could be obtained upon request.				

[A] For additional information, visit http://www.epa.gov/tri.
[B] NTP (National Toxicology Program). 2016. Report on Carcinogens, Fourteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc14.
[C] The term "ENERGY STAR" and the ENERGY STAR logo are trademarks of the U.S. Environmental Protection Agency (EPA).
[D] Additional information may be obtained from U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, Forrestal Bldg. 1000 Independence Ave., SW, Washington, DC 20585, https://www.energy.gov/eere/femp/federal-energy-management-program.
[E] Note that some of the questions under Criterion No. 1 (Materials [Product Feedstock]) refer to attributes of products, for example, toxicity, that pose concerns for indoor environmental quality as well. In the interest of avoiding repetition, those questions are not repeated here. Respondents are reminded to answer all questions in the general section of this questionnaire.

E631 Terminology of Building Constructions
E1480 Terminology of Facility Management (Building-Related)
E2114 Terminology for Sustainability Relative to the Performance of Buildings

2.2 *ANSI Standard:*[4]
ANSI A208.2 Medium Density Fiberboard

2.3 *ASHRAE Standards:*[5]
ASHRAE 90.1 Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings
ASHRAE 62 Ventilation for Acceptable Indoor Air Quality
ASHRAE 52–76 Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter

2.4 *ASME Standard:*[6]
ASME A112.18.1M-1989 Plumbing Fixture Fittings

2.5 *CSI Program:*[7]
MasterFormat 2004 Edition

2.6 *EN Standard:*[8]
EN 15804 (2012 Amd 1) Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

2.7 *EPA Standards:*[9]
ENERGY STAR Program
Comprehensive Procurement Guidelines
National Volatile Organic Compound (VOC) Emission Standards

2.8 *HUD Standards:*[10]
24 CFR Pt. 3280 Manufactured Home Construction and Safety Standards

[4] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.
[5] Available from American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE), 1791 Tullie Circle, NE, Atlanta, GA 30329, http://www.ashrae.org.
[6] Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Two Park Ave., New York, NY 10016-5990, http://www.asme.org.
[7] Available from Construction Specifications Institute (CSI), 110 S. Union St., Suite 100, Alexandria VA 22314, http://www.csiresources.org.
[8] Available from European Standards (EN), Krimicka 134, 318 13 Pilsen, Czech Republic, https://www.en-standard.eu.
[9] Available from U.S. Environmental Protection Agency (EPA), William Jefferson Clinton Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, http://www.epa.gov.
[10] Available from U.S. Department of Housing and Urban Development (HUD), 451 7th Street S.W., Washington, DC 20410, http://www.hud.gov.

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