

ENVIRONMENTAL PROTECTION AGENCY

[RCRA-2001-0047; SWH-FRL-7655-1]

Recovered Materials Advisory Notice IV**AGENCY:** Environmental Protection Agency.**ACTION:** Notice of availability of final document.

SUMMARY: The Environmental Protection Agency is providing notice of the availability of the final Recovered Materials Advisory Notice IV (RMAN IV) and supporting materials. The final RMAN IV contains EPA's recommendations for purchasing seven newly designated items and three revised items presented in the final Comprehensive Procurement Guideline IV, which is published elsewhere in today's **Federal Register**. The final RMAN IV also contains revised recommendations for two other previously designated items. This action will help use government purchasing power to stimulate the use of recovered materials in the manufacture of products and expand markets for those recovered materials. EPA designates items that are or can be made with recovered materials and provides recommendations for the procurement of these items under the authority of the Resource Conservation and Recovery Act of 1976 (RCRA). The seven newly designated items for which EPA is making recommendations include: modular threshold ramps; nonpressure pipe; roofing materials; office furniture; rebuilt vehicular parts; bike racks; and blasting grit. The five items for which EPA is making revised recommendations include: cement and concrete; polyester carpet; railroad grade crossing surfaces; latex paint; and retread tires.

EFFECTIVE DATES: These recommendations apply to the seven new items (*i.e.*, modular threshold ramps; nonpressure pipe; roofing materials; office furniture; rebuilt vehicular parts; bike racks; and blasting grit) whose designations are effective May 2, 2005, as well as to the five items that were previously designated (*i.e.*, cement and concrete, polyester carpet, railroad-grade crossing surfaces, latex paint, and retread tires).

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Call Center at (800) 424-9346 or TDD (800) 553-7672 (hearing impaired). In the Washington, DC metropolitan area, call (703) 412-9810 or TDD (703) 412-3323. For technical information on

individual item recommendations, contact Terry Grist at (703) 308-7257 or Sue Nogas at (703) 308-0199.

SUPPLEMENTARY INFORMATION:**I. General Information****A. How Can I Get Copies of This Document and Other Related Information?**

1. *Docket.* EPA has established an official public docket for this action under Docket ID No. RCRA-2001-0047. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. Although a part of the official docket, the public docket does not include Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. The official public docket is the collection of materials that is available for public viewing at the OSWER Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the OSWER Docket is (202) 566-0270. Copies cost \$0.15/page.

2. *Electronic Access.* You may access this **Federal Register** document electronically through the EPA Internet under the "**Federal Register**" listings at <http://www.epa.gov/fedrgstr/>.

An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at <http://www.epa.gov/edocket/> to view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified above. Once in the system, select "search," then key in the appropriate docket identification number.

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I. What Is the Statutory Authority for This Action?

EPA is issuing the Recovered Materials Advisory Notice IV (RMAN IV) under the authority of sections 2002(a) and 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6912(a) and 6962; and Executive Order (E.O.) 13101 (63 FR 49643, September 14, 1998).

II. Why Is EPA Taking This Action?

Section 6002 of RCRA establishes a Federal buy-recycled program. RCRA section 6002(e) requires EPA to (1) designate items that are or can be produced with recovered materials and (2) prepare guidelines to assist procuring agencies in complying with affirmative procurement requirements set forth in paragraphs (c), (d), and (i) of section 6002. Once EPA designates an item, section 6002 requires that any procuring agency using appropriated Federal funds to procure that item must purchase it composed of the highest percentage of recovered materials practicable. For the purposes of RCRA section 6002, procuring agencies include the following: (1) Any Federal agency; (2) any State or local agencies using appropriated Federal funds for a procurement; and (3) any contractors with these agencies (with respect to work performed under the contract). The requirements of section 6002 apply to procuring agencies only when procuring a designated item where the price of the item exceeds \$10,000 or when the quantity of the item, or functionally equivalent items, purchased in the previous year exceeded \$10,000.

Executive Order 13101 (63 FR 49643, September 14, 1998) requires EPA to designate items in a Comprehensive Procurement Guideline (CPG) and publish guidance that contains EPA's recommended recovered materials content levels for the designated items in Recovered Materials Advisory Notices (RMAN). The Executive Order (E.O.) also requires EPA to update the CPG every two years and the RMAN periodically to reflect changes in market conditions. EPA codifies the CPG designations in the Code of Federal Regulations (CFR), but, because the

recommendations are guidance, the RMAN is not codified in the CFR. This process allows EPA to revise its recommendations in a timely manner and in response to changes in a product's availability or recovered materials content.

The first CPG (CPG I) was published on May 1, 1995 (60 FR 21370). It established eight product categories, designated 19 new items in seven of those categories, and consolidated five earlier item designations.¹ At the same time, EPA also published a notice of availability of the first RMAN (RMAN I) (60 FR 21386). On November 13, 1997, EPA published CPG II (62 FR 60962), which designated an additional 12 items. At the same time, EPA published an RMAN II notice (62 FR 60975). Paper Products RMANs were issued on May 29, 1996 (61 FR 26985) and June 8, 1998 (63 FR 31214). On January 19, 2000, EPA published CPG III (65 FR 3070), which designated an additional 18 items. At the same time, EPA published an RMAN III notice (65 FR 3082). On August 28, 2001, EPA published a proposed CPG IV (66 FR 45256), which proposed to designate an additional 11 items. At the same time, EPA published a draft RMAN IV notice (66 FR 45297). For more information on CPG, go to the EPA Web site at <http://www.epa.gov/cpg/>.

The 11 items EPA proposed for designation in the proposed CPG IV were: cement and concrete containing cenospheres; cement and concrete containing silica fume; modular threshold ramps; nonpressure pipe; nylon carpet and nylon carpet backing; roofing materials; office furniture; rebuilt vehicular parts; tires; bike racks; and blasting grit. The proposed designations of cement and concrete containing cenospheres and silica fume are actually proposed revisions to the existing designation of cement and concrete containing coal fly ash and ground granulated blast furnace slag. Consequently, today EPA is publishing recommendations for seven of the originally proposed items: modular threshold ramps; nonpressure pipe; roofing materials; office furniture; rebuilt vehicular parts; bike racks; and blasting grit. At the same time, EPA is also revising its recommendations for five items: cement and concrete; polyester carpet; railroad grade crossing

¹ Between 1983 and 1989, EPA issued five guidelines for the procurement of products containing recovered materials, which were previously codified at 40 CFR parts 248, 249, 250, 252, and 253. These products include cement and concrete containing fly ash, paper and paper products, re-refined lubricating oils, retread tires, and building insulation.

surfaces; latex paint, and retread tires. As for the latex paint recommendations, as previously discussed in the draft RMAN IV notice, EPA is deleting reference to specification TT-P-2846, which was cancelled by the U.S. General Services Administration (GSA), and recommends that procuring agencies refer to commercial item description (CID) A-A-3185 instead when purchasing recycled paint. (A copy of this CID has been placed in the docket for the final RMAN IV.) Regarding the retread tire recommendations, although not previously discussed in the draft RMAN IV, EPA has recently learned that the GSA Federal Tire Program's Quality Assurance Facility Inspection Program (QAFIP) is defunct. Therefore, EPA is revising the retread tire recommendations by deleting reference to the GSA QAFIP. EPA is not designating tires or nylon carpet and nylon carpet backing at this time and, therefore, is not issuing final recommendations for purchasing these items. The reasons for this decision are discussed in Section IV of this notice and in the final CPG IV, published in the rules section of today's **Federal Register**.

Section 6002 requires that each procuring agency that procures a designated item must procure such items composed of the highest percentage of recovered material practicable consistent with maintaining a satisfactory level of competition, except in defined circumstances. These include a determination that the item (1) is not reasonably available within a reasonable period of time; (2) fails to meet applicable performance standards; and (3) is only available at an unreasonable price. *See also* 40 CFR 247.2(d). For further discussion of when a procuring agency must purchase items with recovered materials content see 61 FR 58067 (November 12, 1996).

III. What Are the Definitions of Terms Used in This Action?

Today's final RMAN IV recommends postconsumer and/or total recovered materials content levels for the following previously and newly designated items: railroad grade crossing surfaces, modular threshold ramps, nonpressure pipe, roofing materials, office furniture, bike racks, and blasting grit. For these items, EPA found that manufacturers were using both postconsumer and other types of recovered materials to manufacture these products. Limiting the Agency's recommendation to only postconsumer content levels would be inconsistent with RCRA's requirement that EPA

designate items which are or can be made with recovered materials whose procurement will carry out the objective of section 6002—the procurement of items composed of the highest percentage of recovered materials practicable. The statute defines “recovered materials” to include waste materials and byproducts which have been recovered or diverted from solid waste. Section 1004(19) of RCRA, 42 U.S.C. 6903(19). If the Agency only recommended postconsumer content levels, it would fail to take into account the contribution that manufacturers using other manufacturers' byproducts as feedstock have made and can make to solid waste management.

EPA defined the terms “recovered materials” and “postconsumer materials” in the CPG and in 40 CFR 247.3. We repeat the definitions of these terms in this notice for the convenience of the reader.

Postconsumer materials means a material or finished product that has served its intended end use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is part of the broader category of recovered materials.

Recovered materials means waste materials and byproducts which have been recovered or diverted from solid waste, but the term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

IV. What Did Commenters Say About the Recommendations in the Draft RMAN IV?

This section discusses the major public comments on the draft RMAN IV. A summary of all of the comments and the Agency's response is provided in the document entitled “Background Document for the Final Comprehensive Procurement Guideline (CPG) IV and Recovered Materials Advisory Notice (RMAN) IV,” August 2003, hereafter referred to as the “Background Document for the Final CPG IV/RMAN IV.” A copy of this document has been placed in the docket for the final RMAN IV. *See SUPPLEMENTARY INFORMATION* above for information about reviewing documents in the public docket. This document is also available electronically on the Internet. *See* section V of this notice for information on accessing this document electronically.

A. Item-Specific Comments

1. Polyester Carpet

In the proposed CPG IV and RMAN IV, EPA requested comments on its proposal to revise the polyester carpet

designation to reference new Carpet and Rug Institute (CRI) end-use classifications of moderate- and heavy-wear.

Comment: Five organizations submitted comments on EPA's recommended use of polyester carpet in moderate and heavy minimum use classifications based on CRI's End-Use Applications Classification. In its comments, CRI urged that EPA limit its recommendation for polyester carpets to polyester carpets used only in moderate end-use applications, as indicated in CRI's revised Carpet End-Use Applications Classification document. With its comments, CRI provided a revised table for Carpet End-Use Applications Classification. In the Background Document for Proposed CPG IV and Draft RMAN IV, EPA noted that at the time the proposed CPG IV/RMAN IV was issued, the classifications were under review and were expected to be revised. CRI also provided GSA-recommended density specifications for polyester carpet construction.

With regard to EPA's proposal clarifying its original specifications for polyester carpet, the White House Task Force on Recycling indicated that it was not clear whether EPA intended to exclude bachelor-enlisted quarters and other dormitory-style housing from the scope of its revision. The Task Force asked that EPA state unambiguously in the final notice whether the specifications apply to these types of housing.

Response: EPA has revised the final RMAN to address CRI's comments and reference CRI's End-Use Applications Classification. The final RMAN for polyester carpet is thus limited to moderate end uses and does not include heavy or severe end uses. Under CRI's revised classification system, bachelor-enlisted quarters and other dormitory-styled housing are categorized as "heavy" use. Therefore, these types of housing would be excluded from the polyester carpet recommendation. EPA also has included the GSA-recommended density specifications provided by CRI in the final RMAN.

Comment: Manatt, Phelps, & Phillips, LLP (on behalf of Milliken Carpet) does not believe EPA has sufficiently explored and evaluated the problems related to uses for polyester carpet, particularly as they relate to performance characteristics. Specifically, the company does not believe that polyester carpet should be recommended for heavy-wear applications. Even though EPA's recommendation does not include polyester carpet for severe-wear and commercial applications, Milliken

believes some heavy-wear applications, such as in private offices, may be considered "commercial" use in some situations. Three other commenters (DuPont Nylon Flooring, the National Recycling Coalition, and CRI) stated that polyester carpet should be limited to moderate end-use classifications.

Response: As discussed above, EPA has revised the recommendations for polyester carpet to reflect CRI's revised End-Use Applications Classification table and is revising its recommendation to limit polyester carpet to moderate end uses. Thus, today's RMAN does not recommend the use of polyester carpet in heavy-wear applications such as in bachelor quarters, dormitory-style housing, private offices, or other heavy or severe-wear applications as identified in CRI's classification table. A copy of CRI's revised End-Use Applications Classification table has been placed in the RCRA docket for this final notice.

Comment: Milliken also commented that EPA's instructions on purchasing polyester carpet for suitable applications is confusing in light of EPA's proposed designation of nylon carpet. Milliken believes that the language EPA included in the proposed rule may be interpreted to require the purchase of polyester carpet over nylon carpet when both products are designated for the same use. Milliken suggests making it clear that customers can choose either nylon carpet or polyester carpet if both qualify for a particular use. Milliken specifically referred to language on page 45267 of Proposed CPG IV.

Response: In the carpet discussion on page 45267 of the proposal, it was not EPA's intention to favor one type of carpet product over another. However, since the proposal, EPA issued a notice of data availability (NODA) announcing the availability of information on nylon carpet submitted both during and after the public comment period and provides a summary of the revisions EPA is considering making to the draft RMAN for nylon carpet as a result of this information. (See the CPG IV final rule, published in the rules section of today's **Federal Register**, and IV.A.3. of this preamble for further discussion of the NODA.) EPA will consider information and data submitted in response to the NODA when issuing the final RMAN recommendations for nylon carpet in the future. The NODA can be accessed at <http://www.epa.gov/cpg>. Supporting materials and public comments for this notice are available through EPA's electronic public docket and comment system. If EPA moves forward with a nylon carpet designation, it will ensure that the

distinction between the Agency's recommendations for both polyester and nylon carpet are clear.

2. Cement and Concrete Containing Cenospheres and Silica Fume

Comment: The American Portland Cement Association (APCA) is a trade association representing virtually all domestic portland cement production. APCA submitted a comment suggesting mostly minor technical and administrative changes to EPA's draft recommendation. These recommended changes primarily pertain to citing ASTM specifications and the way to express the recommended range of recovered content of silica fume and cenospheres in cement and concrete. APCA suggested that the RMAN recommendations for silica fume in cement and concrete should be 5 to 10 percent of cementitious material on a dry weight basis and those for cenospheres in cement and concrete should be a minimum of 10 percent by volume.

Response: After reviewing APCA's comments, EPA agrees the proposed changes should be cited in the RMAN. Although EPA acknowledges that we inadvertently cited ASTM C-618 as applicable to cenospheres used in cement and concrete, the Agency believes there is still justification for designating cement and concrete containing cenospheres and that appropriate recommendations can be made in the RMAN, since all suppliers of cenospheres have specifications, including Material Safety Data Sheets, for their cenospheres. EPA believes that the recovered material content information suggested by APCA is more appropriate than the ASTM specifications contained in the draft RMAN. Therefore, in the final RMAN, EPA has changed the information regarding recovered content ranges for silica fume in cement and concrete to "5 to 10 percent of cementitious material on a dry weight basis" and to "a minimum of 10 percent by volume" for cenospheres.

Comment: The National Ready Mixed Concrete Association (NRMCA) submitted a comment indicating that the concrete industry has no history of purchasing cenospheres as an ingredient and that concrete producers have not been buying it as a product separate from fly ash for use in concrete. In addition, ASTM C-618 does not address cenospheres, and there is no technical literature documenting their use in concrete. NRMCA added that the presence of cenospheres in fly ash occurs naturally so the generation facility for fly ash has no control over

whether it can be produced. It depends on many factors, including type of coal being used, plant type, and firing conditions. Furthermore, NRMCA indicated that the variety of cenospheres discussed in EPA's proposal are used for applications other than cement and concrete. Moreover, the cenosphere range of 10–15 percent is typically the amount of fly ash used in cement. The cenospheres content would be 1/10th of the fly ash, if at all.

NRMCA also commented on the use of silica fume in cement and concrete. They indicated that silica fume in cement is only used for high performance applications and should only be used when the construction application requires it. In addition, its availability is not as wide as other products, and its cost is much higher. Finally, demand for silica fume is so high that a large percentage is imported from Europe, which begs the question of whether silica fume would ever be diverted to a landfill in the first place.

Response: With regard to NRMCA's comment about the use of cenospheres, EPA explained in the proposed CPG that cenospheres are a component of fly ash. EPA's research found that cenospheres can be and are separated and removed from fly ash and sold and used as a recovered material. EPA's research also found that there is a market, albeit small, for high-strength cement to which recovered cenospheres, specifically, have been added. EPA has adjusted its recommendations to reflect cement and concrete to which only cenospheres have been added. EPA spoke with several suppliers of cenospheres who indicated that their product is used in producing this type of specialty cement. EPA recognizes that it inadvertently cited ASTM C-618 as applying to cement with cenospheres, when in actuality, it applies to fly ash and raw or calcinated pozzolan for use as an admixture in concrete. As previously stated, although no industry standards exist for cement and concrete containing cenospheres alone, EPA learned that suppliers of cenospheres have specifications available for the cenospheres themselves, including Material Safety Data Sheets. EPA has removed reference to ASTM C-618 in the final RMAN. EPA agrees that in typical cement containing fly ash, the percent of cenospheres would be about 1/10 that of the fly ash. However, in the cases where cenospheres have been specifically added to produce a high-strength specialty cement, the percentage of cenospheres alone can reach 10–40 percent, according to contacts in the industry.

With regard to NRMCA's comment on silica fume in cement, EPA agrees, and its research did find, that cement containing silica fume is a high-performance product that may cost more than other types of cement. However, in issuing recommendations for silica fume (and cenospheres), EPA is simply expanding the list of recommended recovered materials used in cement in concrete. If an application warrants the use of higher-strength concrete, an agency now has recommendations for procuring cement and concrete containing silica fume. Agencies, however, will not be limited to using cement and concrete containing silica fume, or cenospheres for that matter. Also, it should be noted that EPA's research found that in a recent year 115,000 tons of silica fume were generated and only 67,200 tons were reused. So, regardless of whether silica fume is being imported from other countries, there is obviously a need to encourage more reuse of silica fume that is generated domestically.

3. Nylon Carpet and Nylon Carpet Backing

EPA received a number of comments on its proposed designation of nylon carpet in the proposed CPG IV and its recovered materials content recommendations for nylon carpet face fiber and nylon carpet backing contained in the draft RMAN IV. Many of these comments provided additional information that was conflicting in nature. As a result of these comments, EPA decided not to finalize the designation of nylon carpet face fiber and nylon carpet backing at this time. EPA instead issued a NODA on July 16, 2003 (68 FR 42040) announcing the availability of information on nylon carpet submitted both during and after the public comment period and provided a summary of the revisions EPA is considering making to the draft RMAN for nylon carpet as a result of this information. EPA will consider information and data submitted in response to this notice when issuing the final RMAN recommendations for nylon carpet in the future. The NODA can be accessed at <http://www.epa.gov/cpg>. Supporting materials and public comments submitted in response to the NODA are available through EPA's electronic public docket and comment system, *EPA Dockets* [EDOCKET]. The docket number is RCRA-2003-0013.

4. Roofing Materials

Comment: Nuline believes that there is a significant omission in the background document. Nuline provided language to recognize its product—

organic corrugated asphalt panels and tiles—as part of the designation in the Residential Roofing section. Nuline requested that EPA insert the language into Section 1.e of the background document following the designation for Organic Corrugated Asphalt Panels and Tiles.

Response: In its research, EPA included discussion of Nuline's roofing product in the section addressing "fiber" products, since the product contains 50 percent cellulose fibers. EPA's research found that asphalt roofing products do not typically contain recovered asphalt, so the Agency placed items such as those made by Nuline in the "Fiber" category. To make it clearer, EPA has changed the material to "Fiber or Fiber Composite" in the RMAN table to capture companies making roofing products both from fiber alone or fiber combined with other materials, such as asphalt or wood. EPA has also adjusted the recommended postconsumer and total recovered content to 50–100 percent to reflect information provided by the commenter. In addition, upon designation, Nuline and other companies will be added to EPA's online Supplier Database.

5. Office Furniture

Comment: Pacific Northwest Fiber (PNF), the Idaho State Department of Agriculture, and the Spokane County Conservation District submitted comments in support of the designation of office furniture, since it would establish new uses for diverted agriculture fiber, such as grass seed residue, wheat straw, rice straw, bagasse, and other agricultural products. All three commenters noted competition from the forest products industry. PNF believes particle board made from agricultural fiber or from wood or other materials diverted from the solid waste stream would qualify as recovered material, but that traditional wood particle board would not qualify as recovered material because it is manufactured from wood fiber "generated from, and commonly reused within an original manufacturing process."

Response: EPA agrees that diverted agricultural fibers that meet the statutory definition of "recovered materials" would be included in office furniture designated in the CPG. Traditional wood particle board would not contain recovered materials if the recovered wood fiber is generated from, and is commonly used within, the original manufacturing process to manufacture particle board. However, EPA's research found that some particle

board manufacturers are using materials that fall under the RCRA definitions of postconsumer and recovered materials. Examples of postconsumer materials used in particle board include used pallets and wood crating, and recovered wood from home deconstruction.

Examples of non-postconsumer recovered materials used in particle board include mill wastes, scraps, and trimmings from the lumber industry.²

Comment: The Composite Panel Association (CPA) commented on the level of recovered wood used in the manufacture of particle board and fiberboard. Based on its survey of the industry and subsequent findings, CPA recommends that EPA change the postconsumer content range in the RMAN from "1 to 50 percent" to "Greater than 0 percent" with no upper level value. In addition, CPA asserts that nearly all manufacturers use a high percentage of recovered material and that the total recovered content range should be changed to "Greater than 80 percent" with no upper limit.

Response: At the time of EPA's proposed rulemaking, CPA had provided information that some particleboard (PB)/medium density fiberboard (MDF) plants use a small amount of postconsumer wood in their products. Based on this initial information, EPA set the lower level of the postconsumer range at 1 percent. However, based on the subsequent information provided by CPA, EPA now recognizes that, although the PB/MDF industry does use some postconsumer wood, it is not always feasible, mostly due to logistical reasons. For example, CPA indicated that many PB/MDF plants are located near the raw material source, such as sawmills and plywood plants, which means they are often far from urban areas where most postconsumer wood waste is available. Furthermore, EPA recognizes that many plants, if they are able to obtain postconsumer wood, are not able to obtain enough to equate to 1 percent of their final product. Therefore, EPA has concluded that the recommended postconsumer content level should be "Greater than 0 percent." In addition, since a high level of recovered wood is

commonly used by the industry, EPA is recommending a total recovered content range of 80–100 percent, which represents what is currently being used in the industry.

Additional Revision for Office Furniture RMAN: EPA realizes that, in the particleboard recommendation in Table G–9 of the draft RMAN, we inadvertently recommended recycled content levels only for "wood composites." EPA's recommendation should have read "wood or wood composites." The final RMAN corrects this error.

6. Blasting Grit

Comment: The Utility Solid Waste Activities Group (USWAG) c/o Edison Electric Institute and the American Coal Ash Association (ACAA) commented that there was an erroneous reference to the Bevill Regulatory Determination on Wastes from the Combustion of Fossil Fuels as a "final rule." This was actually issued as a "regulatory determination," which is legally distinct from a final rule. In addition, USWAG and ACAA pointed out what they believe was an oversight in including only coal slag, but not bottom ash, in the RMAN specification.

Response: EPA agrees that the "Regulatory Determination on Wastes from Combustion of Fossil Fuels" was issued as a "regulatory determination," rather than as a final rule, and understands that there is a legal distinction between the two terms. EPA also agrees that it inadvertently omitted bottom ash from its RMAN recommendations. EPA's research found that "* * * bottom ash can also be used as a light-to medium-duty blasting grit." Therefore, in this final notice, EPA has amended the RMAN table to add 100 percent total recovered content bottom ash as a recommended recovered material for blasting grit.

Comment: During the public comment period, Environmental Abrasives (formerly Idaho Powder Products) submitted information on its recycled fused alumina oxide material, which it has researched, developed, patented, and is processing for use as an abrasive material. According to the company, the material is the waste product from the manufacture of cast fused alumina oxide containers and lab equipment, and since the material is typically landfilled, it presents a solid waste problem that can be alleviated by collection and use as an abrasive product. Environmental Abrasives' product is marketed in the same cost range, if not less, than other similar products. The product has already been used for a federally funded job in Nevada.

Response: Since this fused alumina oxide material is an appropriate material for use as an abrasive, and it meets EPA's criteria and definition of recovered material, EPA has added it to the final RMAN table as a recommended material. Although EPA is unaware of any ASTM or other industry specifications for this material used as an abrasive, Environmental Abrasives indicated that users can request instruction for proper use of the product on its Web site <http://www.enviroabrasives.com>.

V. Supporting Information and Accessing Internet

The index of supporting materials for today's final CPG IV is available in the EPA Docket Center and on the Internet. The address and telephone number of the EPA Docket Center are provided in the SUPPLEMENTARY INFORMATION Section above. The index and the following supporting materials are available in the EPA Docket Center and on the Internet:

"Background Document for the Final CPG IV/RMAN IV," U.S. EPA, Office of Solid Waste and Emergency Response, September 2003.

Copies of the following supporting materials are available for viewing at the EPA Docket Center only:

"Economic Impact Analysis for the Final Comprehensive Procurement Guideline IV," U.S. Environmental Protection Agency, September 2003.

"Processing and characterization of a lightweight concrete using cenospheres," *Journal of Materials Science*, Vol. 37, 4217–4225, October 1, 2002.

To access information on the Internet go to <http://www.epa.gov/cpg>.

Dated: April 22, 2004.

Michael O. Leavitt,
Administrator.

Recovered Materials Advisory Notice IV

The following represents EPA's recommendations to procuring agencies for purchasing the items designated today in the Comprehensive Procurement Guideline IV in compliance with section 6002 of the Resource Conservation and Recovery Act (RCRA) and section 502(b) of E.O. 13101. These recommendations are intended to be used in conjunction with the RMANs issued on May 1, 1995 (60 FR 21386), November 13, 1997 (62 FR 60975), and January 19, 2000 (65 FR 3082), and the Paper Products RMANs issued on May 29, 1996 (61 FR 26985) and June 8, 1998 (63 FR 31214). Refer to May 1, 1995, November 13, 1997, and January 19, 2000 RMANs for definitions,

² As noted in the final RMAN IV recommendations for office furniture, while EPA has no evidence or indication that wood treated with chromated copper arsenate (CCA) is currently used in office furniture, EPA is not recommending the use of CCA-treated wood as a recovered material in office furniture. The arsenic in CCA is a known human carcinogen and EPA is currently conducting a thorough and comprehensive risk assessment of CCA as a part of the pesticide reregistration process for CCA. In addition, EPA is conducting a risk assessment for children who contact CCA-treated wood playsets and decks.

general recommendations for affirmative procurement programs, and recommendations for previously designated items. In the case of cement and concrete, polyester carpet, railroad grade crossing surfaces, latex paint, and retread tires, the recommendations published today revise the previous recommendations issued in RMAN I, RMAN II, and RMAN III.

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I. General Recommendations

General recommendations for definitions, specifications, and affirmative procurement programs can be found in the May 1, 1995 RMAN (60 FR 21386). Procuring agencies should avoid specifications that may result in unintentional barriers to purchasing designated items, such as packaging, color, or cosmetic requirements that have no bearing on the item's functionality or performance, but that might prevent its purchase with the highest percentage recovered materials practicable.

II. Specific Recommendations for Procurement of Designated Items

Recommendations for purchasing previously-designated items can be found in the May 1, 1995, November 13, 1997, and January 19, 2000 RMANs, and the May 29, 1996 and June 8, 1998 Paper Products RMANs. Revised recommendations for cement and concrete, polyester carpet, railroad grade crossing surfaces, latex paint, and retread tires are included in today's notice.

Part B—Vehicular Products

Section B-2. (Revised) Retread Tires

Note: EPA learned that the U.S. General Services Administration (GSA) Federal Tire Program's Quality Assurance Facility Inspection Program (QAFIP) is defunct. Therefore, EPA is revising the retread tire recommendations by deleting reference to the GSA QAFIP. The following are EPA's revised recommendations for procuring retreading services and retread tires. These recommendations replace those issued in RMAN I (60 FR 21386, May 1, 1995).

Procurement of tire retreading services for the agencies' used tire casings: EPA recommends that procuring agencies specify that tire repair and retread services must conform to Federal Specification ZZ-T-441H (or current version).

Procurement of tires through competition between vendors of new tires and vendors of retread tires: EPA recommends that procuring agencies specify that retread tires must meet the requirements of Federal Specification ZZ-T-381, "Tires, Pneumatic, Vehicular (Highway) (New and Retreaded).

Section B-4. Rebuilt Vehicular Parts

Note: Based on EPA's research, rebuilt vehicular parts generally contain between 60 and 95% postconsumer material. However, this level of detail might not be readily available from distributors to procurement officials. Therefore, EPA is not recommending a range of recovered content.

Preference Program: EPA recommends that procuring agencies whose vehicles (passenger vehicles as well as medium- and heavy-duty equipment, including trucks, cranes, off-road vehicles, and military vehicles) are serviced by a motor pool or vehicle maintenance facility establish a service contract to require the use of rebuilt vehicular parts in the agencies' vehicles or establish a program for vehicular parts rebuilding and reuse consisting of either recovering a used vehicular part and rebuilding it, replacing it with a rebuilt part, or contracting to have the part replaced with a rebuilt part. This designation applies to vehicles served by both on-site and commercial facilities.

Specifications: To be labeled "rebuilt" or "remanufactured," a part must be

processed in accordance with the FTC's "Guides for the Rebuilt, Reconditioned and Other Used Automotive Parts Industry," 16 CFR part 20. Rebuilders must test each part for compliance with FTC specifications and correct defects as necessary.

Part C—Construction Products

Section C-3. (Revised) Cement and Concrete Containing Coal Fly Ash, Ground Granulated Blast Furnace Slag, Cenospheres, and Silica Fume From Silicon or Ferrosilicon Metal Production

Note: Following are EPA's revised recommendations for procuring cement and concrete. EPA previously designated cement and concrete containing coal fly ash and ground granulated blast furnace slag (GGBF) in CPG I and provided information about recovered materials content in RMAN I (60 FR 21386, May 1, 1995). EPA has amended the designation to add cenospheres and silica fume from silicon or ferrosilicon metal production as other recovered materials for use as cement and concrete additives. Procuring agencies should substitute these recommendations for the recommendations found in section C-3 of RMAN I.

Preference Program: EPA recommends that procuring agencies prepare or revise their procurement programs for cement and concrete or for construction projects involving cement and concrete to allow the use of coal fly ash, ground granulated blast furnace slag (GGBF slag), cenospheres, or silica fume, as appropriate. EPA does not recommend that procuring agencies favor one recovered material over the other. Rather, EPA recommends that procuring agencies consider the use of all of these recovered materials and choose the one (or the mixture of them) that meets their performance requirements, consistent with availability and price considerations. EPA also recommends that procuring agencies specifically include provisions in all construction contracts to allow for the use, as optional or alternate materials, of cement or concrete which contains coal fly ash, GGBF slag, cenospheres, or silica fume, where appropriate. Due to variations in cement, strength requirements, costs, and construction practices, EPA is not recommending recovered materials content levels for cement or concrete containing coal fly ash, GGBF slag, cenospheres, or silica fume. However, EPA is providing the following information about recovered materials content.

- Replacement rates of coal fly ash for cement in the production of blended cement generally do not exceed 20–30 percent, although coal fly ash blended cements may range from 0–40 percent

coal fly ash by weight, according to ASTM C 595, for cement Types IP and I(PM). Fifteen percent is a more accepted rate when coal fly ash is used as a partial cement replacement as an admixture in concrete.

- According to ASTM C 595, GGBF slag may replace up to 70 percent of the Portland cement in some concrete mixtures. Most GGBF slag concrete mixtures contain between 25 and 50 percent GGBF slag by weight. EPA recommends that procuring agencies refer, at a minimum, to ASTM C 595 for the GGBF slag content appropriate for the intended use of the cement and concrete.

- According to industry sources, cement and concrete containing cenospheres typically contains a

minimum of 10 percent cenospheres (by volume).

- According to industry sources, cement and concrete containing silica fume typically contains silica fume that constitutes 5 to 10 percent of cementitious material on a dry weight basis.

Specifications for Cement and Concrete Containing Fly Ash and Ground Granulated Blast Furnace Slag: For cement and concrete containing coal fly ash and ground granulated blast furnace slag, the following recommendations address guide specifications, materials specifications, contract specifications, performance standards, mix design, and quality control.

- *Guide specifications.* EPA recommends that procuring agencies

ensure that their guide specifications do not inappropriately or unfairly discriminate against the use of coal fly ash or GGBF slag in cement and concrete. EPA further recommends that procuring agencies revise their guide specifications to require that contract specifications for individual construction projects or products allow for the use of coal fly ash or GGBF slag, unless the use of these materials is technically inappropriate for a particular construction application.

- *Materials specifications.* EPA recommends that procuring agencies use the existing voluntary consensus specifications referenced in Table C-3 for cement and concrete containing fly ash and/or GGBF slag.

TABLE C-3.—RECOMMENDED SPECIFICATIONS FOR CEMENT AND CONCRETE CONTAINING RECOVERED COAL FLY ASH AND/OR GROUND GRANULATED BLAST FURNACE SLAG

Cement specifications	Concrete specifications
ASTM C 595, "Standard Specification for Blended Hydraulic Cements."	ASTM C 618, "Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete."
ASTM C 150, "Standard Specification for Portland Cement."	ASTM C 311, "Standard Methods of Sampling and Testing Fly Ash and Natural Pozzolans for Use as a Mineral Admixture in Portland Cement Concrete."
AASHTO M 240, "Blended Hydraulic Cements."	ASTM C 989, "Ground Granulated Blast-Furnace Slag for Use in Concrete Mortars."
	AASHTO M 302, "Ground Granulated Blast Furnace Slag for Use in Concrete and Mortars."
	American Concrete Institute Standard Practice ACI 226.R1, "Ground Granulated Blast-Furnace Slag as a Cementitious Constituent in Concrete."

- *State specifications.* EPA recommends that procuring agencies consult other agencies with established specifications for coal fly ash or GGBF slag to benefit from their experience. Procuring agencies can consult the Federal Highway Administration, which maintains a data base of State highway agency material specifications. The States of Alabama, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Maryland, Michigan, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, Virginia, and West Virginia have adopted specifications which allow the use of GGBF slag in one or more applications. If needed, procuring agencies can obtain these specifications from the respective State transportation departments and adapt them for use in their programs for cement and concrete, as appropriate.

- *Contract specifications.* EPA recommends that procuring agencies which prepare or review "contract" specifications for individual construction projects revise those specifications to allow the use of cement

and concrete containing coal fly ash or GGBF slag as optional or alternate materials for the project, where appropriate, consistent with the agencies' performance and price objectives.

- *Performance standards.* EPA recommends that procuring agencies review and, if necessary, revise performance standards relating to cement or concrete construction projects to insure that they do not arbitrarily restrict the use of coal fly ash or GGBF slag, either intentionally or inadvertently, unless the restriction is justified on a job-by-job basis: (1) to meet reasonable performance requirements for the cement or concrete or (2) because the use of coal fly ash or GGBF slag would be inappropriate for technical reasons. EPA recommends that this justification be documented based on specific technical performance information. Legitimate documentation of technical infeasibility for coal fly ash or GGBF slag can be for certain classes of applications, rather than on a job-by-job basis. Procuring agencies should

reference such documentation in individual contract specifications to avoid extensive repetition of previously documented points. However, procuring agencies should be prepared to submit such documentation to analysis by interested persons, and should have a review process available in the event of disagreements.

- *Mix design.* In concrete mix design specifications which specify minimum cement content or maximum water, the cement ratios could potentially unfairly discriminate against the use of coal fly ash or GGBF slag. Such specifications should be changed in order to allow the partial substitution of coal fly ash or GGBF slag for cement in the concrete mixture, unless technically inappropriate. Cement ratios may be retained, as long as they reflect the cementitious characteristics which coal fly ash or GGBF slag can impart to a concrete mixture, e.g., by considering Portland cement plus coal fly ash or Portland cement plus GGBF slag as the total cementitious component.

• *Quality control.* Nothing in this RMAN should be construed to relieve the contractor of responsibility for providing a satisfactory product. Cement and concrete suppliers are already responsible both for the quality of the ingredients of their product and for meeting appropriate performance requirements, and will continue to be under this RMAN. Nothing in EPA's recommendations should be construed as a shift in normal industry procedures for assigning responsibility and liability for product quality.

• *Additional Considerations:*
 • Procuring agencies should expect suppliers of blended cement, coal fly ash or GGBF slag, and concrete to demonstrate (through reasonable testing programs or previous experience) the performance and reliability of their product and the adequacy of their quality control programs. However, procuring agencies should not subject cement and concrete containing coal fly ash or GGBF slag to any unreasonable testing requirements.

• In accordance with standard industry practice, coal fly ash and GGBF slag suppliers should be required to provide to users a statement of the key characteristics of the product supplied. These characteristics may be stated in appropriate ranges. Other characteristics should be requested as needed by the procuring agency.

• Agencies desiring a testing or quality assurance program for cements, blended cements, or coal fly ash should contact the U.S. Army Engineer Waterways Experiment Station, PO Box 631, Vicksburg, Mississippi 39180.

Specifications for Cement and Concrete Containing Cenospheres and Silica Fume: For cement and concrete containing cenospheres, EPA recommends that procuring agencies contact cenosphere suppliers to obtain specifications, such as material safety data sheets for assisting with use of cenospheres in cement and concrete.

For cement and concrete containing silica fume, EPA recommends that

procuring agencies refer to the following national specifications and guidelines, which enable procuring agencies to buy high-performance concrete containing silica fume of a standard quality, when purchasing cement and concrete with silica fume: ASTM C1240, AASHTO M840, and ACI 234R-96. ACI 234R-96 describes the properties of silica fume; how silica fume interacts with cement; the effects of silica fume on the properties of fresh and cured concrete; typical applications of silica fume concrete; recommendations on proportions, specifications, and handling of silica fume in the field.

Section C-4. (Revised)
 Recommendations for Polyester Carpet

Note: On May 1, 1995, EPA issued a final designation for polyester carpet containing recovered materials in CPG I (60 FR 21370). EPA has revised the polyester carpet recommendations to reference the new Carpet and Rug Institute (CRI) classifications and specify that the recommendations be limited to moderate-wear applications such as those found in single-family housing units and similar applications as identified by CRI.

Preference Program: EPA recommends that, based on the recovered materials content levels recommended for polyester carpet in CPG I, procuring agencies establish minimum content standards for use in purchasing polyester carpet for moderate-wear applications such as those found in single-family housing units and other similar applications as identified by the Carpet and Rug Institute (CRI). This recommendation does not include polyester carpet for heavy- or severe-wear or commercial-type applications.

Specifications: Procuring agencies should refer to CRI's table entitled "Use Classification by End-Use Application" for a complete listing of CRI's recommended carpet applications. A copy of this table has been placed in the public docket for this RMAN.

Procuring agencies should also refer to GSA's minimum density recommendations, as follows:

- Cut pile constructions: 5,000 ounces/yard³ minimum density
- Loop pile constructions: 4,500 ounces/yard³ minimum density

While numerous carpet specifications exist, the members of the carpet industry do not utilize any universal standards. Specifications vary and are determined based on the particular factors of the installation. The project's designer, architect, general contractor, and/or facility manager typically decide the specifications. Some procuring agencies, such as the Department of the Army and the Department of Housing and Urban Development, have developed their own specifications for end-use carpet applications. These specifications should be readily available to procurement officials in those agencies.

Section C-7. (Revised) Specification for Reprocessed and Reconsolidated Latex Paints for Specified Uses

EPA is deleting reference to Federal specification TT-P-2846, which was cancelled by GSA, and recommends that procuring agencies refer to commercial item description (CID) A-A-3185 instead when purchasing recycled paint.

Section C-10. (Revised) Railroad Grade Crossing Surfaces Made From Recovered Content Concrete, Rubber, Steel, Wood, and Plastic

Note: EPA previously designated railroad grade crossing surfaces made from recovered content concrete, rubber, and steel (65 FR 3070).

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table C-10a (Revised), procuring agencies revise their procurement programs for railroad grade crossing surfaces to allow the use of recovered content concrete, rubber, steel, wood, and plastic railroad grade crossing surfaces.

TABLE C-10A. (REVISED).—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR RAILROAD GRADE CROSSING SURFACES MADE FROM RECOVERED CONTENT CONCRETE, RUBBER, STEEL, WOOD, AND PLASTIC

Surface material	Recovered material	Postconsumer content (%)	Total recovered materials content (%)
Concrete	Coal Fly Ash		15-20
Rubber	Tire Rubber		85-95
Steel	Steel	16	25-30
		67	100
Wood	Wood or wood composite	90-97	90-97
Plastic	Plastic or plastic composite	85-95	100

Notes: The recommended recovered materials content levels for rubber railroad grade crossing surfaces are based on the weight of the raw materials, exclusive of any additives such as binders or other additives.

Coal fly ash can be used as an ingredient of concrete slabs, pavements, or controlled density fill product, depending on the type of concrete crossing system installed. Higher percentages of coal fly ash can be used in the concrete mixture; the higher percentages help to produce a more workable and durable product but can prolong the curing process.

The recommended recovered materials content levels for steel in this table reflect the fact that the designated items can be made from steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF). Steel from the BOF process contains 25%–30% total recovered materials, of which 16% is postconsumer steel. Steel from the EAF process contains a total of 100% recovered steel, of which 67% is postconsumer.

Railroad grade crossing surfaces made from recovered wood may also contain other recovered materials such as plastics. The percentages of these materials contained in the product would also count toward the recovered materials content level of the item.

Railroad grade crossing surfaces made from recovered plastics may also contain other recovered materials such as auto shredder residue, which contains a mix of materials. The percentages of these materials contained in the product would also count toward the recovered materials content level of the item.

Specifications: EPA has not identified any industry specifications or standards for wood or plastic railroad grade crossing surfaces.

Section C–11. Modular Threshold Ramps Containing Recovered Steel, Rubber, or Aluminum

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table C–11, procuring agencies establish minimum content standards for use in purchasing modular threshold ramps containing recovered materials.

TABLE C–11.—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR MODULAR THRESHOLD RAMPS CONTAINING RECOVERED STEEL, RUBBER, OR ALUMINUM

Material	Postconsumer content (%)	Total recovered material content (%)
Steel	16–67	25–100
Aluminum .....	.....	10
Rubber	100	100

Notes: The recommended recovered materials content levels for steel in this table reflect the fact that the designated item may contain steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF), or a combination of both. Steel from the BOF process contains 25%–30% total recovered steel, of which 16% is postconsumer. Steel from the EAF process contains 100% total recovered steel, of which 67% is postconsumer. According to industry sources, modular threshold ramps containing a combination of BOF and EAF steel would contain 25%–85% total recovered steel, of which 16%–67% would be postconsumer. Since there is no way of knowing which type of steel was used in the manufacture of the item, the postconsumer and total recovered material content ranges in this table encompass the whole range of possibilities, i.e., the use of EAF steel only, BOF steel only, or a combination of the two.

These recommendations are for modular threshold ramps. EPA understands that ramps may also be constructed of cement and concrete. For these ramps, procuring agencies should follow the procurement guidelines for cement and concrete containing recovered materials.

Specifications: Although the Federal Government is not governed by ADA, the Access Board’s ADA standards are more current than the UFAS and are therefore generally used by Federal facilities. According to the “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities” (28 CFR part 36), published in the **Federal Register**, July 26, 1991, ground and floor surfaces along accessible routes and in accessible rooms and spaces including floors, walks, ramps, stairs, and curbs, must be stable, firm, and slip-resistant. The guidelines

do not define what is meant by “stable, firm, and slip-resistant,” but the Access Board recommends static coefficient of friction values of 0.8 for ramps and 0.6 for accessible routes.

Section C–12. Nonpressure Pipe Containing Recovered Steel, Plastic, or Cement

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table C–12a, procuring agencies establish minimum content standards for use in purchasing nonpressure pipe containing recovered materials.

TABLE C–12A.—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR NONPRESSURE PIPE CONTAINING RECOVERED STEEL, PLASTIC, OR CEMENT

Material	Postconsumer content (%)	Total recovered materials content (%)
Steel	16 67	25–30 100
HDPE	100	100
PVC	5–15	25–100
Cement	Refer to cement and concrete recommendations in C–3 of the RMAN.	

Note: The recommended recovered materials content levels for steel in this table reflect the fact that the designated item can be made from steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF). Steel from the BOF process contains 25%–30% total recovered steel, of which, 16% is postconsumer steel. Steel from the EAF process contains a total of 100% recovered steel, of which, 67% is postconsumer steel.

Specifications: EPA recommends that procuring agencies refer to the following tables C–12b, C–12c, C–12d, and C–12e when purchasing nonpressure pipe containing recovered materials. For additional guidelines see the “Background Document for Proposed CPG IV and Draft RMAN IV,” which can be found in the RCRA public docket.

TABLE C–12B.—ASTM PLASTIC PIPE SPECIFICATIONS

- F1960, Standard Specification for Co-extruded Poly(Vinyl Chloride) (PVC) Non-Pressure Plastic Pipe Having Reprocessed Recycled Content.
- F1732, Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer and Drain Pipe Containing Recycled PVC Material.
- D1248, Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.
- F810, Smooth Wall Polyethylene (PE) Pipe for Use in Drainage and Waste Absorption Fields.
- F405, Standard Specification for Corrugated Polyethylene (PE) Tubing and Fittings.
- F512, Standard Specification for Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation.
- F667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing and Fittings.
- F949, Standard Specification for Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings.
- D2665, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.
- D3034, Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.

TABLE C-12B.—ASTM PLASTIC PIPE SPECIFICATIONS—Continued

D2239, Standard Specifications for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter.
 D2447, Standard Specification for Polyethylene (PE) Plastic Pipe Schedules 40 and 80, Based on Controlled Outside Diameters.
 D2729-96a, Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 D3035, Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter.
 D4976, Standard Specification for Polyethylene Plastic Molding and Extrusion Materials.
 D3350, Standard Specification for Polyethylene Plastic Pipe and Fitting Materials.
 D4396, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications.
 F810, Standard Specification for Smooth Wall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields.
 F405, Standard Specification for Corrugated Polyethylene (PE) Tubing and Fittings.
 F1970, Standard Specification for Special Engineered Fittings or Appurtenances for Use in Poly(Vinyl Chloride) (PVC) or Chlorinated Poly(Vinyl Chloride) (CPVC) Systems.

Note: ASTM Committee C13 on Concrete Pipe is responsible for the formulation and review of specifications, test methods and definitions for concrete pipe and develops and reviews practices and guides covering design, installation, testing, economic evaluation, and performance of concrete pipe systems. While the previous ceiling on fly ash content had been set at 25 percent, in 1999, ASTM Committee C13 removed all limitations on fly ash content in pipe.

TABLE C-12C.—ASTM CONCRETE PIPE SPECIFICATIONS

C14-99, Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
 C118-99, Standard Specification for Concrete Pipe for Irrigation or Drainage.
 C412-99, Standard Specification for Concrete Drain Tile.
 C444-95, Standard Specification for Perforated Concrete Pipe.
 C505-99a, Standard Specification for Nonreinforced Concrete Irrigation Pipe With Rubber Gasket Joints.
 C654-99, Standard Specification for Porous Concrete Pipe.
 C76-99, Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 C506-99, Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe.
 C507-99, Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.
 C478-97, Standard Specification for Precast Reinforced Concrete Manhole Sections.

TABLE C-12D.—ASTM AND AASHTO SPECIFICATIONS FOR STEEL PIPE

Material	Description	AASHTO specifications	ASTM specifications
Zinc Coated Sheets and Coils	Steel base metal* with 610 g/m ² (2 oz/ft ²) zinc coating	M-218	A929M
Polymer Coated Sheets and Coils ..	Polymer coatings applied to sheets* and coils* 9.25 mm (0.010 in.) thickness each side.	M-246	A742M
Fiber Bonded Coated Coils	Steel base metal with zinc coating and fibers pressed into the zinc while molten to form fiber bonded coating.	.....	A885
Aluminum Coated	Steel base metal* coated with 305 g/m ² (1 oz/ft ²) of pure aluminum	M-274	A929M
Sewer and Drainage Pipe	Corrugated pipe fabricated from any of the above sheets or coils. Pipe is fabricated by corrugating continuous coils into helical "from with lockseam or welded seam, or by" rolling annular corrugated mill sheets and riveting seams	.....
	Galvanized corrugated steel pipe	M-36	A760M
	Polymeric pre-coated sewer and drainage pipe	M-245	A762M
	Fiber bonded impregnated corrugated steel pipe .....	.....	A760M
	Aluminized corrugated steel pipe	M-36	A760M
	Structural plate pipe	M-167	A761M
Asphalt Coated Steel Sewer Pipe ..	Corrugated steel pipe of any of the types shown above with a 1.3 mm (0.0050 in.) high purity asphalt cover.	M-190	A849, A862
Invert Paved Steel Sewer Pipe	Corrugated steel pipe of any one for the types shown above with an asphalt pavement poured in the invert to cover the corrugation by 3.2 mm (1/8 in.).	M-190	A849, A862
Fully Lined Steel	With an internal asphalt lining centrifugally spun in place	M-190	A849, A862
	Corrugated steel pipe with a single thickness of smooth sheet fabricated with helical ribs projected outward.	M-36	A760M
	With an internal concrete lining in place	M-36	A760M
	Corrugated steel pipe with a smooth steel liner integrally formed with the corrugated shell.	M-36	A760M
Cold Applied Bituminous Coatings	Fibrated mastic or coat tar base coatings of various viscosities for field or shop coating of corrugated pipe or structural plate.	M-243	A849
Gaskets and Sealants	Standard O-ring gasket .....	.....	D1056
	Gasket strips, butyl or neoprene .....	.....	C361

NOTES: * Yield point 0230 Mpa (33 ksi) min.; tensile strength—310 Mpa (45 ksi) min.; Elongation (50 mm/2 in.)—20% min.
 AASHTO pipe specifications restrict the use of recycled plastic through the reference to "rework" material. Specifications referenced by those who commented in 1994 are listed in Table C-12e. AASHTO's specifications are updated annually.

TABLE C-12E.—AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS PIPE SPECIFICATIONS (1994)

M252-93, Corrugated Polyethylene Drainage Tubing.
 M294-93, Corrugated Polyethylene Pipe.
 M278, Class PS 46 Polyvinyl Chloride (PVC) Pipe.
 Section 18, Standard Specifications for Highway Bridges.

Section C-14. Roofing Materials Containing Recovered Steel, Aluminum, Fiber, Rubber, Plastic or Plastic Composites, or Cement

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table C-14, procuring agencies establish minimum content standards for use in purchasing or procuring roofing materials or services. EPA's research indicates that wood

shakes and shingles as well as asphalt/plastic composite roofing materials can be made from recovered materials, but we were unable to identify recycled-content percentages in these products. In the case of asphalt/plastic composite roofing materials, EPA found that the plastic was the recovered material in the items, not the asphalt.

TABLE C-14.—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR ROOFING MATERIALS CONTAINING RECOVERED STEEL, ALUMINUM, FIBER, RUBBER, PLASTIC OR PLASTIC COMPOSITES, OR CEMENT

Material	Postconsumer content (%)	Total recovered materials content (%)
Steel	16	25-30
	67	100
Aluminum	20-95	20-95
Fiber (Felt) or Fiber Composite	50-100	50-100
Rubber	12-100	100
Plastic or Plastic/Rubber Composite	100	100
Wood/Plastic Composite		100
Cement	Refer to cement and concrete recommendations in C-3 of the RMAN.	

NOTE: The recommended recovered materials content levels for steel in this table reflect the fact that the designated item can be made from steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF). Steel from the BOF process contains 25%-30% total recovered steel, of which, 16% is postconsumer steel. Steel from the EAF process contains a total of 100% recovered steel, of which, 67% is postconsumer steel.

Specifications: EPA recommends that procuring agencies refer to the 186 standards for roofing products maintained by ASTM's Committee D08 on Roofing, Waterproofing, and Bituminous Materials. The specifications, however, do not discuss use of recovered materials, nor do they preclude the use of recovered materials.

Part G. Nonpaper Office Products
 Section G-9. Office Furniture Containing Recovered Steel, Aluminum, Wood, Agricultural Fiber, and Plastic

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table G-9, procuring agencies

establish minimum content standards for use in purchasing office furniture with recovered materials, including remanufactured or refurbished office furniture.

TABLE G-9.—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR OFFICE FURNITURE

Product	Material	Postconsumer content (%)	Total recovered materials (%)
Furniture structure	Steel	16	25-30
Furniture structure	Aluminum		75-100
Particleboard/Fiberboard component	Wood or wood composite	Greater than 0	80-100
	Agricultural fiber		100
Fabric	PET	100	100
Plastic furniture component	HDPE	70-75	95
Remanufactured or Refurbished Furniture.	Various	25-75	25-75

Notes: The recommended recovered materials content levels for steel in this table reflect the fact that the designated item is generally made from steel manufactured in a Basic Oxygen Furnace (BOF). Steel from the BOF process contains 25%-30% total recovered steel, of which, 16% is postconsumer steel.

Particleboard and fiberboard used in the wood components of office furniture may also contain other recovered cellulosic materials, including, but not limited to,

paper, wheat straw, and bagasse. The percentages of these materials contained in the product would also count toward the recovered materials content level of the item. In addition, while EPA has no evidence or indication that wood treated with chromated copper arsenate (CCA) is currently used in office furniture, EPA is not recommending the use of CCA-treated wood as a recovered material in office furniture. The arsenic in CCA is a known human carcinogen and EPA is currently conducting a thorough and

comprehensive risk assessment of CCA as a part of the pesticide reregistration process for CCA. In addition, EPA is conducting a risk assessment for children who contact CCA-treated wood playsets and decks.

Specifications: EPA did not identify any standards or specifications that would preclude government agencies from purchasing office furniture with recovered materials content or remanufactured or refurbished office

furniture. GSA requires that remanufactured furniture meet the same Underwriters Laboratories, ASTM, and Business and Institutional Furniture Manufacturer's Association standards and fire codes (Boston and California) as new furniture.

Part H. Miscellaneous Products

Section H-8. Bike Racks Containing Recovered Steel or Plastic

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table H-8, procuring agencies establish minimum content standards for use in purchasing bike racks.

TABLE H-8.—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR BIKE RACKS

Material	Postconsumer content (%)	Total recovered materials content (%)
Steel	16	25-30
HDPE	100	100

Notes: The recommended recovered materials content levels for steel in this table reflect the fact that the designated item is generally made from steel manufactured in a Basic Oxygen Furnace (BOF). Steel from the BOF process contains 25%-30% total recovered steel, of which, 16% is postconsumer steel.

Specifications: EPA did not identify any industry standards or specifications that would preclude the use of recovered materials in bike racks.

Section H-9. Blasting Grit Containing Recovered Steel, Coal and Metal Slag, Bottom Ash, Glass, Plastic, Fused Alumina Oxide, and Walnut Shells

Preference Program: EPA recommends that, based on the recovered materials content levels shown in Table H-9, procuring agencies establish minimum content standards for use in purchasing blasting grit containing recovered materials.

TABLE H-9.—RECOMMENDED RECOVERED MATERIALS CONTENT LEVELS FOR BLASTING GRIT

Material	Post-consumer content (%)	Total recovered materials content (%)
Steel	16-67	25-100
Coal Slag .....	.....	100
Copper and Nickel Slag .....	.....	100
Bottom Ash .....	.....	100
Glass	100	100
Glass/Plastic	20	100
Fused Alumina Oxide	100	100
Walnut Shells .....	.....	100

Note: The recommended recovered materials content levels for steel in this table

reflect the fact that the designated item may contain steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF), or a combination of both. Steel from the BOF process contains 25%-30% total recovered steel, of which 16% is postconsumer. Steel from the EAF process contains 100% total recovered steel, of which 67% is postconsumer. According to industry sources, blasting grit containing a combination of BOF and EAF steel would contain 25%-85% total recovered steel, of which 16%-67% would be postconsumer. Since there is no way of knowing which type of steel was used in the manufacture of the item, the postconsumer and total recovered material content ranges in this table encompass the whole range of possibilities, i.e., the use of EAF steel only, BOF steel only, or a combination of the two.

Specifications: EPA did not find any specifications that would preclude the use of recovered materials in blasting grit. EPA recommends that procuring agencies exercise OSHA or other required standard safety practices when using blasting grit, particularly when using blasting grit containing slag materials.

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