

November 12, 2009

Green Seal is in the process of revising the Environmental Standard for Sanitary Paper Products, GS-1. Comments from the public were solicited on a Proposed Revised Standard from January 5, 2009 until February 23, 2009. As noted on the Green Seal website as a July 2009 update, resource limitation due to the economic downturn resulted in a delay of the GS-1 revision. However, the standard is moving forward and your patience is appreciated.

Included in this document are the comments received on the Proposed Revised Standard for Sanitary Paper Products, GS-1, January 5, 2009, with responses and an explanation on how the Draft Final Revised Standard will be modified accordingly.

By participating in Green Seal's standard setting process, the following organizations that provided comments played an important role in Green Seal's effort to encourage the design, manufacture, and end use of environmentally superior products. Their assistance and involvement is greatly appreciated.

AbitibiBowater, Inc.

American Paper Converting, Inc.

Cascades, Inc.

Georgia-Pacific LLC

Hoffmaster Group, Inc.

Kimberly-Clark Corp.

Multnomah County, Oregon

Planet, Inc.

SCA Tissue North America

Wausau Paper Corp.

World Wildlife Fund

The language from the Proposed Revised Standard is included, followed by comments, and Green Seal's response to the comments. *Draft final revised standard language is given in italics.*

1.0 SCOPE

This standard establishes environmental requirements for sanitary paper products including paper towels, paper napkins, bathroom tissue, facial tissue, toilet seat covers, placemats and other sanitary paper products made from 100% recovered material. The standard covers products for institutional as well as retail markets. This standard does not include nonwoven sanitary products, general purpose wipes, flushable wipes, disposable diapers, or sanitary napkins and tampons.

Comment:

The scope excludes general purpose wipes. Assume this is addressing hygiene and personal care wipes. Where would a paper based general purpose wiper go? Is it considered a paper towel? Needs clarification on definition of a wipe.

Response:

It is noted that a definition is needed for general-purpose wipes. Paper-based general-purpose wipes that contain no cleaning agents or fragrances will be added to the scope and grouped throughout the standard with paper towels and napkins. These products are folded towels that are considered wipers in the industry. The scope will be modified as follows and a definition will be added.

Please note that the scope will also be modified to include the section from the Foreword of the standard that discusses compliance with government rules. This section is being added to the standard since it is an assumed requirement that must be met by manufacturers, now made more explicit.

1.0 Scope

This standard establishes environmental requirements for sanitary paper products including paper towels and general-purpose wipes, paper napkins, bathroom tissue, facial tissue, toilet seat covers, placemats and other sanitary paper products not used for personal care. The standard covers products for institutional as well as retail markets. This standard does not include nonwoven sanitary products, general-purpose wipes and flushable wipes containing cleaning agents or fragrances, disposable diapers, or sanitary napkins and tampons.

This standard assumes compliance with all applicable laws and regulations. As a result, in order to be certified to this standard, the manufacturer of the certified product must disclose all governmental allegations or determinations of violation of federal, state, or local environmental laws or regulations with respect to facilities in which the product is manufactured. Certification will be denied any product manufactured in violation of environmental laws or regulations if, in the certifier's judgment, such violations indicate that the environmental impacts of the product significantly exceed those contemplated in the setting of the standard.

General-Purpose Wipes. A class of absorbent disposable paper products suitable for use as industrial wipers and containing no cleaning agents (e.g., surfactants) or fragrances.

2.0 DEFINITIONS

The comments regarding specific definitions shall be made here.

Comment:

It appears that some definitions contain requirements. The definitions section should only contain definitions, otherwise, it can be confusing.

Response:

It is noted that definitions should not contain requirements. The definitions included in the standard provide extra information for clarity. Modifications were made to a definition in cases where the information didn't provide clarity or added confusion.

Comment:

Need a definition for air dried tons of product.

Response:

Since air dried ton is typically applied to pulp, the units will be changed to ton of final product, with an understanding that moisture content may vary from product to product, but will be relatively close. Air dried ton will be removed from the standard and the replacement units used will be ton of final product.

Comment:

Component and ingredient definitions are very similar.

Response:

The component and ingredient definitions are consistent with other Green Seal standards. To clarify, a component is any substance deliberately added to a product at any level. The definition of an ingredient is a component or contaminant that comprises at least 0.01% by weight.

Comment:

Fresh water use - Does process water include water used in boilers for steam generation?

Response:

If the steam generated from the boilers is used directly in the paper manufacturing process, then the fresh water used to generate the steam should be included. If the steam is used for some other purpose (e.g., in a virgin pulp mill) then do not include it. The definition will be modified as follows:

Fresh Water Use. The total amount of steam, process, and cooling water used in the manufacture of sanitary paper products, including water used during recovered material re-pulping, throughout the paper making process, and during converting (if applicable).

Comment:

Total Particulate Matter - How is total particulate matter as defined measured? Does total particulate matter include filterable and condensible particulate matter?

Response:

The use of total particulate matter will be removed from the standard. Instead, PM₁₀ and PM_{2.5} will be used to better represent particulate matter of concern by State and Federal Regulations. Definitions will be added as follows:

PM₁₀. Airborne particulate matter (carbonaceous, organic, and sulfate particulates) with an upper size limit of approximately 10 microns in diameter.

PM_{2.5}. Airborne particulate matter (carbonaceous, organic, and sulfate particulates) with an upper size limit of approximately 2.5 microns in diameter.

2.1 Adsorbable Organic Halide (AOX)

A measure of the total sum of the halide (typically measured as chloride) concentration bound in organic compounds. AOX is a surrogate measure for the amount of chlorinated organic compounds in wastewater.

Comment:

Not all facilities are required to test for AOX. What testing frequency and reporting frequency to Green Seal would be required for certification demonstration?

Response:

Green Seal acknowledges your comment; however, a leadership product should proactively measure AOX, even if it is not required by a permit. Green Seal is currently not setting a criterion for AOX, but is gathering data to inform the development of a possible future criterion. The most recent data available or an annual average will be sufficient for reporting purposes. This data will be reported to Green Seal at the time of certification and will be reassessed during compliance monitoring.

2.3 Bathroom Tissue

A soft paper product used to maintain personal hygiene, designed to disperse in septic tanks. Sheets can range in size from a minimum of 3 7/8" by 3 7/8" up to 4 1/2" by 4 1/2".

Comment:

Roll height should range in size from 3 7/8" to 4.5". Sheet size (perf to perf) should range from 3.75" to 4.5".

Comment:

Agree, an industry standard has become 3.75" sheet length.

Comment:

It is better to put a minimum area for this requirement rather than state sheet sizes. Also, the size should be in requirements or specification section rather than the definitions section.

Comment:

Strongly believe that all sheet size specifications should be left out of these standards (see detailed comment under Paper Napkins).

Response:

The sheet size range listed in the definition of Bathroom Tissue was meant to provide a typical size to be used to help categorize products – it was not meant as a size limit. Based on the comments on these definitions, the definition for facial tissue has also been modified. The definitions will be modified as follows:

***Bathroom Tissue.** A soft paper product used to maintain personal hygiene, designed to disperse in septic tanks.*

***Facial Tissue.** A class of soft, absorbent, disposable paper products suitable for use on the face. Product may come in flat, cube, or dispenser type boxes. Flat and dispenser boxes are typically rectangular in shape and wider than they are tall. Cube boxes are typically an upright package with a square base and an elongated height.*

2.28 Paper Napkins

A class of absorbent, disposable paper that is typically folded and is suitable for wiping hands and mouth. Retail sheet size is typically 11 inches by 12 inches. Institutional sheet size varies, but a typical size is 14 inches by 17 inches.

Comment:

Does it mean that an institutional napkin will have to be 14 x 17"? There are too many different formats and applications to require a specific sheet size (Low fold, tall fold, full fold, dinner, beverage...)

Comment:

We agree. There should not be a size requirement.

Comment:

This size of 14" x 17" is more suited towards folded dinner napkins. It does not account for the wide range of dispenser napkins which can have dimensions of down to 6.5" or beverage napkins, typically 10". Recommend either removing a size mention or greatly increasing the "typical" size range.

Comment:

The customer/chooser/user will determine the size by making the purchase or not. That should be the case for all products.

Comment:

Agree strongly that sheet sizes should not be a part of this standard. Manufacturers need the flexibility to follow trends in the marketplace in sheet sizes, without invalidating Green Seal

certification or putting pressure on Green Seal to update standards regularly in response to such trends.

Response:

The sheet size range listed in the definition of Paper Napkins was meant to provide a typical size to be used to help categorize products – it was not meant as a size limit. The definition will be modified as follows:

***Paper Napkins.** A class of absorbent, disposable paper products that is typically folded and is suitable for wiping hands and mouth.*

2.29 Paper Towels

A class of absorbent, disposable paper suitable for use in drying hands, wiping windows, or cleaning up spills. Retail sheet size is typically 11 inches by 9 inches. Institutional rolls are typically 7 1/2 to 10 inches wide, and a typical folded towel is a minimum 9-inch square.

Comment:

Kitchen/Perforated Roll Towel sheet size is typically 11 inches by 9 inches. Institutional/Hardwound Roll Towels are typically 7 1/2 to 10 inches wide, and a typical folded towel is a minimum 9-inch square.

Comment:

Agree. In general, due to the vast differences between a hardwound or folded paper towel versus a kitchen roll towel (or perforated roll towel), the definitions and metrics should be split for these two major categories.

Comment:

This standard should not define sizes. There are too many variations

Comment:

Agree there should be no specification of sheet sizes (see comment under Napkins). An example for towels is Select-a-Size offerings that are quite popular in the marketplace. These are typically 4.5" sheet length (perf to perf).

Response:

The sheet size range listed in the definition of Paper Towels was meant to provide a typical size to be used to help categorize products – it was not meant as a size limit. The definition will be modified as follows:

***Paper Towels.** A class of absorbent, disposable paper products suitable for use in drying hands, wiping windows, cleaning equipment, or cleaning up spills, including, but not limited to: retail, perforated roll towels; institutional, hardwound roll towels; and institutional folded towels.*

2.33 Processed Chlorine Free (PCF).

Recycled or recovered-content papers in which chlorine or chlorine-containing compounds are not used in any of the unit processes used to manufacture the product, including, but not limited to, the pulping, screening, deinking, washing, and bleaching stages.

Comment:

It should read "Recycled or recovered-content papers in which chlorine or chlorine-containing compounds are not used in any of the bleaching stages." Otherwise it contradicts section 4.3.5.

Response:

Green Seal acknowledges your comment. However, Green Seal is requiring Processed Chlorine Free to make sure that chlorine-containing compounds are not used in any stage of the manufacturing process. The exception for disinfection, 4.3.2, is to allow the incoming water supply to be disinfected, either by the local utility or by the manufacturing plant, if the water is drawn directly from a river or other water body. The section will be modified for clarity and made an exception to the Process Chlorine Free section.

As an exception, chlorine, chlorine derivatives, biocides, and disinfection by-products may be allowed in the manufactured product, if the presence of these chemicals is a result of disinfection of the incoming water supply. Product testing is not required, as long as the wastewater concentrations of the materials used for disinfection are below the applicable MCLs or MRDLs in the National Primary Drinking Water Regulations found in 40 CFR, Part 141.

2.34 Recovered Material

Material recovered from or otherwise diverted from the solid waste stream that is generated after the completion of the paper manufacturing process.

Recovered material may include:

- Recovered fibers from wastewater or trimmings of paper machine rolls (recovered mill broke) used to make the certified product.
- Manufacturing waste such as dry paper and paperboard waste generated after completion of the papermaking process (i.e., during converting).
- Post-consumer materials such as paper, paperboard, and fibrous materials from retail stores, office buildings, homes, etc., after they have completed their intended end-use.

Recovered material does not include:

- Virgin or part virgin fibrous waste paper generated during the manufacturing process, such as fibers recovered from wastewater or trimmings of paper machine rolls (virgin mill broke), regardless of whether such materials are used by the same or another company.
- Fibrous by-products of harvesting, extractive or woodcutting processes or forest residues such as cotton linters, bark or sawdust.

For non-timber species, recovered material is considered agricultural residue that would otherwise be disposed as waste.

Comment:

For non-timber species, the definition states that recovered material includes agricultural residue that would otherwise be disposed of as waste. Agricultural residues, such as bagasse, could be disposed of as waste or burned, however it is often preferable from an environmental standpoint to have the bagasse remain on the field for soil and water quality reasons. Given that the impacts of using agricultural residues are variable and not fully understood, I recommend at a minimum that the definition for non-timber recovered material be strengthened in-line with the detail provided for timber-derived material.

Response:

The intent of allowing Sanitary Paper Products to be made from agricultural residue is to redirect a waste material into something useful. The intent is not to take something that is being used as a fertilizer and redirect it to a product use. The agricultural residue definition will be clarified, as follows:

Agricultural Residue. Process waste material remaining from an agricultural plant after it was used to produce food or fiber, that would otherwise be incinerated or disposed of as a solid waste.

Comment:

Definitions 2.34 Recovered Material and Post-consumer Material

Why do you not use the same definitions used by EPA for recovered fiber and post-consumer recovered fiber as shown below? We strongly recommend these EPA definitions be used for consistency and completeness.

Postconsumer fiber means:

- Paper, paperboard, and fibrous wastes from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; and
- All paper, paperboard, and fibrous wastes that enter and are collected from municipal solid waste.
- Postconsumer fiber does not include fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

Recovered fiber means the following materials:

Postconsumer fiber such as:

- Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used

cordage; and

- All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste, and

Manufacturing wastes such as:

- Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and
- Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

Mill broke means any paper waste generated in a paper mill prior to completion of the papermaking process. It is usually returned directly to the pulping process. Mill broke is excluded from the definition of "recovered fiber."

- If you use the proposed Green Seal definitions as shown in the GS-1 Draft, then we have the following comments:

We have provided our comments in red as inserts, or questions regarding the GS-1 proposed language.

Recovered material may include:

- Recovered fibers from wastewater or trimmings of paper machine **finished parent** rolls (recovered **converting waste**) used to make the certified product.
- Manufacturing waste such as dry paper and paperboard waste generated after completion of the papermaking process (i.e., during converting).
- Post-consumer materials such as paper, paperboard, and fibrous materials from retail stores, office buildings, homes, etc., after they have completed their intended end-use.

Recovered material does not include:

- Virgin or part virgin fibrous waste paper generated during the manufacturing process, such as fibers recovered from wastewater or trimmings of paper machine base sheets (virgin mill broke), regardless of whether such materials are used by the same or another company. **What is "part virgin" material? If it is meant to be fibrous waste from a mixed virgin and recycled base sheet, then the portion that is recycled would remain recycled. You can't arbitrarily reinstate virginity to that portion of the paper. i.e. recovered trim from a 50% recycled base sheet is 50% recycled content and can be claimed as 50% recycled.**

Our suggestion for identifying what can't be used would be to use the EPA definition with the statement that it is the virgin content of mill broke that is excluded.

- Fibrous by-products of harvesting, extractive or woodcutting processes or forest residues such as cotton linters, bark or sawdust. **We agree with adding this statement since the EPA has also provided this opinion.**

For non-timber species, recovered material is considered agricultural residue that would otherwise be disposed as waste.

Response:

It is noted that the EPA’s definition is relevant; however, it is not specific enough for use in this certification standard, nor does it fully address this product category’s process considerations. In addition, the reason for including recovered mill broke as “recovered material” is as follows. Consider a paper mill using only 100% recovered material in production. When the paper machine rolls were trimmed on the machine, if that material did not count towards the 100% recovered, the mill would either have to sell that broke to someone, or dispose of it as solid waste, which is unreasonable. Therefore, Green Seal has modified the mill broke definition for this standard. Likewise, EPA clarifies their definition of recovered material in their “measurement” section as follows:

“EPA recommends that procuring agencies express their minimum content standards as a percentage of the fiber weight of the paper or paper product. EPA further recommends that procuring agencies specify that [mill broke](#) cannot be counted toward postconsumer or recovered fiber content, except that procuring agencies should permit mills to count mill broke generated in a papermaking process using postconsumer and/or recovered fiber as feedstock toward "postconsumer fiber" or "recovered fiber" content, to the extent that the feedstock contained these materials. In other words, if a mill uses less than 100% postconsumer or recovered fiber, only a proportional amount of broke can be counted towards postconsumer or recovered fiber content.”

<http://www.epa.gov/osw/conservation/tools/cpg/products/define.htm>

Regarding virgin or part-virgin material, the requirement for the GS-1 standard is 100% recovered. Therefore, if a facility is making some lines of paper that are all virgin pulp, or contain virgin material mixed with recovered material (i.e., part-virgin), then none of the broke generated from those lines (mill broke containing any virgin material) will be allowed into the Green Seal-certified product.

To summarize, the definition for recovered material will be modified in the standard for clarity, as follows:

2.38 Recovered Material. *Material recovered from or otherwise diverted from the solid waste stream, that is generated after the completion of the paper manufacturing process.*

Recovered material may include:

- *Manufacturing waste generated after completion of the papermaking process (i.e., during converting), such as envelope cuttings; bindery trimmings; printing waste; cuttings and other converting waste; butt rolls and mill wrappers; obsolete inventories; and rejected unused stock.*

- *Post-consumer materials such as paper, paperboard, and fibrous materials from retail stores, office buildings, homes, etc., after they have completed their intended end-use.*
- *Fibers recovered from wastewater or trimmings of paper machine rolls used only to make the certified product (mill broke containing 100% recovered material).*

Recovered material does not include:

- *Fibers recovered from wastewater or trimmings of paper machine rolls used to make non-certified products containing virgin material (mill broke containing any virgin material), regardless of whether such materials are used by the same or another company.*
- *Fibrous by-products of harvesting, extractive or woodcutting processes or forest residues such as cotton linters, bark or sawdust.*

For non-timber species, recovered material is considered agricultural residue that would otherwise be disposed as waste.

2.36 Reproductive Toxin

A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq., also known as Proposition 65).

Comment:

We suggest citing some authoritative body other than the State of California when referring to what is, or is not, a toxin. California has not always taken all the scientific data into consideration when listing their chemicals. Groups like the Toxicology Excellence in Risk Assessment (TERA), or Agency for Toxic Substances & Disease Registry (ATSDR), or similar agency groups would be better choices to use.

Response:

For the purposes of this standard, Green Seal utilizes references that list chemicals determined to cause reproductive or development toxicity based on a peer-review process. For classification of chemicals ISO 14020/14024 guides the following order of preference: international, then national, then regional or state resources. In the absence of internationally- or nationally-accepted lists, Green Seal will continue to reference the California Proposition 65 list for reproductive and developmental toxicity. Green Seal uses other references for other toxins. For example, Green Seal references the National Toxicology Program, the International Agency for Research on Cancer, the US Environmental Protection Agency, and OSHA for carcinogens. Neither TERA, nor ATSDR provide specific lists of chemicals; however, they do provide links to quantitative data on risk assessments and/or contain excellent information regarding the profiles for individual compounds. As a result, these references cannot serve the purposed needed in this standard. Therefore, Green Seal will continue to reference Prop 65 for reproductive and developmental toxins.

2.38 Sanitary Paper Products

SIC 2676. Products including facial and bathroom tissues, toilet seat covers, paper towels, paper napkins, paper placemats and table coverings. Products that are technically in this category by SIC code, but not covered by this standard include nonwoven sanitary products, general purpose wipes, flushable wipes, disposable diapers, or sanitary napkins and tampons.

Comment:

Please clarify on the definition of general purpose wipes. There are some paper based wipers (i.e. a windshield towel or a light duty general purpose task wiper) and it is unclear if they would be considered included (as a towel) or excluded (as a general purpose wipe).

Comment:

Perhaps a towel can be defined as a product used in a kitchen or bathroom. Then all other examples would be wipers - used in shops, labs, garages, etc.

Response:

Paper-based general-purpose wipes that contain no cleaning agents or fragrances will be added to the scope and grouped throughout the standard with paper towels and napkins. These products are folded towels that are considered wipers in the industry. The Sanitary Paper Products definition will be modified accordingly.

1.0 Scope

This standard establishes environmental requirements for sanitary paper products including paper towels and general-purpose wipes, paper napkins, bathroom tissue, facial tissue, toilet seat covers, placemats and other sanitary paper products not used for personal care. The standard covers products for institutional as well as retail markets. This standard does not include nonwoven sanitary products, general-purpose wipes and flushable wipes containing cleaning agents or fragrances, disposable diapers, or sanitary napkins and tampons.

General-Purpose Wipes. *A class of absorbent disposable paper products suitable for use as industrial wipers and containing no cleaning agents (e.g., surfactants) or fragrances.*

Sanitary Paper Products. *SIC 2676. Products including facial and bathroom tissues, toilet seat covers, paper towels and general-purpose wipes, paper napkins, paper placemats and table coverings. Products that are technically in this category by SIC code, but not covered by this standard include nonwoven sanitary products, general-purpose and flushable wipes containing cleaning agents or fragrances, disposable diapers, or sanitary napkins and tampons.*

2.41 Source Reduction

Altering the design, manufacture, or use of sanitary paper products to reduce the amount that gets disposed of in a landfill.

Comment:

To be serious about this topic you have to consider a balanced fiber approach, as least for towels. A towel made with a combination of both virgin and recycled fiber performs much better with respect to absorbency than a 100% recycled product. Therefore, fewer towels are used for hand drying and less material goes to landfill.

Response:

Your comment is acknowledged. However, it is Green Seal's position that an environmentally preferable leadership Sanitary Paper Product, which is typically a disposable item, does not require virgin fiber content. The products are required to be made from 100% recovered material, since this provides the greatest reduction in life-cycle impacts (*i.e.*, maintains biodiversity in forests, maintains trees for storing and sequestering carbon, less energy input to manufacture, fewer overall emissions)¹. Green Seal has successfully certified many products over the years to the existing GS-1 and GS-9 standards.

The intent of source reduction in the standard is to allow individuals to potentially use less post-consumer material if they can support that with an equivalent source reduction approach.

3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

General comments regarding product-specific performance requirement shall be made here.

Comment:

What percentage of finished product would have to be tested to demonstrate the products meet the performance requirements listed in the standard?

How often will the testing data have to be submitted to Green Seal to demonstrate the products meet the standards?

Response:

The product must be tested for performance once during certification to demonstrate compliance with the requirement, re-tested with any product or process changes, with updates provided as part of compliance monitoring. The frequency and amount of testing required should be part of a company's standard Quality Assurance/Quality Control (QA/QC) process and will be part of the certification evaluation.

Comment:

In general, we strongly question the relevance and effect of including product performance requirements in the Green Seal standard. We would argue that they have nothing to do with the environmental qualities of the products (which is the principal objective of the standard). In addition, the required testing and verification for these characteristics will add significantly to the cost and complexity of gaining and maintaining Green Seal certification

¹ Paper Task Force 1995 and 2002. Lifecycle environmental comparison: virgin paper and recycled paper-based systems. http://www.edf.org/documents/1618_WP3.pdf

In fact, including performance requirements could have the effect of discouraging "very green" products. It may be the case that products that meet your required level of post-consumer fiber (for example 60% for towels, bath tissue and napkins) can readily meet the performance standards given. It may also be the case that products meeting a higher level of post-consumer fiber, such as 80 or 90%, may have difficulty meeting the performance standards. In that scenario, Green Seal would actually be having the effect of discouraging products that demonstrate the best environmental characteristics.

Response:

Product-specific performance requirements have been included in the standard in order to ensure that environmentally preferable leadership products can meet these minimum specifications to maintain the quality of the product. Green Seal believes performance criteria are an important part of these standards. ISO 14204 is the standard that guides the development of environmental leadership standards like this one and requires that Green Seal look at product performance. This is because if a product doesn't work, it is not a sustainable solution, and is not environmentally preferable.

Note, the product specific performance requirements section will be reorganized in the standard for clarity.

3.1 Test Methods Product characteristics shall be measured for all products according to the following ASTM test methods (or equivalent TAPPI or ISO methods):

Product Characteristic	S.I. Units	English Units	Test Method
Basis Weight (grammage)	g/m ²	lbs/ream	ASTM D 646 (T-410; ISO 536)
Dry Tensile Strength (MD & CD)	N/m	gf/in or gf/3in	ASTM D 828 (T-494; ISO 1924/3) or T-576
Wet Tensile Strength (MD & CD)	N/m	gf/in or gf/3in	ASTM D 829 (T-456) or T-576
Stretch	%	%	ASTM D 828 (T-494; ISO 1924/3) or T-576
Brightness	reflectance scale	reflectance scale	ASTM D 985 (T-452; ISO 2469,2470/2) or T-525

Comment:

Would be helpful to actually include the metrics and testing methods in the standard. Want to be sure that everyone is using the same testing methods, many paper companies will use testing methods based on TAPPI or ASTM, but modified for their needs. Want to ensure everyone is using the same size samples, product is unfolded, product is testing base paper and not converted product, etc... If you are creating a comprehensive standard and including all the definitions in Section 2.0 you should also list out the testing methods and metrics for Section 3.0.

Comment:

Most test using modified ASTM or TAPPI test methods. It would be cost prohibitive to convert.

Comment:

Need to explicitly state base paper testing or converted product testing.

Response:

The requirement is to use the published ASTM, TAPPI, or ISO test method. It is generally acceptable to modify the published test method, as long as the modification is documented in QA/QC procedures and applied consistently. Any modifications to the standard method that are not explicitly noted in the Green Seal standard would be considered “alternative performance” testing and would need to meet those requirements (3.4). The goal of this section of the standard is to make sure the product meets some minimum specifications for quality, but not to cause the paper industry to conform to uniform testing protocol.

The intent of the standard is to test the base sheet. It is understood that testing the converted product would result in differing test results. If a facility only does converting, then the supplier of the parent rolls will be required to supply the test results. This has been clarified in the standard and a definition of base sheet has been added. In addition, Section 3.0 will be reorganized and modified to clarify the intent, and there will not be a separate Test Methods section.

3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

Product performance requirements shall be measured on the base sheet for all products, unless otherwise indicated.

Base Sheet/Paper. *Manufactured paper that will be further processed or converted. The base sheet/paper is the paper that comes directly off the paper machines.*

3.3.1 Basis weight (grammage)

Product	Basis Weight	Grammage^(a)
	(lbs/ream)	(g/m ²)
Paper towels	11 - 32	17.9 – 52.1
Paper napkins	10 – 28.3	16.3 – 46.1
Bathroom tissue	8.5 - 22	13.8 – 35.8
Facial tissue	8 - 19	13.0 – 30.9
Toilet seat covers	8.7 – 9.7	14.1 – 15.7
Placemats and other table coverings	35 - 40	57 - 65

(a) See ASTM D 646 for basis weight to grammage conversion.

Comment:

The basis weight for placemats is too restricting. We recommend a range from 26-40 lbs.

Comment:

Increase the upper limits at least 25%, especially on towels. Some higher end products have a higher basis weight needed for a higher quality product. Understand a product not wanting to be viewed as cheap (low basis weight) but why limit on the high end?

Response:

It is noted that the range on basis weight should not be restricting. The ranges presented in the standard for the product-specific performance requirements were developed based on a review of product information which included an assessment of the current marketplace. After additional review, Green Seal agrees that the range can be broadened. Therefore, the ranges of the product-specific performance requirements will be modified throughout the standard.

Regarding using a range as the requirement, it is standard practice in the industry when reporting specifications to use a low and high range. Therefore, the range will be maintained in the standard.

The basis weight range will be modified based on an analysis of marketplace information, reorganized, and paper towels will be separated into institutional and retail, as follows:

3.1 Basis Weight (grammage). *Product characteristics shall be measured on the base sheet for all products for basis weight (grammage) according to ASTM D646, T-410 or ISO 536 and shall meet the following requirements when measured as g/m² (SI Units) or lbs/ream (English units).*

<i>Product</i>	<i>Basis Weight</i>	<i>Grammage^(a)</i>
	<i>(lbs/ream)</i>	<i>(g/m²)</i>
<i>Paper towels - institutional</i>	<i>15 - 35</i>	<i>24.4 – 56.9</i>
<i>Paper towels - retail</i>	<i>20 – 30</i>	<i>32.5 – 48.8</i>
<i>Paper napkins</i>	<i>11 – 30</i>	<i>17.9 – 48.8</i>
<i>Bathroom tissue</i>	<i>8.5 - 22</i>	<i>13.8 – 35.8</i>
<i>Facial tissue</i>	<i>8 - 19</i>	<i>13.0 – 30.9</i>
<i>Toilet seat covers</i>	<i>8.5 – 10.5</i>	<i>13.8 – 17.1</i>
<i>Placemats and other table coverings</i>	<i>26 - 40</i>	<i>38.5 – 59.2</i>

(a) See ASTM D 646 for basis weight to grammage conversion.

Comment:

Let the consumer/chooser/user decide what they want to buy.

Comment:

These considerations have no place in an environmental standard. Manufacturers should not have their hands tied in the marketplace if they wish to try any particular combination of price and quality that they think may sell, and the consumer will ultimately decide the success of those.

Response:

Green Seal acknowledges your comments. Product-specific performance requirements have been included in the standard in order to ensure that environmentally preferable products can meet these minimum specifications to maintain the quality of the product. Green Seal believes performance criteria are an important part of these standards. ISO 14204 is the standard that guides the development of environmental leadership standards like this one and requires that Green Seal look at product performance. This is because if a product doesn't work, it is not a sustainable solution, and is not environmentally preferable.

3.3.2 Tensile strength using ASTM D 828/829 (T-494/456)

Product	Dry Tensile Strength ^(a)		Wet Tensile Strength	
	MD	CD	MD	CD
	(gf/in)	(gf/in)	(gf/in)	(gf/in)
Paper towels	1750 - 2800	650 - 1200	300 - 700	150 - 300
Paper napkins	470 - 550	275 - 350	n/a	n/a
Bathroom tissue	166 - 600	50 - 190	n/a	n/a
Facial tissue	302 - 456	92 - 124	20 - 40	10 - 15
Toilet seat covers	3.1 - 7	1 - 2	n/a	n/a
Placemats and other table coverings	n/a	n/a	n/a	n/a

(a) 1 gf/in = 0.3886 N/m

n/a = not applicable

Comment:

Tensile strength can not be measured on finished product with perforations due to the bias caused by the perforation. Perforated products must be tested prior to perforation.

Response:

The intent of the standard is to test the base sheet. It is understood that testing the converted product would result in differing test results. If a facility only does converting, then the supplier of the parent rolls will be required to supply the test results. This has been clarified in the standard and a definition of base sheet has been added.

3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

Product performance requirements shall be measured on the base sheet for all products, unless otherwise indicated.

Base Sheet/Paper. *Manufactured paper that will be further processed or converted. The base sheet/paper is the paper that comes directly off the paper machines.*

Comment:

Should not be part of standard. See comments under 3.0 and 3.3.1.

Response:

Green Seal acknowledges your comments. Product-specific performance requirements have been included in the standard in order to ensure that environmentally preferable products can meet these minimum specifications to maintain the quality of the product. Green Seal believes performance criteria are an important part of these standards. ISO 14204 is the standard that guides the development of environmental leadership standards like this one. It requires that Green Seal look at product performance. This is because if a product doesn't work, it is not a sustainable solution, and is not environmentally preferable.

Comment:

A separate line should be added for Kitchen/Perforated Roll Towels which have very different specs than industrial paper towels.

Dry Tensile Strength (T456):

MD: 886

CD: 509

Wet Tensile Strength (T456):

MD: 232

CD: 136

Response:

It is acknowledged that these products have different performance needs and thus will be separated (institutional and retail), as follows:

3.2 Tensile Strength (Dry and Wet). *Product characteristics shall be measured on the base sheet for tensile strength in the machine direction (MD) and cross direction (CD) using the methods described in either 3.2.1 or 3.2.2.*

3.2.1 Tensile strength using ASTM D 828/829 (T-494/456) *Product characteristics shall meet the following requirements when tested according to ASTM D 828, T-494 or ISO 1924/3 (dry tensile strength) and ASTM D829 or T-456 (wet tensile strength), as measured in gf/in (English units).*

<i>Product</i>	<i>Dry Tensile Strength^(a)</i>		<i>Wet Tensile Strength</i>	
	<i>MD</i>	<i>CD</i>	<i>MD</i>	<i>CD</i>
	<i>(gf/in)</i>	<i>(gf/in)</i>	<i>(gf/in)</i>	<i>(gf/in)</i>
<i>Paper towels - institutional</i>	700 - 3100	280 - 1800	140 - 750	50 - 450
<i>Paper towels - retail</i>	560 - 1110	250 - 640	120 - 300	50 - 300
<i>Paper napkins</i>	400 - 1100	230 - 570	--	--
<i>Bathroom tissue</i>	140 - 900	50 - 450	--	--
<i>Facial tissue</i>	250 - 470	80 - 160	17 - 40	8 - 15
<i>Toilet seat covers</i>	2.6 - 7	0.85 - 2	--	--
<i>Placemats and other table coverings</i>	--	--	--	--

(b) 1 gf/in = 0.3886 N/m

-- = no requirement

3.3.3 Tensile strength using T-576

Product	Dry Tensile Strength^(a) (T-576)		Wet Tensile Strength (T-576)	
	MD	CD	MD	CD
	(gf/3 in)	(gf/3 in)	(gf/3 in)	(gf/3 in)
Paper towels	2100 - 9250	1600 - 5750	900 - 2500	300 - 1400
Paper napkins	1500 - 2900	750 - 1650	n/a	n/a
Bathroom tissue	1050 - 2000	475 - 825	n/a	n/a
Facial tissue	1130 - 2150	400 - 750	230 - 250	90 - 115
Toilet seat covers	4750	2500	160	100
Placemats and other table coverings	n/a	n/a	n/a	n/a

1 gf/3in = N/m

n/a = not applicable

Comment:

Need a different tensile requirement for household/kitchen roll towels, product too different than standard paper towels.

Comment:

Recommend removing upper limits on all tensiles. Tensile will be lower on converted product versus base sheet. Products are engineered for dispensibility. For example, dispenser napkins have higher tensile than dinner napkins for dispensing purposes. No need to limit upper tensile, no manufacturer would add unnecessary wet strength.

Comment:

Would also lower minimum tensile by 25% for the same reason - products are made with the necessary wet strength to dispense.

Response:

It is noted that the ranges on tensile strength should not be restricting. The ranges presented in the standard for the product-specific performance requirements were developed based on a review of product information which included an assessment of the current marketplace. After additional review, Green Seal agrees that the range can be broadened. The tensile strength range will be modified as part of this process.

Regarding using a range as the requirement, it is standard practice in the industry when reporting specifications to use a low and high range. Therefore, the range will be maintained in the standard. In addition, paper towels will be separated into institutional and retail and the section will be reorganized, as follows:

3.2.2 Tensile strength using T-576 (no equivalent ASTM standard). *Product characteristics shall meet the following requirements when tested according to T-576 (dry and wet tensile strength), as measured in gf/3 in (English units).*

<i>Product</i>	<i>Dry Tensile Strength^(a) (T-576)</i>		<i>Wet Tensile Strength (T-576)</i>	
	<i>MD</i>	<i>CD</i>	<i>MD</i>	<i>CD</i>
	<i>(gf/3 in)</i>	<i>(gf/3 in)</i>	<i>(gf/3 in)</i>	<i>(gf/3 in)</i>
<i>Paper towels - institutional</i>	<i>2100 - 9250</i>	<i>1600 - 5750</i>	<i>900 - 2500</i>	<i>300 - 1400</i>
<i>Paper towels- retail</i>	<i>1680 - 3350</i>	<i>960 - 1950</i>	<i>430 - 900</i>	<i>250 - 510</i>
<i>Paper napkins</i>	<i>1500 - 2900</i>	<i>750 - 1650</i>	<i>--</i>	<i>--</i>
<i>Bathroom tissue</i>	<i>1050 - 2000</i>	<i>475 - 825</i>	<i>--</i>	<i>--</i>
<i>Facial tissue</i>	<i>1130 - 2150</i>	<i>400 - 750</i>	<i>200 - 250</i>	<i>70 - 115</i>
<i>Toilet seat covers</i>	<i>2850 - 5940</i>	<i>1500 - 3125</i>	<i>--</i>	<i>--</i>
<i>Placemats and other table coverings</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>

(a) 1 gf/3in = 1.1658 N/m

-- = no requirement

3.3.4 Stretch, Brightness and Water Absorbency

Product	Stretch	Brightness	Water Absorbency
	(%)	(reflectance)	(seconds)
Paper towels	2 - 22	55 - 85	2 - 75
Paper napkins	6 - 20	76 - 87	2 - 25
Bathroom tissue	7 - 18	70 - 84	8 - 45
Facial tissue	3 - 23	70 - 87	n/a
Toilet seat covers	1.7	82	n/a
Placemats and other table coverings	n/a	65 - 80	n/a

n/a = not applicable

Comment:

The brightness for placemats doesn't make sense. Essentially, the less bright the better because the paper is less processed. We recommend 60-80 for brightness. Perhaps even a slightly lower minimum.

Comment:

Lower brightness minimum for bath tissue to 68 to allow for higher range of post consumer content grades without requiring excessive processing or "bleaching".

Comment:

Need to exclude a brightness requirement for kraft products. Brightness is not a metric for non-white products.

Response:

It is agreed that brightness requirements are not needed in the standard, specifically because the standard allows for kraft (brown) products, and specifically prohibits the use of added optical brighteners. Therefore, the brightness requirements will be removed from the standard, and the section will be reorganized, as follows:

3.3 *Stretch and Water Absorbency* *Product characteristics shall be measured on the base sheet when tested according to ASTM D 828, T-494 or ISO 1924/3 or T-576 for stretch; and ASTM D985, T-452, ISO 2469/2470/2 or T-525 for water absorbency; and shall meet the following requirements, as measured in % stretch or seconds of water absorbence.*

<i>Product</i>	<i>Stretch</i>	<i>Water Absorbency</i>
	<i>(%)</i>	<i>(seconds)</i>
<i>Paper towels-institutional</i>	<i>2 - 22</i>	<i>0 - 160</i>
<i>Paper towels - retail</i>	<i>2 - 22</i>	<i>0 - 160</i>
<i>Paper napkins</i>	<i>2 - 22</i>	<i>0 - 180</i>
<i>Bathroom tissue</i>	<i>2 - 18</i>	<i>--</i>
<i>Facial tissue</i>	<i>2 - 23</i>	<i>--</i>
<i>Toilet seat covers</i>	<i>1 - 10</i>	<i>--</i>
<i>Placemats and other table coverings</i>	<i>--</i>	<i>--</i>

-- = no requirement

Comment:

Absorbency is typically not measured for bath tissue as it is instantaneous. If data must be provided to certify products to the standard, how much product testing will be required and how often will the testing data be reported?

Response:

Green Seal acknowledges your comment. Consistent with facial tissue, absorbency will be removed as a test metric for bathroom tissue, since it is not a standard specification for that product.

The product must be tested for performance once during certification to demonstrate compliance with the requirement, re-tested with any product or process changes, with updates provided as part of compliance monitoring. The frequency and amount of testing required should be part of a company's standard Quality Assurance/Quality Control (QA/QC) process and will be part of the certification evaluation.

Comment:

Remove lower limit on absorbency (can a product really absorb "too fast" to be Green Seal certified?). Increase the upper limits to at least double the current metric. These numbers don't seem to reflect a test of 1 ply absorbency on 100% recycled products, maybe based on incorrect test methods? Dispenser napkins require a much higher absorbency time than dinner napkins.

Comment:

Remove any stretch metric. Stretch is primarily a measurement used internally affecting converting. The differences between paper machines and converting equipment are what manufacturers set their stretch ranges on, has no impact on the user of the product

Response:

It is noted that the ranges on these metrics should not be restricting. The ranges presented in the standard for the product-specific performance requirements were developed based on a review of product information which included an assessment of the current marketplace. Green Seal agrees that the ranges can be broadened, and stretch and water absorbency will be modified as part of this process. Using a range on the specifications, both high and low, is standard practice in the industry when reporting specifications. Therefore, the range will be maintained in the standard.

3.3 Stretch and Water Absorbency *Product characteristics shall be measured on the base sheet when tested according to ASTM D 828, T-494 or ISO 1924/3 or T-576 for stretch; and ASTM D985, T-452, ISO 2469/2470/2 or T-525 for water absorbency; and shall meet the following requirements, as measured in % stretch or seconds of water absorbence.*

<i>Product</i>	<i>Stretch</i>	<i>Water Absorbency</i>
	(%)	(seconds)
<i>Paper towels-institutional</i>	2 - 22	0 - 160
<i>Paper towels - retail</i>	2 - 22	0 - 160
<i>Paper napkins</i>	2 - 22	0 - 180
<i>Bathroom tissue</i>	2 - 18	--
<i>Facial tissue</i>	2 - 23	--
<i>Toilet seat covers</i>	1 - 10	--
<i>Placemats and other table coverings</i>	--	--

-- = no requirement

3.5 Product Specifications. Products must contain the following minimum material specifications (unless an alternate size generates better packaging or shipping efficiencies per Section 3.6):

Product	Single Ply Specification^(a)	Double Ply Specification^(a)
Bathroom Tissue	800 sheets per roll (equivalent to 84 ft ² /roll for a 3 7/8" x 3 7/8" sheet)	400 sheets per roll (equivalent to 42 ft ² /roll for a 3 7/8" x 3 7/8" sheet)
Facial Tissue – Institutional Flat Box	n/a	100 sheets per box (equivalent to 44 ft ² /box for an 8" x 8" sheet)
Facial Tissue – Retail Flat	n/a	200 sheets per box

Box		(equivalent to 88 ft ² /box for an 8" x 8" sheet)
Facial Tissue – Cube/Dispenser Boxes	n/a	85 sheets per box (equivalent to 37 ft ² /box for an 8" x 8" sheet)
Paper Towels – Institutional Rolls	200 feet per roll (equivalent to 133 ft ² /roll for an 8 inch wide roll)	100 feet per roll (equivalent to 67 ft ² /roll for an 8 inch wide roll)
Paper Towels – Institutional Folded	200 sheets per package (equivalent to 112 ft ² /package for a 9" x 9" sheet)	100 sheets per package (equivalent to 56 ft ² /package for a 9" x 9" sheet)
Paper Towels – Retail Rolls	180 sheets per roll (equivalent to 124 ft ² /roll for an 11" x 9" sheet)	90 sheets per roll (equivalent to 62 ft ² /roll for an 11" x 9" sheet)
Paper Napkins – Institutional	200 sheets per package (equivalent to 330 ft ² /package for a 14" x 17" sheet)	100 sheets per package (equivalent to 165 ft ² /package for a 14" x 17" sheet)
Paper Napkins - Retail	250 sheets per package (equivalent to 229 ft ² /package for an 11" x 12" sheet)	100 sheets per package (equivalent to 91 ft ² /package for an 11" x 12" sheet)
Toilet Seat Covers	250 sheets per package	n/a
Placemats and Other Table Coverings	n/a	n/a

The equivalent square footage for the specified sheet or roll size is provided so that a manufacturer using a different size sheet can determine the minimum sheets per roll/box/package for that sheet size (e.g., tissue: minimum sheets per roll = square feet per roll divided by sheet size (in²) multiplied by 144 (in²/ft²)).

Comment:

One concern we have is the sheet count requirement on Facial Tissues. The current requirement is for 150 sheet count per facial box. The problem is the 150 count boxes are too big to fit under counter dispensers, like seen in hospitals for example. The product is not selling as well and consumers are forced to buy the non Green Seal items.

Could this requirement be reviewed to allow for 100 count facial tissue containers?

Thank you

Response:

Green Seal acknowledges your comment and has provided for such uses by setting the minimum for institutional facial tissue at 44 ft²/box for 100 sheets of an 8-inch by 8-inch sheet.

Comment:

Paper Towels - Kitchen/Perforated Roll Towels: 85 to 90 sheets (58 to 62 ft²/roll)

Comment:

I do not like the restrictions on sheets/package for paper napkins- Institutional. Institutional packaging is bulk. Our typical case packs range from 500-10,000 napkins per case. The more napkins in a case, the less packaging required. We believe case packs and counts should be left up to the manufacturer considering we will be making sure we use the least amount possibly to reduce any unnecessary waste.

Comment:

If consumers disagree with a case pack they will not purchase. Higher quality recycled folded towels can have a towel count of 150 per sleeve. It is more important to require accurate case count or footage to be displayed on the case to ensure consumers are getting what they pay for.

Comment:

All minimum specifications for sheet counts unnecessarily constrain manufacturers in the marketplace. If there is a de facto "standard" in the marketplace at any particular time with respect to sheet sizes or numbers, set by manufacturers of conventional products, green products need the flexibility to compete by offering comparable put-ups. For example, 4 single-roll (198 count) bathroom tissue is a very popular item for green brands, because it represents the lowest cost purchase for a "value" consumer. Several green brands would be placed in a position of not being able to certify their entire product lines, only those items that meet these standards, which would create confusion in the marketplace.

We believe that Green Seal should focus on the ultimate goal in this area, which is shipping efficiency. Some direct measure of how much product can be shipped in a standard volume (example a high-cube truckload) would be preferable to specifying sheet counts per package.

Other specific examples: One standard put up of Facial Tissue in a retail flat box is 175 count. Many green paper towel put ups are significantly less than 90 sheets per roll, and will not likely be changed, based on considerations of retail price points.

Response:

Green Seal acknowledges your comments. It is Green Seal's intent with this section to provide consumers and institutions with efficiently packaged products with a high product to packaging ratio. In addition, Green Seal intends products that are certified to the GS-1 standard to be considered environmentally preferable leadership products, representing the upper 15-20% of products. This may result in the inability to certify some products currently marketed as "green".

The levels here represent minimum levels that can be met by most products in the marketplace. This ensures that certified products are not over packaged, which would reduce the environmental benefits of the contents of the package. However, in an effort not to limit innovation or constrain the marketplace, a manufacturer can offer different product specifications for evaluation by Green Seal, provided they can provide data to support that the alternate size generates better packaging or shipping efficiencies.

The table in the standard will be modified so that institutional and retail products are grouped in separate categories. Retail categories will be added for all products and several retail category specifications will be adjusted.

3.5 Product Specifications. *Products must contain the following minimum material specifications. The basis, consisting of the number of sheets and the sheet size, is provided so that a manufacturer can make conversions between the minimum product in square feet and the minimum sheets per roll^(a):*

<i>Product</i>	<i>Single Ply Specification</i>		<i>Double Ply Specification</i>	
	<i>Minimum product per roll/package</i>	<i>Basis</i>	<i>Minimum product per roll/package</i>	<i>Basis</i>
INSTITUTIONAL PRODUCTS				
<i>Bathroom Tissue</i>	84 ft ² /roll	800–3 7/8" x 3 7/8" sheets	42 ft ² /roll	400–3 7/8" x 3 7/8" sheets
<i>Facial Tissue –Flat Box</i>	--	--	44 ft ² /box	100–8" x 8" sheets
<i>Facial Tissue – Cube/Dispenser Boxes</i>	--	--	38 ft ² /box	85–8" x 8" sheets
<i>Paper Towels –Rolls</i>	133 ft ² /roll	200 feet/roll–8 inch wide roll	67 ft ² /roll	100 feet/roll–8 inch wide roll
<i>Paper Towels –Folded</i>	112 ft ² /package	200–9" x 9" sheets	56 ft ² /package	100–9" x 9" sheets
<i>Paper Towels –General Purpose Wipes</i>	125 ft ² /box	200–9" x 10" sheets	62 ft ² /box	100–9" x 10" sheets
<i>Paper Napkins – Folded (used with or without a dispenser)</i>	330 ft ² /package	200–14" x 17" sheets	165 ft ² /package	100–14" x 17" sheets
RETAIL PRODUCTS				
<i>Bathroom Tissue</i>	62 ft ² /roll	600–3 7/8" x 3 7/8" sheets	31 ft ² /roll	300–3 7/8" x 3 7/8" sheets
<i>Facial Tissue –Flat Box</i>	--	--	44 ft ² /box	100–8" x 8" sheets
<i>Facial Tissue – Cube/Dispenser Boxes</i>	--	--	38 ft ² /box	85–8" x 8" sheets
<i>Paper Towels –Rolls</i>	110 ft ² /roll	160–11" x 9" sheets	58 ft ² /roll	85–11" x 9" sheets
<i>Paper Napkins - Folded</i>	229 ft ² /package	250–11" x 12" sheets	91 ft ² /package	100–11" x 12" sheets
MISCELLANEOUS PRODUCTS				
<i>Toilet Seat Covers</i>	250 sheets per package	--	--	--
<i>Placemats and Other Table Coverings</i>	--	--	--	--

(a) For example, bathroom tissue: minimum sheets per roll = square feet per roll divided by sheet size (in²) multiplied by 144 (in²/ft²).

-- = no requirement

Alternatively, different sizes that generate better package or shipping efficiency may be permitted provided that the manufacturer submits specifications to demonstrate that they have improved the packaging and shipping efficiency.

4.0 PRODUCT-SPECIFIC HEALTH AND ENVIRONMENTAL REQUIREMENTS

General comments regarding product-specific health and environmental requirements shall be made here.

Comment:

Will there be extra credits?: waste valorisation, renewable energy....

Response:

Green Seal is pleased to see so many manufacturers able to take their environmental leadership into the company culture on other levels within the company, such as energy source. At this time, this issue is being handled by Green Seal as a whole and will likely be a separate certification that can be obtained in the future.

4.1 Recovered Material Requirements

The product shall contain 100% recovered materials. For integrated mills where whitewater and/or wastewater recovery may cause contamination of the incoming recovered material furnish (stock), reclaimed mixed fibers containing virgin material may be acceptable as long as it can be shown, through mass balance calculations, that the amount of virgin fiber in the reclaimed mixed fibers is less than 0.5% of the incoming recovered material furnish (stock).

When using agricultural residues for recovered materials, the manufacturer shall document the source of the crop; the original agricultural crop shall be USDA Organic, or certified to the Rainforest Alliance Sustainable Agriculture standard.

Comment:

How often is the mass balance required to be performed? Recommend no more than annually or longer.

Comment:

How often is mass balance required? Recommend not more than annually.

Response:

The calculation should be provided to Green Seal during the certification process and then it will be verified during compliance monitoring, typically once a year.

Comment:

Per my previous comment in the definitions section, we have some concerns regarding the agricultural residues for recovered materials requirements. As noted, we are concerned about how and when ag residues will be defined as waste and therefore, eligible for inclusion in recovered material.

90 percent of agriculture globally does not replace the carbon that is lost producing the crop.

What this means is that any offtake of residue is actually mining further the carbon. This is not only about carbon. Studies in Brazil suggest that the carbon residue also reduces by half the water, fertilizer and pesticide use, by 70% the fungicide use, and up to 90% of all effluents. We would prefer to see ag residue stay on the field and if anything for farmers to get carbon credits.

Response:

It is acknowledged that removing an agricultural material from the field would result in carbon loss, fertilizer loss, and stormwater runoff issues. The intent of allowing Sanitary Paper Products to be made from agricultural residue is to redirect a waste material into something useful. The intent is not to take something that is serving a useful purpose and redirecting it to a product use. The agricultural residue definition will be clarified, as follows:

***Agricultural Residue.** Process waste material remaining from an agricultural plant after it was used to produce food or fiber, that would otherwise be incinerated or disposed of as a solid waste.*

Comment:

While it would not necessarily address the environmental pros and cons of whether to divert residues for paper production, requiring that the original crop be certified as sustainable is an important step toward addressing sustainability concerns. However, USDA Organic certification is not a sustainable management standard, as it only addresses pesticide use and not habitat impacts. We would recommend that in addition to Rainforest Alliance's standard, Green Seal ultimately consider the standards under development through efforts such as the Better Sugar Initiative (BSI) and Better Cotton Initiative (BCI).

Response:

It is acknowledged that there are programs and standards for agricultural products that are in the development stages, such as BSI. Green Seal wants to be sure to allow flexibility in the standard so that these types of efforts can be considered. Consequently, this requirement will be modified as follows:

When using agricultural residues for recovered materials, the manufacturer shall document the source of the crop; the original agricultural crop shall be certified to the Rainforest Alliance Sustainable Agriculture standard, or other approved third-party certification program.

The following definition will be added to the standard:

***Third-Party Certification Program.** A program without any financial interest or stake in the sales of the product or service being certified, or other conflict of interest. There must be a standard to base the certification from and the standard must be appropriate and meaningful for its intended purpose. The standard must be publically available and developed with stakeholder input. Certification to the standard must be completed by an independent party (i.e., not the product company), include site inspections, where applicable, and have a monitoring program to verify ongoing compliance.*

Comment:

An additional question we have is: What are the requirements for documenting the source of the crop?

Response:

Typically for this type of requirement Green Seal will request a signed attestation letter from the supplier of the material, on their letterhead that will document the source of the crop. This also will typically be verified during the audit process.

4.2 Post-Consumer Material Requirements

The percentage of post consumer material shall be calculated and certified based on the fiber weight of the paper. The calculation of recycled content based on fiber weight shall be performed using the following formula for post- consumer material:

$$\frac{\text{Post-consumer Material} \times \text{Yield}}{\text{Recovered Material} \times \text{Yield}}$$

Yield will depend on the product manufactured, the raw material, the level of contaminants and the cleaning and deinking technology employed. The percentage yield shall be calculated by dividing the total material output by the total material input⁽¹⁾. The percentage of recovered material and post-consumer material shall be calculated based on a weighted average of the materials used for a period of time not to exceed the previous three months.

⁽¹⁾ If a particular manufacturer's operating procedures do not provide for accurate yield measurements, the following shall be used as default values:

Recovered/Post-Consumer Material: 75%

Comment:

What does recovered/post = 75% mean?

Response:

This means that the default value Green Seal will use in the calculations, if data are unavailable, is 75% for recovered material yield and 75% for post-consumer material yield. The standard will be adjusted to provide clarity and the equation will be modified to have separate yield terms.

4.2 Post-Consumer Material Requirements

The percentage of post consumer material shall be calculated and certified based on the fiber weight of the paper. The calculation of recycled content based on fiber weight shall be performed using the following formula for post- consumer material:

$$\frac{\text{Post-consumer Material} \times \text{Yield}_{PC}}{\text{Recovered Material} \times \text{Yield}_R}$$

Yield will depend on the product manufactured, the raw material, the level of contaminants and the cleaning and deinking technology employed. The percentage yield shall be calculated by dividing the total material output by the

total material input⁽¹⁾. The percentage of recovered material and post-consumer material shall be calculated based on a weighted average of the materials used for a period of time not to exceed the previous three months.

⁽¹⁾ If a particular manufacturer's operating procedures do not provide for accurate yield measurements, the following shall be used as default values:

Default Recovered Material yield (Yield_R): 75%

Default Post-Consumer Material yield (Yield_{PC}): 75%

Comment:

Product Specific Requirements 4.2 Post-Consumer Material Requirements

The second paragraph under 4.2 states that the yield averages should be weighted averages not to exceed 3 months. We suggest using an annual average on both the yield calculations and the actual recycled content values as is used in the FTC Guidelines.

Response:

The purpose of the 3-month average is to limit the variability in the post-consumer material content during production. This ensures that the product going out the door contains the amount of post-consumer that meets the Green Seal standard. If Green Seal were to allow an average over an entire year it would introduce more data points that could theoretically allow some 0% post-consumer material runs to be mixed in with some purposefully higher runs, with a 12-month average that still complies. Thus, the requirement will not be changed.

Comment:

A question for Green Seal regarding the implementation of the post-consumer content requirements is how the level of post-consumer content is verified or substantiated by the facility and by Green Seal. Are manufacturers allowed to calculate the total volume (or total weight) of post-consumer fiber used by their facility and arbitrarily assign that total volume to an equivalent volume of finished product without tracking it through their system product by product? i.e. The firm purchases 10,000 tons of post-consumer wastepaper Their yield is 70%, or 7,000 tons of cleaned post-consumer fiber which is used for making products throughout their system of 20 different product offerings. Their total product production in the mill is 100,000 tons, and since they don't segregate the fiber, everything in the mill contains 7.0% post-consumer fiber. They only want to make Green Seal Certified claims on one line of products which totals 10,000 tons of their total production, so they can take credit for all 7,000 tons of post-consumer fiber in that one product line and claim a 70% post-consumer fiber content for that product. They would make no claims at all on the remainder of their 90,000 tons of other product categories. Is that an acceptable scenario under Green Seal Certification audits?

Response:

Green Seal reviews the paper furnish, individual batch runs, as well as the 3-month average of runs to track the post-consumer material content. This data is verified during the certification process, checked during the audit, and updated batch tickets are provided during compliance monitoring. Therefore, the scenario outlined in the comment would not pass.

4.2.1 Paper Towels and Napkins

The fiber in paper towels and napkins shall contain at least 60% post-consumer material.

Comment:

Recommend 50% post consumer requirement for towels and napkins rather than 60%.

Comment:

We support the 60% post-consumer requirement (or even higher). Green Seal is meant to denote environmental distinction, and to encourage companies to improve the environmental performance of their products, not to recognize run of the mill performance.

Comment:

We suggest: The fiber in industrial paper towels shall contain at least 80% post-consumer material. Napkins shall contain at least 40% post-consumer material and kitchen/perforated roll towels shall contain a minimum of 60% post-consumer.

Comment:

Product Specific Requirements 4.2.1 through 4.2.5 Post-Consumer Material Requirements

We have stated before and will state again that we are strongly opposed to increasing the post-consumer content requirements of all the product categories. There are many reasons for this opposition including economic, social, and environmental. This has negative consequences on all three aspects of sustainability without any documented environmental benefit.

If we were to meet the higher requirements we would have to;

- essentially rob some SKUs of the post-consumer fiber in them to make a few with higher values. This is unacceptable because those with less than EPA levels are valuable to some customers who want to do something to make them feel they are helping the environment without having to have EPA levels of post-consumer fiber in the products they are buying. We certify the actual levels of post-consumer content on bids even if they do not meet EPA. If the towel product only has 20% post-consumer fiber in it, we certify that level to the customer. We would have to rescind those letters and not supply products to those customers with post-consumer fiber any more. We currently have over two hundred different SKUs with various levels of post-consumer fiber in them. The question we would be faced with in this case would be whether we wanted to have several product offerings that meet EPA Guidelines and several products that have post-consumer fiber at lower, but still significant levels, or do we simply reduce our total offerings to a few products meeting very high levels of post-consumer fiber as suggested in your Standard. Do we serve a multitude of concerned customers or only a select few? We believe it is important to involve as many customers as possible in the efforts to do their part in this global environmental protection, and participating in the effort to purchase recycled content paper is one important environmental practice. Recycling, and purchasing recycled content products is an important use of our precious raw materials, regardless of whether it is pre or post-consumer content. This is an economic and social negative without

documented environmental gains; or

- we would have to increase our demand for post-consumer fiber in our local wastepaper markets, resulting in supply and demand price increases. This is an economic negative without documented environmental gains; or
- we would have to go outside our normal wastepaper supply basket to get more post-consumer fiber resulting again in supply and demand price increases. This has the possibility of taking fiber from other manufacturers who are currently using it economically, and then generates a larger carbon footprint due to increased transportation requirements. This is an economic and environmental negative without documented environmental gains; or
- see if we can find more heavily contaminated post-consumer fibers within our own supply basket which require more energy and chemicals to process and generate lower yields and frequently results in lower quality finished products This is an environmental and customer (social) acceptance negative without documented environmental gains.
- considering a facility may be close to their manufacturing capacity, requirements to significantly increase the post-consumer fiber in the systems could displace the pre-consumer fiber in the system, causing lower yields, higher costs for chemicals, possibly selling the higher quality pre-consumer fiber off shores to foreign competitors, or having to find some other use for those materials which are already being collected. This would be an economic, social, and environmental negative without any environmental gains.

We are opposed to making such sweeping changes without any real documented environmental gains, but rather for the sake of having higher numbers that may be perceived as doing the right thing without any real data to substantiate the perceived benefit. What is the environmental benefit resulting from higher post-consumer fiber requirements? We strongly urge Green Seal to maintain the EPA Comprehensive Procurement Guideline levels for post-consumer content

Response:

It is noted that there are a wide range of comments on the post-consumer material level, ranging from lowering it, to keeping it the same, to increasing it. The GS-1 Standard for Sanitary Paper Products is meant to be an environmental leadership standard in the field of disposal paper products. Green Seal conducted a market survey which demonstrated that this product category can be made of 100% recovered material and can contain increasingly higher levels of post-consumer material. Therefore, the post-consumer material requirements for products will be increased in the 2009 version of the standard.

The EPA Comprehensive Procurement Guidelines were developed in 1988 and Green Seal's GS-1 and GS-9 standards were developed in 1992/1993. Consequently, these new increased levels are representative of environmental leadership today, and should be considered feasible. However, it is also understood that there are pressures in the marketplace for post-consumer material with regard to supply and demand, and the manufacturing difficulties associated with lower grade post-consumer material. Therefore, levels will only be increased on average by 25%.

The post-consumer material for paper towels and napkins will be changed to 50% in the revised standard, and the data will be presented in a table for clarity. General purpose wipes will be added to this category.

The requirement for each product type is summarized as follows:

<i>Product Type</i>	<i>Post-Consumer Material Requirement (%)</i>
<i>Paper Towels, General-Purpose Wipes, and Napkins</i>	<i>50%</i>
<i>Bathroom Tissue</i>	<i>25%</i>
<i>Facial Tissue</i>	<i>15%</i>
<i>Toilet Seat Covers</i>	<i>25%</i>
<i>Placemats and other Table Coverings</i>	<i>40%</i>
<i>Agricultural Residue Products</i>	<i>15%^(a)</i>

(a) For agricultural residue products, because post-consumer materials originally made from agricultural residue may not be available, this requirement may be satisfied by using post-consumer material that originated from tree pulp.

4.2.2 Bathroom Tissue

The fiber in bathroom tissue shall contain at least 60% post-consumer material.

Comment:

The higher the PC content, the higher the risk of stickies contamination, especially in bath tissue. There is also a risk on availability.

Comment:

Just a general comment that 60% PC bath tissue requires a solid source of high quality PC fiber. The lower grades of PC fiber have a lot of contamination that really affects tissue production. Availability of Green Seal tissue could be affected and cost could be higher if the market returns to where it was mid-2008.

Comment:

Recommend 40% post consumer requirement for tissue rather than 60%. Increase from current 20% to 60% is too much. Post consumer fiber supply is not readily available and will cause additional transportation of fiber causing additional emissions.

Comment:

We support the 60% (or even higher) post-consumer requirement. Green Seal is meant to recognize products that are superior in environmental performance, and many manufacturers routinely offer 80 to 100% PC content.

Response:

It is noted that there are a wide range of comments on the post-consumer material level, ranging from lowering it, to keeping it the same, to increasing it. The GS-1 Standard for Sanitary Paper Products is meant to be an environmental leadership standard in the field of disposal paper products. Green Seal conducted a market survey which demonstrated that this product category can be made of 100% recovered material and can contain increasingly higher levels of post-consumer material. Therefore, the post-consumer material requirements for products will be increased in the 2009 version of the standard.

The EPA Comprehensive Procurement Guidelines were developed in 1988 and Green Seal's GS-1 and GS-9 standards were developed in 1992/1993. Consequently, these new increased levels are representative of environmental leadership today, and should be considered feasible. However, it is also understood that there are pressures in the marketplace for post-consumer material with regard to supply and demand, and the manufacturing difficulties associated with lower grade post-consumer material. Therefore, levels will only be increased on average by 25%.

The post-consumer material for bathroom tissue will be changed to 25% in the revised standard, and the data will be presented in a table for clarity. This change will also be reflected in the Toilet Seat Cover section.

The requirement for each product type is summarized as follows:

<i>Product Type</i>	<i>Post-Consumer Material Requirement (%)</i>
<i>Paper Towels, General-Purpose Wipes, and Napkins</i>	<i>50%</i>
<i>Bathroom Tissue</i>	<i>25%</i>
<i>Facial Tissue</i>	<i>15%</i>
<i>Toilet Seat Covers</i>	<i>25%</i>
<i>Placemats and other Table Coverings</i>	<i>40%</i>
<i>Agricultural Residue Products</i>	<i>15%^(a)</i>

(a) For agricultural residue products, because post-consumer materials originally made from agricultural residue may not be available, this requirement may be satisfied by using post-consumer material that originated from tree pulp.

4.2.5 Placemats and other Table Coverings

The fiber in placemats and other table coverings shall contain at least 75% post-consumer material.

Comment:

The post-consumer content minimum is extremely high and unachievable. We have a letter from our vendor stating that there is a "lack of available post consumer raw material." This means that a post-consumer content of 40% is as high as can be promised. I have a letter from our supplier that will be submitted under separate cover.

Response:

There is no specific category in the EPA Procurement guidelines for this product. From a manufacturing standpoint, these products are somewhere between bathroom tissue and napkins. Therefore, the post-consumer material for placemats and other table coverings will be adjusted to 40% in the revised standard, and the data will be presented in a table for clarity.

The requirement for each product type is summarized as follows:

<i>Product Type</i>	<i>Post-Consumer Material Requirement (%)</i>
<i>Paper Towels, General-Purpose Wipes, and Napkins</i>	<i>50%</i>
<i>Bathroom Tissue</i>	<i>25%</i>
<i>Facial Tissue</i>	<i>15%</i>
<i>Toilet Seat Covers</i>	<i>25%</i>
<i>Placemats and other Table Coverings</i>	<i>40%</i>
<i>Agricultural Residue Products</i>	<i>15%^(a)</i>

(a) For agricultural residue products, because post-consumer materials originally made from agricultural residue may not be available, this requirement may be satisfied by using post-consumer material that originated from tree pulp.

4.2.6 Agricultural Residue Products

Products made from agricultural residue of non-timber species shall contain at least 15% post-consumer content. This requirement may be satisfied by using timber-species post-consumer material since post-consumer materials may not be readily available from agricultural residue sources.

Comment:

Agricultural residues are not post consumer fibers according to the post consumer definition in the standard and therefore should not be substituted for post consumer content. A minimum percentage of agricultural residues should be specified if less post consumer fiber is allowed with its use. For example, agricultural residues must comprise 85% fiber weight if only 15% post consumer fiber is required.

Response:

Green Seal acknowledges your comment. This requirement applies to products made primarily from agricultural residues, except for the fraction that is post-consumer material. This section of the standard will be presented in a table for clarity.

The requirement for each product type is summarized as follows:

<i>Product Type</i>	<i>Post-Consumer Material Requirement (%)</i>
<i>Paper Towels, General-Purpose Wipes, and Napkins</i>	<i>50%</i>
<i>Bathroom Tissue</i>	<i>25%</i>
<i>Facial Tissue</i>	<i>15%</i>
<i>Toilet Seat Covers</i>	<i>25%</i>
<i>Placemats and other Table Coverings</i>	<i>40%</i>
<i>Agricultural Residue Products</i>	<i>15%^(a)</i>

(a) For agricultural residue products, because post-consumer materials originally made from agricultural residue may not be available, this requirement may be satisfied by using post-consumer material that originated from tree pulp.

4.2.7 Alternative Requirements

Alternatively, if a reduction of total fiber use and disposal (i.e., through source reduction) can be demonstrated, the post-consumer material requirements outlined in 4.2.1 – 4.2.6 may be lowered by an equivalent amount.

Comment:

We applaud the inclusion of paragraph 4.2.7 - Alternative Requirements. Making paper from recovered materials is only one way of reducing the total amount of virgin wood fiber used in manufacturing the product, and credit should be given for other innovative ways of doing this.

Response:

The alternative requirements section deals with the post-consumer material content, but does not change the requirement that Sanitary Paper Products must be made from 100% recovered material.

Comment:

What is the baseline specified for source reduction? There must be a documented standard for sanitary material which ends up in a landfill for this to make sense. Otherwise, it is very subjective how source reduction will be measured and verified. There should at least be a maximum amount of source reduction credits which can be taken against the post consumer content standard such as 10%, since source reduction does not promote recycling.

Comment:

I completely agree with the previous comment regarding baseline, timeframes, etc.

Response:

It is agreed that to avoid confusion, source reduction claims must qualify the amount of source reduction and give the basis for any comparison that is made. This type of documentation will be required by Green Seal and evaluated on a case-by-case basis. It is understood that source reduction does not directly tie into post-consumer material, so a limit will be put on how much of a credit can be received, to ensure that a substantial portion of the recovered material is still made with post-consumer material.

Alternatively, if a reduction of total fiber use and disposal (i.e., through source reduction) can be demonstrated, the post-consumer material requirements may be lowered by an equivalent amount. The maximum credit for source reduction is a 15% reduction in the post-consumer material requirement.

4.3.1 Processed Chlorine Free

The recovered material used to manufacture the products shall be PCF.

Comment:

It is impossible to control for the original manufacturing process of the recovered material. This section should be removed.

Response:

This section applies only to the manufacturing process for the products being made – it is understood that incoming recovered material could have been originally bleached using chlorine containing compounds. The section will be revised for clarity.

4.3.1 Processed Chlorine Free. The manufacturing process used to produce the products shall be PCF.

4.3.2 Carcinogens, Mutagens, and Reproductive Toxins

The product shall not contain any ingredients or components that are carcinogens, mutagens or reproductive toxins. Additionally, the product shall not contain any ingredients or components known to produce or release carcinogens, mutagens, or reproductive toxins.

Comment:

This statement is too broad. Even some foods if tested would contain traces of these materials. Need a maximum ppm value here.

Response:

Green Seal acknowledges the comment. This section of the standard is consistent with Green Seal's position on carcinogens, mutagens, and reproductive toxins in other Green Seal Standards. The component portion of Section 4.3.2 limits a producer from deliberately adding a known carcinogen, mutagen, or reproductive toxin to a product at any level. The ingredient portion of this section limits any carcinogen, mutagen, or reproductive toxin as a known contaminant to 0.01% or 100 parts per million (ppm) in the final product.

4.3.3 Other Prohibited Components

The product shall not contain the following components:

- Heavy metals, including but not limited to lead, chromium, or selenium both in the elemental form or compounds
- Ozone-depleting compounds
- Optical brighteners
- Surfactants

- Fragrances
- HAPs
- Colorants

Comment:

Surfactants are also components of many cleaning chemicals used in this industry. Are surfactants and defoamers prohibited in all applications?

Comment:

Surfactants are commonly used in de-inking processes - flotation de-inking.

Comment:

Need to call out specific chemicals to avoid versus sweeping categories. IF surfactants are not removed from the restrictions (since they are common papermaking chemicals), the list of specific objectionable ingredients need to be listed.

Comment:

Surfactants and defoamers are commonly used in both deinking and paper making processes. Surfactants are also used as components in many cleaning chemicals. Other standards require use of biodegradable surfactants verified via a standard test method. Use of biodegradable surfactants in deinking should be allowed. Use of all surfactants as components in cleaning and use of defoamers should be allowed.

Response:

It is acknowledged that readily biodegradable surfactants could be considered acceptable. Therefore, consistent with other Green Seal standards, this criterion will be used to evaluate surfactants, and a new section will be added. In the prohibited section, alkylphenol ethoxylates and 2-butoxyethanol will be specifically prohibited as ingredients.

4.3.5 Surfactants. *Any surfactants used shall exhibit ready biodegradability in accordance with the OECD definition. Biodegradability shall be measured according to any of the following methods: ISO 7827, 9439, 10707, 10708, 9408, 14593; OECD Methods 301A – F; or OECD 310. Specifically, within a 28-day test:*

- *Removal of DOC > 70%*
- *BOD >60%*
- *% of BOD of ThOD > 60%*
- *% CO₂ evolution of theoretical > 60%*

For organic ingredients that do not exhibit ready biodegradability in these tests the manufacturer may demonstrate biodegradability in sewage treatment plants using the Coupled Units Test found in OECD 303A by demonstrating DOC removal > 90%.

Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer-reviewed literature or databases. In the absence of experimental data, QSAR data from EPA's BioWin (EPISuite) models may be considered.

Comment:

HAP's are present in residual quantities in many common papermill process chemicals. Either remove the restriction or set a reasonable de-minimus quantity.

Comment:

Heavy metals and HAPs are contaminants and components of chemicals used in the paper making process. Suppliers of these chemicals are not required to list these components in their material safety data sheets, so verification of their content would be difficult without product testing. The standard should set a minimum content based on available information such as in the ingredient definition. As HAPs are air pollutants, they are tracked as air emissions and should alternately be listed in section 4.5 of the standard as a report only requirement.

Response:

It is agreed that HAPs are regulated through the air permit process. In addition, most of the HAPs of concern are covered by the carcinogen, mutagen, and reproductive toxin requirement. Therefore, HAPs will be removed from the list of prohibited ingredients.

Green Seal acknowledges the comments regarding heavy metals. The intent was to prohibit heavy metals at the ingredient level and the section will be reworded to correctly reflect that. In addition, an exception will be made for the introduction of prohibited ingredients through the addition of recovered materials.

4.3.3 Other Prohibited Ingredients⁽¹⁾. The product shall not contain the following ingredients ; an exception is allowed for products that would not exceed 100 parts per million by weight (0.01%) but for the addition of recovered materials:

- *Optical brighteners*
- *Ozone-depleting compounds*
- *Fragrances*
- *Heavy metals, including but not limited to lead, chromium, or selenium both in the elemental form or compounds*

Comment:

When making a product from 100% recycled fiber, it is impossible to control for heavy metals and optical brighteners when already part of the raw material. This section should read:

None of the following elements shall be added to the manufacturing process of the certified products:

- Heavy metals, including but not limited to lead, chromium, or selenium both in the elemental form or compounds
- Ozone-depleting compounds
- Surfactants
- Fragrances

Comment:

Recovered Material Processing
Section 4.3.3 Other Prohibited Components

We disagree with prohibiting optical brighteners in this section since there are several optical brighteners which have been approved by the FDA as safe and acceptable for use in food contact paper and paperboard. We also disagree because of the fact that there is so much optical brightener in the wastepaper stream, that most recycled paper products show positive for optical brightener even if you don't add it in the process.

Response:

Green Seal acknowledges the comments regarding optical brighteners and heavy metals. The intent was to prohibit certain chemicals at the ingredient level and the section will be reworded to correctly reflect that. In addition, an exception will be made for the introduction of prohibited ingredients through the addition of recovered materials.

There have been issues with the biodegradation, effects on microflora and fish, and skin sensitization or irritation of traditional, fluorescent, optical brighteners. Therefore, Green Seal will maintain the prohibition on optical brighteners as ingredients, consistent with other Green Seal standards. A separate colorant section will be added, since there is an exception for printing on some products.

***4.3.3 Other Prohibited Ingredients⁽¹⁾.** The product shall not contain the following ingredients ; an exception is allowed for products that would not exceed 100 parts per million by weight (0.01%) but for the addition of recovered materials:*

- *Optical brighteners*
- *Ozone-depleting compounds*
- *Fragrances*
- *Heavy metals, including but not limited to lead, chromium, or selenium both in the elemental form or compounds*

***4.3.4 Colorants.** The product shall not contain any colorants as components; an exception is allowed for products that would not contain colorants but for the addition of recovered materials.*

Further, paper towels and general-purpose wipes, paper napkins, and placemats and other table coverings may be printed with colorants provided that these colorants contain a sum concentration of less than 100 parts per million, by weight (0.01%), of heavy metals including lead, mercury, cadmium, and hexavalent chromium.

4.3.5 Disinfection

Chlorine, chlorine derivatives, biocides, and disinfection by-products may be allowed in the manufactured product, if the presence of these chemicals are a result of disinfection of the water supply. Product testing is not required, as long as the wastewater concentrations of the materials used for disinfection are below the applicable MCLs or MRDLs in the National Primary Drinking Water Regulations found in 40 CFR, Part 141.

Comment:

Chlorine, chlorine derivative and biocides containing chlorine should also be allowed in treatment of fiber for disinfection / microorganism killing purposes as the residual chlorine is very low and will not reach the facility effluent.

How often will testing for chlorine residuals in wastewater be required and reported?
Recommend testing required on an annual basis or 5-year basis as required for NPDES permitting.

Response:

Green Seal acknowledges the comment. The standard does not allow for additions of these materials beyond the incoming water supply because the product must be Processed Chlorine Free (PCF). The intent of this is to reduce the negative impacts associated with chlorine use in the sanitary paper making process. Use of chlorine and/or chlorine-containing compounds in paper making can result in the formation of dioxins, furans, and other chlorinated organics that typically pass through a wastewater treatment plant, and end up accumulating in the environment in the fat tissue of animals and humans. These compounds have been linked to adverse health effects, including cancer and toxicity to reproductive, immunologic, and endocrine systems
(<http://www.epa.gov/waterscience/guide/pulppaper/jd/fs2.pdf>).

The testing frequency will be the most recent data or an annual average provided at the time of certification with updates as part of compliance monitoring. This section will be moved so that is presented after PCF is discussed.

As an exception, chlorine, chlorine derivatives, biocides, and disinfection by-products may be allowed in the manufactured product, if the presence of these chemicals is a result of disinfection of the incoming water supply. Product testing is not required, as long as the wastewater concentrations of the materials used for disinfection are below the applicable MCLs or MRDLs in the National Primary Drinking Water Regulations found in 40 CFR, Part 141.

4.5 Manufacturing and Converting Requirements – Air

Fossil CO₂ (from grid and external sources) SO₂, NO_x, Mercury, and TPM shall be documented as kg/air dried ton of product.

Comment:

Are there limits for these or are values just to be reported?

Comment:

What will be the data verification / reporting requirements for these numbers? Recommend annual reporting only. Recommend specification of emissions factors to be used for reporting such as AP-42 unless directly measured.

Response:

Green Seal is currently not setting criteria for these emissions, but is gathering data to inform the development of possible future criteria. The standard does require a limit on energy use, which indirectly limits emissions.

The most recent data available or an annual total will be sufficient for reporting purposes. These data will be reported to Green Seal on a one time basis at the time of certification with any changes updated as part of compliance monitoring.

Comment:

Only pollutants for which the facility is permitted should be required for documentation. Air dried ton of product and total particulate matter must also be defined in the definitions as these terms are defined differently by different sources.

Response:

Since air dried ton is typically applied to pulp, the units will be changed to ton of final product, with an understanding that moisture content may vary from product to product, but will be relatively close. The use of total particulate matter will be removed from the standard. Instead, PM₁₀ and PM_{2.5} will be used to better represent particulate matter of concern by State and Federal Regulations.

PM₁₀. Airborne particulate matter (carbonaceous, organic, and sulfate particulates) with an upper size limit of approximately 10 microns in diameter.

PM_{2.5}. Airborne particulate matter (carbonaceous, organic, and sulfate particulates) with an upper size limit of approximately 2.5 microns in diameter.

Comment:

What is the threshold? Is there any upper limit that if exceeded would preclude certification?

The WWF Paper Scorecard recommends that emissions of fossil CO₂ in excess of 950 kg/T receive a score of "0".

Response:

Green Seal is currently not setting criteria for these emissions, but is gathering data to inform the development of possible future criteria. The WWF Paper Scorecard is a very useful tool in evaluating the environmental impacts of paper products. As Green Seal understands it the scorecard levels were developed by looking at data from mostly integrated pulp and paper mills. Relying on the "not to exceed" WWF Paper Scorecard level for CO₂ in this standard would not be representative of this industry sector since Green Seal is looking only at emissions from paper production and converting of deinking mills, and is not considering emissions from virgin pulp mills.

In addition, the CO₂ level that scores a zero in the WWF Paper Scorecard, meaning it is the highest, or most polluting, emission, was based on the average performance level of the most impacting paper grade. While this works for the WWF Scorecard, this level

would not be restrictive enough for this standard. Therefore, Green Seal is gathering data at this time to aid in development of a possible future requirement.

Based on the previous responses, this section of the standard will be modified as follows, and combined for clarity:

5.2 Manufacturing and Converting Reporting Requirements. *The following information shall be reported for processes including re-pulping, parent roll production, product converting, and waste treatment, on an annual basis or when any changes are made to the processes. If a manufacturer only does converting, then the supplier of the parent rolls will be required to provide additional relevant data. The data should represent the total annual output of the relevant parameter divided by the total annual production of all grades of certified product.*

Media	Reporting Requirement	Units
<i>Air</i>	<i>Fossil CO₂ (from grid and external sources) SO₂, NO_x, Mercury, and PM₁₀ and PM_{2.5}</i>	<i>kg/ton of final product</i>
<i>Wastewater</i>	<i>AOX, TSS, and BOD or COD</i>	<i>kg/ton of final product</i>
<i>Solid waste</i>	<i>ratio of the dry tons of material entering an external solid waste disposal stream to the tons of product produced</i>	<i>dry ton/ton of final product</i>

4.6 Manufacturing and Converting Requirements - Wastewater

Wastewater levels for AOX, TSS, and COD shall be documented as kg/air dried ton of product.

Comment:

The standard requires only the data of COD, TSS, AOX to be documented but there are no specifications or limits. The process of making paper with recovered materials or post consumer materials could create a negative impact to the environment if the mill's effluent is not treated.

Comment:

There is no mention about the toxicity of the mill's effluent, either in terms of measurement or compliance. The effluent should be non-toxic according to the local regulations in place.

Response:

Green Seal is currently not setting criteria for wastewater discharges, but is gathering data to inform the development of possible future criteria. However, there is already direct value in gathering this data for facilities that are currently not measuring, tracking, and reporting this information.

Most facilities are required to monitor these parameters as part of meeting their state and/or federal discharge permit requirements. The foreword section of the standard states that facilities must comply with applicable government environmental regulations and this section was added to the scope to make it more explicit.

Since air dried ton is typically applied to pulp, the units will be changed to ton of final product, with an understanding that moisture content may vary from product to product, but will be relatively close.

1.0 Scope

This standard establishes environmental requirements for sanitary paper products including paper towels and general-purpose wipes, paper napkins, bathroom tissue, facial tissue, toilet seat covers, placemats and other sanitary paper products not used for personal care. The standard covers products for institutional as well as retail markets. This standard does not include nonwoven sanitary products, general-purpose wipes and flushable wipes containing cleaning agents or fragrances, disposable diapers, or sanitary napkins and tampons.

This standard assumes compliance with all applicable laws and regulations. As a result, in order to be certified to this standard, the manufacturer of the certified product must disclose all governmental allegations or determinations of violation of federal, state, or local environmental laws or regulations with respect to facilities in which the product is manufactured. Certification will be denied any product manufactured in violation of environmental laws or regulations if, in the certifier's judgment, such violations indicate that the environmental impacts of the product significantly exceed those contemplated in the setting of the standard.

Comment:

BOD tests are required by the wastewater permit. COD is measured once every 5 years as part of the permit renewal process. Changing testing beyond federal/state/local requirements could increase operating costs. Recommend changing language to "Industrial wastewater levels for AOX, TSS, COD or BOD (if required by a WPDES permit or the local POTW) shall be documented as kg/air dried ton of product."

Comment:

Only pollutants required by the facility permit should have to be reported. What is the required reporting frequency? Recommend annual average reporting only or 5-year reporting as required by NPDES permitting.

Response:

BOD will also be acceptable in the standard, since BOD and COD can be correlated based on the manufacturing process. Green Seal is currently not setting criteria for these wastewater discharges, but is gathering data to inform the development of possible future criteria. The most recent data available or an annual total will be sufficient for reporting

purposes. These data will be reported to Green Seal on a one time basis at the time of certification with any changes updated as part of compliance monitoring.

Comment:

What is the threshold? Is there any upper limit that if exceeded would preclude certification?

The WWF Paper Scorecard recommends that wastewater levels of AOX in excess of 0.135 kg/T and of COD in excess of 18 kg/T receive scores of "0".

Response:

Green Seal is currently not setting criteria for these wastewater discharges, but is gathering data to inform the development of possible future criteria. The WWF Paper Scorecard is a very useful tool in evaluating the environmental impacts of paper products. As Green Seal understands it the scorecard levels were developed by looking at data from mostly integrated pulp and paper mills. Relying on the “not to exceed” WWF Paper Scorecard level for AOX in this standard would not be representative of this industry sector, since Green Seal is looking at discharges from paper production and converting of deinking mills, and is not considering discharges from virgin pulp mills.

In addition, the AOX level that scored a zero in the WWF Paper Scorecard, meaning it is the highest, or most polluting, discharge, was based on the average performance level of the most impacting paper grade. While this works for the WWF Scorecard, this level would not be restrictive enough for this standard. Therefore, Green Seal is gathering data at this time to aid in development of a possible future requirement.

Based on the previous responses, this section of the standard will be modified as follows, and combined for clarity:

5.2 Manufacturing and Converting Reporting Requirements. The following information shall be reported for processes including re-pulping, parent roll production, product converting, and waste treatment, on an annual basis or when any changes are made to the processes. If a manufacturer only does converting, then the supplier of the parent rolls will be required to provide additional relevant data. The data should represent the total annual output of the relevant parameter divided by the total annual production of all grades of certified product.

<i>Media</i>	<i>Reporting Requirement</i>	<i>Units</i>
<i>Air</i>	<i>Fossil CO₂ (from grid and external sources) SO₂, NO_x, Mercury, and PM₁₀ and PM_{2.5}</i>	<i>kg/ton of final product</i>
<i>Wastewater</i>	<i>AOX, TSS, and BOD or COD</i>	<i>kg/ton of final product</i>
<i>Solid waste</i>	<i>ratio of the dry tons of material entering an external solid waste disposal stream to the</i>	<i>dry ton/ton of final product</i>

	<i>tons of product produced</i>	
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4.7 Manufacturing and Converting Requirements - Waste Disposal

The ratio of the ton of product produced to the ton of material entering an external waste disposal stream shall be documented.

Comment:

Are there to be limits for this?

Response:

Green Seal is currently not setting a criterion for waste disposal, but is gathering data to inform the development of a possible future criterion. However, there is already direct value in gathering this data for facilities that are currently not measuring, tracking, and reporting this information.

Comment:

Clarify exact type of waste material included. Only sludge and wastes sent to landfills? Add a statement to the end "Material sent off site for recycling excluded. Universal waste, used oil, and hazardous wastes are also excluded." Mills appropriately deal with these through recycling programs and they don't go to landfills (i.e. used batteries or oil).

Comment:

Specify wastes to be reported such as sludge, fly ash, trash, etc. Define whether hazardous wastes and universal wastes are covered. Define whether waste tons are to be tracked on a wet ton or dry ton of material basis. What is the reporting frequency for this information? Recommend annual reporting only.

Response:

The most recent data available or an annual total will be sufficient for reporting purposes. Tracking should be on a dry ton basis, this will be added to the standard. These data will be reported to Green Seal on a one time basis at the time of certification with any changes updated as part of compliance monitoring.

The waste definition is provided in the standard – waste material from the manufacturing of the product, which are not salable and are disposed. This indirectly implies that sanitary waste or recyclable material is not included. However, a clarification will be added to the definition, and the definition will be divided into solid waste and wastewater for clarity. This section will be revised for units.

5.2 Manufacturing and Converting Reporting Requirements. The following information shall be reported for processes including re-pulping, parent roll production, product converting, and waste treatment, on an annual basis or when any changes are made to the processes. If a manufacturer only does converting, then the supplier of the parent rolls will be required to provide additional

relevant data. The data should represent the total annual output of the relevant parameter divided by the total annual production of all grades of certified product.

<i>Media</i>	<i>Reporting Requirement</i>	<i>Units</i>
<i>Air</i>	<i>Fossil CO₂ (from grid and external sources) SO₂, NO_x, Mercury, and PM₁₀ and PM_{2.5}</i>	<i>kg/ton of final product</i>
<i>Wastewater</i>	<i>AOX, TSS, and BOD or COD</i>	<i>kg/ton of final product</i>
<i>Solid waste</i>	<i>ratio of the dry tons of material entering an external solid waste disposal stream to the tons of product produced</i>	<i>dry ton/ton of final product</i>

Solid Waste. Waste material from the manufacturing of the product not included in the finished product, which are not salable and are disposed. Sanitary waste (e.g., restroom discharges, etc.) and materials that are recycled are excluded.

Wastewater. Wastewater effluent from the manufacturing of the product, which is not salable and is treated and disposed at an onsite or offsite wastewater treatment facility.

Comment:

What is the threshold? Is there any upper limit that if exceeded would preclude certification?

The WWF Paper Scorecard recommends that solid waste in excess of 45 kg dry waste/T receive a score of "0".

Response:

Green Seal is currently not setting criteria for waste disposal, but is gathering data to inform the development of possible future criteria. The WWF Paper Scorecard is a very useful tool in evaluating the environmental impacts of paper products. As Green Seal understands it the scorecard levels were developed by looking at data from mostly integrated pulp and paper mills. Relying on the “not to exceed” WWF Paper Scorecard level for waste disposal in this standard would not be representative of this industry sector, since Green Seal is looking at waste disposal from paper production and converting of deinking mills, and is not considering waste disposal from virgin pulp mills.

In addition, the waste disposal level that scored a zero in the WWF Paper Scorecard, meaning the highest amount of waste disposed, was based on the average performance level of the most impacting paper grade. While this works for the WWF Scorecard, this level would not be restrictive enough for this standard. Therefore, Green Seal is gathering data at this time to aid in development of a possible future requirement.

4.8 Manufacturing and Converting Requirements – Water and Energy Use.

Manufacturers shall meet the following fresh water and energy use criteria, on a facility-wide basis. The data should represent the total annual average resource used divided by the total annual production of all grades.

Fresh Water Use (gallons/air dried ton of final product) ^a	Total Energy Use (millions of BTUs/air dried ton of final product) ^b
17,500	15.5

^a gallons/air dried ton of final product = 0.00417 m³/ADMT

^b millions of BTUs/air dried ton of final product = 1.16 GJ/ADMT = 323.2 kwh/ADMT

Comment:

Can't get the units to work out. 17500 gallons does not equal 0.00417 cu m/ADMT

Comment:

We are not able to make all the calculations work out and have concerns about whether or not all energy and water are being considered in these values. We believe they are very low if everything is included.

Response:

Green Seal acknowledges the comments. There was some confusion concerning the units in this section, therefore the conversions are provided below. Since air dried ton is typically applied to pulp, the units will be changed to ton of final product, with an understanding that moisture content may vary from product to product, but will be relatively close.

$$\frac{1 \text{ gallon}}{\text{ton}} \times \frac{1 \text{ cubic meter}}{264.17 \text{ gallons}} \times \frac{2204.6 \text{ ton}}{2000 \text{ metric tonne}} = \frac{0.0042 \text{ cubic meter}}{\text{metric tonne}}$$

Similarly,

$$\frac{1 \text{ million BTU}}{\text{ton}} \times \frac{1 \text{ GJ}}{0.948 \text{ million BTU}} \times \frac{2204.6 \text{ ton}}{2000 \text{ metric tonne}} = \frac{1.16 \text{ GJ}}{\text{metric tonne}}$$

And,

$$\frac{1.16 \text{ GJ}}{\text{metric tonne}} \times \frac{277.8 \text{ kWh}}{1 \text{ GJ}} = \frac{322.2 \text{ kWh}}{\text{metric tonne}}$$

In addition to the data provided above, example calculations will be available through Green Seal after the standard is issued.

Comment:

Still unsure if all site energy use is being included to come under the 15.5 million BTUs/ton AD. Recommend increase to 17. Also clarify the energy includes "re-pulping" (taking recycled fibers and making pulp) to eliminate confusion of where the energy inclusion begins. Pulping is viewed as a virgin fiber process (according to the standard), technically anyone making GS product is re-pulping.

Comment:

We need to specify how these figures are calculated. Depending on the method, they should probably be lower...

Response:

These benchmark data were gathered based on a survey of this industry sector. The definitions of water and energy use are provided in the standard and cover what was taken into consideration to develop these criteria. The energy use definition says pulping of recovered material. This will be changed to re-pulping of recovered material to eliminate any confusion. This change will also be made to the water use definition. In addition, this section will be modified for clarity.

The allowable levels have been increased in the standard based on additional survey data gathered during the response to comments process. The standard will be modified as follows:

5.3 Manufacturing and Converting Requirements – Water and Energy Use. *Manufacturers shall meet the following fresh water and energy use criteria, for processes including re-pulping, parent roll production, product converting, and waste treatment. If a manufacturer only does converting, then the supplier of the parent rolls will be required to provide additional relevant data. The data should represent the total annual resource used divided by the total annual production of all grades of certified product.*

<i>Fresh Water Use (gallon/ ton of final product)^a</i>	<i>Total Energy Use (million BTU/ton of final product)^b</i>
19,250	17.0

^a gallon/T = 0.0042 m³/MT

^b million BTU/T = 1.16 GJ/MT = 323.2 kwh/MT

Energy Use. *The total energy used to manufacture sanitary paper products, including energy used during re-pulping of recovered material, throughout the paper making process, during waste treatment, and during converting and/or packaging. Total energy use is considered all energy consumed, regardless of source, excluding any generated energy sold to a power grid. It does not include transportation.*

Fresh Water Use. *The total amount of steam, process, and cooling water used in the manufacture of sanitary paper products, including water used during*

recovered material re-pulping, throughout the paper making process, and during converting (if applicable).

5.0 PACKAGING REQUIREMENTS

General comments regarding packaging requirements shall be made here.

Comment:

Don't require specific content levels in packaging. Ensure packaging is recyclable to limit impact on landfills. Most corrugate suppliers will not guarantee a post consumer level unless it is in the supply agreements (reference quality recycled fiber shortages of 2008). It could increase costs and availability of product.

Response:

The previous GS-1 and GS-9 standards required that roll cores be made from 100% recovered material, including but not limited to post-consumer material. Green Seal considers this to be a reasonable criterion for paper and paperboard used in association with environmentally preferable products. The packaging section is also being reorganized for clarity and categories have been separated by material type.

6.1 Primary Packaging. *Primary packaging shall meet the following requirements, based on the packaging material type:*

- *Primary packaging made from paper or paperboard shall be recyclable, and made from 100% recovered material.*
- *Primary packaging made from plastic shall be recyclable, or source-reduced by 20%, or shall contain 25% recovered material content (pre- or post-consumer). The package must be clearly marked with the appropriate Society of the Plastics Industry symbol to identify the type of plastic for recycling.*

6.2 Secondary Packaging. *Secondary packaging shall meet the following requirements, based on the packaging material type:*

- *Secondary packaging made from paper or paperboard shall be recyclable and made from 100% recovered material.*
- *Secondary packaging made from containerboard (corrugated cardboard) shall be recyclable and made from 30% recovered material.*
- *Secondary packaging made from plastic shall be recyclable, or source-reduced by 20%, or shall contain 25% recovered material content (pre- or post-consumer). The package must be clearly marked with the appropriate Society of the Plastics Industry symbol to identify the type of plastic for recycling.*

5.2 Plastic Primary Packaging

Plastic primary packaging shall be recyclable or shall contain a state-of-the-art amount of post-consumer material content. Where the primary packaging is below these levels, the manufacturer must demonstrate that efforts have been made to use the maximum available post-

consumer material in packaging. The package must be clearly marked with the appropriate Society of the Plastics Industry symbol to identify the type of plastic for recycling.

Comment:

The reference to "state-of-the-art amount of post-consumer material content" is vague, very subjective and difficult to evaluate. We recommend that the paragraph be modified to simply: "Plastic primary packaging shall be recyclable. The package must be clearly marked with the appropriate Society of the Plastics Industry symbol to identify the type of plastic for recycling."

While it is applaudable to encourage incorporation of post-consumer material in products, it should be left to the judgment of manufacturers as to where that material is best re-used, due to quality and cost considerations.

Comment:

"State of the art" post consumer content must be defined. This term must be replaced with a number or it is too subjective.

Comment:

"State of the art amount of post-consumer material content" is vague, subjective, and difficult to evaluate.

Comment:

Packaging specifications should encourage minimal packaging, which is a major contributor to consumers' waste streams. Recyclability should remain a major focus but overall packaging reduction is optimal.

Response:

Consistent with other Green Seal standards, the state-of-the-art amount will be replaced by 25%. In addition, source-reduced packaging shall be added as an alternative with a definition provided, and plastic will be added to the primary packaging definition section. This section has also been reorganized for clarity. Finally, pre-consumer material will be added to the standard.

6.1 Primary Packaging. *Primary packaging shall meet the following requirements, based on the packaging material type:*

- *Primary packaging made from paper or paperboard shall be recyclable, and made from 100% recovered material.*
- *Primary packaging made from plastic shall be recyclable, or source-reduced by 20%, or shall contain 25% recovered material content (pre- or post-consumer). The package must be clearly marked with the appropriate Society of the Plastics Industry symbol to identify the type of plastic for recycling.*

Primary Packaging. *Material physically containing and coming into physical contact with the product, including, but not limited to: paper and paperboard material such as roll cores, brown papers, wrappers, bands, and folding cartons; and plastic materials such as film wrappers and roll core inserts.*

Pre-Consumer Material. Material diverted from a waste stream during the manufacturing process, excluding material such as rework, regrind, or scrap generated in a process and capable of being reused within the same process that generated it.

Source-Reduced Package. A package or packaging item that has at least 20% less material by weight for a given product unit (e.g., paper towel roll, box of tissue) compared to the original package for a given product unit (of the same size), commonly used for that product.

5.6 Colorant Components. Packaging may contain colorant components provided that they contain a sum concentration of less than 100 parts per million, by weight, of items prohibited in 4.3.2 through 4.3.7.

Response: Green Seal has revised this section to be consistent with other standards, as follows:

6.3 Colorants. Packaging may be printed using colorants provided that these colorants contain a sum concentration of less than 100 parts per million, by weight, of lead, mercury, cadmium, and hexavalent chromium.

5.6 Other Restrictions. Phthalates and chlorinated packaging material are prohibited from being intentionally introduced; an exception is allowed for packages with added phthalates or chlorinated packaging material solely from the addition of post-consumer material.

Response: Green Seal has added bisphenol A as a restriction in plastic packaging material due to exposure issues during production, manufacturing, and end use. This section has been modified as follows:

6.5 Other Restrictions. Phthalates, bisphenol A, and chlorinated packaging material are prohibited from being intentionally introduced in packaging; an exception is allowed for packages with added phthalates or chlorinated packaging material solely from the addition of post-consumer material.

6.1 Disposal

The manufacturer's label shall include a statement encouraging proper disposal of the product and encouraging consulting with local authorities regarding reuse and recycling opportunities for packaging and unused product.

Comment:

Agree regarding encouraging proper disposal. Disagree on the rest. Real estate on packaging is scarce, and manufacturers should not be required to clutter it with advisories of a general nature, rather than specific to the product in hand.

Response:

It is agreed that there is a limited space available on packaging labels. However, the requirements are specific to the product type, and can be handled with minimal text or

graphics. Paperboard and #1 and #2 plastic are considered recyclable because they are collected in a substantial majority of cities. Plastic wrappers or films, typically made from low density polyethylene (LDPE) or linear low density polyethylene (LLDPE), are not considered recyclable because the collection infrastructure is not in place, but it would still be possible to encourage the recycling of plastic films at retail stores or where facilities exist. The standard will be modified as follows:

7.1 Disposal. *The manufacturer's label shall include a statement encouraging proper disposal of the product and encouraging recycling of appropriate packaging.*

6.4.1 Certification Statement

Whenever the Green Seal Certification Mark appears on a package or applicable product, the package or applicable product must contain a description of the basis for the certification. The description shall be in a location, style, and typeface that are easily readable by the consumer. Unless otherwise approved in writing by Green Seal, the description shall read as follows:

“This product meets the Green Seal™ environmental standard for Sanitary Paper Products for being processed chlorine free and for efficient energy and water use during manufacturing. The product contains 100% recovered material, including XX% post-consumer content, and contains no added colorants or fragrances.” [Where XX is the verified level of post-consumer material].

Comment:

We need to shorten the description due to packaging restrictions (most packaging is now trilingual!!)

“This product meets the Green Seal™ environmental standard for Sanitary Paper Products for being processed chlorine free and for efficient energy and water use during manufacturing. The product contains 100% recovered material, including XX% post-consumer content.” [Where XX is the verified level of post-consumer material].

When space is not available (for example, bath tissue roll), we could put "Certification details provided on the carton" instead?

Response:

It is acknowledged that there is often limited space on packaging to include the full certification statement. Therefore, the section provides for options with “unless otherwise approved in writing by Green Seal”. Green Seal has approved alternate language or “see carton” statements in the current standard and this policy will still apply. The statement will be modified and the section revised, as follows:

7.2 Statement of Basis of Certification. *Whenever the product claims to be certified to this standard, it shall be based on a third-party certification program with an on-site auditing program, and shall state, unless otherwise approved in writing by Green Seal:*

“This product meets the Green Seal™ environmental standard for Sanitary Paper Products (GS-1) manufactured chlorine free, with efficient energy and water use; made from 100% recovered

material with XX% post-consumer material; and no added colorants or fragrances.” [Where XX is the verified level of post-consumer material].

6.4.2 Manufactured Without Bleach

If the product has been made without bleach of any kind, the package or the product may bear the additional endorsement: "Unbleached" or an equivalent description, approved in writing by Green Seal.

Comment:

Is this the same as current guidelines? Define without bleach - meaning base sheet is made without bleaching? Can't guarantee fiber wasn't bleached (with chlorine or chlorine compounds) before arriving at the mill. Also recycled fibers aren't "bleached", they are treated for color and hue control. Why have a "no bleach" and a "no chlorine bleach" designation.

Comment:

The standard should say "Manufactured without chlorine bleach," as other color stripping agents may be considered bleach.

Response:

This section was included from the current GS-9 standard. Since the revised standard and the certification statement are specific about the manufacturing process being PCF, this section will be removed from the standard and any additional labeling will be evaluated on a case by case basis.

6.4.3 Manufactured Without Chlorine or its Derivatives

Since the product has been bleached without chlorine or any of its derivatives, the package, or the product, may bear the additional endorsement: "No Chlorine Bleach," or "Oxygen Bleached," as appropriate, or an equivalent description, approved in writing by Green Seal.

Comment:

This standard should read "Bleached without Chlorine or its Derivatives" rather than "Manufactured," as chlorine is allowed in disinfection.

Comment:

The standard should also allow the words "whitened without the use of chlorine"

Response:

This section was included from the current GS-9 standard. Since the revised standard and the certification statement are specific about the manufacturing process being PCF, this section will be removed from the standard and any additional labeling will be evaluated on a case by case basis.