Natural Stone Sustainability Standard

ANSI/NSI 373-2023

Sustainable Production of Natural Dimension Stone

NATURAL STONE INSTITUTE

naturalstoneinstitute.org/sustainability

This standard is subject to revision.
Contact NSF to confirm this revision is current.

Users of this standard may request clarifications and interpretations, or propose revisions by contacting:

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American National Standard /
Natural Stone Institute

Sustainable Production of Natural Dimension Stone

Standard Developer
NSF International

Designated as an ANSI Standard
October 31, 2023
American National Standards Institute

Prepared by
The NSF Joint Committee on Natural Dimension Stone

Adopted by
Natural Stone Council (NSC)
March 2014

Adopted by
Natural Stone Institute (NSI)
January 2022

Revised August 2017 Revised July 2019 Revised January 2022
Revised November 2022 Revised December 2023

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Printed in the United States of America.

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Foreword[1]

This American National Standard, ANSI/NSI 373: *Sustainable Production of Natural Dimension Stone*, has been developed as part of the ongoing efforts of a number of interested parties to document and improve the sustainability profile of natural dimension stone production. Stakeholders involved in developing the Standard included stone producers, fabricators, end users such as architects, state agencies responsible for environmentally preferable product procurement practices, academics, and other interested parties.

The purpose of this standard is to recognize and drive sustainability practices in the natural dimension stone industry. The standard establishes a set of well-defined environmental, ecological, social responsibility and human health metrics through a multistakeholder, science-based approach recognized by the green building movement as an indicator of leadership in sustainability performance. This standard provides an important opportunity to educate key members of the design and building professions, end users, government, and environmental advocacy groups about the production of natural dimension stone products. As a rating system, this standard creates a mechanism that differentiates natural dimension stone companies that demonstrate environmental leadership through commitment to sustainable operations and continued innovation. This standard considers national and international environmental, ecological, human health, and social responsibility requirements for stone quarrying and production.

This standard applies to all processors of natural stone, from quarry operations through final stone fabrication, and is intended to allow for both domestic and international market participation from natural dimension stone producers. The quarrier and processor will need to obtain the standard, chain of custody and conformance document in order to pursue certification. The certifier will not provide these.

This edition of the standard contains the following revisions:

Issue 8

This revision updates criteria in Section 5, 7, 8, 10, and 14, as well as definitions in Section 3 associated with those criteria. Additionally, several minor updates have been included to improve clarity and correct grammatical errors.

Suggestions for improvement of this standard are welcome. This standard is maintained on a continuous maintenance schedule and can be opened for comment at any time. Comments should be sent to: Chair, Joint Committee on Natural Dimension Stone, NSF International, National Center for Sustainability Standards at ncss@nsf.org, or P.O. Box 130140, Ann Arbor, Michigan 48113-0140, U.S.A.

[1] The information contained in this foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the standard.

About Natural Stone Institute (NSI)

The Natural Stone Institute is a trade association representing every aspect of the natural stone industry. The current membership exceeds 2,000 members in over 50 countries. The association offers a wide array of technical and training resources, professional development opportunities, regulatory advocacy, and networking events. Two prominent publications – the Dimension Stone Design Manual and Building Stone Magazine – raise awareness within the natural stone industry and in the design community for best practices and uses of natural stone.

The association serves as the authoritative source for safety and technical standards and information regarding the use of natural stone. It operates an industry accreditation program and two prestigious awards programs, as well as a continuing education program for architects and designers.

About NSF International

NSF International is a global independent organization that writes standards, and tests and certifies products for the water, food, health sciences and commercial and consumer goods industries to minimize adverse health effects and protect the environment. Founded in 1944, NSF is committed to protecting human health and safety worldwide. Operating in more than 150 countries, NSF is accredited by the American National Standards Institute (ANSI) and has been collaborating with the World Health Organization (WHO) since 1997 in water quality and safety, food safety and indoor environments. NSF Sustainability draws upon this expertise in standards development, product assurance and certification, advisory services and quality management systems to help companies green their products, services, operations, systems and supply chains. Through its National Center for Sustainability Standards, NSF has developed sustainability standards for product categories such as chemicals, building products and materials, and water quality. NSF works with leading regulators, scientists, engineers, public health and environmental health professionals, and industry representatives to develop these transparent, science-based standards, protocols, and product category rules (PCRs). NSF Sustainability also develops PCRs that enable environmental product declarations (EPDs) that report the results of life cycle assessments (LCAs).

ANSI/NSI Standard

Sustainable Production of Natural Dimension Stone

1 General

1.1 Purpose

The purpose of this standard is to recognize and drive sustainability practices in the natural stone industry. The standard establishes a set of well-defined environmental, ecological, social responsibility and human health metrics through a multistakeholder, science-based approach recognized by the green building movement as an indicator of leadership in sustainability performance. The standard provides an important opportunity to educate key members of the design and building professions, end users, government, and enviornmental advocacy groups about the production of natural stone products. As a rating system, this standard creates a mechanism that differentiates natural stone companies that demonstrate environmental leadership through commitment to sustainable operations and continued innovation. This standard considers natural and international environmental, ecological, human health, and social responsibility requirements for stone quarrying and production.

This voluntary standard emphasizes the disclosure of information necessary to mitigate negative impacts and promote efficiencies in the production of natural dimension stone products in a sustainable manner.

1.2 Scope

This standard establishes criteria to measure the extent to which natural dimension stone has been produced sustainably. The standard applies to all processors of natural stone, from quarry operations through final stone fabrication, and is intended to allow for both domestic and international market participation from natural dimension stone processors. In practice, the facility operator applies this standard to quarry operations, stone fabrication, or both. A processor with multiple facilities may choose which of those are to be certified; however, only natural dimension stone produced or processed exclusively by certified facilities may be considered environmentally preferable under this standard.

1.3 Principles

This standard was developed based on the following important principles.

1.3.1 Life cycle consideration

A comprehensive life cycle approach was employed to ensure that relevant aspects of quarry operations and stone fabrication associated with natural dimension stone products were considered when developing the criteria for this standard.

1.3.2 Relationship with legislation

A prerequisite for claiming conformance with this standard shall be that the facility operator is in compliance with health and safety, environmental, and other relevant regulations that are applicable to the quarry operations or fabrication facilities claiming conformance.

1.3.3 International trade aspects

The procedure and requirements included within this standard are designed to enhance trade while maintaining a level of awareness with respect to environmental and social issues.

1.3.4 Scientific basis

The criteria contained in this standard were developed and selected based on sound scientific and engineering principles intended to achieve credible, accurate, reproducible and measurable results.

1.3.5 Innovation

Use of this standard is intended to support, not inhibit, innovation that maintains or has the potential to improve environmental and social responsibility.

1.3.6 Continuous improvement

This standard is maintained by the consensus body to promote continuous improvement within the industry.

2 Normative references

The following documents contain provisions that, through reference, constitute provisions of this standard. At the time this standard was balloted, the editions listed below were valid. All documents are subject to revision, and parties are encouraged to investigate the possibility of applying the recent editions of the documents indicated below.

Age Discrimination in Employment Act of 1967[2]

Americans with Disabilities Act of 1990 (ADA), Titles I and V[2]

ASTM C119-20, *Standard Terminology Relating to Dimension Stone*[3]

ASTM C1528/C1528M-20, *Standard Guide for Selection of Dimension Stone*[3]

Civil Rights Act of 1964, Title VII[2]

Civil Rights Act of 1991[2]

Equal Pay Act of 1963[2]

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)[4]

ILO C29, *Forced Labour Convention*, 1930[5]

ILO C105, *Abolition of Forced Labour Convention,* 1957[5]

ILO C138, *Minimum Age Convention,* 1973[5]

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[2] EEOC Headquarters, U.S. Equal Employment Opportunity Commission. 131 M Street NE, Washington, DC 20507. <www.eeoc.gov>

[3] ASTM International. 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. <www.astm.org>

[4] United Nations. United Nations Headquarters, New York, NY 10017. <www.un.org>

[5] International Labour Office, 4 route des Monillons CH-1211 Geneva, Switzerland. <www.ilo.org>

ILO C182, *Worst Forms of Child Labour Convention*, 1999[5]

ISO 14064, Series for Greenhouse Gases

IARC, *Monographs on the Evaluation of Carcinogenic Risks to Humans, International Agency on the Research of Cancer*[6]

MSHA, *Mine Accident, Injury and Illness Report*[7]

MSHA, *Respirable silica (quartz) – Proposed rule*[7]

NSI, *Chain of Custody Standard*, Version 1.0[8]

NSI, *Glossary of Stone Industry Terms* [8]

NSI, *Silica & Slab Safety Certification*[8]

NSI, *Silica Exposure Control Plan Template*[8]

Rehabilitation Act of 1973[2]

State of California Environmental Protection Agency, Proposition 65, *Safe Drinking Water and Toxic Enforcement Act of 1986* – Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. seq.[9]

U.S. Department of Health & Human Services, National Toxicology Program (NTP), *Report on Carcinogens*[10]

U.S. U.S. EPA, *Toxics Release Inventory (TRI) Program – Persistent, Bioaccumulative, and Toxic (PBT) Chemicals Rules*[11]

U.S. OSHA, Form 300, *Log of work-related injuries and illnesses*[12]

U.S. OSHA, *Regulated Toxic Metal or Carcinogen*[12]

U.S. OSHA, *Respirable Crystalline Silica (RCS)*[12]

U.S. OSHA, *Respiratory Protection*[12]

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[6] World Health Organization, International Agency on the Research of Cancer. 150 Cours Albert Thomas, 69372 Lyon CEDEX 08, France. <www.iarc.who.int>

[7] U.S. Department of Labor, Mine Safety and Health Administration. 201 12th Street S, Suite 401, Arlington, VA 22202.

[8] Natural Stone Institute. 380 E Lorain Street, Oberlin, OH 44074. <www.naturalstoneinstitute.org>

[9] California Office of Environmental Health Hazard Assessment. 1001 I Street, Sacramento, CA 95814. <www.oehha.ca.gov>

[10] National Toxicology Program (NTP), U.S. Department of Health and Human Services. P.O. Box 12233, MD K2-03, Research Triangle Park, NC 27709. <www.ntp.niehs.nih.gov>

[11] Toxics Release Inventory (TRI) Program, U.S. Environmental Protection Agency. P.O. Box 10163, Fairfax, VA 22038. <www.epa.gov/toxics-release-inventory-tri-program>

[12] U.S. Department of Labor, Occupational Safety and Health Administration. 200 Constitution Avenue NW, Washington, DC 20210. <www.osha.gov>

3 Definitions

3.1 asthmagens: Any substance that through inhalation exposure contributes to the development of asthma in a human.

3.2 carcinogen: Chemicals which cause cancer. Those chemicals listed as known, probable, or possible human carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), the U.S. Environmental Protection Agency, or the Occupational Health and Safety Administration. For the purposes of this standard, a carcinogen is also defined by reference in Annex I-1.

3.3 chemical of concern: A chemical identified through its listing on one or more authoritative human health and environmental hazards resources listed in Annex I-1.

3.4 dimension stone:[3] Naturally occurring stone used as units or cut and finished to specifications. This excludes natural stone processed for use as crushed stone, fines, or powder for any purpose, or as aggregate or chemical raw materials. For purposes of this standard, the term is used interchangeably with natural stone.

3.5 discharge water: Water discharged from a facility to the natural hydrologic system.

3.6 energy management: Tracking and optimizing energy consumption to conserve usage which may include identifying sources of consumption, collecting utility bill data, analyzing meter date, identifying opportunities to save on costs and reduce energy usage and a company's carbon footprint, analyzing progress, and implementation of measures directly resulting in a reduction in energy consumption.

3.7 environmentally preferable: An alternative chemical material, or manufacturing process that significantly mitigates a potential human health or environmental hazard.

3.8 excess process materials: Stone unsuitable for fabrication into any final product, unless stone is stored on-site for future use, such as reclamation. This includes overburden materials, grout from quarrying, fragments, trimmings, dust from fabrication operations, and other stone not suitable for final production.

3.9 fabricator: A company who processes natural stone from raw blocks into usable building materials.

3.10 facility operator: Any company that engages in quarrying or stone fabricating. The entity that oversees / manages all involved facility operators. (As with facility operator, ownership is not constrained to only one site or aspect of this standard.)

3.11 greywater: Untreated wastewater, except water from toilets, that is eligible for treatment, reuse, or both.

3.12 input water: Any potable or nonpotable water utilized in a facility's operation that may originate from public or private plants, wells, cisterns, rain collection systems, or other legally-acquired source, other than recycled water.

3.13 persistent bioaccumulative toxic (PBTs): Chemicals or chemical compounds defined by the Toxics Release Inventory (TRI).

3.14 priority chemical of concern: Chemicals considered to be carcinogenic, mutagenic, reproductive toxins, potential endocrine disruptors, or persistent bioaccumulative or toxic (PBTs) as identified through its listing on one or more of the "priority chemicals of concern" lists in Annex I-1.

3.15 publicly available: Information that is available upon request or accessible on demand to anyone in the general public, without the need for specific qualifications, permissions or privileges.

3.16 quarrier: A company who extracts raw natural stone from a quarry with the intent to sell or process

into usable building materials.

3.17 quarry block: Rough stone as it comes from a quarry, which may be dressed (trimmed) or sawn for shipment.[8]

3.18 quarry operations: Development of site including removal of overburden and natural stone from the deposit and activities occurring at that location or other locations captured under these operations. This incudes (but is not limited to) trimming quarry blocks, if trimming occurs at the same location where the stone is extracted.

3.19 recycled water: Water that has been captured and reused one or more times for on-site operations.

3.20 site adaptive reuse: Quarry site post-closure programs that typically have goals that are identified by local community needs and support those objectives. These projects may involve private, public, and public-private partnerships, and may include a wide range of solutions. Among many examples of adaptive reuse projects include recreational sites, concert venues, nature preserves, destination adventures, residential development, water retention, as well as municipal equipment storage and landfills.

3.21 site reclamation: Restoration of quarry site(s) to a natural setting suitable as habitat for fish, flora, fauna, and wildlife, promoting a stable ecosystem, integrating stormwater management, and protecting watershed.

3.22 sludge: A residual mixture of raw material fines created from cutting and shaping operations, which may include water (and other materials) used in those operations. Typically, sludge is diverted to facilitate separation, disposition, and/or recycling of both solids and liquids.

3.23 solid waste: All nonliquid waste that is not excess process materials unless diverted from landfill by recycling, reusing, composting, etc. Materials and/or equipment stored on site without a plan for future use and/or disposal are considered solid waste.

3.24 stone fabricating: Process which yields natural dimension stone cut and finished to specifications. This may include trimming of stone to standard units, application of finishes, coatings, or other surface treatments, and the packaging or other preparation for shipment (ready-to-set) for project application. Transportation beyond the operation facility's gate is not considered in this scope.

3.25 transportation: The operation of transporting stone to and from the quarry to the next step, whether it be fabrication, block storage, or other location.

4 Conformance requirements

4.1 Elements

This standard is divided into basic categories consisting of credits that are potentially available to organizations seeking to demonstrate compliance with this standard. For facility operators, each section covers focus areas including water, energy, reclamation (waste), corporate governance and others. The criteria apply to quarry operations and initial fabrication facilities that work with raw blocks.

4.2 Intended users of this standard

Quarriers and stone fabricators are able to claim conformance to this standard. Companies engaged in both quarrying and stone fabricating, or companies with multiple operations (e.g., more than one quarry) may elect to certify some or all of its operations to this standard. However, each operation shall be evaluated separately for conformance to the standard, and only stone produced or processed exclusively by certified operations may be considered environmentally preferable by virtue of this standard. Operations that are

co-located on the same site may be combined and certified together as long as all requirements of the standard are met.

Specifiers, designers, governmental agencies, and consumers are among those intended to adopt and utilize the standard to qualify that the processors of natural dimension stone are following these sustainable principles.

4.3 Criteria

In addition to Section 1.3.2, each section may have one or more performance criteria that are considered prerequisites to comply with this standard. Once all prerequisite criteria are met, users may achieve additional points toward multiple levels of achievement in each category.

4.4 Achievement levels

In order to claim any level of conformance, all prerequisite criteria shall be met. The achievement levels are as follows:

Quarrier **46 possible points**

- **Silver**: 9 to 17 points
- **Gold**: 18 to 26 points
- **Platinum**: 27+ points

Fabricator **42 possible points**

- **Silver**: 8 to 16 points
- **Gold**: 17 to 24 points
- **Platinum**: 25+ points

Points to achieve Silver, Gold, or Platinum are total points independent of category. Points shall be earned individually by each facility operator and are site-specific.

5 Water

Ensuring the responsible sourcing, use, and disposal of water.

5.1 Water management plan Required

The facility operator shall establish and implement a documented plan with a goal to systematically assess water consumption, recycling practices, and seek to understand available options for water efficiency.

The plan shall include, but is not limited to, the following topics:

— sourcing of water (e.g., rainwater, greywater, naturally occurring ground water, or other nonpotable sources);

— capture and reuse of water (e.g., holding and settling ponds, and filtering and recirculation systems);

— discharge and end-use of water (e.g., use for dust suppression, and discharge into natural drainage area);

— conservation of potable water (e.g., water-efficient taps with aerators or flow restrictors, low-flow toilets, signage, employee education);

— conservation of landscaping water (e.g., creation of climate-appropriate or nonirrigated landscapes, use of native plants, efficient watering); and

— create an inventory of water loss.

The facility operator shall also develop and maintain an annual inventory of water use. The inventory shall include:

— water source (e.g., municipal potable, rainwater, naturally occurring ground water, onsite wells, or other sources);

— quantity of water used;

— purpose of consumption (e.g., processing, dust suppression, landscape watering, office use, or other).

5.2 Enhanced water treatment — Required

Demonstrate on-site systems that result in enhanced treatment of discharge water. The quality of water discharged to the environment from their facility shall meet the U.S. EPA's NPDES requirements.

If no water is discharged, then this criterion is met.

5.3 Water use management

5.3.1 Recycled water — **Optional**: Up to 3 points

A facility operator shall demonstrate that water was recycled in the processing of dimension stone. Points shall be earned as follows:

— 50% to 74% of water used has been recycled on-site (1 point); or
— 75% to 94% of water used has been recycled on-site (2 points); or
— 95% or greater of water used has been recycled on-site (3 points).

5.3.2 Input water sourcing — **Optional**: Up to 2 points

The facility operator shall demonstrate input water was sourced from nonpotable sources, such as rain collection systems, natural waterways, or other legally-acquired sources (excludes recycled water). Points shall be earned as follows:

— 75% to 94% of input water from nonpotable sources (1 point); or
— 95% or greater of input water from nonpotable sources (2 points).

6 Custody and transportation

Understanding the chain of custody from raw material extraction at the quarry, to fabrication, and through distribution and final installation.

6.1 Chain of custody — Required

The facility operator shall develop, implement, and maintain a documentation and tracking system capable of meeting the requirements of the Natural Stone Council *Chain of Custody Standard* (NSC COC), 2014.[8]

6.2 Transportation management program — Required

Facility operators shall establish and implement a management plan to manage and continually improve the efficiency of the transportation of dimension stone. The plan shall include the following:

— measurement and recording of each of the following data, on a per shipment basis, for all shipments arranged by the facility operator:

  — weight of shipment and capacity of load (e.g., LTL);
  — shipment carrier information (e.g., company, DOT number, truck type); and
  — distance and mode of transport.

— tracking of annual tonnage shipped and number of shipments;

— calculation of the annual amount of packaging, transportation materials, or both, consumed by type of product (e.g., block, slab);

— establishment of goals for reducing impacts of transportation of dimension stone and measurement and tracking of progress against those goals;

— identification of methods used by the facility operator for maximizing shipping efficiency (e.g., intelligent loading, logistics planning);

— identification of opportunities for environmentally-preferable (i.e., sustainable) packaging and shipping solutions; and

— description of measurement and evaluation process used (e.g., procedure for measuring or estimating transportation data).

6.3 Enhanced transportation strategies — **Optional**: 1 point

The facility operators shall document and demonstrate processes that improve the efficiency of transportation and the associated environmental impacts.

7 Site management

Recognizing the environmental impacts associated with daily operations by developing plans to track them.

7.1 Site management plan — Required

The facility operator shall develop and maintain a set of site-specific management plan(s) to ensure responsible environmental management of impacts associated with daily operations. Site management plan shall be reviewed internally on a minimum 3-year schedule to document changes in quarry operations,

scope, jurisdictional changes or regulation that may impact post-closure goals. This plan should be considered a living document and adjusted as necessary during this 3-year period.

7.1.1 Quarries

— list all company locations, both on-site and off-site, that support quarry operations (e.g., administration offices, equipment repair facilities);

— site maps, to-scale, of all inactive and active quarry pits. All maps shall clearly indicate the physical boundaries of the subject property, including key codes and legends, all areas where active, past, or future operations are being conducted, mark areas of operation (e.g., transportation staging, equipment maintenance) and storage (e.g., grout piles, chemical storage), and identify all relevant environmental considerations (e.g., streams, rivers, riparian waterways, etc). All maps shall be maintained and kept current;

— Storm Water Pollution Prevention Plan, conforming to the requirements of U.S. EPA NPDES;

— measures to control dust (e.g., through regularly scheduled observation and control);

— presence and location of safety messages displayed such as “No trespassing” or other signage required by jurisdiction having authority;

— location of, and requirements for, fencing, gates, or other closure mechanisms to discourage entry while the site is inactive or other means required by jurisdiction having authority;

— provisions for safe exit as required by jurisdiction having authority, should accidental entry occur into the quarry or operations site. Such provisions shall be identified and detailed in the plan;

— procedures to secure equipment in areas of facility operation in order to prevent damage or unauthorized use;

— measures to prevent unauthorized entry into buildings and storage;

— location of designated hazardous materials storage areas and procedures for safe storage andremoval of such materials;

— location of storage areas for empty containers designated for recycle or reuse; and

— location of storage area(s) for natural quarry materials which are to be used for site reclamation, fabrication into any final product, or both. The facility operator shall outline planned use for those materials in the future.

7.1.2 Fabrication facilities

— list all on-site and off-site facilities essential to the fabrication of natural stone;

— site maps shall include, at a minimum, all building entry and exit points, areas of fabrication operation (e.g., sawing, primary finish application, shipping), administrative space, support operations (e.g., shipping, equipment maintenance), water treatment, material storage (e.g., material stock, chemical storage), and points of waste collection, storage (e.g., solid waste, used chemical drums, hazardous waste), or both. All maps shall be maintained and kept current;

— measures to control occupational exposure to chemicals, dust, or other harmful materials (e.g., environmental controls, ventilation, personal protective equipment);

— measures to control or contain potential releases to the environment (e.g., environmental controls, waste collection);

— procedures to secure equipment in areas of facility operation in order to prevent damage or unauthorized use;

— location of designated hazardous materials storage areas and procedures for safe storage and removal of such materials;

— location of storage areas for empty containers designated for recycle or reuse; and

— location of storage area(s) for natural stone materials which are to be used for site reclamation, fabrication into any final product, or both. The facility operator shall outline planned use for those materials in the future.

The plan(s) shall establish the physical "defined boundaries" to which the facility shall be assessed under this standard. To comply with this requirement, facility operators shall demonstrate that all sites are being managed as described in the plan(s).

7.2 Enhanced site management planning

The facility operator shall receive points for demonstrating conformance to one of the two enhanced site management planning activities listed below.

Additional points shall be earned if the site management plan for active, on-going operations is supplemented with the following:

7.2.1 Ecosystem boundaries **Optional**: 1 point

The facility operator shall establish ecosystem boundaries to promote conservation (e.g., in a site preservation plan, keep disturbed area as small as possible and ensure vehicles keep to designated paths, research local wildlife populations, mitigate downstream effects from surface water diversion, minimize removal of native vegetation).

7.2.2 Environmental impact assessment **Optional**: 2 points

The facility operator shall conduct an independent assessment of environmental impacts of current and planned quarrying operations. The plan shall identify any potential impacts on biodiversity, endangered species, and critical habitats, as well as any other impacts anticipated to human health or the environment. To qualify for the points, the results of the impact assessment shall be used to inform other aspects of the site management plan, which shall describe how the plan acts to minimize or prevent identified impacts. Impact assessments performed as part of the site acquisition process meet this requirement, so long as it was performed by an independent third party (e.g., environmental professional engineer, or accredited organization) and within the past 20 years.

8 Site reclamation and adaptive reuse

This section addresses responsible and sustainable reclamation or adaptive reuse of a quarry site once operations have ceased. As such, criteria in this section shall apply only to facility operators that include quarry operations.

8.1 Post-closure plan **Required**

The facility operator shall create a post-closure plan which includes approach for site reclamation, site adaptive reuse, or both, scope, and proposed phasing as an overlay to the site management plan outlined

in Section 7.1 of this standard.

Post-closure plan shall be reviewed internally on a minimum 3-year schedule to document changes in quarry operations, scope, and jurisdictional changes or regulation that may impact post-closure goals. This plan should be considered a living document and adjusted as necessary during this 3-year period. Reviews shall be signed and dated by an appropriate management representative at completion.

Post-closure plan shall be either a single plan with delineation of individual quarry sites or one plan per quarry site. At a minimum, the plan shall include a description of actions to be taken by the operator to prepare quarry-ground for goals of final disposition, transfer of ownership, or both, including:

— site cleanup (e.g., removal of equipment, storage tanks, hazardous materials, recyclables, landfill materials, installation, and compaction of stored quarry materials, such as overburden);

— infrastructure to remain for future use (e.g., buildings, utilities, wells, septic);

— infrastructure to be removed (e.g., buildings, utilities, wells, septic, exposed foundations);

— site safety (e.g., abandoned material stabilization, protective barriers, hazard signage;

— environmental stabilization (e.g., operational stormwater best management practices, topsoil stabilization, shear wall mitigation)

— ecosystem support (e.g., topography, vegetation, habitat audit, drainage system); and

— site monitoring documentation to post-closure land use objectives.

8.2 Enhanced post-closure plan **Optional**: 2 points

The facility operator shall demonstrate the following enhancements were made to the Section 8.1 post-closure plan:

— engage the local community to identify community needs and establish goals pertaining to the quarry site post-closure plan. Outreach to the local community shall be documented;

— the post-closure plan shall be made publicly available over the period of certification.

8.3 Exemplary site closure **Optional**: 1 point per site (maximum 2 points)

The facility operator shall demonstrate successful closure of quarry site(s) consistent with their post-closumre plan outline in Section 8.1 of this standard. The qualifying site(s) shall have established ownership of applicant during post-closure activity.

Demonstrate the following has taken place prior to the final disposition, transfer of ownership, or both:

— site reclamation or adaptive reuse was performed consistent with the needs of the local community, or have been carried out in consideration of the local ecosystem to minimize future impacts; and

— site closure and reclamation shall exhibit action commensurate with the plan or have been completed within the past 20 years.

9 Social governance

Ensuring ethical treatment of employees.

9.1 Prohibitions on forced labor — Required

The facility operator shall document that it does not engage in or permit the use of forced or compulsory labor (per ILO Conventions No. 29, *Forced Labour Convention,* and No. 105, *Abolition of Forced Labour*[5]). To meet this requirement, the declaration shall encompass all corporate operations of the applicant, including all sites and quarries, including those that may not be certified under this standard.

9.2 Prohibitions on child labor — Required

The facility operator shall document that all facilities owned or operated by the facility operator comply with ILO Conventions No. 138, *Minimum Age Convention,* and No. 182, *Worst Forms of Child Labour Convention*[5]). To meet this requirement, the declaration shall encompass all sites and quarries of the operator, including those that may not be certified under this standard.

9.3 Prevention of discrimination — Required

The facility operator shall document that it does not engage in or support discrimination in the employment process. To qualify, the operator shall demonstrate that their corporate operations are not in conflict with any of the following:

— Title VII of The Civil Rights Act of 1964 (Title VII),[2] which prohibits employment discrimination based on race, color, religion, sex, or national origin;

— The Equal Pay Act of 1963 (EPA),[2] which protects men and women who perform substantially equal work in the same establishment from sex-based wage discrimination;

— The Age Discrimination in Employment Act of 1967 (ADEA),[2] which protects individuals who are 40 years of age or older;

— Title I and Title V of the Americans with Disabilities Act of 1990 (ADA) as amended 2008,[2] which prohibits employment discrimination against qualified individuals with disabilities in the private sector, and in state and local governments;

— Sections 501 and 505 of the Rehabilitation Act of 1973,[2] which prohibit discrimination against qualified individuals with disabilities who work in the federal government; and

— The Civil Rights Act of 1991,[2] which, among other things, provides monetary damages in cases of intentional employment discrimination.

Facility operators shall provide documentation of established and implemented corporate policies, available to all employees that demonstrate compliance with the above listed acts.

9.4 Employee participation — **Optional**: 1 point

The facility operator shall document company-supported employee activities within the community, involvement in community outreach, or both. Company-supported employee activities consist of community service work performed by company employees on its behalf for that purpose, community service work performed, educational activities, and financial contributions. Activities and contributions deemed political in nature shall not qualify under this credit.

9.5 Social accountability **Optional**: 1 point

The facility operator shall develop and implement a social accountability plan that shall address the following:

- demonstration of fair hiring practices;
- education for applicable employees social accountability issues or practices;
- corporate ethics;
- receipt of gifts; and
- prohibitions against engaging in insider trading, in cases where a company is publicly traded.

To qualify, the facility operator shall demonstrate through documentation the implementation of each aspect of the plan, including demonstration of training to all employees.

9.6 Corporate sustainability report **Optional**: 1 point

Make publicly available a Corporate Sustainability Report that, at a minimum, addresses:

- water custody and transportation;
- site management;
- land reclamation and adaptive reuse;
- social governance;
- energy management plan;
- excess process materials;
- management of solid waste;
- chemical management;
- human health and safety, and;
- innovation.

10 Energy

Understanding energy use to identify opportunities to lower total carbon impacts.

10.1 Energy inventory **Required**

The facility operator shall complete an inventory of energy use, including the quantity and type of energy consumed (e.g., diesel, local power grid), organized by location or function (e.g., power use by building, equipment). Inventory shall include both electricity and fuel usage and identify factors important to consumption (e.g., number of tons shipped, hours of operation, etc). Energy consumption shall be reported in energy consumed per unit processed (e.g., KWh per ton of dimension stone produced), and a total energy consumption for the facility operations (i.e., combined energy from all sources) shall be calculated.

10.2 Energy management plan **Required**

The facility operator shall establish and implement a plan to systematically improve energy consumption and associated greenhouse gas emissions. The quarry or fabrication facility shall measure and track energy consumption by energy source and purpose of consumption, identify opportunities and methods for reducing energy use, establish target goals, quantify changes, and monitor progress. This plan shall cover, but not be limited to, the following topics:

- equipment operation and maintenance (e.g., minimizing idle times, improved maintenance, replacement of inefficient equipment);

- transportation and logistics (e.g., maximizing shipping loads, utilizing advanced logistics); and

— office and administration energy and lighting.

This plan shall track progress towards established goals on a rolling 5-year period based on percentage reduction, and shall be reported publicly (e.g., corporate sustainability report, website posting). Alternatively, this criterion shall be met if the facility operator has earned Energy Star®[13] Challenge recognition, or international equivalent.

10.3 Total energy reduction — **Optional**: Up to 2 points

The facility operator shall demonstrate maintain or reduce their performance year's energy use compared to the average energy use from the previous 10 years.

Points shall be earned as follows:

— demonstrate the performance year's energy use meets or falls below the average energy use from the previous 10 years (1 point); and

— demonstrate an improvement of 20% or greater in energy use reduction compared to the average energy use from the previous 10 years (1 point).

10.4 Carbon management — **Optional**: 2 points

The facility operator shall perform a carbon footprint analysis of its operations. Boundaries of the analysis shall include the manufacturing and transportation stages of the product life-cycle, as well as all stages upstream, including materials extraction, processing, and energy generation. Analysis shall include carbon emissions associated with all of the following:

— processes directly related to stone production;
— on- and off-site transportation during production; and
— off-site support and administrative processes.

To qualify, carbon footprint shall have been performed in the last 3 years and shall be documented in a report meeting the specifications of ISO 14064. Carbon footprint shall be performed using any commercially available software package or by a credible, qualified third party.

10.5 Renewable and alternative energy source — **Optional**: Up to 4 points

The facility operator shall demonstrate the use, purchase, or both of renewable energy in its operations through credits achieved under Section 10.5.1, 10.5.2, or both.

10.5.1 Renewable energy sourcing

Use on-site renewable energy systems or procure renewable energy from off-site sources including energy derived from water, wind, and solar sources, as well as the use of renewable fuels such as biodiesel and those derived from sources such as switch grass. All contributions of renewable energy are measured relative to total energy use for entire operation, as determined in Section 10.1, and shall be measured and documented to receive credit:

— demonstrate 1% or greater of total energy use is derived from renewable sources (1 point);
— demonstrate 5% or greater of total energy use is derived from renewable sources (2 points); or
— demonstrate 10% or greater of total energy use is derived from renewable sources (3 points).

[13] <www.energystar.gov>

10.5.2 Alternative energy sources

Off-site renewable energy sources. Engage in a contract to purchase at least 50% of the company's total energy use annually (based on quantity of energy consumed, not cost) from green power, or renewable energy certificates (RECs). Green power and RECs shall be Green-e Energy certified or equivalent (1 point).

11 Excess process materials

Managing the storage, removal, or both of stone not suitable for final production.

11.1 Inventory of excess process materials and solid waste Required

The facility operator shall create and maintain an inventory of excess materials generated by its operations. The inventory shall characterize the nature of the excess materials (e.g., sludge, fines, cuttings), the annual quantity generated (estimated or measured), the source of the excess materials (e.g., cutting operations, rejects), the percent or quantity reclaimed or recycled, and the disposal, storage, or reclaim method.

11.2 Excess process material and waste management program Required

The facility operator shall establish and implement a plan to track and manage excess process material and to systematically reduce or eliminate waste. Specifically, the plan shall track and measure the amount of excess process material produced by source and type, identify opportunities and methods for reducing generation rates, establish target goals, quantify changes in generation rates (normalized by production volume), and monitor progress of plan efforts. At a minimum, the plan shall address each of the following:

- material yield improvement;
- management of stone excess material from dimensional stone production; and
- alternative uses for processing excess material.

This plan shall track progress towards established goals on a rolling 5-year period for excess process material. Progress shall be estimated or measured based on percentage reduction in generation rates (per unit of dimension stone produced), and be publicly available.

11.3 Enhanced sludge management **Optional**: 1 point

The facility operator shall demonstrate operation of a sludge management system that meets one of the following:

- divert 100% of annual sludge produced by operations from traditional disposal methods (e.g., landfill) to environmentally acceptable reuse applications (e.g., agricultural use, quarry reclamation plan, storage on-site, creating roads on-site). Provide documentation of the diversion, including a description of the end disposal method (1 point); or

- demonstrate zero sludge creation for the performance year (1 point).

11.4 Demonstrated reduction of excess process materials **Optional**: Up to 3 points

The facility operator shall compare the performance year excess process materials generated, normalized by dimensional stone production, to the prior year, normalized by dimensional stone production. Methods for reducing such materials shall include, but are not limited to, process modification, operational changes, efficient use of materials, and use of more sustainable materials (estimated or measured). If estimated, the facility operator shall provide the method of estimation and documented data on which the estimation is based, in order to receive credit:

— 0% and up to 2% reduction (1 point);

— 2% to 5% reduction (2 points);

— achieve reduction greater than 5% (3 points); or

— operators that do not produce excess process materials in the quarrying or fabrication of dimension stone shall qualify for the maximum points allowed under Section 11.3 (3 points).

11.5 Reuse of excess process material plan **Optional**: 1 point

The facility operator shall provide an implemented plan for reusing stone waste and demonstrate processes and approaches that result in the reuse or recycling of excess process materials. Examples include, new market development, new product development, and partnerships with potential consumers of the desired excess process materials.

12 Solid waste

Tracking nonliquid waste in order to identify opportunities to reduce or eliminate trash from ending up a landfill.

12.1 Inventory of solid waste **Required**

The facility operator shall track solid waste generated on-site, characterizing the nature and annual quantity of the waste, it shall also include inventory of quantity and method of any waste diverted from landfill by recycling, reusing, composting, etc.

12.2 Solid waste management plan **Required**

The facility operator shall establish and implement a plan to track and manage solid waste and to systematically reduce or eliminate waste. Specifically, the plan shall track and measure the amount of solid waste produced by source and type, identify opportunities and methods for reducing generation rates, establish target goals, quantify changes in generation rates (normalized by production volume), and monitor progress of plan efforts. This plan shall track progress towards established goals on a rolling 5-year period for solid waste. Progress shall be estimated or measured based on percentage reduction in generation rates (per unit of dimension stone produced), and be publicly available. At a minimum, the plan shall address each of the following:

— management of solid waste including collection, separation, disposal and/or recycling;
— reuse, recycling or reclaim of goods used in processing; and
— office waste reduction.

This plan shall track progress towards established goals on a rolling 5-year period for solid waste. Progress shall be estimated or measured based on percentage reduction in generation rates (per unit of dimension stone produced), and be publicly available.

12.3 Demonstrated solid waste reduction **Optional**: 1 point

The facility operator shall demonstrate a successful reduction of solid waste generation. They shall compare the performance year solid waste generated, normalized by dimension stone production, to up to the previous 10 years, normalized by dimension stone production. Methods for reducing waste include, but are not limited to, process modification, operational changes, efficient use of materials, and use of more sustainable materials (estimated or measured). If estimated, the facility operator shall provide method of estimation and documented data on which the estimation is based to receive credit:

— achieve reduction greater than 10% (1 point); or
— operators that do not produce solid waste (1 point).

13 Chemical management

Identifying and eliminating potentially hazardous substances from facilities.

The following requirements shall apply to all company sites associated with the production of dimension stone. Operations that are not co-located with the primary production facilities, but which are necessary for the production of stone, shall be included in the scope of this section.

13.1 Chemical inventory Required

The facility operator shall develop and maintain an inventory of all materials and products used in operations directly associated with the production of dimension stone, as well as all those used in operations required to support stone production. Cleaning products used to maintain workspace and administrative areas (i.e., nonproduction areas), lubricants, and fuels, may be excluded from the inventory, while cleaners used to maintain equipment shall be included. Such an inventory shall at a minimum include the following, if applicable:

— product or material name or trade name;

— Safety Data Sheet (SDS) reportable product ingredients (as defined by OSHA 29 C.F.R. § 1910.1200[12]) for each product or material identified. Reportable product ingredients shall be identified by chemical name and Chemical Abstract Service Registry Number (CASRN), if available;

— SDS reportable chemicals shall be reviewed and all chemicals of concern (primary and secondary) shall be identified (see Annex I-1);

— supplier of the chemical product or material, including the manufacturer, distributor, or both;

— description of how product is used including method of application (e.g., spray) and the manner of storage on-site;

— annual quantity purchased;

— maximum quantity stored (unit of measure); and

— SDS reportable physical hazards associated with the material or product.

13.2 Chemical management plan Required

The facility operator shall develop and maintain a plan to safely manage the chemical inventory identified in Section 13.1. The plan shall:

— document procedures for the handling, storage, and disposal of materials and products containing chemicals of concern or those identified as physical hazards in a manner consistent with federal, state, and local regulations and international guidelines;

— develop a plan to inform workers of the potential hazards of chemicals they are reasonably expected to come in contact with, and to train those workers in the proper procedures for the safe handling, storage, and disposal of such chemicals. The plan shall include information specific to the chemicals of concern, their potential hazards, the procedures for safe handling, and information on the proper use of personal protective equipment. Such a plan shall be mandatory for all employees working in the immediate area where chemicals of concern are handled, stored or disposed, or for employees

who might otherwise be expected to be exposed to such chemicals; and

— document the implementation of the training plan, including a log of the employee name, and date of completion of training.

13.3 Chemical stewardship **Optional**: 2 points

The facility operator shall develop and implement a safer chemical management plan that establishes priorities for replacing or reducing the use of chemicals of concern with environmentally preferable alternatives. The plan shall include, at a minimum, the following elements:

— assigned priorities for replacement or reduction to chemicals of concern and those presenting physical hazards. Priorities shall be based on the overall human health and environmental health concerns of each chemical, and the potential availability of alternatives;

— established goals and timelines for replacement or reduction;

— established baselines for chemical or material use against which progress shall be quantified and reported;

— defined roles and responsibilities for identified personnel and staff responsible for executing the plan;

— defined process for identifying and evaluating potential environmentally preferable alternatives; and

— schedule for reporting progress.

13.4 Elimination of chemicals of concern **Optional**: Up to 5 points

The facility operator shall demonstrate the absence of chemicals of concern (see Annex I-1) by:

— elimination of all priority chemicals of concern (3 points);

— elimination of all persistent, bioaccumulative toxins (PBTs) from the chemical inventory in Section 13.1 (1 point); and

— elimination of all asthmagens from the chemical inventory in Section 13.1 (1 point).

14 Human health and safety

Ensuring workers are provided with a safe and healthy work environment.

14.1 Occupational safety plan **Required**

The facility operator shall document a safety plan adequate to insure that workers are provided with a safe and healthy work environment. Such a plan shall include, but not be limited to, the following:

— occupational and process safety training for both full and part-time workers, including contractors that work on-site;

— emergency preparedness and response plan that protects the health and safety of workers during emergency situations;

— a system for tracking, classifying, and reporting occupational injuries and work-related illness;

— documented procedures for safeguarding workers using potentially hazardous machinery (e.g., using barriers, interlocks, periodic inspection, and maintenance);

— documented procedures to identify, evaluate, and control worker exposure to chemical, biological, or physical, or any combination of the above agents that are likely to be present in the workplace; and

— documented procedures to identify, evaluate, and control general safety hazards in the workplace (e.g., electrical, fire, slip-trip-fall hazards).

14.2 Silica exposure control plan — Required

The facility operator, who works with silica-based stone, shall document the company's identified competent person(s) has completed a training program regarding occupational exposure to respirable crystalline silica (RCS), such as the Natural Stone Institute's Silica & Slab Safety Certificate Program, or similar.

They shall have a written silica exposure control plan that meets the requirements of federal, state, or local regulatory authorities' requirements (i.e., OSHA, MSHA, or other applicable regulatory authorities) and demonstrate implementation of the plan.

Where no authority exists, or where silica exposure regulations are less stringent than North America, the facility operator shall demonstrate adherence to OSHA or MSHA guidelines.

If facility operator does not work with silica-based stone, this requirement is met.

14.3 Improved workplace safety — **Optional**: Up to 2 points

The facility operator shall demonstrate an improvement in occupational injuries, as compared to previous years using industry accepted documentation (e.g., OSHA Form 300, *Log of Work-Related Injuries and Illnesses, Mine Safety and Health Administration* [MSHA][7]), or an equivalent standard for international users):

— incidents are at or below the applicable industry average (1 point);

— zero incidents (2 points).

14.4 Management of air quality

14.4.1 Air emissions inventory — Required

The facility operator shall create an inventory of air emissions including both point (i.e., fixed place) and mobile sources, examples include loaders, trucks, saws, and other machinery. The inventory shall include a description of each source, the type of expected emissions (e.g., diesel fumes), the likely location of the source, and the presence and type of control technology, if applicable. Inventory shall consider the presence of any ozone depleting substances, green house gas emissions as well as any other additional emissions required to be reported under applicable federal or local regulations. Quantities of emissions should be estimated or measured, but shall not be required to be tested.

14.4.2 Air emissions management plan — Required

The facility operator shall develop a plan to systematically control and reduce air emissions, where possible. The plan shall include, but not be limited to, the following elements:

— each source and type of associated emissions;

— key parameters for each source that may directly or indirectly contribute to the air emissions;

— site-specific best practices / procedures for minimizing emissions during facility or site operations, and ways to minimize periods of unproductive idling or operation;

— document and tracking of required maintenance of equipment and other sources that contribute to air emissions;

— implementation of the plan through direct training, printed procedures, or other methods to employees; and

— definition and on-going measurement of key metrics (e.g., operating time of emission sources, miles traveled by vehicle) that track the effectiveness of the plan and facilitate the estimation of emissions over time.

15 Innovation

Encouraging exceptional performance above and beyond the requirements set by this standard.

In order to facilitate continuous improvement, this standard recognizes efforts that result in exceptional performance above the requirements set by this standard and/or innovations that advance or improve the dimension stone industry that are not specifically addressed by this standard. To qualify, innovations shall be documented, improvements quantified, exceed any local / federal requirements or baselines set in this standard, and shall not qualify for a point under another criterion in this standard (i.e., resulting in double-counting), including other innovation credits.

15.1 Innovation **Optional**: Up to 6 points

Companies shall receive a maximum of 6 Innovation points for exceptional performance above the requirements set by this standard and/or innovations that advance or improve the dimension stone industry. There is no limit to the number of times an innovation may be claimed as long as it continues to improve. These innovation points are awarded for comprehensive strategies that demonstrate quantifiable environmental, ecological, social, and human health benefits. Multiple points may be awarded for a single claimed innovation based on the scope of benefits claimed.

Normative Annex 1

Scorecard

5	Water	5
5.1	Water management plan	R
5.2	Enhanced water treatment	R
5.3	Water use management	
5.3.1	Recycled water	3
5.3.2	Input water sourcing	2

6	Custody and transportation	1
6.1	Chain of custody	R
6.2	Transportation management plan	R
6.3	Enhanced transportation strategies	1

7	Site management	3
7.1	Site management plan	R
7.2	Enhanced management planning	
7.2.1	Ecosystem boundaries	1
7.2.2	Environmental impact assessment	2

8	Site reclamation and adaptive reuse*	4
8.1	Post-closure plan	R
8.2	Enhanced post-closure plan	2
8.3	Exemplary site closure	2
* Quarriers only		

9	Social governance	4
9.1	Prohibitions on forced labor	R
9.2	Prohibitions on child labor	R
9.3	Prevention of discrimination	R
9.4	Freedom of association	1
9.5	Employee participation	1
9.6	Social accountability	1
9.7	Corporate sustainability report	1

10	Energy	8
10.1	Energy inventory	R
10.2	Energy management plan	R
10.3	Total energy reduction	2

10	Energy (con't)	
10.4	Carbon management	2
10.5	Renewable and alternative energy source	4

11	Excess process materials	5
11.1	Inventory of excess process materials	R
11.2	Excess process material and waste management program	R
11.3	Enhanced sludge management	1
11.4	Demonstrated reduction of excess process materials	3
11.5	Reuse of excess process material plan	1

12	Solid waste	1
12.1	Inventory of solid waste	R
12.2	Solid waste management plan	R
12.3	Demonstrated solid waste reduction	1

13	Chemical management	7
13.1	Chemical inventory	R
13.2	Chemical management plan	R
13.3	Chemical stewardship	2
13.4	Elimination of chemicals of concern	5

14	Human health and safety	2
14.1	Occupational safety plan	R
14.2	Silica exposure control plan	R
14.3	Improved workplace safety	2
14.4	Management of air quality	
14.4.1	Air emissions inventory	R
14.4.2	Air emissions management plan	R

15	Innovation	6
15.1	Innovation	6

Total possible points	
Quarriers	47
Fabricators	42

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Informative Annex 1

Informational sources

The information contained in this annex is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this annex may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the standard.

The following resources are all considered authoritative sources of environmentaland human health hazard data.

I-1.1 Priority chemicals of concern

CAL-EPA Proposition 65[9] – Known to cause cancer or reproductive toxicity. State of California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA). <www.oehha.ca.gov/proposition-65/proposition-65-list>

ECHA REACH SVHC – Reason for inclusion: Carcinogenic, Toxic for Reproduction, Mutagenic, Endocrine activity. <www.echa.europa.eu/information-on-chemicals>

European Commission Directive 76/769 Carcinogen, Mutagens, and Reproductive Toxins (CMRs):

- Carcinogen: Category 1 or 2 or GHS[4] Category 1A or 1B
- Mutagen: Category 1 or 2 or GHS[4] Category 1A or 1B
- Reproduction: – Category 1 or 2 or GHS[4] Category 1A or 1B

<https://eur-lex.europa.eu/eli/dir/1976/769/oj>

European Union Priority List of suspected endocrine disruptors (prioritized for further testing):

- Category 1 or Category 2 endocrine disruptors

<https://ec.europa.eu/environment/chemicals/endocrine/strategy/substances_en.htm>

IARC Cancer Monographs, International Agency for Research on Cancer, World Health Organization[6]:

- IARC Group 1: Carcinogenic to humans
- IARC Group 2A: Probably carcinogenic to humans

<https://monographs.iarc.who.int/agents-classified-by-the-iarc/>

PBT European Union - European Chemicals Agency

<https://echa.europa.eu/pbt>

U.S. Environmental Protection Agency, Toxics Release Inventory Program[11]:

— U.S. EPA Toxic Release Inventory (TRI) Persistent, Bioaccumulative, and Toxic Substances

<https://www.epa.gov/toxics-release-inventory-tri-program/persistent-bioaccumulative-toxic-pbt-chemicals-covered-tri>

U.S. Department of Health & Human Services, National Institutes of Health, National Institute of Environmental Health Sciences, National Toxicology Program. U.S. NIH NTP Report on Carcinogens[10]:

— known to be a human carcinogen
— reasonably anticipated to be a human carcinogen

<https://ntp.niehs.nih.gov/whatwestudy/assessments/cancer/roc/index.html>

U.S. EPA and U.S. Department of Labor, Occupational Safety and Health Administration[12]:

— U.S. OSHA Carcinogens

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1003>

I-1.2 Secondary chemicals of concern

Association of Occupational and Environmental Clinics (AOEC) Exposure Code List [30]:

— AOEC Asthmagens: Sensitizer induced asthmagens (Rs or Rrs)

<http://aoecdata.org>

European Union - European Chemicals Agency:

— ECHA REACH SVHC: Reason for inclusion: very Persistent and very Bio-accumulative (vPvB)

<www.echa.europa.eu/information-on-chemicals>

U.S. Environmental Protection Agency, Ozone Layer Depletion Program:

— U.S. EPA Ozone Depleting Substances: Class I and Class II

<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>

Informative Annex 2

Key elements of a certification program for environmentally preferable and sustainable dimension stone

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I-2.1 General

Declaring conformance to this standard identifies that a facility operator proceeds in a sustainable and/or environmentally preferable manner. Conformance to this standard alone does not imply certification. The facility operator may provide additional public confidence regarding the attainment of these goals by undertaking independent conformity assessment (certification).

I-2.2 Certification process

I-2.2.1 Selection of conformity assessment body

The facility operator identifies a certification organization qualified by National Stone Council to perform the conformity assessment of the product(s) assessment process for conformance with this standard.

I-2.2.2 Conformity assessment to this standard

The certifying organization performs the necessary functions to determine whether the operations of the facility operator conform to the specified criteria. This involves activities such as the review of documentation submitted in support of certification, or an on-site audit for assessing conformance with the specified criteria.

I-2.2.3 Issuance of product(s) certification

If the dimension stone(s) has been demonstrated adequately to meet the specifications described in this standard, and any issues of nonconformance have been addressed, the certifying organization provides a dimension stone certification to the facility operator. This includes the provision of documentation of certification of the dimension stone to the quarry operator and/or processor, as well as inclusion of the dimension stone on any publicly available lists of certified products maintained by the certifying organization. The certifying organization instructs the facility operator regarding appropriate use of the registered certification mark of the certifying organization.

I-2.2.4 Monitoring of product(s) conformance

At intervals determined by the certifying organization, the continued conformance of the certified product(s) to the specified criteria is monitored using periodic audits and document review or both.

***THE HOPE OF MANKIND** rests in the ability of man to define and seek out the environment which will permit him to live with fellow creatures of the earth, in health, in peace, and in mutual respect.*