



ASTM Standards for a Sustainable Future

Balancing Environmental,
Social and Economic Goals

BY DRU MEADOWS

Authorized Reprint from *ASTM Standardization News*,
Volume 35, Number 3, March 2007 © Copyright 2009
ASTM International, 100 Barr Harbor Drive, P.O. Box C700,
West Conshohocken, PA 19428-2959 USA.



Many Americans use the terms “environmental” (or sometimes “green”) and “sustainable” interchangeably. This is a mistake. The international market generally recognizes “environmental” as a subset of “sustainable.” So does ASTM International Committee E06 on Performance of Buildings. Through the work of Committee E06, ASTM is among the first standards development organizations to recognize this concept in an industry standard.

In 2005, ASTM E2432, Guide for General Principles of Sustainability

Relative to Buildings, was published under the jurisdiction of Subcommittee E06.71 on Sustainability. This standardizes the concept of sustainability and is precedent-setting internationally.

Standard E2432 states clearly that there are three primary aspects of sustainability: environmental, social and economic. These tripartite criteria are what distinguishes “sustainability” from “green.” Further, in defining the general principles of sustainability as the “ideal,” the standard recognizes that those aspects need to be balanced when applied to the

real world. In other words, preservation of the environment is important, but so is a decent quality of life and so are jobs.

The standard also emphasizes continual improvement. This is an important concept not only because it encourages the market to respond in a feasible, phased manner, but also because it recognizes that the scientific knowledge supporting decisions about sustainability is evolving. That means that decisions need to be revisited on a regular basis to verify that they continue to have validity.

ASTM INTERNATIONAL SYMPOSIUM ON SUSTAINABILITY AND STANDARDS

The market has become inundated with new claims, labels, standards and rating programs that attempt to respond to the growing demand for sustainable development. Some are excellent. Others are less than helpful. All are indicative of the exponential growth in the market.

ASTM International is uniquely positioned to bring together an objective discussion of the various efforts. Therefore, ASTM has organized the First International Symposium on Common Ground, Consensus Building and Continual Improvement – Standards and Sustainable Building. The symposium will be held April 19-20 in Washington, D.C., and is sponsored by Subcommittee E06.71 in cooperation with the U.S. Environmental Protection Agency and the Office of the Federal Environmental Executive.

Sustainable building standards are at the forefront of the environmental movement in many ways: taking a holistic, systems approach to defining preferability; pushing the science of life cycle assessment; asking the tough questions about chemicals of concern; balancing environmental, economic, and social considerations; and, most importantly, responding to consumer demand by communicating the keys to responsible purchasing. Furthermore, the leaders in sustainable building standards development are engaging stakeholders in an open, transparent process – demonstrating that consensus can bring real industry transformation.

This forum provides a unique opportunity for governments, professional organizations, trade organizations, industry, standard developing organizations and environmental organizations to discuss the world of standards

and sustainable building. The symposium will explore current and developing standards, as well as the organizations developing them. Additionally, the symposium will highlight opportunities and needs for coordination and consensus in the marketplace. These are critical topics given the rapid growth of demand in the market and the proliferation of associated claims.

The anticipated papers represent a range of international efforts, including presentations from Canada, China, Japan, Germany, the United Kingdom and the U.S. Accepted papers represent perspectives from various standards development organizations, trade and professional organizations, academia and nonprofit organizations.

There are two full days scheduled. The first day will focus on building products and sustainability standards. The second will address whole buildings and sustainability standards.

For additional information on the symposium or the work of ASTM E06.71 on Sustainability, please contact Dru Meadows at dmeadows@thegreenteaminc.com or ASTM Staff Manager Steve Mawn at smawn@astm.org.

SYMPOSIUM AGENDA

DAY 1 - PRODUCTS

- ▶ An International Standard for Environmental Communication - Gary Wilson, Kleinfelder, Inc.
- ▶ Type I Eco-Labels: Use and Misuse in Sustainable Building - Susan Herbert and Scott McDougall, TerraChoice Environmental Marketing Inc.
- ▶ BRE Environmental Profiles - 7 Years' Experience - Kristian Steele, BRE

ASTM LEADERSHIP IN SUSTAINABILITY STANDARDS

Committee E06 has assumed a leadership role in developing standards related to sustainable development, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (ASTM E2114, Terminology for Sustainability Relative to the Performance of Buildings). The consensus process has meant that the significant and unfortunate mistake of equating "environmental" with "sustainable" was

recognized and avoided.

Last year saw an increase in consumer, corporate and government interest in sustainable development. ASTM's leadership has established a viable and credible approach to sustainable development.

The benefit to the market is substantial. If "environmental" is the benchmark, then many organizations — however much they support the ideal — may be discouraged from responding to the challenge. On the other hand, if "sustainable," with a realistic balance of environmental, social

and economic factors is the benchmark, then the market has a realistic opportunity to respond effectively. It becomes accessible. That means organizations actually embrace more sustainable operations and develop more sustainable products and services. That benefits everyone.

SUSTAINABILITY AND CORPORATIONS

Corporate initiatives to promote sustainable development have been many and varied. DuPont committed to \$6

- ▶ **Developing and Driving Environmentally Preferable and Sustainable Product Standards into the Marketplace** - Kirsten Ritchie, Gensler
 - ▶ **Data Standards That Support Sustainable Buildings and Procurement** - Gregory Norris, Sylvatica
 - ▶ **The Label Game** - Bill Walsh, Healthy Building Network
 - ▶ **Responsible Purchasing Network -- Identifying Environmental Purchasing Standards** - Dan Burgoyne, State of CA Dept of General Services; Chris O'Brien, Center for a New American Dream
 - ▶ **A Standard Developing Organization's Analysis of Low-Emitting Products Certification Programs - What Does It Take?** - Ben Taube, Greenguard Environmental Institute
 - ▶ **IAQ Standards and Guidelines** - Ken Sandler, EPA
 - ▶ **Development of American National Standards for Sustainable Products** - Jane Wilson and Jaelyn Bowen, NSF International
 - ▶ **Meeting Customer Demand with BIFMA's Sustainable Assessment Standard** - Bill Stough, BIFMA
 - ▶ **Evaluating Sustainability Using Standard Approaches: The BEES Tool** - Barbara Lippiatt, National Institute of Standards & Technology
- DAY 2 - BUILDINGS**
- ▶ **Building Systems for Introducing Standards and Sustainable Design** - William Kelly, Catholic University
 - ▶ **Standards vs. Recommended Practice: Separating Process and Prescriptive Measures from Building Performance** - Wayne Trusty, Athena Institute
 - ▶ **Designing an Assessment System of Buildings for All Lifecycle Stages Based on the Concept of Eco-efficiency** - Junko Endo, Nikken Sekkei Research Institute; Shuzo Murakami and Toshiharu Ikaga, Keio University
 - ▶ **The New Normal - Green Building Systems** - Susan Herbert and Scott McDougall, TerraChoice
 - ▶ **Development of a Canadian National Standard on Design for Disassembly and Adaptability** - Michael Clapham, Natural Resources Canada; Simon Foo, Public Works and Government Services Canada; Ja-been Quadir, Canadian Standards Association
 - ▶ **The Review of Sustainability Building Standards in China** - Gang Liu, China Institute of Building Standard D&R
 - ▶ **Progress Report on ASHRAE/USGBC/IESNA 189, Standard for High-Performance, Green Buildings Except Low-Rise Residential Buildings** - John Hogan, City of Seattle DPD
 - ▶ **LEED v3** - Joel Todd, USGBC; Scott Horst, Horst, Inc.; Tom Hicks, USGBC
 - ▶ **GSA Review of Sustainable Building Rating Systems** - Donald Horn, GSA - Public Building Service
 - ▶ **Sustainability in Building Construction General Principles-ISO 15392** - Wolfram Trinius, Buro Trinius; Christer Sjöström, Centre for Built Environment
 - ▶ **The Emergence of Sustainable Construction: The Construction Industry's Move Toward Environmental Responsibility** - Melinda Tomaino, Associated General Contractors of America; Kim Pexton, HITT Contracting
 - ▶ **Practice, Education and Research for Sustainable Infrastructure** - Richard Wright, PERSI



billion in new revenue from “business offerings addressing safety, environment, energy, and climate challenges.” General Electric announced that it was ahead of its plan to reach \$20 billion in annual sales of “Ecomagination” products by 2010. Dow came on board with a water initiative. Caterpillar launched an ambitious business unit to develop a re-manufacturing industry in China. Wal-Mart announced plans to convert to 100 percent renewable energy, to create zero waste and “to sell products that sustain our resources and environment.”¹

NATIONAL AND INTERNATIONAL GOVERNMENTAL EXAMPLES

In June 2006, the European Council adopted an ambitious and comprehensive renewed Sustainable Development Strategy for an enlarged European Union.²

In parts of the United States, Europe, China, South Korea and Canada, new regulations for electronic waste are forcing cell phone manufacturers to pursue innovative recycling programs and develop phones that contain less toxic materials. To date, there are no national electronics recycling regulations in the U.S., but individual states are adopting their own. The electronics industry is subject to legislation in eight states that requires products containing mercury-added components (such as flat-panel computer displays) to be labeled as such — Connecticut, Maine, Maryland, New Hampshire, New York, Rhode Island, Vermont, and Washington. Additionally, new laws require certain electrical appliances and electronic products meet minimum energy-efficiency requirements.³

A growing number of municipalities are mandating “green” buildings not only for public buildings but also for private sector construction. While there have been both federal and state commitments to public buildings that are “green,” the move to mandating private construction as “green” is relatively new. Examples may be found across the nation and include:

- ▶ Albuquerque, N.M.;
- ▶ Boston, Mass.;
- ▶ Calabasas, Calif.;
- ▶ Frisco, Texas;
- ▶ Normal, Ill.;
- ▶ Pasadena, Calif.;
- ▶ Portland, Ore.

There is increasing regulatory control over potentially harmful chemicals in the market.

- ▶ The European Union’s REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) program aims to give greater responsibility to industry to manage the risks from chemicals and to provide safety information on the substances.⁴
- ▶ The U.S. Federal Kids Safe Chemicals Act proposed changes to the Toxic Substances Control Act to increase accountability for manufacturers for chemical safety.
- ▶ California Bill SB1379 takes this a step further. It would establish the Healthy Californians Biomonitoring Program to monitor the presence and concentration of designated chemicals in Californians.
- ▶ New York’s green cleaning for schools law (S5435) went into effect Sept. 1, 2006. Under this law, all K-12 schools (public and private) are required to maintain their facilities using “environmentally sensitive” cleaners.

CONSUMER AWARENESS

By the end of last summer, Al Gore’s film “An Inconvenient Truth” grossed over \$20 million dollars, making it the fourth highest grossing documentary of all time. In the film, Gore presents the latest evidence to demonstrate how the accumulation of carbon dioxide and other pollutants of the industrial age are increasing temperatures. Gore argues — with scientific evidence projected on big screens at his back — that global warming may soon lead to catastrophic sea level rises, global pandemics and extreme weather events. With this

“rising tide” of evidence, some of the world’s largest insurance companies, like Swiss Re, have questioned if the future is insurable.

Poll after poll shows that a majority of Americans believe that global warming is real. According to a Time Magazine/ABC News/Stanford University poll, 85 percent say global warming is probably happening, 68 percent think the government should do more to address global warming, and 87 percent support tax breaks to develop water, wind and solar power.⁵

The New Oxford American Dictionary’s Word of the Year for 2006 is “carbon neutral.”⁶ Being carbon neutral involves calculating one’s total climate-damaging carbon emissions, reducing them where possible, and then balancing remaining emissions, often by purchasing a carbon offset⁷ (paying to plant new trees or investing in “green” technologies such as solar and wind power). Whether one agrees with the premise of global warming or not, the impact on the market is an unavoidable reality.

REFERENCES

1. <http://walmartstores.com/GlobalWMStorsWeb/navigate.do?catg=345>
2. http://ec.europa.eu/sustainable/sds2006/index_en.htm
3. States that have enacted such laws include Arizona, California, Maryland, New Jersey, Oregon, Rhode Island, and Washington.
4. The Council adopted the final REACH text at the Environment Council on 18 December. REACH will enter into force on 1 June 2007.
5. Time Magazine/ABC News/Stanford University <http://www.time.com/time/nation/article/0,8599,1176967,00.html> March 26, 2006
6. http://blog.oup.com/oupblog/2006/11/what_do_al_gore.html
7. http://www.ecobusinesslinks.com/carbon_offset_wind_credits_carbon_reduction.htm

DRU MEADOWS is a principal with theGreenTeam, Inc., Tulsa, Okla., a strategic environmental consulting firm specializing in building industry issues and sustainable development. www.thegreenteaminc.com.