



Designation: ~~E2129-05~~ Designation: E2129 - 10

Standard Practice for Data Collection for Sustainability Assessment of Building Products¹

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 standard addresses sustainability issues related to building products. This standard 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 standard provides no instruction as to interpretation of the data obtained. Interpretation of the data obtained is the responsibility of the user of this standard.

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 standard is organized according to the Construction Specifications Institute's (CSI) MasterFormat² 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 standard 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 and health practices and determine the applicability of regulatory limitations prior to use.*

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 [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 Compostable Plastics](#)

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² The term "MasterFormat" and the MasterFormat logo are trademarks of The Construction Specifications Institute (CSI), 99 Canal Center Plaza, Suite 300, Alexandria VA 22314, <http://www.csinet.org>.

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.



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 U.S. EPA's 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 (i.e. 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 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?				
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? 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 Report on Carcinogens?				
2.4b	If substances listed in the National Toxicology Program'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 Program rating or meet the energy efficiency recommendations of the DOE's Federal Energy Management Program?				
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?				
Criterion No. 4—Indoor Environmental Quality⁴					

	Question	Yes or No	N/A	U/K	Comments
4.1	Is there any other information about how this product contributes to indoor environmental quality (positively or negatively, e.g. 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.				

⁴ 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.

E2114 Terminology for Sustainability Relative to the Performance of Buildings

2.2 ANSI Standards: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 of Acceptable Indoor Air Quality [E2129-10](#)

ASHRAE 52–76 Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter

2.4 ASME Standards:⁶

ASME A112.18.1M-1989 Plumbing Fixture Fittings

2.5 CSI Program:⁷

MasterFormat 2004 Edition

2.6 DOE Program:⁸

Federal Energy Management Program

2.7 EPA Standards:

Energy Star Program ⁹

Comprehensive Procurement Guidelines ¹⁰

National Volatile Organic Compound (VOC) Emission Standards¹⁰

Toxics Release Inventory ¹⁰

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, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

⁷ Available from The Construction Specifications Institute (CSI), 99 Canal Center Plaza, Suite 300, Alexandria VA 22314, <http://www.csinet.org>.

⁸ Available from U.S. Department of Energy (DOE), Energy Efficiency and Renewable Energy, Mail Stop EE-1, Department of Energy, Washington, DC 20585, <http://www.eere.energy.gov>.

⁹ Available from United States Environmental Protection Association (EPA), Climate Protection Partnerships Division ENERGY STAR Programs Hotline & Distribution (MS-6202J), 1200 Pennsylvania Ave., NW, Washington, DC 20460, <http://www.epa.gov>.

¹⁰ Available from United States Environmental Protection Agency (EPA), Ariel Rios Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, <http://www.epa.gov>.



TABLE 2 Questions Related to Specific Building Products

	Question	Yes or No	N/A	U/K	Criteria Category(ies)	Comments
DIVISION 2—SITE CONSTRUCTION						
General						
2-A	Does the manufacturer facilitate ultimate deconstruction of buildings or building products, or both, (in which components are taken apart for reuse) by, for example, designing products for disassembly? If YES, describe the process.				Materials Manufacturing Op. Performance IEQ	
2-B	Does the product facilitate water treatment on site? If YES, describe the process and indicate the level of treatment.				X Corp. Env. Policy Materials Manufacturing X Op. Performance IEQ X Corp. Env. Policy	
Paving						
2-C	Does the manufacturer offer surfaces with high albedo reflectance? What is the albedo reflectance?				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
2-D	Does the manufacturer offer pervious paving materials for non-landscaped areas (roadways, surface parking, plazas, pathways)?				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
DIVISION 3—CONCRETE						
3-A	Does the product meet the following standards, which refer to recovered materials?				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
3-A.1	Specification C618 "Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete?"				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
3-A.2	Specification C989 "Specification for Ground Granulated Blast Furnace Slag for use in Concrete and Mortars?"				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
3-A.3	Specification C1240 "Specification for Silica Fume for Use in Hydraulic Cement, Concrete, and Mortar?"				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
DIVISION 4—MASONRY						
4-A	Does the product meet the following standards, which refer to recovered materials?				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
4-A.1	Specification C989 "Specification for Ground Granulated Blast Furnace Slag for use in Concrete and Mortars?"				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
4-A.2	Specification C1240 "Specification for Silica Fume for Use in Hydraulic Cement, Concrete, and Mortar?"				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
DIVISION 5—METALS						
5-A	Does the product have a factory finish or can it be installed unfinished? If NO, describe recommended field finishing properties.				Materials X Manufacturing Op. Performance IEQ Corp. Env. Policy	
5-B	If a finish does exist, can the finish be easily removed to facilitate future recycling of the metal?				Materials X Manufacturing Op. Performance IEQ Corp. Env. Policy	
DIVISION 6—WOOD AND PLASTICS						
Wood						

	Question	Yes or No	N/A	U/K	Criteria Category(ies)	Comments
6-A	Is the wood that is used in the product harvested from forests that have been managed for sustainability according to the guidelines of a recognized certification program? If YES, indicate the name of regulation and describe the primary aspects of sustainability that it promotes.				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
6-B	Is the product made from a species of wood that is naturally resistant to damage associated with the conditions to which it is exposed? If YES, indicate which definition of “naturally resistant” is used to make this determination and indicate the name of the species.				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
6-C	Has the wood been treated with a preservative? If YES, please indicate the preservative that was used and the standard (or standards) to which the wood was treated.				X Manufacturing Op. Performance X IEQ Corp. Env. Policy	
6-D	Is the agricultural resource from which this product is made certified organically grown according to the standards of a recognized certification program? If YES, indicate the name of the certification program.				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
6-E	Is the medium density fiberboard (MDF), or products made containing MDF, third party certified to comply with the formaldehyde emissions requirements in ANSI A208.2?				X Manufacturing Op. Performance X IEQ Corp. Env. Policy	
6-F	Does the binder for plywood or particleboard, or both, meet the Manufactured Home Construction and Safety Standards promulgated by HUD 24 CFR Pt. 3280) for formaldehyde emissions?				X Manufacturing Op. Performance X IEQ Corp. Env. Policy	
Plastics and Plastic Composites						
6-G	Are plastics marked to identify materials for recycling?				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
6-H	Does the building product (or components of the product) meet the requirements of Specification D6400 “Standard Specification for Compostable Plastics?”				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
DIVISION 7—THERMAL AND MOISTURE PROTECTION						
Roofing						
7-A	Is the roofing material a light color/high albedo material? If YES, what is the albedo reflectance?				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
Sealants and Caulking						
7-B	Do caulking and sealant products come with detailed instructions for proper application in order to minimize health concerns? If YES, indicate how the sender of this questionnaire could obtain a copy of the instructions.				Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
7-C	Is the sealant or caulking compound a low-odor, all-weather, waterproof, and vapor-proof coating?				Materials Manufacturing X Op. Performance X IEQ Corp. Env. Policy	
Insulation						
7-D	Does the fiberglass insulation product meet the requirements established in Specification D5359 “Specification for Glass Cullet Recovered from Waste for Use in Manufacture of Glass Fiber?”				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
7-E	In which R-Values is the insulation product available?				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
DIVISION 8—DOORS AND WINDOWS						
8-A	Is the energy efficiency of the windows, doors, or skylights determined in accordance with NFRC 100 (U Factor) and NFRC 200 (SHGC) by an accredited independent laboratory and labeled and certified by the manufacturer?				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	

Question	Yes or No	N/A	U/K	Criteria Category(ies)	Comments
8-B				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
DIVISION 9—FINISHES					
Flooring					
9-A				Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
9-B				Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
Paints and Coatings					
9-C				X Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
9-D				Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
DIVISION 10—SPECIALTIES					
10-A				X Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
DIVISION 11—EQUIPMENT					
There are no questions for Division 11.					
DIVISION 12—FURNISHINGS					
12-A				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
12-B				X Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
12-C				Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
12-D				Materials Manufacturing Op. Performance X IEQ Corp. Env. Policy	
DIVISION 13—SPECIAL CONSTRUCTION					
There are no questions for Division 13.					
DIVISION 14—CONVEYING SYSTEMS					
14-A				Materials Manufacturing X Op. Performance IEQ Corp. Env. Policy	
DIVISION 15—MECHANICAL					
Oils and Lubricants					
15-A				X Materials Manufacturing Op. Performance IEQ Corp. Env. Policy	
HVAC					