
CONNECTING THE PIECES— CARPET INDUSTRY SUSTAINABILITY AND STEWARDSHIP

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INTRODUCTION

Founded in 1971, The Carpet and Rug Institute (CRI) has long recognized that the key to a successful carpet industry is service to the many stakeholders and their varied needs. From the homeowner to the tufting operator, the impacts of carpet are distinct and beneficial. As the concept of sustainability has developed, the carpet industry has remained at the forefront of sustainable thought and action. Sustainable actions involve many different factors but can be easily delineated. The activities undertaken to create the carpet can be referred to as “preconsumer,” while activities relating to the sustainability of carpet in use can be referred to as “postconsumer.” The carpet industry and CRI have taken many steps to ensure the sustainability of carpet in both sectors.

ABOUT THE CRI

CRI is a membership organization that represents manufacturers and allied industry organizations. CRI’s job is to demonstrate how our environment for living, working, learning, and healing is improved thanks to carpet and rugs. Through science-based research, customer advocacy, environmental stewardship, and consensus building, we serve our members and their customers. Our initiatives help protect carpet’s life and beauty and demonstrate its air quality benefit. The CRI’s members create over 95% of the carpet manufactured in the United States, an amount equivalent to approximately 45% of the carpet produced in the entire world.

CRI is a source of extensive carpet information for consumers, writers, interior designers, specifiers, facility managers, architects, builders, building owners and managers, installation contractors, and retailers. Since there is so much information about carpet available, CRI wants to provide the public with accurate information. To that end, CRI continually conducts primary research and gathers data from multiple sources to enable the public to make decisions based on the facts.

Education and outreach are central to our activities at CRI. With a dozen Continuing Education Courses (all certified for CEU credit through AIA and IDCEC), participants can earn credit while learning about sustainability and the carpet industry. The importance of peer-reviewed research is

critically important at CRI. Our web site catalogs dozens of peer-reviewed papers on topics ranging from the acoustic characteristics to the indoor air quality benefits of carpet. Many of these are available at no charge, while others are offered at a nominal fee. Reliance on research sets CRI apart from traditional non-profit organizations. CRI’s science-based approach lends CRI signature programs such as the Green Label Plus and Seal of Approval certification broad acceptance outside and inside the industry.

The CRI has long relied upon the scientific and research expertise of our academic institutions. The State of Georgia’s Traditional Industry Partner (TIP) Program is a model of effective and valuable interaction between government, academia, and industry. Examples of research currently underway in the TIP program are: projects to determine the thermal effectiveness of carpet (Epps, UGA), and Life Cycle Inventory modules currently underway at the Georgia Institute of Technology (Realff and Overcash, Georgia Tech). Although state budgetary struggles jeopardize the future of the program, we hope it will continue as we value the partnership with these great institutions.

WHAT SUSTAINABILITY MEANS TO CRI

CRI, subscribes to the definition of sustainability first described by the World Commission on Environment and Development (the Brundtland Commission) as that development that “meets the needs

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of the present without compromising the ability of future generations to meet their own needs.” Further, CRI accepts the concept of the sustainability triumvirate, namely, that sustainability must be measured on the basis of economic strength, environmental legacy, and social responsibility. CRI’s Sustainability Report 2008 clearly shows the carpet industry’s accomplishments in these three key areas. The results of the industry’s economic strength are clear. With over \$4 billion in payroll, the carpet industry is the largest manufacturing employer in Georgia. Socially, many members have earned recognition for worker safety and training programs. All of our members’ full-time employees are covered under medical insurance programs, compared to about 71% nationwide for the manufacturing sector.

The greatest portion of our Sustainability Report 2008 focuses on our environmental legacy. As a whole, the carpet industry has exceeded the goals established by the Kyoto Protocol for carbon reductions. Carpet manufacturers have reduced their greenhouse gas emissions by over 40% since 2003—a figure far higher than the 29% reductions specified (the only measurable contributions being in the form of methane and carbon dioxide). Improved engineering and processes such as heat capture, transition to cleaner or renewable energy sources, and better maintenance practices (particularly on plant boilers) has made these emission reduction goals a reality. These results were realized by actual cuts in emissions and not through trading programs. The industry’s environmental success goes beyond factors related to climate change. Numerous facilities in the industry have been certified as “zero waste” and many use no new water in the manufacturing process—the same water is captured and used repeatedly within the mill. In fact, one Mohawk Industries facility uses more water to flush their low-flow urinals than to make carpet! These individual steps form the basis of a unified and holistic industry effort for a more responsible environmental profile.

CRI’s concept of sustainability can be divided into two separate but dependant areas: manufacturing-related activities and consumer-related activities. With programs designed to provide the maximum benefit to each, CRI is ideally suited to be a cultural and industrial leader.

REACHING INDUSTRIAL EXCELLENCE

The carpet industry’s pursuit of environmental excellence is nothing new. Milliken and Company began measuring water usage during the 1950s and later provided guidance to the fledgling United States EPA on water use standards for the carpet industry. During the 1990s, Ray Anderson, president of commercial carpet manufacturer Interface, emerged as one of the pioneers of the sustainability movement. Interface remains one of the world leaders in sustainable manufacturing.

Like many industries, widespread adoption of environmental activism initially began in the 1980s in the form of waste reductions. These efforts have grown steadily into a holistic program that is ingrained at the highest levels of corporate and industry leadership. The carpet industry is proud of its history of environmental stewardship, and yet recognizes that past accomplishments do not guarantee future success. Fervently believing that industry can and should be a solution rather than part of the problem, the carpet industry’s efforts and environmental focus are only increasing.

The carpet industry’s “low hanging fruit” of environmental responsibility have already been harvested. Leaks have been fixed, machinery updated, and lights turned off—every simple and easily recognized improvement has been made. Now the carpet industry must rely on technology, innovation, and ingenuity. Gains are harder and harder to find. Fortunately, there is a remarkably talented core of environmental and engineering professionals at work solving these problems and finding new solutions. Innovations such as “foam-in” dye application at Beaulieu Group (the world’s largest privately held carpet manufacturer), and extensive heat recapture at Shaw Industries (the world’s largest carpet producer) are examples of some technical innovations employed by the industry. The International Standards Organization (ISO) is the global body responsible for developing world standards. The ISO 14001 series of standards guides manufacturers in establishing Environmental Management Systems within their facilities. ISO 14001 registrations are not common in the world’s manufacturing but are widespread within the carpet industry. These activities go far beyond simple compliance with laws and regulations. The carpet industry is a recognized leader among manufacturing sectors.

The Carpet and Rug Institute is proud of the work it does to facilitate and assist its members in developing and implementing their sustainability measures. Leading carpet industry sustainability experts meet monthly at Sustainability Issues Management Team (SIMT) meetings. Through SIMT workgroups, carpet manufacturers develop strategies to address the pressing issues and consider possibilities related to sustainability. Strictly adhering to the CRI Antitrust Guidelines, the discussion and policies generate CRI's purpose and direction. The goals set forth at the beginning of each year define the group activities. In 2009, SIMT goals include: first, to update the metrics used for the sustainability report and second, to gather 2008 data. This underscores CRI's fundamental belief that measurement is a vital aspect of sustainability efforts. Without valid and dependable data, it is impossible to evaluate CRI's programs.

Released in November 2008, at the USGBC's Greenbuild, the Carpet Industry Sustainability Report 2008 outlines carpet industry accomplishments. This information is pivotal in recognizing opportunities to make the greatest impact.

The results of the report confirmed what many in the industry already expected to be the greatest areas of opportunity—water and air. Although the three gallons of water per square yard average reported in the Sustainability Report only represent temporary withdrawals (the great majority of that is returned in better condition to the watershed than when the manufacturers took it out), prolonged drought conditions in a large portion of the carpet producing area have pushed water issues to the forefront of environmental concerns. Globally, air quality issues and concern over climate change have caused industry release of greenhouse gases to be a matter of strict attention. To address the effect of greenhouse gases and the carpet industry's position on the topic, CRI has recently released the Carpet Industry Greenhouse Gas Strategy. Among the provisions of that strategy is recognition that reducing greenhouse gases from industrial sources is the responsibility of the carpet industry, which is committed to doing its part to improve performance. Results published in the 2008 Sustainability Report show that the carpet industry is significantly and consistently improving its restriction of emissions.

Students of business schools will likely recall Porter's Five Forces, which state that regulatory forces, in particular state and federal government, are one of the five forces that shape a marketplace. The carpet industry has long viewed its interaction with this market force as a partner rather than as an adversary. This partnership is displayed by the industry's record of environmental achievement without requirement by state or federal regulation.

In short, the carpet industry views itself as part of the solution to the world's environmental problems. Evidenced by its participation in the groundbreaking Memorandum of Understanding on Carpet Stewardship, the industry recognizes that voluntary action and self regulation are the most effective means of achieving environmental excellence. Across the nation, our federal, state, and local governments have offered assistance and expertise in many areas. The carpet industry welcomes this input and looks forward to a long and prosperous partnership.

BRINGING IT ALL TOGETHER

Sustainability can be a patchwork process. Manufacturer A might put great focus on reducing waste, while Manufacturer B emphasizes limited water usage. Both are valid and important goals. However, without an integrated process for establishing a program of sustainability, it is possible that an industry can perform exceptionally well in certain areas, but only marginally in others. Environmental Management Systems help unify operations and ensure that no gap is present in an organization's activities. In fact, a standardized Environmental Management System is listed as a prerequisite in the ANSI/NSF 140-2007 Carpet Sustainability Assessment Standard.

ANSI/NSF 140-2007 was developed as collaboration between academia, state, and federal government regulators, non-governmental organizations, and industry interests. It is rapidly proving to be the model of consensus-standard development. Important to the process of effective standard development are issues such as: The development process must be consensus-based. A broad group of experts contributing their expertise to a standard adds depth and relevance. In addition, the standard must include multiple relevant attributes. As important as CRI's Green Label Plus program is, it does not fit

the description of a sustainability standard because it is too limited in scope. Add the necessity of challenging requirements, ease of understanding, and independent (third party) verification to complete the formula for a high quality standard. ANSI/NSF 140-2007 does all of this.

Based on Life Cycle Analysis, the ANSI/NSF 140-2007 standard examines the impact of carpet from five distinct and equally important perspectives. The five categories include: Public Health and Environment, Energy and Energy Efficiency, Materials (including recycled and bio-based content), Manufacturing, and Reclamation/End of Life Management. Each category has a prerequisite(s), with additional points necessary for higher achievement. For example, indoor air quality requirements can be met through compliance with CRI's internationally-recognized Green Label Plus Program for Indoor Air Quality.

- **Public Health and Environment**—This section describes the interaction between carpet and human health. As mentioned, CRI's Green Label Plus meets the requirements for Indoor Air Quality assurance. Also included in the section are: feedstock inventory documentation, input PBT (Persistent, Bioaccumulative, Toxic) limitations, Polybrominated Diphenyl Ether restrictions (PBDEs), and optional items.
- **Energy and Energy Efficiency**—This section details how a complete inventory of all electrical and thermal energy is required. Additional points may be earned through the use and documentation of alternative energy use.
- **Materials (Bio-based, Recycled, or Environmentally Preferable Products)**—At a minimum, an inventory of materials used in the product is required. To get significant points, the manufacturer must then document usage of alternative materials. Levels of bio-based or recycled content materials are required for certain levels of achievement.
- **Manufacturing**—Includes such diverse topics as a Life Cycle Analysis for each product undergoing certification (Platinum level prerequisite), social indicator reporting, performance and durability prerequisites, and several additional opportunities to earn credit.

- **Reclamation/End of Life Management**—Describes the requirement for an operational reclamation program and extended product life.

Volatile Organic Compounds are the by-products of the production process in many building and construction products. Building products experience off-gassing of these compounds during and for a short time following installation. Thanks to the success of the Green Label Plus program, carpet has the lowest VOC release of any common building material. Even better, what few VOCs are released typically diminish to less than measurable levels in two to three days.

The staff at CRI is often asked what difference exists between ANSI/NSF 140-2007 and the Green Label Plus Program. Simply put, Green Label Plus specifically addresses minimization of VOCs while ANSI/NSF 140-2007 is a holistic sustainability standard that evaluates products based on the five attributes listed previously. The twenty chemicals identified by the State of California in their 01350 requirement served as the guide for establishing the original Green Label, and the subsequent Green Label Plus Programs. Minimization of VOCs is a tremendously important aspect of providing building occupants with the most healthful and beneficial environment.

As critical as the abovementioned items are, they are only the basics. Simply meeting these prerequisites won't achieve a high level of accomplishment. To achieve Gold and Platinum certifications, extensive work must be done beyond the basic requirements of ANSI/NSF 140-2007. The CRI and its members have been actively promoting ANSI/NSF 140-2007 to city, state, and federal governments as the standard for carpet procurement. As an added bonus, CRI's market research has shown that carpets certified to ANSI/NSF 140-2007 sell with no price premium over carpets with similar construction and features. Same price, better carpet—how can that be better?

Government agencies who adopted ANSI/NSF 140-2007 purchasing policies have more streamlined and efficient procurement processes. Many of the critical tests required by every governmental procurement agency have already been included with the certification process. This means less red tape for government staff and fewer redundant costs for manufacturers.

Confidence in the proficiency of the certifier is necessary for the success of ANSI/NSF 140-2007. Because of the precision required to conduct such intricate evaluations, only two organizations are currently performing audits following the guidelines of ANSI/NSF 140-2007. NSF International is one of the world's most respected standard developers and certifiers. As a not-for-profit organization, they have access to vast resources. Scientific Certification Systems (SCS) was founded in 1984, and has also become one of the most recognized firms in the standards and certification community. Although the two certifiers may name things a little differently, the end result is a rigorous examination of each manufacturer's operations and a remarkably consistent evaluation. UL Environmental has also recently joined the list of approved certifiers. A subsidiary of the well-known Underwriter's Laboratory, UL Environmental is expected to begin certifications in the Spring of 2009. They bring even more credibility to the ANSI/NSF 140-2007 certification program.

Why is the ANSI/NSF 140-2007 standard so important? Two key terms predominate: evaluation and communication. The standard can be used to make evaluations at each level of stakeholder involvement (regulatory, consumer, and manufacturer). It also serves as a communication tool between stakeholders. Through participation in the Joint Committee, governmental regulators and consumers communicate their expectations to industry, and in turn, the carpet industry tells its collected stakeholders how their desires will be met. All interests are represented and no group is ignored. Some standards from other industries have been criticized as being non-inclusive. This is clearly not the case with ANSI/NSF 140-2007. Information about standard and available product platforms can be found online at: <http://www.carpet-rug.org/carpet-and-rug-industry/sustainability/sustainable-carpet/index.cfm>.

It is apparent that the needs and requirements of the population will change in regard to environmental stewardship. Additionally, the capabilities of industry will also change. Therefore it is necessary to meet regularly to review the standard and review potential changes and upgrades to the ANSI/NSF 140-2007 standard. The Joint Committee of ANSI/NSF 140-2007 recently convened at The Georgia Institute of Technology. Although the results of the meeting have

yet to be officially released, the consensus was that the meeting was very beneficial and productive. Watch our website at <http://www.carpet-rug.org/carpet-and-rug-industry/sustainability/sustainable-carpet/index.cfm> for updates as they are released.

THE PIECES OF THE PUZZLE

The Carpet and Rug Institute's signature programs each fulfill significant portions of CRI's commitment to customer safety, satisfaction, and sustainability. The sustainability implications are clear: once the carpet is installed on a consumer's floor, the number one method of keeping the lowest possible environmental footprint is through proper cleaning and maintenance. For this reason, each of CRI's signature programs contributes directly to the longevity and environmental profile of carpet.

The Green Label Plus program is widely referenced in such well-known programs as USGBC's LEED Suite ©, the NAHB's ANSI Accredited Green Building Guidelines ©, The Collaborative for High Performance Schools (CHPS) and, of course, ANSI/NSF 140-2007 ©. Designed to meet the State of California's 01350 requirements, carpets must pass a rigorous environmental chamber test in order to earn the Green Label Plus mark. In March 2008 CRI received ANSI Accreditation as a certifying body. This high honor confirms the level of precision and credibility that differentiate this program. CRI's ANSI Certification confirms that CRI administers the Green Label testing in the strictest adherence to ANSI guidelines and protocols. With a dedicated following already in Europe and Asia, the Green Label Plus program is rapidly expanding to the rest of the world.

The scope of the Green Label program is not limited to carpet. Categories also exist for carpet adhesives (as used in the installation of carpet), carpet cushion, and vacuum cleaners. Representing a merger between CRI's Seal of Approval program and the Green Label program, the vacuum category tests products on their indoor air quality performance as well as cleaning efficacy.

CRI's Seal of Approval program serves as the best tool for ensuring the cleaning efficacy of several categories of products. Many products on the market are rightfully certified to be safe for the environment, but this has no bearing on whether or not they work.

Many cleaning products will clean carpet well, but are less than ideal when considering a mother's concerns for the safety of the floor area where her child plays. CRI's Seal of Approval program is the only tool available to a consumer that guarantees cleaning efficacy and environmental safety. Pre-sprays, in-tank solutions, and spot treatments are all evaluated in the program. This link will direct to the Seal of Approval web site: <http://www.carpet-rug.org/commercial-customers/cleaning-and-maintenance/seal-of-approval-products/index.cfm>.

Environmental safety is ensured by first requiring that the carpet cleaning product has earned certification under the United States EPA's Design for the Environment Program, Canada's EnvironDesic, or by Ecologo. Previously, GreenSeal's GS37 standard was an approved vehicle for ensuring environmental safety. CRI recently decertified the newest version of GS37 citing shortcomings in the standard development process. Products that had been certified to the older version of GS37 will remain valid until their GS37 certifications expire. After that, those products will be required to obtain certification under one of the approved methods listed above. The news release concerning GS37 decertification can be viewed at: http://www.carpet-rug.org/news-room/press-releases/090108_CRI_Withdraws_Green_Seal_Support.cfm.

In addition to recognizing environmental attributes of the product, CRI evaluates the product's efficacy based on four key criteria:

1. That it does not harm the carpet or rug.
2. That it effectively removes dirt and soil.
3. That it contains no ultraviolet brighteners.
4. That it does not resoil by attracting dirt.

The first and second criteria are simple enough, but the third perhaps requires explaining. Ultraviolet brighteners are commonly included in cleaning products for the brightening effect they have on textiles. Indeed, optical brighteners truly can make a freshly-cleaned carpet appear to sparkle. This being true, why shouldn't optical brighteners be included in a cleaning product? First, they can mask the dirt the cleaning product failed to remove. This leads to a false sense of cleanliness and can contribute to accelerated wear. Secondly, they are often oil-based. Although the temporary effect of the brighteners is

impressive, over time, use of the products containing optical brighteners will commonly lead to rapid resoiling and deteriorated appearance. These effects may be fine for clothing that is washed repeatedly, but they are not appropriate for carpet. Resoiling is the leading complaint from consumers who say their carpet looks worse a day or two after using a product.

A word on one of the most common and erroneous myths associated with carpet—many people associate carpet with increased occurrence of asthma and allergies. Based on the available science, this does not appear to be based in fact. Indeed, the contrary appears to be the case. Numerous peer-reviewed, scientific studies have concluded that there is no link between the use of carpet and the occurrence of asthma and allergies. There are, however, multiple indications that carpet improves the breathing environment by trapping dust and other allergens before they can become airborne. Carpet holds dustborne allergens until regular vacuuming with a CRI Seal of Approval/Green Label Vacuum safely removes the trapped particles.

This point leads to another crucial and often misunderstood aspect of carpet performance. Proper cleaning and maintenance suffers from an assortment of myths and misconceptions. Some are extreme, for example, a homeowner once called CRI to complain that Coca-Cola © had not removed the stain from his carpet and had, in fact, made it worse! Perhaps the most important aspect in lowering a carpet's lifelong environmental footprint is proper cleaning and maintenance. This is where CRI's signature programs step once again to the forefront. Information on how to set up a proper cleaning and maintenance program can be found at CRI's web site, [carpet-rug.org](http://www.carpet-rug.org). Another excellent resource is the CRI-sponsored "Carpet Cleaning Tips for Dummies." Written in simple and humorous language, this book demystifies some of the problems sometimes encountered when handling routine maintenance issues. It is available through CRI's web site for a nominal fee.

THE CARPET AMERICA RECOVERY EFFORT (CARE)

In 2002, representatives of the carpet industry joined with several Midwest states to create the Memorandum of Understanding (MOU) for Carpet

Stewardship. The primary goal of this MOU was the diversion of carpet from landfills. The memorandum recognizes, among other things, that used carpet has value. Carpet is essentially plastic. In fact, nearly 70% of all carpet is constructed of some form of Nylon (Nylon 6 and 6,6 are by far the most common). The remaining carpets found in the United State are made from wool, polyester (PET), or polypropylene (Olefin). A few carpets have emerged in recent years that feature agri-based fibers. Fibers made from Polylactic Acid (PLA) have great promise as textile fibers but present some difficulties in the collection and processing phase. In addition, carpet is a large, bulky product that does not biodegrade. As such, it can easily clog landfills. EPA estimates place carpet's contribution to landfills at 1–2% of all landfills by volume. While 1–2% of all landfill contributions may not seem significant, the impact is more apparent when one considers the value that can be recovered from these products. EPA estimates show that approximately seventeen pounds of carpet for every American are removed from commercial and residential structures annually.

It is important to note that CARE and the CRI are distinct, independent organizations that share a number of goals. Both groups recognize the benefit that each holds for the carpet industry. Intentionally separate from the carpet industry, CARE is free to explore and develop options away from traditional carpet manufacturing, while retaining the contacts and support of the industry. The most exciting news from CARE in the past few months has been the selection of Georgina Sikorski as the Executive Director. Her selection fills the void that was left when Dr. Bob Peoples moved to the American Chemistry Council's Green Chemistry Institute. Georgina's energy, ability, and optimism promise to take CARE even further towards the inspirational goal of no carpet to landfills.

CARE's efforts have followed a simple strategy that has relied on private entrepreneurs to establish collection centers around the nation. The MOU for Carpet Stewardship calls for market-based solutions to the issue of responsible carpet stewardship. Growing from four centers in 2002 to over sixty in 2008, the collection network has brought in over one billion pounds of post consumer carpet that would have otherwise ended up in landfills. While a small



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portion of this carpet has gone to facilities for production of electricity (waste to energy, we call it) the lion's share has gone to new products—some to new carpet, some to other plastic products, and others to pocketbooks. Yes, pocketbooks. An enterprising lady in the United Kingdom has made a business of creating high fashion pocketbooks from recovered carpet materials. The creative possibilities are endless.

The typical business model for those participating in the CARE group normally follows the Model Collect, Sort, Process, or Manufacture (C-S-P-M) format. While many participants actively work in more than one category (for example, collecting and sorting may be conducted at one site), these four distinct activities cover the great majority of members' activities. CARE's collection network is well represented by over sixty private entrepreneurs around the nation. Most of these add value to the collected products by sorting. The sorting process requires the use of very expensive scanner technology that allows the collector to determine face fiber composition. This critical step cannot be overemphasized. Contamination in the recycling stream is a major concern and necessitates the great efforts taken to ensure purity in the recycling stream.

As mentioned, most carpet is made from either Nylon 6 or Nylon 6,6. Shaw Industries currently makes use of great quantities of Nylon 6-based carpets at its Evergreen facility in Augusta, Georgia. The Nylon 6 is delivered to Evergreen where it is chemically broken down into its basic components. This depolymerization process is extremely complex, but yields a remarkably high-quality product, one that is equal to virgin Nylon 6. Mohawk Industries has begun recycling Nylon 6 fibers into new yarn at its Greenworks Plant in Eton, GA. The increased recycling of post-consumer Nylon 6 into new carpet fiber promises to keep the growth of post-consumer carpet recycling going.

Problems with chemical processes and practical considerations make recycling nylon 6,6 somewhat

more problematic. Columbia Mills in Dalton, Georgia, was a major processor of post-consumer Nylon 6,6 fibers until a devastating fire in 2007 destroyed the historic building the business occupied. This major disruption in the recycling chain sent shockwaves through the collection network that are just now being resolved. When depolymerized, Nylon 6,6 is much more difficult to color. For this reason, it was extremely popular in the automotive industry for use in the “black parts” under the hood. For example, each Ford F-150 truck contains approximately 2.3 square yards of post-consumer carpet under each hood. Recent technological innovations by Universal Fibers and Interface Global have drastically expanded the options of what the industry can do with Nylon 6,6 fibers. The large and reproducible color line now available from post-consumer Nylon 6,6 fibers promises to open new markets for this product. Although not yet released to market, new technologies are nearly ready that will drastically improve the ability of manufacturers to use post-consumer Nylon 6,6, by, among other things, returning Nylon 6,6 to its pelletized form for new extrusion.

Polyester, also known as PET, or Polyethylene Terephthalate, is the material commonly used to create plastic bottles. Mohawk Industries is a world leader in recycling these bottles. In fact, Mohawk alone is responsible for over 25% of the United States’ total annual recycling of these ubiquitous containers. The environmental benefits of this are many, and the added benefit is the collected polyester carpet can be used again and again. Due to similar coloring problems that once hampered the use of Nylon 6,6, collected polyester and olefin carpets are difficult and expensive to make into new carpet fibers. Polyester and Olefin products are most commonly reused in shredded, densified products where color is not an issue. The carpet underlayment currently being tested by Hilton Hotels calls for the use of a non-specific fiber. This fiber need can be easily filled by recycling polyester or olefin carpets.

When the MOU for Carpet Stewardship was established in 2002, a goal was set of 40% diversion of used carpet by the year 2012. While still within reach, CARE has extensive work yet to do before this goal can be reached. To a large extent, the previous success CARE enjoyed relied heavily on input

from the construction and auto industries. The current economy has brought significant cutbacks in both industries, which has in turn had an effect on carpet collection and recycling.

The activities of CARE and the concept of carpet stewardship go beyond simply recycling carpet. From a consumer standpoint, proper care and maintenance contribute greatly to the beauty and durability of the carpet after it is installed. For example, if a carpet has a design life of 10 years but is “killed” by improper maintenance after five years, the environmental footprint of that carpet has doubled! One might observe that more frequent carpet purchases by the consumer would be good for the carpet industry, but, simply put, the carpet industry would prefer a satisfied customer once every ten years than an angry one once every five years. Some carpet is left on the floor far beyond its design life and soiled to the point that it can not be recycled. For this reason, a small portion of annual collections is used for the production of energy. Typically, less than 5% of annual carpet collections, this use of post consumer carpet provides the benefit of high BTU output and is easy to handle. Much of the carpet used in waste-to-energy is consumed by the cement production industry in their cement kilns.

CARE benefits from the ANSI/NSF 140-2007 Carpet Sustainability Assessment in several ways. One of the main and most obvious benefits is the requirement for certified carpets to contain post-consumer content (direct insertion of post consumer carpet into new carpet). Another less obvious benefit is the requirement for performance and durability. These requirements ensure that carpet produced performs equally or better than non-certified carpets of similar construction and features. There are no corners cut when producing these carpets. Producing superior carpets (environmentally speaking) that do not perform well on the floor defeats the purpose of ANSI/NSF 140-2007. Poor performing carpets would cause increased burden on CARE and lead to untold numbers of dissatisfied customers. Finally, ANSI/NSF 140-2007 requires documentation that a product is recyclable in accordance with FTC Guides (16 CFR 260.7(d)).

There are several recent initiatives that CARE members are following to help divert more carpet from landfills. Most recently, CARE has released

a plastics grading scale to help plastic molders and compounders to specify what type of plastic is needed. As a more stable funding platform, CARE has also been converted from a sponsorship-based organization to a membership-based organization.

While a large amount of used carpet is used to manufacture new carpet, recent opportunities have emerged in the plastics and compounding industry. New production and marketing models have been developed to emphasize regional capabilities and needs. Leveraging the purchasing power and influence of city, state, and federal governments is a key focus. The state of Maine has joined the other signatories to the MOU, indicating that, despite negative economic conditions, interest and energy continues to grow for carpet recycling and the products that can be made from reclaimed carpet.

One of the more promising opportunities currently being developed is a post-consumer carpet credit bank. This concept will be fashioned after carbon trading programs. Under this concept, manufacturers will have the opportunity to purchase credit for recycled post-consumer carpet regardless of where the product is used. Among the many advantages of this concept are: increased support for the collection network, availability for smaller manufacturers, and improved “regionality.” Instead of shipping bulky, hard to manage carpet pieces across country for processing, local options can be exploited. CARE is ideally suited to oversee the verification and audits necessary to ensure the validity of the program.

CARE's primary role is creating, developing, and fostering market-based solutions for the disposition of used carpet. Whether with governments or private organizations, partnership is key to the success of this effort. Increasing recognition for CARE has led several city and state governments to become involved with carpet recycling. By leveraging the leadership, example, and buying power of these governmental entities, the strength of CARE will continue to increase. CRI supports this leveraging effort by promoting the use of ANSI/NSF 140-2007. Although the post-consumer content in ANSI/NSF 140-2007 products is not required to come from post-consumer carpet content, CRI's desire is to see the standard updated to reward manufacturers for the direct insertion of post-consumer carpet content (on a mass balance-style plan) or the purchase of

post-consumer carpet credits. Whether this position will be officially adopted by the full Joint Committee remains to be seen, although CRI will continue to advocate for this change to the ANSI/NSF 140-2007 Sustainable Carpet Standard.

In keeping with the market-based emphasis of CARE, product pull-through is a critical aspect of the value chain. A pilot program is currently in the testing phase with Hilton Hotels. Under this program, Hilton is evaluating carpet underlayment created from post-consumer carpet. Another possibility being evaluated by Hilton is the use of post-consumer carpet for the production of the plastic room keycards. There is much untapped potential from this resource.

Sadly, too much carpet continues to go to landfills. Nearly all manufacturers have functioning take-back programs. It is important for purchasers to remember to work with carpet sales force representatives to responsibly dispose of their old carpet. Additionally, purchasing carpet, underlayment, and non-flooring products that contain post-consumer carpet content or credit is a tremendous opportunity for consumers to support the environmental actions being taken by the carpet industry.

CARE is still growing. Despite a down economy, collections have remained high and interest continues to grow in the valuable products the collectors deliver. In fact, difficult economic conditions can be viewed as an opportunity. Value is harder to find than ever, yet we are looking at a virtually untapped resource. With continued focus on market-based solutions and value recovery, CARE is a model of partnership between government, industry, and private entrepreneurs.

POSSIBLE CONTRIBUTIONS TO LEED POINTS FROM ANSI-NSF 140-2007 CERTIFIED CARPET

Materials and Resources (MR 4.1)—Contributes to recycled content requirements: 1 pt

Indoor Environmental Quality (IE 4)—Green Label Plus certified products: 1 pt

Regional Credit—Contributes to Regional Credits: 1 pt

Innovation Credit—Earns one of the ten available Innovation Credits: 1 pt