

# Attachments to Proposed Changes

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Reason: This appendix specifies procedures and guideline for approving alternative programs that may or may not look or be formatted like NGBS or IECC, but are verified to achieve their overall energy efficiency goals. There are many good programs that have achieved local, state and national success. NGBS users, the NGBS support organization or others should have the ability to recognize a variety of accomplished programs.

## **Appendix X. CRITERIA FOR NATIONAL GREEN BUILDING STANDAR AND IECC ALTERNATIVE PROGRAMS**

### **PREFACE**

This establishes criteria provide interested parties with guidelines for accrediting residential construction programs that meet or exceed the energy requirements and levels in the National Green Building Standard (NGBS) levels and/or International Energy Conservation Code. These criteria are intended to be used for a wide variety of Programs and Design Rules that result in residences that meet or exceed the overall energy efficiency of the NGBS and/or IECC.

## **CRITERIA FOR NGBS ENERGY AND IECC ALTERNATIVE PROGRAMS**

### **1.0 INTRODUCTION**

**1.1 Scope:** This appendix sets forth the requirements for Programs that result in residences or residential buildings that meet or exceed the energy efficiency of specific versions of the National Green Building Standard (NGBS) and the International Energy Conservation Code (IECC). This document also sets forth criteria for Design Rules that specify requirements for residential designs that meet or exceed the overall energy efficiency requirements of a specific version or level in the NGBS and/or the IECC.

**1.2 Overview:** A Program complying with these criteria will have demonstrated that the Program has Design Rules, verification procedures, health/life safety requirements, documentation procedures, personnel, organization, experience, knowledge and quality procedures that result in residences that meet or exceed the overall energy efficiency of a specified version of the NGBS and/or the IECC.

**1.3** The terms “NGBS” or “IECC” without the specification of the year shall be taken to mean the year(s) as is implied by the context. In most sections the terms shall refer to the 2009, 2012 and 2015 NGBS, and the 2006, 2009, 2012 and 2015 IECC; as well as future versions as they become available.

### **2.0 DEFINITIONS**

**2.1 General:** Unless stated otherwise the following words and terms shall have the meanings as indicated in this appendix or the NGBS. As used herein “criteria” refer to these approval criteria.

**2.1.1 Terms Defined in Codes:** Terms that are not defined in these criteria or the NGBS, but are defined in the International Residential Code or the International Energy Conservation Code shall have the meanings ascribed to them in those codes.

**2.1.2 Terms Not Defined:** Terms not defined by this section shall have the ordinarily accepted meanings as is implied by the context.

**2.2 Acceptable Option:** An option, or list of options, that would meet a specific requirement. The term “acceptable option” implies there are other valid options that are not specifically listed.

**2.3 Corrective Action:** Action necessary to eliminate or reduce the root cause of an identified problem.

**2.4 Design Rule:** A set of design requirements that result in residential designs that meet or exceed the specified year(s) of the NGBS or IECC.

**Note:** The term “Design Rule” does not imply requirements as specific as the plans for constructing a residence. Rather the term “Design Rule” implies a set of rules, sometimes a short set, intended to be applied to many residential designs.

**2.5 General Manager:** The person occupying the highest position of authority within a Program.

**2.6 Letter of Certification:** A document from a Program that certifies that a specific residence has been constructed and verified to meet or exceed the specified year(s) or level(s) of the NGBS or IECC.

**Note:** In buildings with multiple dwelling units the Letter of Certification may apply to more than one dwelling unit.

**2.7 May:** Identifies something that is permitted, but not required.

**2.8 Nonconformance:** An element or action inconsistent with these criteria.

**2.9 Note:** A clarification of a statement that could otherwise have been ambiguous, or further information on a specific item.

**2.10 Procedure:** A written protocol that describes who does what, when, where, why and how.

**2.11 Program:** A program administered by a specific organization or company that has been evaluated to result in residences that meet or exceed the energy efficiency in

specified year(s) of the NGBS and/or IECC.

**Note:** In cases where a Program forms part of a larger organization that carries out other activities besides the Program, the term “Program” refers only to those parts of that organization whose primary purpose is to oversee, set requirements, develop procedures, and provide quality control for these criteria.

**2.12 Quality Assurance:** Measurable systematic actions taken to help ensure objectives, goals and minimum standards are met.

**2.13 Quality Control:** The act of examination, testing or measurement that verifies elements of construction, processes, or documents conform to specified criteria.

**2.14 Quality Manager:** A professional designated by management who has the responsibility for establishing, maintaining and implementing the quality plan to ensure consistent results.

**2.15 Quality Plan:** A written document that describes the procedures and policies implemented to assure residences constructed under a program meet requirements of these criteria.

**2.16 Third Party:** A competent, independent entity recognized to perform specified tasks subject to approval by the Program or the authority having jurisdiction.

### **3.0 GENERAL REQUIREMENTS**

**3.1. Documented Quality System:** Entities accredited under these criteria shall establish and implement a documented quality system. This documented quality system shall include procedures for ensuring that the Program, Design Rule(s) and the resulting residences meet the requirements of these criteria.

**3.1.1** A documented quality system manual shall be prepared and submitted. The documentation shall include a cross-reference matrix prepared in concert with a designated party or organization, ensuring that the requirements in each section of this criteria have been included.

**3.1.2** The submitted quality assurance manual shall be signed and dated by the highest level of authority within the Program.

**3.1.3** The submitted quality assurance document shall be signed and dated by the designated party, attesting that the party has reviewed the documented quality system and that it is sufficient to allow scheduling of an on-site joint assessment.

**3.2 Application for Approval:** Prior to approval, an assessment is required. This assessment will be conducted with input from the staff of the Program seeking approval. The purpose of this joint assessment is to determine compliance with these criteria and the applicant’s ability to meet these criteria in the future. The review shall include consideration of the past and ongoing activities of the Program. The review shall include the Program’s procedures that are required by these criteria. The Program’s requirements, including any existing Design Rules, shall be available as part of the

review.

**3.3 Annual Report:** Annual reports of Program activities shall be prepared and submitted to the approving organization. Reports shall include an overall summary of activities since the last Annual Report including the number of residences, general type of residences, geographical location, changes in key staff, substantive changes in operating procedures, and substantive changes in Program requirements. The Programs publically available annual or periodic report(s) may be part of the Annual Report.

**3.3 Annual Review:** Annual management reviews shall be conducted to assure the adequacy and effectiveness of the quality system. Annual management reviews shall produce a documented summary and a plan of action for improvement.

Documents to be considered during the annual review include, but are not limited to: the Annual Report, third party reviews required by these criteria, a summary of Program activities during the period being reviewed, complaints, internal audit results, problems identified and corrective actions. The Program may add other topics to the Annual Review. The Annual Review may result in improvement to the Program and/or corrective actions.

**3.4 Program Materials:** The materials for consumers, builders, designers or construction trades describing the Program and any Design Rules shall be available at the Annual Review and to any third party designated to review the Program. These materials include all support materials necessary for implementing the program.

**3.5 Follow-up Inspections:** Entities accredited under these criteria must obtain the services of an approved third party to conduct, at a minimum, annual inspections of Program activities related to these criteria. The focus of the inspection may change over time. The inspection shall include the third party's reassessment of residence(s) approved by the Program, with the specific residences selected the third party. One goal shall be an assessment of whether the Program and Design Rules are achieving the primary goal of constructing residences whose design and construction meets or exceeds the overall energy efficiency of the NGBS and/or IECC.

**3.6 Technical Review of Design Rules:** Programs shall be permitted to approve Design Rules. As part of a review, a third party may be designated to make a recommendation as to whether the Program's Design Rules meet these criteria by resulting in residential designs that achieve the goal of meeting or exceeding the overall energy efficiency of the NGBS and/or IECC. The third party shall be permitted to work directly with staff reviewing the final reports and the Program staff associated with the Design Rule.

**3.7 Prior Years Deemed to Comply:** A Program or Design Rule accredited to meet or exceed levels in the 2015 NGBS shall also be deemed to meet or exceed levels in the 2009 NGBS and the 2012 NBGS. A Program or Design Rule accredited to meet or exceed the 2012 NGBS shall also be deemed to meet or exceed those levels in the 2009 NGBS. A Program or Design Rule accredited to meet or exceed the 2012 IECC shall also

be deemed to meet or exceed the 2006 IECC and the 2009 IECC. A Program or Design Rule accredited to meet or exceed the 2009 IECC shall also be deemed to meet or exceed the 2006 IECC.

**3.8 Program and Design Rule Scope:** Programs and Design Rules shall be permitted to define the limits to their scope. Such limits shall be permitted to include, but are not limited to, jurisdiction(s), state(s), type(s) of construction, types of products, specific product(s), specific user(s), or specific climate(s). Where a Design Rule names a specific product, the key energy efficiency characteristic(s) provided by the product shall be identified and quantified in a non-proprietary description.

**3.9 Design Rule Shelf Life:** Residences are permitted to use a Design Rule valid when the building permit was issued, provided construction is completed within one year. Residences are also permitted to use a Design Rule that becomes valid during the time of construction.

**3.10 Non-Energy Goals:** Programs and Design Rules shall be permitted to include non-energy goals and goals beyond these criteria. For example, another goal might include broad Program goals related to many aspects of “green design”.

## **5.0 PERSONNEL**

**5.1 Quality Manager:** Entities accredited under these criteria shall designate quality manager(s) who have the necessary training and experience to complete the tasks in Sections 5.1.1.1 through 5.1.1.5. The quality manager shall report directly to the highest level of authority within the organization or division. Where the quality manager responsibility is divided by geographical location, division, or for other reasons, the responsibilities shall be identified by the documented quality system. The quality manager(s) shall have the following responsibilities:

**5.1.1** Maintaining the documented quality system in accordance with these criteria.

**5.1.2** Maintaining records of residences qualified under the Program, including records of testing and any calculations necessary to approve the residence.

**5.1.3** Monitoring the effective implementation of the documented quality system.

**5.1.4** Assuring that periodic internal audits are conducted and documented, and that corrective actions are implemented.

**5.1.5** Assuring that annual management reviews are conducted and documented to assure the adequacy and effectiveness of the quality system. Annual management reviews must produce a summary and a documented plan of action for improvement.

**5.2 Professional in Responsible Charge:** Entities approved under these criteria shall designate a Professional(s) in Responsible Charge (PRC). The PRC shall have the necessary training and experience to ensure that the residences approved by the Program meet the goals of these criteria concerning energy efficient design and construction, verification, safety, and documentation. The PRC shall report directly to the highest level of authority within the Program. Where this responsibility is divided by geographical location, division, or for other reasons, the responsibilities shall be identified by the

documented quality system.

**5.3 Change of Key Personnel:** The Program shall be permitted to change the Quality Manager or Professional in Responsible Charge for any reason, provided it notifies those who approved the Program within 30 days of such a change.

**5.4 Program Staff:** Program staff shall include the following:

1. A professional engineer, architect or related building science professional registered or licensed in the United States to practice engineering; or an engineer duly registered or licensed in the country in which the residences are constructed; or a professional certification in a relevant engineering field; or a degree in a relevant field of study; or the equivalent as experience. This person shall have relevant experience beyond classroom study.
2. A staff with direct experience with the application of building codes.
3. A staff with direct experience in aspects of the construction of residences, or with oversight of the construction process.

One person shall be permitted to qualify for more than one of the functions above.

**5.5 Testing and Verification Qualification:** The Program shall have a plan for periodic confirmation of those doing the testing and verification. Such a plan shall include procedures for corrective action, suspension, restriction of authority to inspect, and termination as a tester or verifier.

**5.6 Jurisdictional Authority:** The authority having jurisdiction shall be permitted to do any part of the testing, verification, safety, or documentation. The authority having jurisdiction shall be permitted to charge a fee for services.

## **6.0 VERIFICATION**

Residences shall be verified to meet the requirements of this Chapter.

**6.1 Verification Reviewed Annually:** The Program's verification requirements shall be part of the Annual Review.

**6.2 Energy Features:** The presence and correct installation of energy efficient features that were the basis for meeting these criteria shall be verified. Where compliance is based on a Design Rule, inspection for the energy features specified by the Design Rule and those specified by these criteria shall be sufficient.

**6.2.1 Thermal Envelope Insulation:** Insulation shall be verified at time(s) where the insulation is sufficiently exposed to verify the amount and quality of installation.

**6.2.1.2 Insulation R-value:** Building envelope and foundation insulation levels shall be verified.

**6.2.2 Insulation Installation:** The quality of the insulation installed shall be verified.

Acceptable options:

For the NGBS only verified "Grade 1" insulation installation shall be permitted as

described in NGBS Sections 703.1.2.1 and 703.1.2.2. For the 2012 IECC-- verified compliance with Table R402.4.1.1 in the 2012 IECC.

For the 2009 IECC and 2006 IECC-- verified compliance with either the Table R402.4.1.1 in the 2012 IECC or the 2009 IECC.

**6.2.3 Missing Insulation:** The level of missing or poorly installed insulation shall be considered in assessing the energy use. Occasional very small gaps in the insulation are acceptable. Areas equal to 2% or less of the total insulated area may be compressed or incompletely filled to at least 70% of the required level. Levels of missing insulation greater than these require correcting the insulation installation problem or that the energy savings not realized from the missing insulation be made up elsewhere.

### **6.3 Ducts:**

**6.3.1** Duct insulation levels shall be verified.

**6.3.2** Framing cavities shall not be used as supply ducts.

For the 2012 NGBS and 2012 IECC-- framing cavities shall not be used as return ducts.

For the 2009 IECC and 2006 IECC-- framing cavities used as return ducts shall be tested for air tightness.

**6.3.3** Duct sealing shall be verified visually for both ducts inside and outside the conditioned space.

For the 2012 NGBS, 2012 IECC and 2009 IECC duct tightness shall be verified by testing.

**6.3.4** Ducts shall be tested for the 2012 NGBS, 2012 IECC and 2009 IECC in accordance with the tests in the respective documents. Duct losses are permitted to be tested as either a total loss, or loss to outside of the conditioned space. Testing is not required where the ducts and air handler are located entirely in conditioned space.

Acceptable option: Tested ducts which show a total leakage or a leakage to the outside of 4 cfm per 100 square feet of floor area when tested in accordance with the 2012 IECC shall be considered sealed and to meet the requirements of Section 6.3.

**6.4 Building Thermal Envelope Air Leakage:** The building thermal envelope air leakage shall be tested and building thermal envelope verified to be sealed.

Acceptable option: Buildings with tested air leakage rates less than or equal to 5 ACH50 in climate zones 1 and 2, or 3 ACH50 in climate zones 3 through 8 shall be considered to be sealed and to meet the requirements of Section 6.4.

**6.4.1** Building thermal envelope air tightness shall be inspected visually.

Acceptable options:

For the 2012 NGBS- compliance with Table 701.4.3.2(2). For the 2012 IECC-- compliance with Table R402.4.1.1 in the 2012 IECC.

For the 2009 IECC and 2006 IECC-- compliance with either the Table R402.4.1.1 in the 2012 IECC or compliance with the Table 402.4.2 in the 2009 IECC.

**6.4.2** For the 2012 NGBS the building thermal envelope leakage rate shall be test based on the test in Section 701.4.3.2 or the equivalent. For the 2012 IECC and 2009 IECC the building thermal envelope leakage rate shall be tested based on the test in the IECC or the equivalent.

**6.5 Combustion Safety and Back Draft Prevention:** The Program shall have a



procedure for protecting combustion appliances against back drafting. The combustion safety procedure shall be applied in residences with an air tightness of 5 ACH50 or less. Residences not tested for air tightness shall be presumed to require the procedure for protecting combustion appliances against back drafting.

Acceptable options include any combination of:

- Direct vent combustion appliances.
- Combustion appliances located outside the conditioned space air barrier.
- Combustion appliances located in a mechanical room separated from the occupied space by an air barrier, provided the mechanical room has a separate air source.
- Gas cooking stoves or ovens in kitchens with mechanical ventilation.
- Wood stoves present that are not used as the primary heating system.
- Makeup air is provided for an exhaust system at a rate approximately equal to or greater than the design exhaust rate. Makeup air systems shall be equipped with a gravity or motorized damper. Motorized dampers shall be automatically controlled to operate simultaneously with the exhaust systems.

**6.5.3 Mechanical Ventilation.** Residences with a tested air tightness less than or equal to 5 ACH50 shall be provided with mechanical ventilation in accordance with the 2012 IRC or an approved alternative.

**6.5.5 Unvented Heaters.** Permanently installed gas fired unvented room heaters shall not be permitted.

**6.6 Letter of Certification:** A Letter of Certification indicating the residence's design and construction has been verified to meet or exceed the overall energy efficiency of the NGBS and/or IECC shall be issued for residences approved and verified by the Program.

## **7.0 ENERGY EFFICIENCY EVALUATION**

**7.1 Scope:** This chapter describes how Design Rules are judged to meet or exceed the NGBS and/or IECC.

**7.1.1** The scope of these criteria does not include quantifying how much a Design Rule or a resulting residence exceeds the NGBS or IECC.

**7.2 General:** A Design Rule shall result in residential designs that meet or exceed the overall energy use of the NGBS or IECC.

**7.2.1** Programs shall be permitted to have multiple Design Rules. Where a Program has only one set of design requirements, then the Program's energy-related design requirements shall be the Program's Design Rule.

**Note:** A Program can have any combination of general Design Rules with broad application and separate Design Rules for specific and narrow application.

**7.3 Primary Criteria:** A potential Design Rule is evaluated based on its overall projected energy use. A Design Rule resulting in residential designs projected to have an overall energy use equal to or less than that of the NGBS or IECC shall meet this objective.

7.3.1 Programs shall maintain a written rationale for approving a Design Rule.

7.4 Energy Metric: The overall energy use shall be based on energy cost as described in the IECC. Alternately, electric and non-electric fuels shall summed based on (electric heat content) x 2.9 = fossil fuel heat content as specified in the 2012 IECC.

7.5 Meet or Exceed Accuracy: An energy calculation or estimation for a Design Rule shall not be required to be any more detailed and specific than is required to show the Design Rule meets or exceeds the overall energy use of the IECC. Where the Program judges a Design Rule to clearly exceed the IECC, the Program shall be permitted to approve the design requirements as meeting or exceeding the IECC without further analysis or calculation.

7.5.1 Where the Program judges change(s) to an existing Design Rule would result in designs that clearly meet or exceed the NGBS or IECC, no further calculation shall be required.

Note: For a Design Rule that met this criteria, any change that did not affect the energy use or any change that resulted in less energy use would result in an updated Design Rule that met this criteria without the need for further analysis.

7.6 Calculations Based on IECC: Where energy use or energy-cost calculations are used those calculations shall be based on the IECC, except as stated otherwise in these criteria.

7.6.1 The calculation shall be based on  
For the NGBS and 2012 IECC—IECC Section R405  
For the 2009 IECC-- Section 405  
For the 2006 IECC-- Section 404.

7.6.2 The IECC energy use shall be defined as a residence built to the requirements of the IECC, which is termed a “standard reference design” by the IECC, plus the energy for the end uses covered by Design Rule but not in the IECC.

7.6.3 Where the Program includes energy savings for energy-related features not regulated by the IECC, the Program shall define the calculation of those energy savings.

7.7 Renewable Energy Savings: Energy generated from renewables on the building, building site or development shall be treated as energy savings. Renewable energy sources shall include, but are not limited to, photovoltaic, wind, and energy derived from waste.

7.8 End Uses Covered: At a minimum the following end uses shall be included:  
For the NGBS and 2012 IECC and 2009 IECC-- heating, cooling, ventilation, service water heating, and lighting.

For the 2006 IECC-- heating, cooling, ventilation, and service water heating.

7.8.1 The energy savings from permanently installed features of the home may be included in the energy savings for purposed of comparison to the NGBS or IECC.

7.9 Energy Savings Not Included: The following shall not be considered to contribute to the energy savings.

Energy savings based primarily on behavior changes of the occupants.  
Energy savings based on educational campaigns.  
Energy savings based on limiting vehicle use.  
Energy savings based on switching between electric and fossil fuels.  
Energy savings based on changes in the floor area.  
Energy savings based on setback thermostats or thermostat settings.  
Energy savings based on energy efficient TVs.  
Energy savings based on purchased renewable energy or purchased renewable energy credits.  
Devices or aspects of the building not present at the final approval.

**7.10 Specific IECC Requirements.** These criteria do not require a program to include a specific set of energy efficiency measures, or minimum levels beyond meeting or exceeding the overall energy efficiency of IECC. For example, the limitations on tradeoffs based on building thermal envelope air tightness, duct air tightness and equipment efficiency do not apply to a Design Rule.

**7.10.1** Use of specific requirements less than the IECC does not eliminate the requirement in these criteria to meet or exceed the overall energy use in the NGBS or IECC.

**7.11 IECC Requirements by Reference.** Portions of a Design Rule that are direct references to specific NGBS or IECC requirements shall be presumed to meet that document and shall not require calculations or simulation.

**7.12 Portions That Meet or Exceed:** Meet or exceed can be judged based on examining individual parts of the criteria, based on examining subsets of the building, or based on the overall building. UA tradeoffs and area-weighted tradeoffs as defined in the IECC are permitted as part of determining of “meet or exceed”.

**7.13 Climate Zones:** The Design Rule shall specify the IECC climate zones or other description of locality for which the Design Rule is applicable.

**7.14 Features Not Specified in IECC:** A Design Rule shall be permitted to include energy savings for aspects of the residence that are not specifically named in the IECC provided the following:

1. The energy savings result from an installed part of the building, site design, or development.
2. A reasonable “base case” can be used to compare against in order to compute or estimate the energy savings.
3. The energy savings can be calculated; or the energy savings can be projected to be at least a specific minimum amount.

**7.15 Base Case Building Type.** Where a Design Rule is applicable to a specific type of building that type of building is permitted to be the “base case” for comparison. For example, a high thermal mass building would include a high thermal mass and use the IECC requirements for “mass walls” in its base design.

7.16 Window Area: A Design Rule may presume the window area of the base case is equal to the window area of the proposed design.

7.17 Increased Federal Equipment Standards: If minimum Federal efficiency requirements for furnaces, heat pumps, air conditioners, water heaters, or lamps are changed, the Design Rules that are affected by those requirements shall be reviewed and revised if necessary. The revised Design Rule shall be effective on or before the date the new Federal requirements take effect.

7.4 Design Rule Identification: Design Rules shall include a name or identification number. Design Rules shall specify the date when the Design Rule was approved for use.

7.4.1 Revisions of Design Rules shall include a revision number and the date the revision was approved. Programs shall state whether previous versions remain valid. Editorial changes shall not require a new version.

7.4.2 Design Rules shall be reviewed annually by the Program or their designated third party.

7.4.3 Programs are responsible to inform Design Rule users of changes in the requirements, updates, or withdrawal of Design Rules.

## **8.0 REQUIRED INFORMATION IN APPLICATION**

8.1 The application for an approved Program or Design Rule shall include the name of the program seeking accreditation, the physical street address for its headquarters or primary location, mailing address (if different), information on the person serving as the Program or Design Rule contact (including the telephone number and e-mail address), and the telephone number of the facility.

8.2 The application shall include an organizational chart showing the relationships among key staff, such as the CEO, general manager, quality manager, and Professional in Responsible Charge.

## **9.0 REQUIRED WRITTEN PROCEDURES**

Entities accredited under these criteria shall submit written procedures for the following:

9.1 Document Control: Document control procedures shall include:

9.1.1 A document approval procedure.

9.1.2 A procedure to ensure that only current, approved documents are used.

9.1.3 A procedure to ensure that documents are available at all locations where necessary for the proper functioning of the quality system.

9.2 Control of Quality Records: Records control procedures shall include a procedure to retain records of the approval of a residence including the testing, verification, and the associated inspections and calculations on which the approval was based. This procedure

shall include a method for storing, maintaining and accessing quality records for a minimum of three years.

**9.3 Corrective Action Procedure:** The procedure for corrective action shall include investigating, documenting and correcting nonconformance. Corrective actions shall include the identification of specific problem(s), relevant correction action and any root causes identified.

**9.3 Quality of Staff:** Programs shall have a procedure for qualifying and/or training personnel as needed to ensure the quality of the resulting residences. Qualifications may include a combination of training programs, classes successful completed, and professional certifications/licenses. Qualifications may include consideration of professional experience. The procedures shall include provision for maintaining qualifications such as requirements for continuing education or recertification of qualifications.

**9.4 Quality of Verification:** The quality control procedures shall include verification of a random sample of the residences approved under a Program by a third party. The third party shall determine the selected residences in part considering the areas where issues were identified or suspected, and the impact of features on the overall energy use. In selecting the residences to be verified, the third party shall the consider the mix of the foundation type(s), framing type(s), HVAC systems, duct locations, number of stories and localities for the approved residences.

**9.4.1 Current Correction Action:** Verifications shall include requirements performed in accordance with any applicable corrective actions current at the time of the verification.

**9.5 Quality of Inspection and Testing:** Programs shall have written criteria for approving those who do inspections and tests.

**9.6 Quality of Safety:** Programs shall have written criteria for verification and safety measures under these criteria.

**9.7 Favoring Usable and Understandable.** Nothing in these criteria shall be taken to require written procedures to be long or complex. Procedures that are judged usable and understandable may be judged as preferable on that basis.

Prescriptive Energy Alternatives.

This appendix specifies prescriptive packages that comply with the energy efficiency goals of the 10%, 20%, 30% and 40% levels in the energy chapter. The user can select any column for compliance. The entire column is used. Where an additional percentage is required, the bottom row “Extra” lists that percentage.

The “Trades and Adds” table specifies how much a change to a component affects the total. Some “Trades and Adds” will have a negative %. “Trades and Adds” also adds additional specific options. Any combination shall be permitted provided the “Trades and Adds” yields at least the “Extra” required.

For all zones:

Ducts in conditioned space.

Zone 2 and 3: Windows 0.30 U-factor, SHGC <= 0.25

Zones 4 to 8: Windows 0.27 or less.

Skylights 0.50 or less.

Table x.1 (1)

Zone 2

Component	10%				20%				30%				40%			
	10%	20%	30%	40%	10%	20%	30%	40%	10%	20%	30%	40%	10%	20%	30%	40%
Ceiling	60				49				30				38			
Wall	20+10				20+5				20+10				20+5			
Floor	38				30				19				30			
Crawl	15/19				15/19				10/13				15/19			
Slab	10, 4ft				10, 2ft				10, 4ft				10, 2ft			
Basmt	15/19				15/19				10/13				15/19			
AFUE	NA	92	95		92	95	96		96							
SEER	NA		16	19	NA	16		19	19							
HSPF	NA	8.8	9.5	9.5	8.8	9.5			8.8	9.5						
EF	NA	.67/.97		.82/2.0		.82/2.0				82/2.0						
ACH50	4	3			3		2		2		1.5					
Vent	NA				NA		improved		improved							
Extra	-	-	-	-	-	3%	3%	-	-	-	15%	-				

Table x.1 (2)

Zone 2 Trades and Adds

From:	To:
Ceiling R49	R30 is 0.8% R40 is .0.3%
Wall 20+5	20 is 1% 13 is 4%
Floor 30	38 is 0.2% 19 is 0.4%
Crawl 15/19	10/13 is 1.0x%
Basement 15/19	R10/13 is 0.8% R5 exterior 2%
Slab 10, 2 ft	10, 4 4ft is 1% 5, 2ft is 3x%
Window SHGC = 0.25	0.20 is 2%
AFUE 80	0.2% per 1 AFUE
SEER 14	2.5% per SEER
HSPF	7% per 1 HSPF
EF	0.3% per 1 EF change
Ground Source Heat Pump	15%
Each 1 ACH50	2%
Ducts inside	Not inside. Tested leakage 2 per 100 or less -9%
Minimize waste in hot supply pipe - 50 ft developed pipe length or 0.25	Is 3%

gallons whichever is less between hot water supply and use.	
Drain Water Heat Recovery on showers	Is 2%
Valve in shower hot water supply line that prevents wasting hot water once hot water gets to point of use.	1%
Refrigerators/Freezers use no more than 600 kwh/year	Is 2%
Dishwasher	Is 0.3%
Clothes Washer MEF ≥ 2.0 and WF ≤ 6.0	Is 2%
Solar water heating: SEF ≥ 1.8 for electric backup SEF ≥ 1.2 for gas backup	Is 10%
Renewables	Estimated annual %
RECs	1/10 value of RECs purchased

Table x.2 (1)  
Zone 3

Component	10%	20%	30%	40%	10%	20%	30%	40%	10%	20%	30%	40%
Ceiling	60				49				30		38	
Wall	20+10				20+5		20+10		20		20+5	
Floor	38				30				19		30	
Crawl	15/19				15/19				10/13		15/19	
Slab	10, 4ft				10, 2ft		10, 4ft		10, 2ft		10, 4ft	
Basmt	15/19				15/19				10/13		15/19	
AFUE	NA	92	95		92	95		96	96			
SEER	NA		16	19	NA	16		19	19			
HSPF	NA	8.8	9.5	9.5	8.8	9.5		9.5	8.8	9.5		
EF	NA	.67/.97		.82/2.0		.82/2.0				82/2.0		
ACH50	4	3			3		2		2		1.5	
Vent	NA				NA		improved		improved			
Extra	-	-		-	-	3%	3%				15%	

Zone 23 Trades and Adds

From:	To:
Ceiling R49	R30 is 0.8%      R40 is .0.3%
Wall 20+5	20 is 1%      13 is 4%
Floor 30	38 is 0.2%      19 is 0.4%
Crawl 15/19	10/13 is 1.0x%
Basement 15/19	R10/13 is 0.8%      R5 exterior 2%
Slab 10, 2 ft	10, 4 4ft is 1%      5, 2ft is 3x%
Window SHGC = 0.25	0.20 is 2%
AFUE 80	0.2% per 1 AFUE
SEER 14	2.5% per SEER
HSPF	7% per 1 HSPF
EF	0.3% per 1 EF change
Ground Source Heat Pump	15%
Each 1 ACH50	2%
Ducts inside	Not inside. Tested leakage 2 per 100 or less -9%
Minimize waste in hot supply pipe - 50 ft developed pipe length or 0.25 gallons whichever is less between hot water supply and use.	Is 3%

Table x.3(1)  
Zone 4

Component	10%	20%	30%	40%	10%	20%	30%	40%	10%	20%	30%	40%
Ceiling	60				49				30		38	
Wall	20+10				20+5		20+10		20		20+5	
Floor	38				30				19		30	
Crawl	15/19				15/19				10/13		15/19	
Slab	10, 4ft				10, 2ft		10, 4ft		10, 2ft		10, 4ft	
Basmt	15/19				15/19				10/13		15/19	

AFUE	NA	92	95	92	95	96	96
SEER	NA	16	19	NA	16	19	19
HSPF	NA	8.8	9.5	8.8	9.5	8.8	9.5
EF	NA	.67/.97	.82/2.0	.82/2.0		82/2.0	
ACH50	4	3	3	2	2	1.5	
Vent	NA			NA	improved		improved
Extra	-	-	-	-	3%	3%	15%

### Zone 4 Trades and Adds

From:	To:
Ceiling R49	R30 is 0.8% R40 is .0.3%
Wall 20+5	20 is 1% 13 is 4%
Floor 30	38 is 0.2% 19 is 0.4%
Crawl 15/19	10/13 is 1.0x%
Basement 15/19	R10/13 is 0.8% R5 exterior 2%
Slab 10, 2 ft	10, 4 4ft is 1% 5, 2ft is 3x%
Window SHGC = 0.25	0.20 is 2%
AFUE 80	0.2% per 1 AFUE
SEER 14	2.5% per SEER
HSPF	7% per 1 HSPF
EF	0.3% per 1 EF change
Ground Source Heat Pump	15%
Each 1 ACH50	2%
Ducts inside	Not inside. Tested leakage 2 per 100 or less -9%
Minimize waste in hot supply pipe - 50 ft developed pipe length or 0.25 gallons whichever is less between hot water supply and use.	Is 3%

Table x.4(1)

### Zone 5

Comp onent	10%	20%	30%	40%	10%	20%	30%	40%	10%	20%	30%	40%
Ceiling	60				49				30		38	
Wall	20+10				20+5		20+10		20		20+5	
Floor	38				30				19		30	
Crawl	15/19				15/19				10/13		15/19	
Slab	10, 4ft				10, 2ft		10, 4ft		10, 2ft		10, 4ft	
Basmt	15/19				15/19				10/13		15/19	
AFUE	NA	92	95	92	95	96	96					
SEER	NA	16	19	NA	16	19	19					
HSPF	NA	8.8	9.5	8.8	9.5	8.8	9.5	8.8	9.5			
EF	NA	.67/.97	.82/2.0	.82/2.0				82/2.0				
ACH50	4	3	3	2	2	1.5						
Vent	NA				NA	improved		improved				
Extra	-	-	-	-	3%	3%	15%					

From:	To:
Ceiling R49	R30 is 1.4% R40 is .5% R60 is .5% (raised truss)
Wall 20+5	20 is -3% 13 is -11% 20+10 2%
Floor 30	38 is x0.5% 19 is 1.2%
Crawl 15/19	10/13 is 1.0x%
Basement 15/19	10/13 is 2.3% 5 exterior is 7x%
Slab 10, 2 ft	10, 4 4ft is 1% 5, 2ft is 3%
Window SHGC=0.4	2% saving for 0.05 SHGC
Window U 0.27	2% for .22
AFUE 80	0.5% per 1 AFUE change
SEER 13	0.9% per 1 SEER change
HSPF	7% per 1 HSPF change
EF	0.2% per 1 EF change



Ground Source Heat Pump	15%
Each 1 ACH50	Is 3%
Ducts tested leakage 2 per 100 or less	9% duct savings for ducts inside
Minimize waste in hot supply pipe- 50ft developed length or 0.25 gallons whichever is less.	Is 3%
Drain Water Heat Recovery on showers	Is 2%
Valve in shower hot water supply line prevents wasting hot water once hot water gets to point of use.	1%
Refrigerators/Freezers use no more than 600 kwh/year	Is 2%
Dishwasher	Is 0.3%
Clothes Washer MEF $\geq$ 2.0 and WF $\leq$ 6.0	Is 2%
Solar water heating: SEF $\geq$ 1.8 for electric backup SEF $\geq$ 1.2 for gas backup	Is 5%
Renewables	Estimated annual %
RECs	1/10 value of RECs purchased

Table x.5 (1)  
Zones 6 and 7

Component	Zone 6				Zone 7				Zone 8			
	10%	20%	30%	40%	10%	20%	30%	40%	10%	20%	30%	40%
Ceiling	60				49				30		38	
Wall	20+10				20+5		20+10		20		20+5	
Floor	38				30				19		30	
Crawl	15/19				15/19				10/13		15/19	
Slab	10, 4ft				10, 2ft		10, 4ft		10, 2ft		10, 4ft	
Basmt	15/19				15/19				10/13		15/19	
AFUE	NA	92	95		92	95		96	96			
SEER	NA		16	19	NA	16		19	19			
HSPF	NA	8.8	9.5	9.5	8.8	9.5		8.8	9.5			
EF	NA	.67/.97	.82/2.0		.82/2.0				82/2.0			
ACH50	4	3			3		2		2		1.5	
Vent	NA				NA		improved		improved			
Extra	-	-	-	-	-	3%	3%	-	-	-	15%	-

From:	To:		
Ceiling R49	R30 is 1.4%	R40 is .5%	R60 is .5% (raised truss)
Wall 20+5	20 is -3%	13 is -11%	20+10 2%
Floor 30	38 is x0.5%	19 is 1.2%	
Crawl 15/19	10/13 is 1.0x%		
Basement 15/19	10/13 is 2.3%	5 exterior is 7x%	
Slab 10, 2 ft	10, 4 ft is 1%	5, 2ft is 3%	
Window SHGC=0.4	2% saving for 0.05 SHGC		
Window U 0.27	2% for .22		
AFUE 80	0.5% per 1 AFUE change		
SEER 13	0.9% per 1 SEER change		
HSPF	7% per 1 HSPF change		
EF	0.2% per 1 EF change		
Ground Source Heat Pump	15%		
Each 1 ACH50	Is 3%		

Ducts tested leakage 2 per 100 or less	9% duct savings for ducts inside
Minimize waste in hot supply pipe- 50ft developed length or 0.25 gallons whichever is less.	Is 3%
Drain Water Heat Recovery on showers	Is 2%
Valve in shower hot water supply line prevents wasting hot water once hot water gets to point of use.	1%
Refrigerators/Freezers use no more than 600 kwh/year	Is 2%
Dishwasher	Is 0.3%
Clothes Washer MEF $\geq$ 2.0 and WF $\leq$ 6.0	Is 2%
Solar water heating: SEF $\geq$ 1.8 for electric backup SEF $\geq$ 1.2 for gas backup	Is 5%
Renewables	Estimated annual %
RECs	1/10 value of RECs purchased

Some notes follow—

20+10- means:

20+10 or double 2x4 staggered or 28 cavity with low framing factor

20+5- means

20+5 or double 2x4 or R28 cavity

Improved Vent means:

supply to kitchen, living/great/core room, bedrooms

balanced as a whole house, by rooms, or by zones

approximately equal supply / exhaust

jump grill or return for any room with door, not including storage rooms.

Or HRV/ERV



**OUTDOOR POWER EQUIPMENT  
INSTITUTE**

LogID 5255

April 4, 2014

The Outdoor Power Equipment Institute recommends striking all of Sections 403.6. (4) and 503.5 (3). We additionally request that the points for turf limitations in Sections 403.6. (4) and 503.5 (3) be reallocated to other more appropriate sustainable practices within their respective sections.

The inclusion of disincentives for areas of turfgrass conflict with the intent of the NGBS and aren't consistent with other trends in landscape regulation. The 'less turf-more points' formula suggests a negative environmental value to turfgrass and completely discounts its positive social, safety, and environmental attributes. Limiting turfgrass also limits builder flexibility in installing landscapes for the best site specific environmental performance and inhibits offering a green residential building able to compete on an apples-to-apples basis for curbside appeal with traditional residential buildings.

There is extensive scientific documentation of the valuable environmental ecosystem services that can be provided by turfgrass; (stormwater management, biomass accumulation, replacement of hardscapes, bioremediation, carbon sequestration, environmental cooling, nitrogen and phosphorous capture, fire safe site design, atmospheric cleansing, control of water and wind erosion, oxygen production), meaning that an incentive for the limitation of its use is unwarranted. This is particularly true considering the abilities of turfgrass to go dormant in periods of drought while still providing some of its ecosystem services and to be ready to provide the balance when precipitation or wastewater is again available.

Consider, for example, the cooling benefits of turfgrass. In some instances, ground level temperatures of grass-covered land areas are 30 to 40 degrees cooler than bare soil. They are also 50 to 70 degrees cooler than hardscape (asphalt or concrete) areas<sup>1</sup>. Reducing turfgrass increases the 'heat island' effect which in turn increases demand for energy.

In addition to its cooling properties, managed turfgrass plays a positive role in our efforts to confront climate change. A well maintained, growing lawn that is fed by nutrients from grass clippings sequesters carbon from the atmosphere and helps to minimize the property's carbon footprint<sup>2</sup>. Reducing turf areas and replacing them with mulch or hardscape makes active carbon 'sinks' inactive, potentially increasing the carbon released back into the atmosphere by exposing soils or using non-growing, decaying materials such as mulch. These alternative methods can be aesthetically appealing and help control water run-off and use, but they do not share the turfgrass benefit of contributing to the reduction of greenhouse gas emissions.

It should be noted that a complete absence of scientific foundation was offered when turfgrass disincentives were suggested through public comment to the initial draft of the NGBS when the commenter merely referred to a few local green building programs in arid regions and stated: "*Seems reasonable to*

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<sup>1</sup> Beard, J.B. and R.L. Green. 1994. The Role of Turfgrasses in Environmental Protection and Their Benefits to Humans. Journal of Environmental Quality. Vol 23:3

<sup>2</sup> Sahu, R. 2008. Technical Assessment of the Carbon Sequestration Potential of Managed Turfgrass in the United States. Outdoor Power Equipment Institute (OPEI). Alexandria, VA.

*give credit for both limited grass, as well as almost or no grass.”* Similarly, in the last cycle of ICC-700, the EPA comment to create stronger disincentives for turfgrass installation was presented as arbitrary targets with no scientific justification.

In the EPA comment the statement was made that *“EPA supports the inclusion of a practice restricting turf areas in landscaping...”* This conflicts with the EPA’s August 12, 2011 public comment to GG 243-11 of the IgCC in which the agency asks for turf area restrictions to be eliminated, saying instead that *“... a water budget approach would be preferable to guide landscape design, irrespective of the source of irrigation...”* It also conflicts with EPA’s 2012 removal of the 40% turf limitation from the WaterSense Specification as well as the White House’s Council on Environmental Quality’s October 31, 2011 Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes which has no prescriptive turf limitation and in fact recommends the use of turf for certain circumstances. This philosophical approach parallels the action of the International Code Council’s membership which overwhelmingly rejected all turf limitations at the final action hearings for the 2012 IGCC on November 3, 2011.

The best way to facilitate a market approach to green building demand is to offer features that the public wants while providing buildings and sites with superior environmental performance. There was extensive discussion during the development of the first edition of the NGBS about prohibiting fire places and swimming pools from green residential buildings or awarding ‘negative points’ to buildings that offered those amenities. The committee wisely rejected approaches that created disincentives to demand for green residential buildings.

Turfgrass is a similar amenity. For many people the maintenance of a lawn is a hobby of choice and a matter of pride. It’s also affordable, for both installation and maintenance, which can help foster more green building demand. Simply, many people like turfgrass and many would want to own or live in a green residential building with the amenity. They should not be penalized for wanting a place for their children and pets to engage in healthy play

Beyond amenities, turfgrass has larger societal benefits as well. It is the superior vegetative surface material for athletic activity, both organized and informal. It is unparalleled as a vegetative surface for viewing performances and other outdoor assembly uses and social gatherings. It is the most accessible traveling surface, other than hardscapes, as it allows for unobstructed, omni-directional movement. Where public safety is a concern, it is an inviting feature because it doesn’t permit undesirable lurking making it a key component of crime prevention through environmental design. For fire safety purposes turfgrass serves as defensible space for compliance with the Wildland Urban Interface Code and, when used with Grasscrete or similar materials, is suitable for use as a fire access lane or to replace other hardscapes.

Finally, the division of points in our proposed change doesn’t reduce the total amount of points available for providing a landscape plan designed to limit water and energy use. Instead those points are allocated to other practices that demonstrably preserve or enhance the natural environment and which can benefit from the inclusion of turfgrass as an environmentally sound landscape strategy. Note that the greatest point increase is given to providing vegetation that is native or regionally appropriate for local growing conditions which is the best option in these sections for fostering water efficiency.

**Proposed changes:**

**403.6 Landscape plan.** A landscape plan is developed to limit water and energy use in common areas while preserving or enhancing the natural environment utilizing one or more of the following. Examples of techniques may include, but are not limited to, one or more of the following:

(1)	A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	<del>5</del> <u>6</u>
(2)	On-site native or regionally appropriate trees and shrubs are conserved, maintained and reused for landscaping to the greatest extent possible.	<del>5</del> <u>6</u>
(3)	Turf grass species, other vegetation, and trees that are native or regionally appropriate for local growing conditions are selected.	4 <u>6</u>
(4)	<del>The percentage of all turf areas are limited as part of the landscaping.</del>	
	<del>(a) 0 percent</del>	<del>4</del>
	<del>(b) greater than 0 percent to less than 20</del>	<del>3</del>
	<del>(c) 20 percent to less than 40 percent</del>	<del>2</del>
	<del>(d) 40 percent to 60 percent</del>	<del>1</del>

**503.5 Landscape plan.** A landscape plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment. (Where "front" only or "rear" only plan is implemented, only half of the points (rounding down to a whole number) are awarded for items 1-6)

(1)	<del>Where a lot is less than 50% turf, a</del> A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	<del>5</del> <u>6</u>
(2)	Turf grass species, other vegetation, and trees are selected and specified on the lot plan that are native or regionally appropriate for local growing conditions.	4 <u>6</u>
(3)	<del>The percentage of turf areas that is designed to be mowed is limited and shown on the lot plan. The percentage is based on the landscaped area of the lot not including the home footprint, hardscape, and any undisturbed natural areas.</del>	
	<del>(a) 0 percent</del>	<del>4</del>
	<del>(b) greater than 0 percent to less than 20</del>	<del>3</del>
	<del>(c) 20 percent to less than 40 percent</del>	<del>2</del>
	<del>(d) 40 percent to 60 percent</del>	<del>1</del>
	Practices 4 through 6 unchanged	
(6)	Vegetative wind breaks or channels are designed to protect the lot and immediate surrounding lots as appropriate for local conditions.	4 <u>5</u>

I propose the elimination of the questionable practice awarding of points for the limitation of areas of turfgrass and to instead award points for the inclusion of white clover to areas of turfgrass. This measure will improve the wildlife habitat value of turfgrass systems installed on ICC-700 compliant sites while maintaining the durability, carbon sequestration, environmental cooling, atmospheric cleansing, control of water and wind erosion, and oxygen production functions of the turfgrass component.

The addition of white clover to turfgrass is not a new idea; it was commonly added to lawns in the first half of the 20th century. Returning to this practice is suggested as an important option for sustainable turfgrass systems where the performance of the turfgrass materials and white clover are complimentary.

This approach is akin to that taken with structural building materials; we do not limit the use of steel in multi-story buildings because it yields in intense fire conditions – we install it as a component of a system with some sort of fireproofing added; we do not limit the use of concrete because of its permeability – we add water and vapor resistive barriers to create an assembly; we do not limit the use of exterior wood – we treat the wood with some other material to resist rotting. By adding flowering plants to the assembly an insect and bird friendly turfgrass system is provided.

The addition of white clover to turfgrass systems is consistent with the “bee lawn” research of the University of Minnesota’s entomology and horticulture departments.<sup>1-2</sup> This research provides the basis for turfgrass systems that support pollinating arthropods and other fauna.

Research in Illinois by Dr. John Hilty indicates that 53 pollinating insect species, (33 long tongued bees, 14 short tongued bees, 6 wasps,) and 35 non-pollinating insects (9 flies, 14 butterflies, 10 skippers, 2 moths) suck the nectar of white clover.<sup>3</sup> Hilty also reports that many moth caterpillars, 4 species of butterfly caterpillars, and the Flower Thrip all use clover as a food source.<sup>4</sup>

In other white clover faunal associations Hilty states that *“the foliage and seedheads are eaten by the Ruffed Grouse, Greater Prairie Chicken, Wild Turkey, and Ring-Necked Pheasant. Some songbirds occasionally eat the seeds, including the Horned Lark and Smith Longspur (winter only). Various small mammals find the foliage and seedpods very attractive as a source of food, including the Cottontail Rabbit, Groundhog, Thirteen-Lined Ground Squirrel, and Meadow Vole. Large hoofed animals, such as the White-Tailed Deer, cattle, horses, and sheep, also graze on the foliage of clovers.”*<sup>5</sup>

Similarly, the USDA Forest Service identifies white clover as *“an excellent forage plant for livestock and wildlife. The leaves and flowers are grazed by grizzly bear, moose, mule, white-tailed deer, and blue grouse. It comprises nearly 6 percent of the annual forage of the white-footed vole. The seeds are eaten by the northern bobwhite, bufflehead, American coot, sage grouse, ruffed grouse, sharp-tailed grouse, horned lark, mallard, gray partridge, greater prairie chicken, willow ptarmigan, American pintail, California quail, and American robin.”*<sup>5</sup>

Given white clover’s global distribution, (widely naturalized in the temperate regions of the world; native of Europe, North Africa, and western and central Asia;<sup>6</sup> present in all 50 states and provinces of Canada<sup>7</sup>) its habitat value to local wildlife is orders of magnitude beyond that identified by Dr. Hilty in Illinois or to the North American species reported by the USDA Forest Service.

Besides wildlife nutrition, white clover is edible by humans with minimal preparation. It is high in protein and used for soup and salads and tea. It also can be made into flour. White clover’s potential contribution to urban agriculture furthers its sustainability quotient.<sup>8</sup>

White clover is a nitrogen fixing plant, capturing nitrogen from the atmosphere and making it available as fertilizer to other plants when it dies; a sustainability boon in addition to its habitat and urban agriculture values. According to multiple sources it remains green even during drought when turfgrass is dormant; eliminates the need for herbicides because it suppresses weeds; virtually eliminates the need for fertilizer when incorporated with turfgrass because of its nitrogen contribution; requires no pesticides; and smells good.

The standard seeding recommendation by the USDA Natural Resources Conservation Service is 2 lbs. per acre (43,560 ft<sup>2</sup>) for pastures for 50% coverage.<sup>9</sup> A rate equivalent to 1/2 pound per acre is suggested as appropriate for overseeding lawns.

The offered performance alternative to white clover, “*similar flowering maintenance tolerant herbaceous plants*” helps address sites where white clover is not ideally suited. Adding language to the Commentary to provide guidance for the selection of white clover alternatives is strongly indicated.

According to the USDA’s Natural Resources Conservation Service neither the Federal government nor any state government identifies white clover as a noxious weed or invasive plant although, as is for many beneficial plant species, proper management is recommended for control.<sup>10</sup>

1. <http://blog.lib.umn.edu/efans/ygnews/2012/03/a-bee-lawn-how-to-have-an-inse-1.html>
2. <http://turf.umn.edu/category/bee-lawn/>
3. [www.illinoiswildflowers.info/flower\\_insects/plants/white\\_clover.htm](http://www.illinoiswildflowers.info/flower_insects/plants/white_clover.htm)
4. [http://www.illinoiswildflowers.info/weeds/plants/white\\_clover.htm](http://www.illinoiswildflowers.info/weeds/plants/white_clover.htm)
5. <http://www.fs.fed.us/database/feis/plants/forb/trirep/all.html>
6. [http://www.efloras.org/florataxon.aspx?flora\\_id=110&taxon\\_id=200012344](http://www.efloras.org/florataxon.aspx?flora_id=110&taxon_id=200012344)
7. <http://plants.usda.gov/core/profile?symbol=TRRE3>
8. [http://en.wikipedia.org/wiki/Trifolium\\_repens](http://en.wikipedia.org/wiki/Trifolium_repens)
9. [http://plants.usda.gov/factsheet/pdf/fs\\_trre3.pdf](http://plants.usda.gov/factsheet/pdf/fs_trre3.pdf)
10. <http://plants.usda.gov/java/noxComposite>

**403.6 Landscape plan.** A landscape plan is developed to limit water and energy use in common areas while preserving or enhancing the natural environment utilizing one or more of the following. Examples of techniques may include, but are not limited to, one or more of the following:

	Practices 1-3 are unchanged	
(4)	<u>Turfgrass is over-seeded with not less than the equivalent rate of one-half pound per acre (.22 kg/.405 ha) of white clover (trifolium repens) or similar flowering maintenance tolerant herbaceous plants.</u>	<u>5</u>
(4)	<del>The percentage of all turf areas are limited as part of the landscaping.</del>	

	(a) 0 percent	4
	(b) greater than 0 percent to less than 20	3
	(c) 20 percent to less than 40 percent	2
	(d) 40 percent to 60 percent	1

**503.5 Landscape plan.** A landscape plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment. (Where "front" only or "rear" only plan is implemented, only half of the points (rounding down to a whole number) are awarded for items 1-6)

(1)	<del>Where a lot is less than 50% turf, a</del> A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	5
(2)	Turf grass species, other vegetation, and trees are selected and specified on the lot plan that are native or regionally appropriate for local growing conditions.	4
(3)	<u>Turfgrass is over-seeded with not less than the equivalent rate of one-half pound per acre (.22 kg/.405 ha) of white clover (trifolium repens) or similar flowering maintenance tolerant herbaceous plants.</u>	5
(3)	<del>The percentage of turf areas that is designed to be mowed is limited and shown on the lot plan. The percentage is based on the landscaped area of the lot not including the home footprint, hardscape, and any undisturbed natural areas.</del>	
	(a) 0 percent	4
	(b) greater than 0 percent to less than 20	3
	(c) 20 percent to less than 40 percent	2
	(d) 40 percent to 60 percent	1
	Practices 4 through 6 unchanged	



## Responsible Procurement Program (RPP) Standard RPP-STN-V2 (December 1, 2011)

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### A Scope

This Standard stipulates practices for responsible procurement of wood for the purposes of demonstrating conformance to the Responsible Procurement Program (RPP). This standard is applicable to all manufacturers making RPP claims or using the RPP *U.S. Renewing Forests* label.

This document specifies the minimum requirements for an organization's quality management, source verification, and chain of custody systems aimed at ensuring that products offered under (i.e. identified with) the NWFAs Responsible Procurement Program are sourced from one of the following acceptable *source types*:

- 1) FSC-Certified
- 2) U.S. Renewing Forests
- 3) Other acceptable sources

Definitions and requirements for each of the above *source types* are defined within the body and appendices of this standard.

### B Effective Date of Standard

Effective from the date of release: Applicant organizations seeking acceptance into the RPP must be independently confirmed to comply with this Standard prior to making any membership claims or use of the RPP *U.S. Renewing Forests* label.

### C References

Responsible Procurement Program (RPP) Program Document July 23, 2011; and  
FSC Chain of Custody Standard (FSC-STD-40-004 V2-0)

### D Terms and Definitions

Annex 1 provides a glossary of the terms and definitions used throughout this Standard which have been kept consistent with credible chain of custody and legal verification standards.

### E Important Notes on the Use of this Standard

This Responsible Procurement Program Standard works in concert with the Responsible Procurement Program Document, Legal Verification Standards and FSC Chain of Custody Standards referenced in Section C above. In many cases, requirements overlap and this Standard can be fulfilled wholly or partially by complying with compatible chain of custody and legality requirements. Compliance with this Standard alone is not sufficient to allow a company to make legality claims; to be able to do so requires being duly certified/verified to those standards.

# 1. Quality System

## 1.1. Company Procurement Policy

- 1.1.1. The Company shall have a written, publically available procurement policy, endorsed by top management, to eliminate *unknown sources* and to show preference for *acceptable sources*<sup>1</sup> which include:
- a) *FSC Certified* – Wood certified to the *FSC Chain of Custody* standard
  - b) *U.S. Renewing Forests* – Wood originating from districts (states) within the United States of America where the volume of hardwood growth is equal to or greater than that of mortality and removals.<sup>2</sup> Furthermore, controversial sources such as: Illegal logging, the conversion of natural forests, the destruction of high conservation values or the exploitation of local communities shall be avoided as a part of this claim.
  - c) *Other Acceptable Sources*
    - i. Wood for which a *due diligence process* has been conducted in consultation with an *RPP-approved legality resource provider* to ensure it was legally harvested and exported
    - ii. *Post-consumer recycled/reclaimed wood*
    - iii. *Pre-consumer/post-industrial recycled/reclaimed wood*
    - iv. *Salvaged wood*

## 1.2. Complaints Mechanism

- 1.2.1. The Company shall have a publicly available mechanism for processing stakeholder complaints and disputes about the classification of sources procured or products sold by the Company, with the goal of eliminating the use of wood from sources other than those in Section 1.1.1 above, that covers at least the following requirements:
- a) All complaints shall be evaluated and responded to within 2 weeks.
  - b) All complaints shall be investigated within 2 months.
  - c) If any complaint reveals wood not in line with the Company's procurement policy, the Company shall immediately halt the purchase of that wood.
  - d) Records of all complaints and actions taken shall be kept.

<sup>1</sup> See RPP Glossary of terms and Section 2.2 for more information on the RPP definitions of these source types.

<sup>2</sup> The NWFA has established a list of renewing forests that qualify, based on most recently published 5 year USDA FIA statistics for estimated volume of growth, estimated volume of removals and estimated volume of mortality. As of the effective date of this audit, the publication used to establish this list was "Forest Resources of the United States: A Technical Document Supporting the Forest Service 2010 RPA Assessment" published by the USDA Forest Service. Additionally, an organization can demonstrate 'renewing status' (growth is equal to or greater than removals and mortality) for a district (state) using more recent electronic FIA endorsed statistics.

### **1.3. Documented Procedures & Work Instructions**

- 1.3.1. The Company shall document and keep up-to-date procedures and/or work instructions to demonstrate compliance with all parts of this Standard.<sup>3</sup>
- 1.3.2. The Company shall appoint a representative as the RPP Administrator with responsibility over the entire RPP wood procurement and *chain of custody* system.
- 1.3.3. The Company shall clearly list responsible persons or positions for each task or set of tasks identified in the procedures/or work instructions.

### **1.4. Training**

- 1.4.1. The Company shall provide training to all relevant staff per a documented procedure and per a written schedule to ensure compliance with the Standard.

### **1.5. Record Keeping**

- 1.5.1. The Company shall maintain records for at least 5 years to demonstrate compliance with all sections of this Standard.

### **1.6. Internal Audits and Management Review**

- 1.6.1. The Company shall conduct internal audits and management reviews prior to the initial audit and at least annually to ensure a well functioning procurement and *chain of custody* system.

### **1.7. Participating Facilities**

- 1.7.1. The Company shall develop a comprehensive list of facilities (e.g. manufacturing, warehousing, administration, etc.) that will participate in the RPP, including the addresses and telephone numbers for each.

<sup>3</sup> Procedures and work instructions to meet this Standard can be integrated with a Company's ISO or FSC procedures if applicable.

## 2. Material Sourcing & Verification

### 2.1. Supplier Notification

- 2.1.1. The Company shall formally notify its suppliers of the Company's Procurement Policy.
- 2.1.2. The Company shall obtain completed and signed RPP Supplier Declaration Forms<sup>4</sup> from all suppliers<sup>5</sup> of wood.
  - a) A new declaration shall be produced at least every 5 years and if there are any changes which affect the original declaration.
  - b) The declaration must be confirmed and signed annually.

### 2.2. Classification of Wood Products

- 2.2.1. Company shall classify its supplies of wood into one of the following *Source Types* based on the requirements specified for each type below:
  - a) *FSC Certified* – Received per the Company's conforming FSC CoC procedures and documented by conforming sales and transport documents from suppliers.
  - b) *RPP US Renewing Forests* –
    - i. Supplied by a current and valid RPP Certified supplier where *RPP US Renewing Forests* wood is identified on invoices and shipping documents per Section 5 of this standard, OR
    - ii. Covered by an annually verified RPP Supplier Declaration Form<sup>6</sup> from a direct *primary supplier*, and documented in the Company's supplier accounting system
  - c) *Other Acceptable Sources* –
    - i. Linked to a corresponding USDA APHIS Plant and Plant Product Declaration Form<sup>7</sup> covering the shipment of any wood imported into the United States of America **and**, where the wood is clearly identified as part of a *due diligence process* in consultation with an *RPP-approved legality resource provider*, OR
    - ii. Linked to documentation demonstrating that the wood meets the definitions of *post-consumer recycled/reclaimed wood*, *pre-consumer/post-industrial recycled/reclaimed wood*, or *salvaged wood* per Appendix 1 of this Standard.

<sup>4</sup> A sample RPP Supplier Declaration Form is attached in Annex 2

<sup>5</sup> Declarations must be available for at least 80% of wood purchases by volume at initial audit. At subsequent audits the company is expected to maintain supplier declarations for 100% of wood purchases by volume at subsequent audits, as following implementation of the RPP procurement and chain of custody system, a supplier declaration shall be made part of the purchasing process

<sup>6</sup> A sample RPP Supplier Declaration Form is attached in Annex 2

<sup>7</sup> APHIS Plant and Plant Product Declaration Form PPQ 505 available at:  
[http://www.aphis.usda.gov/plant\\_health/lacey\\_act/downloads/declarationform.pdf](http://www.aphis.usda.gov/plant_health/lacey_act/downloads/declarationform.pdf)

- d) *Unknown* – Not linked to documentation sufficient to be classified as one of the *acceptable* sources in 2.2.1(a-c) above or whose *origin* cannot otherwise be confirmed.

### 3 Product List & *Claim* Accounting Systems

#### 3.1 Product List

3.1.1 The Company shall establish and maintain a list of products available for sale according to the following hierarchical *acceptable* source types:

- a) *FSC Certified*<sup>8</sup>
- b) RPP U.S. Renewing Forests
- c) Other RPP *acceptable* sources

3.1.2 Engineered Wood & Mixed Sources

- a) Engineered wood products that combine input materials from multiple sources shall be subject to the following restrictions:
  - i. To be classified as *RPP US Renewing Forests*, ALL wood components used in the engineered/mixed wood product shall meet the criteria and documentation requirements for *RPP US Renewing Forests* as listed above.
  - ii. If any wood component in a product is from an *unknown* source no *RPP Claim* or *RPP Chain of Custody* number can be directly associated with the product (e.g. invoices and shipping document line items, brochures, website, etc.).

3.1.3 The Company shall provide conversion factors for all wood products offered for sale demonstrating the ratio of all wood inputs to final product output.

#### 3.2 Supplier Purchases

3.2.1 The Company shall establish, maintain, and keep up to date an accounting system for recording and tracking all wood purchased per supplier. The system must include at least the following information for each purchase:

- a) Product description
- b) Species
- c) Known *origin*

<sup>8</sup> All FSC related claims for products that meet the FSC Chain of Custody standards for labeling are included in this category and are governed by FSC rules.

- i. Sufficient information to link accounting records to a declaration confirming the State, County or Landowner from where the wood was harvested within the United States of America, **OR**
  - ii. Sufficient information to link accounting records to a declaration confirming the Country, or region within a country, if the wood was harvested outside the United States of America
- d) Volume of wood purchased
  - e) Date of purchase and any other information specific to the shipment (e.g. purchase order number, supplier invoice number, shipping docket number or equivalent.
  - f) *RPP Source Type*

3.2.2 The Company shall maintain accurate records on purchased wood inputs in inventory according to *RPP Source Type*

### 3.3 Sales and Inventory of Products

3.3.1 The Company shall establish and maintain an up-to-date accounting system for recording and tracking all wood products manufactured and/or sold. The system shall identify products that are currently stored in inventory<sup>9</sup> AND products that have been sold. Minimum information shall include:

- a) Product description
- b) Volume of wood
- c) *RPP Source Type*
- d) Date of sale, if applicable

3.3.2 Annual summaries of the volumes of wood purchased and sold per *source type* shall be provided on request by the *Certification Body* and prior to annual audits.

## 4 Material Receiving, Storing & Processing

4.1 The Company shall clearly identify and keep all wood received from *unknown* sources separate from wood from *acceptable* source types.

<sup>9</sup> Inventories at the time of the initial evaluation shall be classified by source type and shall be based on a sound justification. "RPP US Renewing" can be granted based on evidence that demonstrates the true origin of the material. Evidence can include species range, transportation costs and current declarations provided for like material from the same suppliers. Any inventory material without a corresponding declaration shall be classified as "unknown" inventory.

- 4.2 If there is any doubt as to the species or the *origin* of wood received, the Company shall employ the *precautionary approach* and classify the wood as an *unknown* source type.<sup>10</sup>
- 4.3 The Company shall employ a tracking system for keeping *unknown* wood separate from wood from *acceptable* sources types throughout all production stages; no wood from *unknown* sources shall be used in products that will be directly associated with RPP *claims*.
- 4.4 The Company shall remove any visible segregation marks on products or packaging that mimic the RPP *U.S. Renewing Forests* label or *claim* other than accepted *chain of custody* codes prior to packaging, shipping or sale.

## 5 Sales & Invoicing

- 5.1 Invoices for wood products from RPP *acceptable source* types, as identified by this Standard and the RPP Program Document, shall carry the following information clearly linked to the line item of each product or product component:
- 5.1.1 The appropriate *chain of custody* code provided by an NWFA-approved *certification body* (e.g. SCS-RPP-XXXX), AND
- 5.1.2 The *claim* “RPP US Renewing Forests” associated with the appropriate product(s).
- 5.1.3 If the invoice does not accompany the shipment, the shipping document shall contain the requirements under 5.1.1 and 5.1.2 above.

## 6 Promotional Use of RPP *U.S. Renewing Forests* Label or Claim

- 6.1 The Company shall demonstrate that any use of the RPP *U.S. Renewing Forests* label or *claim* in off-product promotional material specifically relate to products that meet the requirements and definitions of this standard.<sup>11</sup> **Use of RPP label on products or packaging is not permitted.**
- 6.2 The Company shall comply with the RPP Label Communication Use Rules and Restrictions found in Appendix 3 of the RPP Program Document and the RPP Style Guide
- 6.3 Any use<sup>12</sup> of the RPP *U.S. Renewing Forests* label or *claims* for promotional purposes shall be approved in writing prior to printing or posting.

## 7 Benchmarking, Objectives & Compliance with RPP Tiers

### 7.1 Benchmarking

<sup>10</sup> Resources such as the Friends of the Earth good wood guide: [http://www.foe.co.uk/campaigns/biodiversity/resource/good\\_wood\\_guide/](http://www.foe.co.uk/campaigns/biodiversity/resource/good_wood_guide/) and the Greenpeace Good Wood Guide at: <http://www.greenpeace.org.uk/media/reports/good-wood-guide> are useful in determining the risk associated with specific species and where such species are grown. Resources like these should be used at least annually as part of the internal audit and management review to assess risk and the validity of declarations from suppliers.

<sup>11</sup> Rules for using the RPP Labels are contained in Appendix 3 of the RPP Program Document and RPP Style Guide.

<sup>12</sup> Approval by NWFA, SCS, or the relevant NWFA approved Certification Body.

- 7.1.1 An initial *baseline* shall be determined for sales of wood products based on each *source type* prior to the Company's initial RPP CoC audit and shall be recalculated every 12 months thereafter.
- 7.1.2 *Baselines* for each *source type* shall be calculated as a percentage of the value of total wood sales.

## 7.2 Objectives

- 7.2.1 Each time the Company calculates a *baseline*, they shall set *objectives* for the next 12 months. Objectives shall be organized by *source type* and shall represent both a percentage increase in sales of products from *acceptable source types* and a percentage decrease in products whose source type is *unknown*.
- 7.2.2 Once FSC *Chain of Custody* certification is achieved, sales of *FSC certified* product shall increase as a percentage of total sales on an annual basis unless justified to the *certification body*.<sup>13</sup>
- 7.2.3 Objectives shall be ambitious yet realistic and achievable, considering local market conditions, turnover, and other applicable factors
  - a) If a Company has the ability to advance from one Tier to the next, then it shall.

## 7.3 Compliance with RPP Tiers

- 7.3.1 Unless all imported sources of wood can be classified as acceptable, the Company shall demonstrate they have engaged with an approved Legality Resource provider prior to its initial RPP CoC audit.
- 7.3.2 Prior to its subsequent RPP CoC audit, any Company subject to 6.3.1 shall establish and document a strategy for dealing with all products whose source type is *unknown*.
- 7.3.3 Before moving to Tier 2 of the RPP and in no more than 36 months of the Company's initial RPP CoC audit, the Company must:
  - a) Obtain *FSC Chain of Custody* certification.
  - b) Provide evidence from an RPP-approved legality resource provider that all products whose source type was *unknown* have been reclassified as Other Acceptable, or Company will cease trading those products.

<sup>13</sup> Please see definition of *justifiable constraint* in Appendix 1.



## Appendix 1: Definition of Terms

*Acceptable Source:* is wood that has been determined to come from one of the following sources: FSC-Certified sources from any region; Domestic sources from U.S. States where hardwood growth exceeds mortality and removals; Verified Legal sources from any region; or imported sources from countries where illegal logging is considered low risk.

*Baseline:* Represents an initial assessment of annual sales per *source type* from which to base future forecasts and objectives.

*Chain of Custody (CoC):* The succession of ownership of wood products from the forest through each stage of manufacturing and distribution to the final consumer.

*Claim:* Statement made on invoices or shipping documents for RPP compliant material. When 100% of the wood in a product is from a U.S. Renewing Forest a corresponding claim of “RPP Renewing” shall be included in the line item.

*CoC:* See Chain of Custody

*Corrective Action Request (CAR):* Advises of a non-conformance with a standard (such as the RPP Standard or the FSC Chain-of-Custody Standard) issued by an auditor to a company following an audit; generally, a CAR is issued with instructions and a deadline for its resolution. Failure to resolve CARs can result in the suspension of chain-of-custody certification (see above).

*Due Diligence Process:* A system of identifying and mitigating risk through the use of supply chain policies and procedures. While the tools may vary widely common themes might include: purchasing policies clearly conveyed to suppliers, preferred supplier programs that reward suppliers that meet expectations, and a clear set of rules for purchasing staff to follow when suppliers or their products do not meet minimum requirements.

*FSC-accredited Certification Body:* An organization that has been authorized by the Forest Stewardship Council to conduct forest management and/or chain of custody audits to FSC standards. A complete listing of FSC-accredited certification bodies can be found at this website: [FSC-accredited certifiers](#)

*FSC Certified:* One of the Acceptable Source Types in the RPP. Wood derived from a well-managed forest, recycled and controlled sources as defined by the FSC. For the wood to be considered “certified” it must be delivered and described on an invoice with an “FSC Pure”, “FSC Mixed”, or “FSC Recycled” claim and supplied by a company holding a valid FSC chain of custody certificate per [www.fsc-info.org](http://www.fsc-info.org).

*FSC Procurement Group:* An initiative of NWFA and the RPP whose goal is to assist in developing programs to overcome the barriers to the FSC certification of family forest lands across the hardwood region of the U.S.

*Justifiable constraint:* A limitation beyond the control of the company that is documented and accepted by the certification body as a valid and reasonable explanation as to why they were unable to meet a requirement.

*Origin:* The country (or region) where the wood was originally harvested from the forest, which is not necessarily the country (or region) where the product was manufactured or traded.

*RPP-approved Legality Resource Provider:* An organization that provides tools for mitigating the risk of sourcing legally harvested or transported wood products. For a list of approved organizations please see the latest version of the RPP Program Document or the NWFA RPP website.

*Other Acceptable Source:* One of the Acceptable Source Types in the RPP. It includes Post-consumer Recycled Wood, Pre-Consumer Recycled Wood, and Salvaged Wood (see below).

*Other acceptable:* Wood products originating from non-virgin sources (Recycled/Reclaimed [pre/post] or Salvaged) where records and other documented evidence suggests the material meets the definitions for recycled and salvaged according to this standard. This designation is also given to wood from virgin sources that is either a) from sources engaged in due diligence verification of legal harvest by an RPP-approved legality resource provider, or b) sourced from countries considered low risk for illegal logging

*Post-consumer Recycled/Reclaimed Wood:* Wood or wood fiber that has been reclaimed from an end-user after being used for its intended purpose. End-users may include individuals, households or industrial users of the product.

*Pre-consumer Recycled/Reclaimed Wood:* Wood or wood fiber that is created as a by-product of a secondary manufacturing process and is not typically re-used on-site in the same process that generated it (also called *post-industrial recycled/reclaimed wood*).

*Precautionary approach:* Within the context of this standard the precautionary approach shall be defined as a high level of risk aversion by the Company; meaning that sources are to be considered *unknown* unless all evidence suggests they are *acceptable*.

*Primary supplier:* Any supplier of logs/roundwood or processor of logs/roundwood into primary products (e.g. veneer, rough lumber, chips and sawdust)

*Salvaged Wood:* Wood or wood fiber that comes from logs that have been salvaged from the following sources: post-agricultural (e.g. fruit and nut orchards); urban forests (street trees); waterways (sunken logs raised from rivers, reservoirs, and lake bottoms); and other sources reviewed and approved as salvaged by NWFA and SCS.

*Source Type:* Refers to the classes of *acceptable* and *unknown* sources used throughout the RPP. The Source Types are as follows:

1. Unknown
2. Acceptable
  - 2.1. FSC Certified
  - 2.2. RPP US Renewing Forests
  - 2.3. Other Acceptable

*Unknown Source:* Any source of wood that cannot be considered acceptable in the context of this standard. Such sources include wood that cannot be traced back to its source and due diligence has not been conducted in conjunction with a legality resource provider. See definition for Due Diligence Process above..

*US Renewing Forests or RPP Renewing Forests:* One of the Acceptable Source Types in the Responsible Procurement Program. A designation given to hardwood forests based on five-year, statewide statistics from the USDA Forest Inventory and Analysis whereby hardwood growth is equal to or greater than

removals and mortality measured in volume. US Renewing Forest can be considered functionally equivalent to “sustainable yield” at the US State-level; however it is not meant to suggest or imply sustainable forest management. Controversial sources, such as illegal logging, the conversion of natural forests, the destruction of high conservation values or the exploitation of local communities shall be avoided as a part of this claim.

*Verified Legal Origin (VLO) or Legal Harvest Verification:* Can be considered functionally equivalent to having the Legal Right to Harvest, and means that the Forest Manager has authorization from the forest owners to harvest in the forest management unit under a valid permit, license, or similar instrument issued pursuant to the laws and regulations governing the harvesting of forest resources.<sup>14</sup>

<sup>14</sup> This definition taken from the Rainforest Alliance/Smartwood Standard for Verified Legal Origin.

## Appendix 2 – Example of a Procurement Policy

*Please include a Procurement Policy like the one below on Company letterhead, signed by a senior executive and posted publicly, e.g. Company website.*

### **Company's Responsible Wood Procurement Policy**

It is the policy of Company to procure and sell wood and wood products originating from responsible sources. To that end, Company commits to increasing our wood purchases from responsible known sources and to avoiding wood from controversial sources. Company has appointed Mr/Ms Smith as the contact person responsible for implementing this policy.

The following are considered responsible sources within the context of this policy and in conformance with Tier 1 of the Responsible Procurement Program:

- 8 FSC-Certified Wood
- 9 U.S. Renewing Forest – the forest of origin is located in a U.S. State where the volume of hardwood growth meets or exceeds mortality and removals and controversial sources such as illegal logging, the conversion of natural forests, the destruction of high conservation values or the exploitation of local communities is avoided
- 10 Pre and Post-consumer Recycled/Reclaimed or Salvaged Wood
- 11 Other acceptable sources (e.g. verified legal)

Company is committed to making best efforts to identify the sources of wood used in the manufacture and sale of our products but recognizes the difficulty in achieving 100% certainty. For this reason Company invites stakeholders to contact us by Describe how and who to address formal complaints to and issue a formal complaint if it is believed that we are not meeting this policy. Company makes the following commitments towards efficient processing and responses to all valid complaints; Company shall:

- ✓ Evaluate and respond to complaints within 2 weeks;
- ✓ Investigate all complaints within 2 months;
- ✓ Immediately halt the use of wood found not to be in line with the Company's procurement policy;
- ✓ Maintain records for all complaints and actions taken to be made available to a third party auditing organization.

Signature of Senior Executive    Date

Name and Title

**[RPP Certified Company]**

**Domestic Supplier Declaration - NWFA Responsible Procurement Program**

In signing this declaration, I attest to the following:

*PART ONE of THREE: Company Specification*

We supply **[RPP Certified Company]** with hardwood lumber, veneer, and/or logs of the species listed in the table below

- We are the original log buyers of the material supplied (we purchased the material from forest of origin) OR
- We are not the original log buyers of the material supplied (we purchased the material from a log yard, a mill, a broker, or any source other than the forest of origin), but we are able to accurately and truthfully complete this declaration because:

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*PART TWO of THREE: Declaration of Origin*

- ✓ All of the logs we procure originate in one or more of the U.S. regions declared in the table below:
- ✓ The maximum economically feasible hauling radius for hardwood logs received by our company (or our suppliers) is \_\_\_\_\_miles. A log would only be hauled the maximum distance if it were a high-quality specimen of a high-value species such as \_\_\_\_\_. All other species of lower economic value, such as \_\_\_\_\_, are generally hauled a lesser distance – typically \_\_\_\_\_miles or less.

**Species and Origin of Hardwood Material Supplied**

Species	U.S. State	County(ies) (if available)

*PART THREE of THREE: Supplier Affirmation*

\_\_\_\_\_  
Supplying company name

\_\_\_\_\_  
Mailing address / Physical address (if different from mailing address)

\_\_\_\_\_  
City and state

I certify that I am an owner/officer of the Company and the information furnished herein is true and correct:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Type or Print Name

\_\_\_\_\_  
Date

*The information provided in this declaration must be confirmed annually and a new declaration produced if anything changes. After 5 years from the initial declaration, a new declaration must be executed.*

<b><u>Date of Confirmation</u></b>	<b><u>Name of Person Obtaining Confirmation</u></b>

**National Wood Flooring Association**

# **Responsible Procurement Program**

*Program Document*



**National  
Wood Flooring  
Association**

**November 8, 2011**

## **Program Purpose**

The National Wood Flooring Association's Responsible Procurement Program (RPP) is a joint initiative between leading environmental groups and industry manufacturers committed to producing and promoting wood floors that come only from environmentally and socially responsible sources, improving forest sustainability for future generations.

To accomplish this, the RPP has been designed to:

- Enable participating companies to exercise environmental responsibility in their procurement process;
- Help companies transition over time to products certified to the standards of the Forest Stewardship Council (FSC);
- Provide options for exercising due care under the US Lacey Act;
- Provide RPP participants with effective marketing support including use of a program logo.

## **Key Program Elements**

The RPP is:

- 1) open to all companies in the U.S. wood flooring and broader U.S. hardwood industries who wish to participate;
- 2) voluntary;
- 3) transparent;
- 4) intended to bring about real change in the wood products trade;
- 5) verified through independent third-party auditing

The RPP was conceived and is administered by the National Wood Flooring Association (NWFA). Scientific Certification Systems (SCS) played a central role in the development of the program from its inception. The RPP has also benefited from the input of other RPP strategic partners, including Forest Stewardship Council U.S., and Rainforest Alliance – see Appendix 1.



The governing entity of the RPP is its Governing Board. For more information on the Board and its functions, see Appendix 2.

The RPP is currently designed for secondary manufacturers of hardwood flooring as well as the primary manufacturers (operations such as sawmills and veneer mills that use hardwood logs as inputs to their production) that supply them with raw materials.

Participation in the RPP is not to be taken lightly. It entails serious commitments on the part of all companies who choose to participate. However, we believe that the near- and long-term benefits for Program participants and for our industry far outweigh any burdens involved.

## **Program Tiers**

The RPP provides progressive “tiers” that act like rungs on a ladder on which participants can move gradually upward toward ever-higher levels of social and environmental performance.

### **Tier 1**

Tier 1 is the starting place for all RPP participants:

- 1) The company prepares for and undergoes an RPP Chain-of-Custody (CoC) audit. Technical assistance in preparing for the audit is provided by NWFPA. All RPP CoC audits shall be conducted by an RPP-approved certifier (see Appendix 4). A key goal of the RPP CoC system is to ensure that wood flooring and other wood products can be matched to Source Types that meet Program requirements. See RPP guidance documents for details.
- 2) If an RPP participant manufactures (either domestically or overseas) wood flooring or other hardwood products made from raw materials originating from States in the U.S. where hardwood timber growth exceeds total hardwood timber harvest and mortality,<sup>1</sup> then they are entitled to use the

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<sup>1</sup> The RPP will use the published 2007 release of USDA FIA statistics for estimated volume of growth, estimated volume of removals and estimated volume of mortality for companies entering the program until the release of 2012 USDA FIA statistics. If RPP participants can access FIA data for a given state that has been classified as ‘non-

*U.S. Renewing Forests* label in off-product claims only for qualifying products or product lines. For guidelines, see the RPP Style Guide.

- 3) If an RPP participant is a manufacturer or importer of wood flooring or other hardwood products made from raw materials originating in countries other than the U.S., then as part of exercising “due care” per the amended Lacey Act and similar legislation outside of the U.S., the company must engage with one or more RPP-approved organizations that provide legality risk assessment, guidance, training, management and/or verification services - see Appendix 3.
- 4) Before they can advance to Tier 2, an RPP participant must demonstrate that they have taken appropriate measures as stipulated by an RPP-approved legality resource provider to assess and manage the risk of all products whose materials originate in countries other than the U.S.

## **Tier 2**

Tier 2 represents the next level of commitment and achievement in the RPP. Program participants shall advance to Tier 2 as rapidly as they are able, but must do so within three years of the date of issuance of their RPP Chain-of-Custody (CoC) certificate.

- 1) The RPP participant obtains FSC Chain-of-Custody (CoC) certification, which in turn requires an annual on-site audit conducted by an FSC-accredited Certification Body - see Appendix 4. RPP CoC certification does not have to be maintained separately once FSC CoC certification is in place, provided that the FSC-accredited certifier expands the scope of the certification audits to include all applicable RPP requirements.<sup>2</sup>
- 2) By sourcing from FSC-certified forests, the company must actively manufacture and/or trade FSC-certified products and must establish concrete

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renewing’ (removals and mortality exceed growth) and show that based on the most recent 5-year average the state should be reclassified as “renewing” (growth exceeds removals and mortality), then the RPP governing will consider this information as appropriate.

<sup>2</sup> If the RPP participant does not have adequate FSC supply in its “wood basket,” an exemption to this requirement can be sought with the RPP Governing Board.

targets to increase its sales of FSC-certified products over time. See the section below on Benchmarking and Accountability.<sup>3</sup>

- 3) The RPP participant agrees to support the work of the FSC Procurement Group (see the end of the body of this document).

### **Tier 3**

The highest level of achievement in the RPP is Tier 3. This level is intended to recognize outstanding leadership in realizing the goals of the RPP and is reserved for Program Participants who meet all Tier 1 and Tier 2 requirements, and who achieve 50% or more of their sales as FSC certified.

Program participants are encouraged to achieve Tier 3 as quickly as possible, but given how high the bar is set, the time frame for doing so is flexible.

### **Labeling and Promotion**

The RPP introduces a new label into the marketplace: *Verified from U.S. Renewing Forests*.



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<sup>3</sup> Per the above, an exemption to this requirement can be sought with the RPP Governing Board.

Use of the RPP label is only allowed in off-product claims – that is, the label cannot be applied to wood flooring and other finished products themselves, but can only be used in promotional and marketing materials such as websites, brochures, and merchandising.

At the option of the RPP participant, boxes or bundles of wood flooring and other finished products can bear a code that will be issued by NWFA after the company has successfully passed an RPP CoC audit.

The *U.S. Renewing Forests* label means that raw materials originate from U.S. forest regions where hardwood growth exceeds removal at the statewide level. This is, by its nature, a generalized claim based on the aggregation of large amounts of data and is NOT intended to imply that the forests of origin are “responsibly,” “sustainably,” and/or “well” managed at the level of the individual management unit.

Finally, it is important to note that the RPP is structured in such a way that the label is transitional and intended to give way, in due course, to FSC certification.

***For further information on the RPP label and its usage, see the RPP Style Guide. Use of the RPP label in off-product claims is reserved for Program participants. All uses of the RPP label and promotional claims related to RPP products and Program participation – whether on product literature, brochures, samples, or displays – must comply with the RPP Style Guide.***

Another label relevant to the RPP is that of the FSC. Only companies that have obtained FSC CoC certification (a Tier 2 requirement) can use the FSC label and make FSC promotional claims. For more information, contact an FSC-accredited certifier (Appendix 2).

## **Engineered Wood Flooring and Mixed Sources**

In order to qualify for the *Verified from U.S. Renewing Forests* label, all of the wood used in engineered wood flooring or other products that may combine material from different sources must meet the underlying requirements for use of the label.

## **Benchmarking and Accountability**

All participants in the RPP will start out by evaluating their suppliers and the origins of wood supplied. Based on this evaluation, the RPP participant shall broadly classify each of its product lines into one (and only one) of the following Source Types:

- 1) Unknown/Unacceptable
- 2) FSC Certified
- 3) U.S. Renewing Forests
- 4) Other Acceptable

Further information on the evaluation process and on classifying by Source Types can be found in the RPP Guidance Documents and the RPP Standard.

This initial evaluation and classification will constitute a baseline for measuring progress toward fulfillment of Program goals. After the baseline is established, participants will establish objectives for future sales (by percentage of overall sales rather than in absolute terms) for products in each Source Type. These benchmarks will be established through the cooperation and to the mutual satisfaction the RPP auditor and each RPP individual. NWFPA also works with RPP partners to ensure that benchmarking is ambitious yet achievable, as accountability is central to the credibility of the Program.

The overarching goal of the benchmarking and accountability process is to increase the supply of hardwood and other products that meet program requirements and, eventually, the requirements of FSC certification.

The baselines and benchmarks of individual Program participants will be aggregated to form the overall baseline and benchmarks by which NWFPA and its partners will measure and judge the progress and success of our Responsible Procurement Program.

## **Continuous Progress**

Program participants commit to continuous progress, both of sales of approved products and within the tiered framework of the Program. It is expected that Program participants will progress from Tier 1 to Tier 2 within three years of the date of issuance of their RPP Chain-of-Custody (CoC) certificate, although if they can advance sooner, they shall. Progress from Tier 2 to Tier 3 is also encouraged in the shortest possible time frame, but the requirement is open-ended given the nature of Tier 3 requirements.

If, subsequent to its initial RPP CoC audit, a Program participant has satisfied (or clearly has the ability to satisfy) all of the requirements to progress from one Tier to the next, then the Company shall advance to the next Tier no later than by the time of its next RPP CoC audit.

Failure to progress from one Tier to the next without reasons that NWFA deems valid and persuasive may be grounds for removal from the Program. Similarly, a failure to progress toward established benchmarks for increased sales of products (as a percentage of overall sales, not in absolute terms) that comply with Program requirements is also contrary to the goals and spirit of the RPP, and could result in probation or removal.

Naturally, companies that are making good faith efforts to progress from one Tier to the next and/or to meet benchmarks for increasing sales of qualifying products, but are unable to do so for reasons beyond their control, will be granted extensions or exemptions, depending on circumstances and the judgment of the RPP Governing Board.

## **FSC Procurement Group**

The FSC Procurement Group plays a central role in the long-term success of the RPP. The goal of the Procurement Group is to assist in developing programs to overcome the barriers to the FSC certification of family forest lands across the hardwood region of the U.S., as family forest lands are a major source of raw material supply for our industry. The FSC Procurement Group is constituted of representatives of RPP participants and other organizations that support its mission

The guiding and planning entity for the FSC Procurement Group is its Steering Committee. For more information on the Committee, see Appendix 2.

## **Appendix 1: Strategic Partners**

RPP strategic partners include Scientific Certification Systems (SCS), Forest Stewardship Council U.S. (FSC-US), and Rainforest Alliance.

- ✓ SCS is a leading third-party provider of certification, auditing and testing services, and standards development whose goal is to recognize the highest levels of performance in environmental protection and social responsibility in the private and public sectors and to stimulate continuous improvement in sustainable development. SCS is an FSC-accredited certifier, and provides numerous other verification services, including legality verification. SCS is the Preferred Provider for the NWFA RPP.
- ✓ FSC-US is the national initiative of the Forest Stewardship Council, an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests. The RPP recognizes Forest Stewardship Council (FSC) certification as the leading standard for environmentally and socially responsible forestry and forest products.
- ✓ Rainforest Alliance TREES (TRaining, Extension, Enterprises & Sourcing) US Program works with small- to medium-sized enterprises (SMEs) and local communities to maximize their investment in certification and related forest sustainability initiatives, involving individuals and groups along the entire spectrum of forestry-related activities, from landowners, loggers, foresters and wood processors to paper producers, architects and builders. Linking them with governmental agencies, educational institutions, and service providers, TREES works to provide sustainable forestry businesses with the tools they need to succeed, increase awareness of the issues and forge the connections that will ensure the success of their COC certification strategy. TREES is a program of the Rainforest Alliance.



## **Appendix 2: RPP Governing Board and FSC Procurement Group Steering Committee**

The RPP Governing Board is the governing entity of the RPP. Its functions include the following:

- Approving any major changes to the RPP program design
- Approving and assisting in expansions of the RPP to other sectors of the hardwood industry
- Review of RPP manufacturer participants' compliance/performance
- Certifier oversight and performance review

As of the date on this document, its members are as follows:

Don Finkell, Anderson Hardwood Floors, Chairman  
Corey Brinkema, FSC- US  
Robert Hrubes, Scientific Certification Systems, Inc.  
Michael Martin, NWFA  
Neil Poland, Mullican Flooring  
Jason Grant, NWFA Advisor

The FSC Procurement Group Steering Committee is the guiding entity for the Group. Its functions include planning the activities of the Group and, in some cases, executing those activities. As of the date on this document, its members are as follows:

Neil Poland, Mullican Flooring, Chairman  
Don Finkell, Anderson Hardwood Floors  
Lisa Stocker, Domtar  
Jason Grant, NWFA Advisor  
Ian Hanna, Forest Stewardship Council US  
Robert Hrubes, Scientific Certification Systems, Inc.  
Michael Martin, NWFA  
Linda Kramme, World Wildlife Fund US  
Paul Pingrey, Forest Stewardship Council US  
Fran Price, The Nature Conservancy  
Eric Smith, Kapstone Paper

## **Appendix 3: Guidance for Exercising Lacey “Due Care” under the RPP**

Tier 1 of the RPP requires that companies engage with an one or more RPP-approved organizations that provide legality guidance, risk assessment, risk management, training, and/or verification resources or services toward exercising “due care” per the amended Lacey Act and similar legislation outside of the U.S.

As of the date on this document, the RPP-approved legality resource providers are as follows:

### **Scientific Certification Systems**

Contact: Neil Mendenhall

510-452-8000

[NMendenhall@scscertified.com](mailto:NMendenhall@scscertified.com)

[www.scscertified.com/nrc/legalharvest.php](http://www.scscertified.com/nrc/legalharvest.php)

### **Rainforest Alliance**

Contact: Ron Wald

(507) 663-1115

[rwald@ra.org](mailto:rwald@ra.org)

[www.rainforest-alliance.org/forestry/verification/legal](http://www.rainforest-alliance.org/forestry/verification/legal)

### **The Forest Trust**

Contact : Robin Barr

206-330-7528

[r.barr@tft-forests.org](mailto:r.barr@tft-forests.org)

[www.tft-forests.org/](http://www.tft-forests.org/)

## **Appendix 4: RPP-Approved and FSC-Accredited Certifiers**

As of the date on this document, the following certifiers are approved by NWFA to perform RPP Chain of Custody audits:

SCS  
2000 Powell St., Ste. 600  
Emeryville, CA 94608  
Ph: 510-452-8000  
<http://www.scs-certified.com/>

For a complete list of FSC-accredited certifiers to whom Program participants can turn to fulfill Tier 2 requirements, see this [List of FSC-Accredited Certifiers](#)

The FSC-accredited certifiers presently active in the U.S. are:

SCS  
2000 Powell St., Ste. 600  
Emeryville, CA 94608  
Ph: 510-452-8000  
<http://www.scs-certified.com/>

SmartWood  
801 Hwy 3 N., Ste. 200  
Minneapolis, MN 55057  
Ph: 507-663-1115  
<http://www.rainforest-alliance.org/forestry.cfm?id=certification>

SGS North America  
201 Route 17 North  
Rutherford, NJ 07070  
Ph: 201-508-3000  
[http://www.us.sgs.com/forestry\\_certification\\_us](http://www.us.sgs.com/forestry_certification_us)

Bureau Veritas  
515 West Fifth St.  
Jamestown, NY 14701  
Ph: 800-937-9311  
<http://www.us.bureauveritas.com>

**Volume vs. SFBE**

	<u>per floor s.f.</u>	<u>length</u>	<u>width</u>	<u>ceil. ht</u>	<u>walls</u>	<u>ceiling</u>	<u>floor</u>	<u>SFBE</u>	<u>Volume</u>	<u>Max. ACH50</u>	<u>ELR50</u>	<u>Point CZ3</u>
Unit A	750 s.f.	30	25	8	880	750	750	2380	6000	5	0.33	3
	Blower Door	500 cfm50					ELR50	0.21	ACH50	4	0.28	5
	Blower Door	700 cfm50					ELR50	0.29	7.00 CODE	3	0.23	6
	Blower Door	900 cfm50					ELR50	0.38	ACH50	2	0.18	8
	Blower Door	1200 cfm50					ELR50	0.50	ACH50	1	0.13	8
Unit B	1050 s.f.	30	35	9	1170	1050	1050	3270	9450			
	Blower Door	600 cfm50					ELR50	0.18	ACH50			
	Blower Door	800 cfm50					ELR50	0.24	ACH50			
	Blower Door	1100 cfm50					ELR50	0.34	6.98 CODE			
	Blower Door	1300 cfm50					ELR50	0.40	ACH50			
Unit C	1200 s.f.	30	40	9	1260	1200	1200	3660	10800			
	Blower Door	700 cfm50					ELR50	0.19	ACH50			
	Blower Door	900 cfm50					ELR50	0.25	ACH50			
	Blower Door	1100 cfm50					ELR50	0.30	ACH50			
	Blower Door	1250 cfm50					ELR50	0.34	6.94 CODE			
	Blower Door	1500 cfm50					ELR50	0.41	ACH50			
Unit D	2400 s.f.	30	40	18	2520	1200	1200	4920	21600			
	Blower Door	1000 cfm50					ELR50	0.20	ACH50			
	Blower Door	1300 cfm50					ELR50	0.26	ACH50			
	Blower Door	1600 cfm50					ELR50	0.33	ACH50			
	Blower Door	2000 cfm50					ELR50	0.41	ACH50			
	Blower Door	2500 cfm50					ELR50	0.51	ACH50			
Unit E	3200 s.f.	32	50	18	2952	1600	1600	6152	28800			
	Blower Door	1000 cfm50					ELR50	0.16	ACH50			
	Blower Door	1500 cfm50					ELR50	0.24	ACH50			
	Blower Door	2000 cfm50					ELR50	0.33	ACH50			
	Blower Door	2400 cfm50					ELR50	0.39	ACH50			
	Blower Door	2800 cfm50					ELR50	0.46	ACH50			
	Blower Door	3200 cfm50					ELR50	0.52	ACH50			