RMAN FOR ITEMS DESIGNATED IN THE COMPREHENSIVE PROCUREMENT GUIDELINE -- SUPPORTING ANALYSES

Office of Solid Waste
U.S. Environmental Protection Agency
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I. Introduction

This document explains the basis for the recommendations of the U.S. Environmental Protection Agency in its Recovered Materials Advisory Notice (RMAN). The information presented here supplies the supporting analyses used by the Agency in developing the RMAN and discusses EPA's overall objectives and the process and methodology used for making recovered materials content recommendations for items designated in the Comprehensive Procurement Guideline (CPG). This document also
provides the Agency's detailed response to public comments received on an earlier draft RMAN.

II. Background

Among other things, Section 6002 of the Resource Conservation and Recovery Act (RCRA) establishes a Federal buy-recycled program. RCRA section 6002(e) requires EPA to (1) designate items which are or can be produced with recovered materials and (2) prepare guidelines to assist procuring agencies in complying with their affirmative procurement responsibilities set forth in paragraphs (c), (d), and (i) of section 6002. Once EPA has designated items, section 6002 requires that any procuring agency using appropriated Federal funds to procure those items must purchase them containing the highest percentage of recovered materials practicable.

EPA previously issued five guidelines for procurement of products containing recovered materials: cement and concrete containing fly ash (40 CFR Part 249, 48 FR 4230, January 28, 1983), paper and paper products (40 CFR Part 250, 53 FR 23546, June 22, 1988), re-refined lubricating oil (40 CFR Part 252, 53 FR 24699, June 30, 1988), retread tires (40 CFR Part 253, 53 FR 46558, November 17, 1988), and building insulation products (40 CFR Part 248, 54 FR 7327, February 17, 1989). Each of these guidelines contains item designations and procurement recommendations for the designated items. Both the item designations and the procurement recommendations were codified in the *Code of Federal Regulations* (CFR).

In order to expedite the process of issuing procurement guidelines, Executive Order 12873, "Federal Acquisition, Recycling, and Waste Prevention" (58 FR 54911, October 22, 1993), directed EPA to adopt modified procedures for designating items and providing procurement recommendations. Under the Order, EPA is to issue a regulation, known as a Comprehensive Procurement Guideline (CPG), which contains the item designations, and also prepare a guidance document, known as a Recovered Materials Advisory Notice (RMAN), which contains EPA's recommendations to procuring agencies to assist them in purchasing the designated items and meeting their statutory obligations. The Order further directs EPA to update the CPG annually and the RMAN periodically, after public comment, to reflect changes in market conditions. Under this procedure, EPA will continue to codify the item designations in the *CFR*, but not the recommendations. In accordance with the Order, the recommendations will be available in guidance documents (i.e., the Recovered Materials Advisory Notices).

EPA proposed the CPG on April 20, 1994 (59 FR 18852) and is issuing the final CPG concurrently with a notice of the availability of the RMAN. In the CPG, EPA consolidated the designations of the five existing procurement guidelines and the new item designations into one regulation. Similarly, the RMAN includes EPA's earlier recommendations made in the five existing procurement guidelines and the recommendations for the new procurement items in one guidance document. The recommendations are organized into eight product categories corresponding to the categories used in the CPG: paper and paper products, vehicular products, construction products, transportation products, park and recreation products, landscaping products, non-paper office products, and miscellaneous products. In the RMAN, the earlier recommendations for paper and paper products are now found in the first category, the recommendations for re-refined lubricating oil and retread tires are found in the vehicular products category, and the recommendations for building insulation products and cement and concrete containing fly ash are found in the construction products category.

On March 15, 1995, EPA published a notice of the availability of a draft RMAN for paper products (see 60 FR 14182). The draft paper RMAN contains potential revisions to EPA's recommended recovered materials content levels for paper products and addresses a variety of issues that have been raised as procuring agencies have implemented affirmative procurement programs for paper products containing recovered materials. It also includes recommended minimum content standards for specified uncoated printing and writing papers called for in section 504 of Executive Order 12873. Federal executive agencies should note, however, that, as of December 31, 1994, the standards in section 504 of the Order are applicable to their paper purchases whether or not EPA adds them to the paper guideline. When the RMAN for paper products is completed, its recommendations will replace the recommendations found in Part A (Paper and Paper Products) of the RMAN for the CPG.

In addition to establishing the new framework, the RMAN contains general recommendations for affirmative procurement programs, recommended recovered materials content levels for the new items designated in the CPG, a revised recommended recovered materials content level for rock wool insulation, and the addition of a range of recommended recovered materials content levels for fiberglass insulation. (Both rock wool and fiberglass insulation were designated previously in the existing building insulation products procurement guideline.)

Executive Order 12873 requires EPA to update the recommended recovered materials content levels periodically to reflect current usage of recovered materials in designated items. In the draft RMAN, EPA stated its intent to establish a process for the public to provide current information about the percentages of recovered materials used in designated items, and solicited views on possible options for implementing such a process. EPA did not receive any information on this issue. The Agency still intends to establish a process that will allow for increased public input and intends to discuss this in a future FEDERAL REGISTER notice.

Finally, EPA uses several acronyms for organizations and materials throughout this document. These are listed in Table 1 for the convenience of the reader.

Table 1
Acronyms Used in the Recovered Materials Advisory Notice

Acronym	Term
AASHTO	American Association of State Highway and Transportation Officials
ASHRAE	American Society for Heating, Refrigeration and Air Conditioning Engineers
ASTM	American Society for Testing and Materials
BOCA	Building Officials Council of America
CABO	Council for American Builders Association
CPG	Comprehensive Procurement Guideline
DWV	Drain, waste, and vent
E.O.	Executive Order 12873
EPA	Environmental Protection Agency
GGBF	Ground granulated blast furnace (slag)
GSA	General Services Administration
HDPE	High density polyethylene
LDPE	Low density polyethylene
PET	Polyethylene terephthalate
PP	Polypropylene
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RMAN	Recovered Materials Advisory Notice

III. Recovered Materials Content

A. Use of Minimum Recovered Materials Content Standards

For most designated items, EPA recommends in the RMAN that procuring agencies establish minimum recovered materials content standards. EPA has previously stated its view that the use of minimum content standards should satisfy the statutory requirement to procure products containing the highest levels of recovered materials practicable (see for example, 53 FR 23553, June 22, 1988 or 59 FR 18894, April 20, 1994).

For some items, the use of minimum content standards is inappropriate because the product is remanufactured, reconditioned, or rebuilt (e.g., remanufactured toner cartridges). In these instances, EPA recommends that procuring agencies use a substantially equivalent alternative to the minimum content standards approach as allowed in section 6002(i)(3) of RCRA. For example, in the case of remanufactured toner cartridges, EPA recommends that procuring agencies establish a two-step program consisting of contracting for remanufacturing of their expended toner cartridges and purchasing remanufactured toner cartridges when replacement cartridges are needed. Minimum content standards are not applicable in this case because the recovered material is the expended cartridge, rather than individual components used to produce a new cartridge. In cases where an agency is procuring new toner cartridges whose components are made from recovered materials (e.g., plastic), minimum recovered content standards would still be applicable.

EPA notes that, under RCRA section 6002(i), it is the procuring agencies' responsibility to establish minimum recovered materials content standards, while EPA provides recommendations regarding the levels of recovered materials in the designated items. To make it clear that EPA does not establish minimum content standards for other agencies, EPA will no longer refer to its recommendations as recovered materials content "standards," as was done in the existing procurement guidelines. Instead, EPA will refer to its recommendations as recovered materials content "levels," consistent with RCRA section 6002(e) and Executive Order 12873.

The Order directs EPA to present, in the RMAN, "the range of recovered materials content levels within which the designated recycled items are currently available." In meeting this provision, the RMAN recommends ranges that reflect the best information available to the Agency about the use of recovered materials in the manufacture of a given item and that encourage manufacturers to use the maximum amount of recovered materials without compromising competition or product performance and availability. EPA recommends that procuring agencies use these ranges, in conjunction with their own research into the recovered materials content of items available to them, to establish their minimum content standards. In some instances, EPA recommends one level (e.g., 100 percent recovered materials), rather than a range, because the item is universally available at that recommended level; EPA recommends that procuring agencies establish their minimum content standards at that level.

B. Methodology For Recommending Recovered Materials Content Levels

EPA identified and evaluated pertinent data sources and information regarding the percentages of recovered materials contained in the items we designated in the CPG. Prior to issuance of Executive Order 12873, EPA was considering five items for designation -- fiberboard, hydraulic mulch, plastic pipe, geotextiles, and compost. For these items, EPA reviewed previously-gathered data. For the other items, EPA reviewed and evaluated information obtained from product manufacturers. In addition, EPA gathered and evaluated publicly-available information and information provided by other Federal agencies. Based on this information, EPA identified a range of recovered materials content levels within which each of the items proposed for designation is available. In developing the ranges, EPA's objective was to ensure the availability of the item, while challenging manufacturers to increase their use of recovered materials. EPA published these ranges in the draft RMAN and solicited the views of the public. In some instances, additional information was provided or additional research was undertaken by the Agency following publication of the draft RMAN. This additional information was also used in developing the recommendations contained in the RMAN.

EPA believes that a range of content levels is appropriate at this time for three reasons. First, EPA has only limited information on recovered materials content levels for the newly-designated items. Second, rather than being purchased centrally, many of these items will be purchased locally, meaning that the recovered materials content of these items is likely to vary substantially, making it problematic to recommend a single content level at this time. Third, the Executive Order directs EPA to issue an RMAN that presents "the range of recovered materials content levels within which the designated recycled items are currently available." By recommending ranges, EPA believes that sufficient information will be provided to enable procuring agencies to set appropriate procurement specifications when purchasing the newly designated items.

It is EPA's intention to provide procuring agencies with the best and most current information available to assist them in fulfilling their statutory obligations under RCRA section 6002. To do this, EPA will monitor the progress made by procuring agencies in purchasing designated items with the highest recovered materials content practicable and will adjust the recommended content ranges accordingly. EPA anticipates that, over time, the recommended ranges will narrow.

As discussed above, EPA also is revising the recommended recovered materials content level for rock wool insulation and adding recommended recovered materials content levels for fiberglass insulation, both of which were designated in the existing building insulation guideline. In the previous procurement guidelines, EPA recommended a single content level for each designated item. When changing these recommendations, in those instances where there is sufficient information on current manufacturing practices to determine that a single recovered materials content level is appropriate (e.g., rock wool insulation), EPA has recommended one. In

other instances, EPA has recommended a range of recovered materials content levels (e.g., for fiberglass insulation).

IV. Definitions

EPA did not include definitions in the April 20, 1994 draft RMAN. Instead, all RCRA and item definitions were included in the Comprehensive Procurement Guideline. EPA has concluded that it will be easier for procuring agencies to use the recommendations in the RMAN if it includes the relevant RCRA definitions. Therefore, these terms have been added as Section I, Part A of the RMAN. Because item designations are found in the CPG, pertinent item definitions are found in the CPG as well.

On March 15, 1995, EPA issued a notice of the availability of a draft Paper Products RMAN, which includes definitions of relevant paper terms (60 FR 14182). When EPA issues the final Paper Products RMAN, these terms will replace the terms used in EPA's 1988 paper procurement guideline. For this reason, EPA did not include the 1988 definitions of paper terms in either the CPG or its companion RMAN.

The 1989 building insulation products procurement guideline included definitions of common insulation terms. These definitions were based on standard industry definitions. Because these terms are not unique to the building insulation products designation or EPA's recommendations for purchasing building insulation containing recovered materials, EPA has decided to delete them. EPA has retained in the CPG only the definitions of insulating materials (e.g., fiberglass, cellulose loose-fill insulation) because these terms define the types of insulation included within the building insulation products designation.

V. Affirmative Procurement Programs

A. General Recommendations

An affirmative procurement program is an agency's strategy for maximizing its purchases of an EPA-designated item. RCRA section 6002(i) requires that an affirmative procurement program consist of a minimum of four elements: (1) a preference program; (2) a promotion program; (3) procedures for obtaining estimates and certifications of recovered materials content and, where appropriate, reasonably verifying those estimates and certifications; and (4) procedures for monitoring and annually reviewing the effectiveness of the program. In addition, Executive Order 12873 requires that agency affirmative procurement programs encourage the electronic transfer of documents and the two-sided printing of government documents, and include provisions in contracts, grants, and cooperative agreements that require documents to be printed two-sided on recycled paper.

EPA discussed preference programs in the previous section of this document, in which EPA generally recommended that procuring agencies establish minimum content standards for designated items. This section of the document discusses promotion and monitoring. Certification is discussed in section IV.B of this document.

In previous guidelines, EPA recommended that specific actions be taken by requesting officials, contracting officers, and architects and engineers when purchasing designated items. In consulting with acquisition policy and requirements officials from several major Federal agencies, EPA learned that procuring agencies viewed these item-specific recommendations as limiting their flexibility to determine the appropriate delineation of responsibilities for implementing the statutory requirements. Based on this information and because of the broad array of products being designated in the CPG, EPA will no longer include specific recommendations for individuals within an agency to implement the requirements of RCRA section 6002 and Executive Order 12873. Instead, EPA recommends that the Environmental Executive within each major procuring agency take the lead in developing the agency's affirmative procurement program and in implementing the recommendations set forth in the RMAN.

The basic responsibilities of an Agency Environmental Executive are described in sections 302 and 402 of Executive Order 12873. Section 302 charges each Agency Environmental Executive with coordinating all environmental programs in the areas of acquisition, standard and specification revision, facilities management, waste prevention, recycling, and logistics. Section 402(c) of the Order further requires each Agency Environmental Executive to track and report, to the Federal Environmental Executive, agency purchases of EPA-designated items. In the absence of an Agency Environmental Executive, EPA recommends that the head of the implementing agency appoint an individual who will be responsible for ensuring the agency's compliance with RCRA section 6002 and Executive Order 12873.

RCRA section 6002 and the Executive Order require procuring agencies to establish affirmative procurement programs for each EPA-designated item. EPA recommends that each agency develop a single, comprehensive affirmative procurement program with a structure that allows for the integration of new items as they are designated. EPA encourages agencies to implement preference programs for non-guideline items as well, in order to maximize their purchases of recycled content products and foster markets for recovered materials.

RCRA section 6002(i)(2)(B) requires each procuring agency to adopt a program to promote its preference to buy EPA-designated items with recovered materials content. The promotion component of the affirmative procurement program educates staff and notifies an agency's current and potential vendors, suppliers, and contractors of the agency's intention to buy recycled content products.

In the previous guidelines, EPA targeted its recommendations for promoting the affirmative procurement program at the agency's vendors and contractors. EPA also believes that the education of an agency's employees is an important part of the promotion program.

Therefore, EPA believes that an agency's promotion program should consist of two components: an internal promotion program and an external promotion program.

There are several methods that procuring agencies can use to educate employees about their affirmative procurement programs. These methods include preparing and distributing agency affirmative procurement policies, publishing articles in agency newsletters and publications, including affirmative procurement program requirements in agency staff manuals, and conducting workshops and training sessions to educate employees about their responsibilities under agency affirmative procurement programs.

Methods for educating existing contractors and potential bidders of an agency's preference to purchase products containing recovered materials include publishing articles in appropriate trade publications, participating in vendor shows and trade fairs, placing statements in solicitations, and discussing an agency's affirmative procurement program at bidders' conferences.

Procuring agencies should monitor their affirmative procurement programs to ensure that they are fulfilling their requirements to purchase items composed of recovered materials to the maximum extent practicable. RCRA section 6002(i)(2)(D) requires the affirmative procurement program to include procedures for annually reviewing and monitoring the effectiveness of agency affirmative procurement programs. Section 402 of Executive Order 12873 requires the Environmental Executive of each Federal Executive agency to track and report on agency purchases of EPA-designated items. Additionally, RCRA section 6002(g) requires OFPP to submit a report to Congress every two years on actions taken by Federal agencies to implement the affirmative procurement requirements of the statute. Also, section 301 of Executive Order 12873 requires the Federal Environmental Executive to submit an annual report to OMB, at the time of agency budget submission, on Federal compliance with the Order. In order to fulfill their responsibilities, EPA anticipates that the Federal Environmental Executive and OFPP will request information from Federal agencies on their affirmative procurement practices. Therefore, it is important for agencies to maintain adequate records of procurements that may be affected by Executive Order and RCRA requirements.

In order to comply with the Executive Order, Federal agencies will need to track their purchases of products made with recovered materials content. This will also allow them to establish benchmarks from which progress can be assessed. To maintain adequate records on procurement of products containing recovered materials, procuring agencies may choose to collect data on the following:

- The minimum percentages of recovered materials content in the items procured or offered;
- Comparative price information on competitive procurements;
- The quantity of each item procured over a fiscal year;

- The availability of each item with recovered materials content; and

- Performance information related to recovered materials content of an item.

EPA recognizes that a procuring agency may be unable to obtain accurate data for all items designated by EPA. EPA does not believe that this is a problem. Estimated data is likely to be sufficient for determining the effectiveness of an agency's affirmative procurement program.

B. Calculation of Product Content for Purposes of Certification

RCRA section 6002(i)(2)(C) requires the affirmative procurement program to include procedures for estimating, certifying, and, where appropriate, reasonably verifying the amount of recovered materials content utilized in the performance of a contract. In addition, RCRA section 6002(c) requires contracting officers to obtain from vendors a certification "that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by applicable specifications or other contractual requirements."

Because each product will be different, in the RMAN, EPA recommends that procuring agencies discuss certification with product vendors to ascertain the appropriate period for certifying recovered materials content. EPA recommends that consistent with federal procurement law requirements, whenever feasible, the recovered materials content of a product be certified on a batch-by-batch basis or as an average over a calendar quarter or some other appropriate averaging period as determined by the procuring agencies.

VI. Agency's Response to Public Comments

The Agency received a number of comments on its draft RMAN. The vast majority were specific to the recommended materials content levels included in the RMAN for each designated item. EPA carefully considered all of the comments we received in issuing the RMAN. A summary of these and the Agency's response is presented below. Comments on specific item recommendations and the Agency's responses are provided in the sections which present the Agency's final recommendations for each item.

A. General Comments and Agency's Response

1. Recovered Materials Content Ranges

EPA received several comments on the Agency's change in approach from recommending minimum content standards to recommending recovered materials content ranges. At least one commenter supported the establishment of recommended ranges for designated items, but several commenters objected to the change, citing one or more of the following reasons: 1) EPA, not procuring agencies, has the resources to determine appropriate content levels; 2) An established standard is easier for procuring officials to administer than a recommended range; and 3) A standard established by one agency provides consistency and uniform baseline requirements for both manufacturers and purchasers. In addition, two commenters suggested that, should the Agency proceed with recommending recovered materials content ranges, the ranges for certain items should be narrowed.

EPA agrees with commenters that a minimum content standard is easier to administer than a range. We do not believe that, either legally or from a practical standpoint, EPA should set the standards for agencies, however. Although EPA follows developments in recovered materials usage, it is the procuring agencies, not EPA, that interact with product manufacturers and vendors on a frequent basis. For this reason, EPA believes that procuring agencies will be able to obtain information regarding the recovered materials content of products available to them and to set their specific standards accordingly.

EPA also agrees with the commenters that consistent standards can help to increase product uniformity and availability. However, such standards also can be seen as maximum targets for manufacturers and can stifle innovative approaches for increasing recovered material usage above established norms. Recognizing that products are not uniformly available at a specific content level, EPA believes that at this time ranges will result in greater availability and procurement of products containing recovered materials than will specific content standards and may cause manufacturers producing at the low end of the range to seek ways of increasing recovered material usage. For this reason, EPA believes that, for most of the items designated in the CPG, recommending a range of content levels is appropriate at this time.

Additionally, as described in the draft RMAN (59 FR 18894) and previously in this document, the Agency moved to recommending recovered materials content ranges for three reasons. First, EPA has only limited information on recovered materials content levels for the newly-designated items. Second, rather than being purchased centrally, many of these items will be purchased locally, meaning that the recovered materials content of these items available in the local market is likely to vary substantially. Third, Executive Order 12873 directs EPA to develop an RMAN that presents "the range of recovered materials content levels within which the designated recycled items are currently available." EPA further explained that it is the Agency's intention to provide procuring agencies with the best and most current information available to assist them in fulfilling their statutory obligations under RCRA section 6002. The Agency will

continue to monitor progress made by procuring agencies in purchasing designated items and will adjust the recommended content ranges accordingly via future RMANs. EPA anticipates that, over time, the recommended ranges will narrow.

2. Recommending 100% Recovered Materials Content Levels

For some items, EPA recommends a 100% recovered materials content level. A commenter stated that, because all manufacturers use some internally generated scrap as feedstock and such scrap does not meet the RCRA definition of "recovered materials," no manufacturer or vendor could certify that their products contained 100% recovered materials.

There are two types of internally generated scrap (also known as manufacturers' scrap): scrap generated in a manufacturing process using only virgin materials and scrap generated in a manufacturing process using some or all recovered materials as feedstock. EPA believes that scrap generated in a process using recovered materials as feedstock should be considered differently from scrap generated in a manufacturing process using only virgin material feedstocks. The Agency allows scrap to be counted as recovered materials to the extent that the feedstock contains materials which would qualify as recovered materials. Otherwise, there is an illogical and unnecessary obstacle to the manufacture of products using all or high levels of recovered materials. A manufacturer using all recovered materials should be able to certify that its product contains 100% recovered materials.

3. Preconsumer vs. Postconsumer Recovered Materials

EPA received several comments regarding its recommendations for postconsumer recovered materials. Three commenters disagreed with the Agency's distinction between recovered materials and postconsumer recovered materials. These commenters maintained that EPA should focus on maximizing the use of recovered materials rather than specifying postconsumer recovered materials. In addition, one commenter suggested that EPA does not have the authority under RCRA section 6002 to specify postconsumer content for any designated item except paper and paper products. Commenters also stated that a postconsumer preference would discourage the use of preconsumer materials, which could result in increased disposal of such materials.

As discussed in the proposed CPG (59 FR 18859), RCRA section 6002(e) requires EPA to designate items based on several criteria, including the potential impact of the procurement of an item on the solid waste stream. Many of the items EPA is designating in the CPG are made from materials that are currently found in significant quantities in the waste stream. The Agency believes that recommending postconsumer recovered materials content levels for these items will have the most positive impact on reducing the amount of solid waste requiring disposal. EPA disagrees with the assertion that a postconsumer preference would result in increased disposal of preconsumer materials. Preconsumer recovered materials are most often easier to incorporate into production processes because they tend to be more uniform and contain less contamination

than postconsumer materials. Thus, it is unlikely that their usage will decrease as a result of EPA's recommendations. Additionally, none of the commenters provided compelling evidence that manufacturing products with postconsumer recovered materials at the levels recommended in the RMAN would result in the displacement of significant amounts of preconsumer materials currently used to manufacture these items.

For several items, EPA recommends two-part content levels, consisting of a total recovered materials component and a postconsumer recovered materials component. In these instances, EPA found that both types of materials were being used to manufacture a product. In these instances, recommending postconsumer-only content levels would fail to acknowledge the contribution to solid waste management and the investments made by manufacturers that have been using all types of recovered materials, regardless of source, and regardless of the differences in contaminants between postconsumer and other recovered materials.

One commenter recommended that EPA should consider that the content ranges for a generic category of items may not be applicable for all applications within that category and that this fact should be kept in mind when recommending content levels.

As discussed in the methodology section of the draft RMAN, EPA used information gathered from public sources, information provided by other Federal agencies, and its own research in recommending recovered materials content levels (see 59 FR 18894). In addition, the Agency noted that many items are purchased locally, rather than from central sources, meaning that the recovered materials content levels are likely to vary substantially. The recovered material content levels recommended for items reflect the information gathered and the potential variability that may exist in local purchasing. EPA notes that RCRA section 6002(c) requires procuring agencies to procure designated items to the extent they are available. In addition, EPA notes that the recovered material content levels issued in the FEDERAL REGISTER are recommended levels and that, under RCRA section 6002(i)(3), each procuring agency should develop a preference program to procure items with the highest percentage of recovered materials practicable, regardless of whether the items contain the recommended recovered material content levels recommended in the RMAN. In cases where these items are not available containing the recommended ranges of recovered materials content, EPA recommends that procuring agencies seek these items with the highest percentage of recovered materials practicable.

4. Affirmative Procurement Programs

Commenters asked whether they are required to develop an affirmative procurement program if they already purchase an item designated by EPA in the CPG. These commenters stated that establishment of an affirmative procurement program would be costly without increasing the quantity of items containing recovered materials that they purchase.

Because most procuring agencies purchase more than one of the designated items, and it is unlikely that they currently purchase all of these items containing recovered materials, EPA believes that procuring agencies will need to establish affirmative procurement programs. However, if they have existing programs for purchasing a designated item, these agencies have met the preference program requirement and probably have satisfied the promotion program and certification requirements. EPA agrees that, in these instances, establishing affirmative procurement programs probably will not increase the agencies' purchases of the designated item containing recovered materials. Agencies simply need to monitor their purchases to ensure that they are fulfilling the RCRA requirement to purchase items composed of recovered materials to the maximum extent practicable.]

VII. Recommendations for Vehicular Products

Part B of the RMAN contains EPA's recommendations for vehicular products. EPA's earlier recommendations for re-refined lubricating oil and retread tires are found in Sections B-1 and B-2, respectively, in the RMAN. EPA updated the recommendations to reflect current specifications and, in the case of tires, GSA programs for testing and assuring the quality of the retreading facilities. Section B-3 contains EPA's recommendations for engine coolants.

A. Engine Coolants

In the draft RMAN, EPA recommended that procuring agencies whose vehicles are serviced by a motor pool or vehicle maintenance facility establish a program for engine coolant reclamation and reuse, consisting of either reclaiming the spent engine coolants on-site for use in the agencies' vehicles, or establishing a service contract for reclamation of the agencies' spent engine coolant for use in the agencies' vehicles. EPA did not recommend the purchase of reclaimed engine coolants because of a lack of information on their availability.

1. Summary of Comments and Agency's Response

a. All commenters supported the recommendations for reclaiming spent engine coolant.

b. One commenter supported the addition of a recommendation that procuring agencies, when buying engine coolants, purchase reclaimed engine coolants. This commenter, which represents a coalition of 17 automotive and trucking service, chemical, petroleum, tire, and equipment trade organizations provided information indicating that reclaimed engine coolant is available for purchase by procuring agencies at a range of prices depending on a variety of market factors. The commenter did not provide specific information on who is marketing reclaimed engine coolants or the costs this item.

Because of the widespread availability of reclaimed engine coolant, EPA is adding a recommendation that procuring agencies request reclaimed engine coolant when having their

vehicles serviced at commercial service centers. Additionally, EPA is also recommending that agencies purchase reclaimed engine coolant when making direct purchases of this item such as when necessary to make up for losses due to leakage or spillage.

c. The United States Department of Defense (DOD) commented that EPA's recommendations might interfere with their maintenance of tactical vehicles. DOD stated that some tactical vehicles use an engine coolant that is chemically different from commercially-available engine coolant (for example, vehicles used in the Antarctic) and that recycling services or equipment may not be available for these specialized products. DOD was also concerned that it would be required to purchase recovered engine coolants made from commercially-available automotive engine coolant rather than the specialized engine coolant required for tactical vehicles.

RCRA section 6002 provides that procuring agencies are not required to purchase designated items that are not available or do not meet their performance requirements. Under this statutory limitation, DOD is not required to use unavailable recycling services, to purchase recycling equipment that is not available, or to buy reclaimed engine coolant that fails to meet its performance requirements. However, DOD would be required to determine that engine coolants cannot be reclaimed or that reclaimed engine coolants do not meet their performance requirements.

d. Commenters pointed out that EPA stated incorrectly in the preamble to the proposed CPG (see 59 18896, April 20, 1994) that ASTM tests D 3306 and D 4985 are applicable to reclaimed engine coolant. Commenters explained that these tests were intended for new or virgin engine coolant.

The commenters are correct. The ASTM Committee on Engine Coolants is in the process of investigating the effects of various contaminants on engine coolants and intends to establish specifications for reclaimed and reformulated coolants in the future. EPA has removed reference to these tests from the recommendations.

e. In contrast to a statement in the draft RMAN that "Engine coolant reclaimers will reject spent engine coolant if it contains more than 1 percent propylene glycol because it interferes with their reclamation of ethylene glycol...," one commenter provided information based on its experience that "amounts of up to 15% propylene glycol can be reclaimed with ethylene glycol." Further, the commenter was concerned that this recommendation implies that the federal government prefers ethylene glycol-based engine coolants to propylene glycol-based engine coolants.

The purpose of EPA's statement was not to express a preference for one product over another but to inform procuring agencies that mixing spent ethylene glycol-based and propylene glycol-based engine coolants can adversely affect reclamation. The exact percentage of propylene glycol that can be reclaimed with ethylene glycol appears to depend on the type of recycling technology used as well as the intended end use of the reclaimed product. Because of the possibility that commingling will preclude reclamation, EPA will continue to recommend that procuring agencies buy only one formulation of engine coolant to minimize the potential that

contamination could occur and thereby interfere with reclamation of the engine coolant. It is procuring agencies prerogative to determine whether ethylene glycol-based or propylene glycol-based engine coolants meet their needs.

f. Several commenters discussed the environmental risk of engine coolants in general as well as the comparative risks and efficacy of propylene glycol-based and ethylene glycol-based engine coolants. One commenter asserts that propylene glycol-based engine coolants are "less toxic" than ethylene glycol-based engine coolants and that EPA should encourage the development of environmentally preferable materials.

The purchase of "environmentally preferable products" is not required by section 6002, and EPA is not directed to designate these products for purchase. EPA is, of course, eager to see wider use of less toxic materials and is now in the process of developing guiding principles for environmentally-preferable products.

3. Preference Program

In Section B-3 of the RMAN, EPA recommends that procuring agencies whose vehicles are serviced by a motor pool or vehicle maintenance facility establish a program for engine coolant reclamation and reuse, consisting of either reclaiming the spent engine coolants on-site for use in the agencies' vehicles, or establishing a service contract for reclamation of the agencies' spent engine coolant for use in the agencies' vehicles.

EPA also recommends that procuring agencies request reclaimed engine coolant when having their vehicles serviced at commercial service centers. Additionally, EPA recommends that agencies purchase reclaimed engine coolant when making direct purchases of this item such as when necessary to make up for losses due to leakage or spillage.

EPA does not recommend one type of engine coolant over another. However, EPA recommends that procuring agencies purchase engine coolant containing only one base chemical, typically ethylene glycol or propylene glycol, to prevent the commingling of incompatible types of engine coolant.

4. Background

Engine coolants, also known as antifreeze, are a necessary automotive chemical. Spent engine coolants can be reclaimed by removing contaminants and breakdown products of the original ingredients and by replacing corrosion inhibitors. Reclamation results in both waste reduction and materials recovery benefits.

Reclamation of engine coolants is being done through on-site and off-site reclamation. Some Navy and Postal Service facilities are reclaiming engine coolants and have not encountered performance problems with the reclaimed product. Additionally, EPA received no comments

identifying performance problems with reclaimed engine coolants. EPA believes that other procuring agencies can successfully implement similar programs.

As explained above, information provided by commenters indicates that reclaimed engine coolant is widely available for direct purchase by procuring agencies.

VIII. Recommendations for Construction Products

Part C of the RMAN contains EPA's recommendations for construction products. Recommendations for specific items are in the following sections of the RMAN:

- Section C-1 - Building insulation products,
- Section C-2 - Structural fiberboard and laminated paperboard products,
- Section C-3 - Cement and concrete,
- Section C-4 - Polyester carpet, and
- Section C-5 - Floor tiles and patio blocks.

In the draft RMAN, EPA also made recommendations for plastic pipe and fittings (see 59 FR 18899, April 20, 1994) and geotextiles and related products (see 59 FR 18900, April 20, 1994). However, since the Agency is not finalizing its designation of these items in the CPG, the RMAN does not include recommendations for these items.

A. Building Insulation Products

EPA recommended an affirmative procurement program for building insulation products in its 1989 procurement guideline (54 FR 7327, 40 CFR Part 248). Specifically, EPA recommended that procuring agencies use recovered materials content standards when purchasing cellulose loose-fill and spray-on insulation, perlite composite board, plastic rigid foam insulation, phenolic rigid foam insulation, and rock wool insulation. For fiberglass insulation, "cellulosic" fiberboards, and polystyrene rigid foam insulation, EPA recommended that agencies use a case-by-case approach to purchasing these items containing recovered materials, because either they were not reasonably available or there was insufficient competition for EPA to recommend content levels. In the draft RMAN, EPA discussed revising its existing recommendations to (1) increase the recommended content level for rock wool insulation, (2) recommend a range of recovered materials content levels for fiberglass insulation, and (3) recommend recovered materials content levels for structural fiberboard and laminated paperboard used for insulating

purposes (see 59 FR 18897, April 20, 1994). This section explains EPA's recommendations for fiberglass and rock wool insulation, while the fiberboard/paperboard recommendations are explained in section VII.B below.

Tables C-1 and C-2 of the RMAN contain the recommended recovered materials content levels for rock wool and fiberglass insulation products and for structural fiberboard and laminated paperboard, respectively. The item designations and definitions for these products are found in 40 CFR Part 247.

1. Rock Wool Insulation

EPA is increasing the recommended recovered materials content level for rock wool insulation products consistent with on a Procurement Guidelines Advisory (PGA) issued by EPA in 1990 (September 10, 1990). The PGA presented information obtained through research on use of recovered materials by the rock wool insulation industry, which indicated that EPA's original recommended minimum content level for rock wool (50 percent recovered materials) was below the current level of recovered materials typically being used by rock wool manufacturers. Based on a request from rock wool manufacturers and additional research, EPA decided to increase the recommended recovered materials content level for rock wool insulation to 75 percent recovered materials, thereby encouraging an increase in the amount of recovered materials used in rock wool procured by government agencies. No comments were submitted on this recommendation.

2. Fiberglass Insulation

In the draft RMAN, EPA recommended a recovered materials content range for fiberglass insulation of 20 to 25 percent.

a. Summary of Comments and Agency's Response

i. EPA received no comments on the draft recommended recovered materials content levels.

ii. EPA received two comments opposing the designation of fiberglass. One commenter stated that encouraging the use of cullet to make fiberglass will interfere with glass bottlers' efforts to use glass cullet to make bottles. A second commenter stated that the introduction of postconsumer glass cullet into his fiberglass insulation manufacturing process would increase the quantity of hazardous waste generated at his facility, adversely affecting his waste minimization program. This commenter stated that postconsumer cullet introduces metals (including lead, selenium, and chromium) into the manufacturing process which would, in turn, cause furnace dust and emissions to be hazardous.

As EPA stated in the proposed CPG (see, 59 FR 18868, April 20, 1994), fiberglass insulation was designated in the 1989 procurement guideline for building insulation products and

the Agency was not seeking comment on the appropriateness of the prior designation. Rather, EPA requested comment on the recommended recovered materials content levels for fiberglass insulation contained in the draft RMAN.

EPA does not agree that the use of recovered cullet by fiberglass insulation manufacturers will interfere with glass bottle manufacturers ability to obtain cullet. In fact, the opposite may be true. It is easier for glass bottlers to obtain and use recovered cullet than for fiberglass insulation manufacturers to do so. Glass bottlers, as a whole, are able to use all three colors of bottle cullet, while fiberglass insulation manufacturers are more restricted regarding the percentage of each color that can be used. In the absence of empirical data to the contrary, EPA does not believe that there will be a problem for glass bottlers. In fact, this provides flexibility that may ensure the availability of additional markets for recovered cullet.

Regarding the second commenter's concerns, EPA is not mandating the use of recovered materials in the manufacture of fiberglass insulation. It is solely the decision of the manufacturer to market his product to procuring agencies seeking fiberglass insulation containing recovered materials. Additionally, the recommended content levels included in the RMAN do not specify postconsumer recovered cullet. Provided the commenter has access to sufficient preconsumer recovered glass cullet to meet the content standards established by a procuring agency, it may be possible for the commenter to sell his product to the procuring agency and not increase his generation of hazardous waste.

The Agency applauds all efforts to minimize hazardous waste generation. EPA's research shows that insulation fiberglass manufacturing plants typically generate hazardous waste. EPA encourages the fiberglass insulation industry to work with the glass packaging industry to seek ways to reduce the toxic constituents added to glass packaging to eliminate or reduce the likelihood that additional hazardous waste will be generated due to cullet usage in making fiberglass products.

b. Preference program

In Section C-1 of the RMAN, EPA recommends that procuring agencies establish minimum recovered content standards for fiberglass insulation, based on EPA's recommended range of 20-25 percent recovered cullet.

c. Background

Fiberglass insulation was designated in the 1989 procurement guideline for building insulation products. The Agency did not recommend recovered materials content levels for fiberglass insulation because it was not being made routinely with recovered material at that time (see 54 FR 7348, February 17, 1989) and it was not clear what content levels were feasible. Additionally, EPA could not identify any manufacturers that were using recovered materials to make fiberglass insulation on a routine basis.

Fiberglass insulation manufacturers indicated to EPA that, based on the availability and cost of recovered cullet meeting their feedstock specifications, they can produce fiberglass insulation containing 20 percent recovered cullet. From our research and the additional information provided by the fiberglass manufacturers, EPA concludes that fiberglass insulation containing 20 percent recovered glass cullet is now reasonably available nationwide. EPA believes that some manufacturers are able to produce fiberglass using 25 percent cullet at some of their plants now. For this reason, EPA is recommending a recovered materials content range of 20 - 25 percent cullet. Using this range, procuring agencies should establish their minimum content standards for fiberglass insulation at the highest level practicable.

d. Specifications

In 1993, ASTM issued a standard for the composition of cullet used in the manufacture of fiberglass insulation, D 5359, "Glass Cullet Recovered from Waste for Use in Manufacture of Glass Fiber." EPA wants to ensure that procuring agencies are aware of this standard so that they can promote the availability of consistent supplies of recovered cullet meeting the feedstock specifications of the fiberglass manufacturers. Therefore, in Section C-1 of the RMAN, EPA recommends that procuring agencies reference D 5359 in their solicitations.

B. Structural Fiberboard and Laminated Paperboard Products

The draft RMAN (59 FR 18898) recommended that procuring agencies establish minimum recovered materials content standards for use in purchasing structural fiberboard and laminated paperboard products, whether for insulating, structural, or decorative applications.

1. Summary of Comments and Agency's Response

a. Structural Fiberboard

EPA received three comments on the draft RMAN regarding the recommended recovered materials content levels for fiberboard. One commenter stated that the recommended range for this product was too broad. This comment is addressed, along with similar comments, in Section VI of this document. Two other commenters contested the Agency's inclusion of recommended content levels for postconsumer recovered paper. In general, their comments fell into three categories: research data, recovered paper supply, and product quality.

i. Research Data

Two commenters stated that the information and data the Agency used in developing the proposed CPG and draft RMAN were inaccurate. The commenters maintained that EPA's information on recovered materials usage, particularly its postconsumer recovered paper data, were not representative of current industry capabilities.

Based on these comments, the Agency conducted additional research to obtain more current industry data. EPA determined that, although the data used to develop the proposed CPG and draft RMAN accurately reflected industry use of recovered materials for the year in which they were gathered, 1991, they did not reflect current industry usage of recovered materials, especially postconsumer recovered paper. On the basis of this additional research, EPA has revised the recovered materials content recommendations for structural fiberboard contained in the RMAN.

ii. Recovered Paper Supply

Two commenters reported that the supply and cost of postconsumer recovered paper has caused the industry to alter its raw material mix substantially.

EPA's research shows that many manufacturers that were using or planning to increase the use of postconsumer recovered paper have either reduced postconsumer recovered paper use or delayed plans for using postconsumer recovered paper. This has resulted from a lack of quality postconsumer recovered paper at a price competitive with other feedstocks, such as wood or bagasse. Since most fiberboard manufacturing facilities are located in rural areas and the largest sources of postconsumer recovered paper are in urban areas, the availability of postconsumer recovered paper at a reasonable cost to these facilities is extremely variable. EPA believes that the current higher prices of recovered paper presents an economic barrier to the use of postconsumer recovered paper at many fiberboard manufacturing plants.

The Agency also learned that most manufacturers of structural fiberboard products are using or are capable of using high levels of recovered materials other than paper in the manufacture of their products. These other materials include waste wood from pallets, saw mills, and forest harvesting, as well as bagasse. For this reason, EPA has modified its draft recommendations as explained below and is no longer including a postconsumer recovered materials content level for paper in its recommendations.

EPA will continue to monitor market conditions for recovered paper and its use by manufacturers of structural fiberboard products. Should market opportunities develop for the use of postconsumer recovered paper in structural fiberboard products, the Agency will consider establishing, in a future RMAN, a recommended postconsumer content level for these products. EPA encourages fiberboard manufacturers to continue to seek sources of price-competitive postconsumer paper.

iii. Product Quality

One commenter contended that introducing or increasing the level of postconsumer recovered paper in a fiberboard product would affect the product's dimensional stability. According to EPA's research, high levels (50 percent or more) of postconsumer recovered paper can affect the dimensional stability of some fiberboard products, particularly products made for exterior uses. In 1992, the U.S. Department of Agriculture's Forest Products Lab tested fiberboard products made from various ratios of wood fiber to old newspaper, including 100:0, 50:50, and 0:100. The test results indicated that high levels of old newspaper in the product produced a deterioration in mechanical properties, water absorption, and thickness swell.

According to EPA's research, at least one manufacturer reported no dimensional stability problems with board manufactured with up to 40% recovered paper. Based on this information, EPA would not recommend the use of fiberboard products containing high levels of postconsumer recovered paper (50 percent or more) for exterior applications, such as siding or roofing products.

b. Laminated Paperboard

EPA did not receive any comments on its recommendations for laminated paperboard.

2. Preference Program

In Section C-2 of the RMAN, EPA recommends that procuring agencies establish minimum recovered materials content standards for use in purchasing structural fiberboard and laminated paperboard products, whether for insulating, structural, or decorative applications. EPA recommends that the standards be based on the content levels shown in Table C-2 of the RMAN.

3. Background

Structural fiberboard and laminated paperboard products, whether used for insulating or for structural applications, are manufactured with a variety of recovered materials. In structural fiberboard, the recovered materials used include wood wastes, bagasse (sugar cane waste), over-issue newspapers and magazines, and postconsumer newspaper, corrugated, and office paper. In laminated paperboard, postconsumer paper is the principal recovered material used, including old newspapers and old corrugated containers.

a. Structural Fiberboard

There are seven manufacturers of structural fiberboard, all of which are currently using various amounts of recovered materials. Five of the manufacturers are using 80 to 100 percent

recovered materials. In addition, while five manufacturers are currently using various levels of recovered paper, most have substantially reduced or eliminated the amount of postconsumer recovered paper used in their raw material mix. EPA notes that, as discussed in Section VII.B.1.a.ii above, the current postconsumer paper content of structural fiberboard is variable due to the limited supply and high price of postconsumer recovered paper.

Based on this information, EPA recommends that procuring agencies establish a minimum recovered materials content standard for use in purchasing structural fiberboard. In today's RMAN, EPA recommends content levels in the range of 80 to 100 percent. EPA further recommends that procuring agencies purchase structural fiberboard products with the highest percentage of postconsumer recovered materials practicable, consistent with their price and performance objectives. Some manufacturers are now using postconsumer recovered paper in combination with over-issue paper (a preconsumer material). The use of over-issue recovered paper would not be counted toward the postconsumer recovered paper component but would count toward the total recovered materials content.

b. Laminated Paperboard

EPA knows of three manufacturers of laminated paperboard products that use recovered materials. Two manufacturers use 100 percent postconsumer paper. The third manufacturer uses varying amounts of postconsumer paper, depending on its customers' specifications. Based on this information, EPA is recommending recovered materials content levels for laminated paperboard products of 100 percent postconsumer recovered paper.

4. Specifications

a. Structural Fiberboard Products

The primary product standard used for structural fiberboard products is ASTM C 208, Insulating Board (Cellulosic Fiber), Structural and Decorative. Fiberboards made with wood, bagasse, and paper can satisfy this standard. However, the specification lists wood and "cane," but not paper, as cellulosic fibers, and does not include floor underlayment and roof overlay, two products which are made by a structural fiberboard manufacturer using 100 percent postconsumer paper. Therefore, in the RMAN, EPA recommends that procuring agencies, when purchasing structural fiberboard made with recovered paper, reference the technical requirements of this standard and specify that structural fiberboard products made from recovered paper and products such as floor underlayment and roof overlay are included.

Another pertinent specification is the American National Standard for Cellulosic Fiberboard (ANSI/AHA A194.1-1985). It neither requires the use of virgin materials nor precludes the use of recovered materials and, therefore, is appropriate to use with structural fiberboard products containing recovered materials.

In addition, the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) provides thermal ratings for "vegetable" fiberboards including "homogeneous board from repulped paper" used as building board.

b. Laminated Paperboard Products

No ASTM or other single specification exists that contains requirements for laminated paperboard. However, laminated paperboard products are tested using some of the standards specified in product and testing specifications for structural fiberboard. Additionally, laminated paperboard products are tested against major codes, including Federal Housing Administration, the Council for American Builders Association (CABO), the Building Officials Council of America (BOCA), and the International Conference of Building Officials. Reports of both CABO and BOCA provide results of tests of laminated paperboard products. ASHRAE also provides thermal ratings for laminated paperboard products.

c. "R"-values

As with other products made with recovered materials, EPA believes that specifications for structural fiberboard and laminated paperboard products should focus on performance requirements. For insulating products, energy value or "R" value, is a principal performance standard. EPA was informed that "R" value specifications, if set at inappropriately high levels, can be used to preclude products made with recovered materials. In the RMAN, EPA recommends that agencies review their specifications and revise them as appropriate to obtain the appropriate "R" value needed without unnecessarily precluding the purchase of products containing recovered materials.

C. Cement and Concrete Containing Ground Granulated Blast Furnace Slag

In the draft RMAN, EPA recommended that procuring agencies revise their procurement programs for cement and concrete or for construction projects to allow the use of ground granulated blast furnace slag (GGBF slag), as appropriate. EPA did not recommend content levels for cement and concrete containing GGBF slag, noting that the appropriate percentages would be dictated by the particular application for the cement or concrete.

1. Summary of Comments and Agency's Response

a. Four state agencies commented that they use cement or concrete containing coal fly ash. Two of these states noted that coal fly ash is generated in their state, while GGBF slag is not. They stated that a preference for GGBF slag over coal fly ash could result in reduced markets for coal fly ash and, therefore, create a negative impact on their waste stream.

In the RMAN, EPA combined the 1983 recommendations for cement and concrete containing coal fly ash with the recommendations for GGBF slag. EPA agrees with commenters that procuring agencies are not required to favor GGBF slag over coal fly ash. Therefore, in the RMAN, EPA clarifies that procuring agencies should consider either recovered material. EPA's designation of cement and concrete simply requires that procuring agencies consider cement and concrete containing either recovered material (i.e., coal fly ash or GGBF slag). Which type of cement or concrete a procuring agency purchases will depend on a number of factors, including the performance requirements for the construction project, product availability, competition, and product price.

b. Several state agencies commented that they specify cement or concrete containing GGBF slag for one or more applications. In addition, the Province of Ontario submitted comments indicating that in some instances mixtures should contain no more than 25 percent GGBF slag in order to reduce the likelihood of scaling in the presence of deicing chemicals.

By contrast, other commenters noted their lack of experience with cement or concrete containing GGBF slag. EPA believes that procuring agencies can benefit from the knowledge and experience of other procuring agencies. In light of these comments, EPA is adding a recommendation that procuring agencies consult other agencies with established specifications for GGBF slag to benefit from their experience. In subsection C.4 below, EPA provides a list of states that permit the use of GGBF slag in one or more applications. Procuring agencies also can consult FHWA, which maintains a data base of state highway agency material specifications.

c. One state commented that it did not want to be required to use GGBF slag beyond the uses which are currently allowed in its specifications.

As previously discussed, RCRA section 6002 provides several exceptions to the general requirement that procuring agencies must purchase EPA-designated items. One of those exceptions is that the item must be able to meet the procuring agency's reasonable performance requirements. Under this statutory provision, if a procuring agency can document that cement or concrete containing GGBF slag does not perform satisfactorily for a given application, then the agency is not required to specify and use it for that application. For example, two states commented that they do not use concrete mixes containing GGBF slag in colder months because of its slower set rate. Under RCRA section 6002, they can continue to limit the time of year when GGBF slag-cement concrete mixes are used. Given the technical limitations of using GGBF slag-cement concrete mixes during this period, a state's failure to specify and use this product during certain periods is not inconsistent with the requirements of section 6002 of RCRA.

d. Two states commented that they should not be required to revise their specifications if GGBF slag is not available to them.

Under RCRA section 6002, if a procuring agency has inquired from known sources of GGBF slag about its availability and determined that it is not reasonably available or will only be

available at an unreasonable price, then the agency is not required to purchase the item. In this instance, the procuring agency would not be required to revise its specifications to permit the use of GGBF slag. If there is a possibility that cement or concrete containing GGBF slag will be available, however, the procuring agency may need to revise its specifications and include the item in its materials or construction contract solicitations.

2. Preference Program

EPA has not changed the draft content recommendations as shown in Table C-3 of the RMAN. EPA recommends that procuring agencies revise their procurement programs for cement and concrete or for construction projects involving cement and concrete to allow the use of GGBF slag, where appropriate. 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 GGBF slag, where appropriate.

As stated in the draft RMAN, due to variations in GGBF slag, cement strength requirements, costs, and construction practices for the particular cement or concrete application, EPA is not recommending that procuring agencies establish a specific minimum content standard for cement or concrete containing GGBF slag. However, EPA notes that, according to ASTM Standard Specification C 595, "Standard Specification for Blended Hydraulic Cements," 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.

3. Background

EPA's 1983 procurement guideline for cement and concrete containing fly ash contains recommendations for the use of those products. In the April 20, 1994 Comprehensive Procurement Guideline, EPA proposed to amend the cement and concrete designation to add GGBF slag. As explained in the proposed CPG, EPA considered designating cement and concrete containing GGBF slag in the 1983 guideline but did not do so because the product was not available nationwide (see 59 FR 18872, April 20, 1994). EPA concludes that GGBF slag is now sufficiently available to add it to the cement and concrete designation.

EPA is modifying its 1983 recommendations to incorporate the use of GGBF slag in cement and concrete. Specifically, EPA is revising the general procurement provision and the sections on guide specifications, contract specifications, materials specifications, and performance standards. EPA also is combining the draft recommendations for GGBF slag with the 1983 recommendations for fly ash.

There has been some confusion about the scope of the 1983 cement and concrete guideline. Because the subject of the guideline was "cement and concrete containing fly ash,"

EPA was asked whether the guideline included municipal combustor ash. While the text of the 1983 guideline clearly explained that the item designation was limited to fly ash generated by coal burning utilities, EPA is using the term "coal fly ash" in the RMAN to clarify that our recommendations are limited to coal fly ash and do not extend to municipal waste combustor ash.

4. Specifications

ASTM, AASHTO, and the American Concrete Institute publish consensus specifications for cement and concrete, including the use of recovered materials such as GGBF slag. ASTM and AASHTO each have two specifications applicable to the use of GGBF slag: ASTM C 989, "Ground Granulated Blast-Furnace Slag for Use in Concrete Mortars;" ASTM C 595, "Blended Hydraulic Cements;" AASHTO M 302, "Ground Granulated Blast Furnace Slag for Use in Concrete and Mortars;" and AASHTO M 240, "Blended Hydraulic Cements." In addition, there is an American Concrete Institute Standard Practice, ACI 226.R1, "Ground Granulated Blast-Furnace Slag as a Cementitious Constituent in Concrete." EPA lists these specifications in the RMAN and recommends that procuring agencies use these voluntary consensus specifications for cement and concrete containing GGBF slag.

FHWA commented that the Federal Lands Highway Division allows the use of both Type IS and Type ISM blended cements. 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 also have adopted specifications which allow the use of GGBF slag in one or more applications. The state specifications are available from the state transportation departments should other procuring agencies wish to adapt them for use in their affirmative procurement programs for cement and concrete.

FHWA also commented that efforts were underway to develop a research contract that identifies appropriate uses for waste materials in highway construction and establishes guides for their use. The contract was awarded in January of 1995, and the guides are scheduled to be completed by the end of 1995.

D. Carpet

The draft RMAN recommended a recovered materials content level of 100 percent postconsumer materials (i.e., PET) for polyester carpet face fiber.

1. Summary of Comments and Agency's Response

a. One commenter, a manufacturer of polyester fiber containing postconsumer materials, was concerned that the recommended level was too high for the following reason: establishing a recommended content level at 100 percent may present problems of inadequate postconsumer materials supply as more manufacturers enter the market. The commenter suggested that EPA establish a recommended recovered materials content level of 25 percent, and increase that recommendation to 50 percent by the year 2000.

EPA understands that the markets for postconsumer PET currently are strong and dynamic; quality postconsumer PET currently is in high demand and adequate material supplies may not always be available to each manufacturer. To accommodate possible fluctuations in recovered materials supply, EPA agrees that the recommended recovered materials content level for polyester carpet face fiber should be between 25 and 100 percent postconsumer recovered materials and is recommending that range in the final RMAN. EPA will continue to evaluate market conditions and will consider raising this recommended level in future updates to the RMAN.

2. Preference Program

In Section C-4 of the RMAN, EPA recommends that, for polyester carpet used in light- and moderate-wear applications, procuring agencies establish minimum content standards at a level of 25 to 100 percent postconsumer recovered materials (for the face fiber only).

EPA recommends that Federal procuring agencies use GSA's New Item Introductory Schedule when purchasing polyester carpet containing recovered materials. EPA understands that GSA plans to place polyester carpet containing recovered materials on a regular supply schedule in the near future. EPA also recommends that procuring agencies review their specifications and revise them to permit, where suitable, the use of polyester carpet containing recovered materials. In particular, EPA recommends that agencies currently limiting carpet materials to nylon and/or wool consider adding polyester carpet, where appropriate, to enable them to procure carpet containing recovered materials.

3. Background

Broadloom carpet, meaning roll goods in 12-foot widths, for wall-to-wall installation, generally is comprised of face fibers (usually made of nylon, polyester, wool, or polypropylene) inserted into a primary backing, which is usually made of polypropylene materials. The majority

of carpet manufactured in the U.S. is made of nylon face fiber, with a smaller percentage (about 10 percent) made of polyester face fiber.

The Carpet and Rug Institute has guidelines that may be used in the selection of carpets for various areas. These guidelines categorize carpet wear applications as light, moderate, heavy, and severe, based on anticipated traffic conditions. For purposes of the CPG and RMAN, procuring agencies should use these classifications as guidance: light- and moderate-wear applications include uses in residences and private offices. Heavy-wear applications include commercial-type installations in office buildings, public rooms, lobbies, stairways, and auditoriums. Severe applications include corridors, and other areas where wheeled traffic is expected. The RMAN recommendations for recovered materials content levels are limited to polyester carpet used in light- and moderate-wear applications.

Although nylon comprises a much larger share of the carpet fiber market than polyester, at this time, carpet containing recovered materials is being manufactured only from recovered PET. Several major nylon fiber manufacturers commented that they have initiated programs to recover used carpets from the waste stream and reprocess the nylon into new products. As these programs mature, there may be a supply of postconsumer nylon that will be suitable for the manufacture of new nylon carpet fiber. Some commenters stated that they currently reuse nylon fiber scrap in their manufacturing process. However, the commenters did not make it clear whether this scrap would be considered preconsumer material or, rather, "rework" material normally reintroduced in the manufacturing process. (Under the RCRA definition of "recovered materials," "rework" is not considered to be a recovered material because it is commonly re-used within the original manufacturing process.) At this time, EPA is not aware of any nylon carpet fiber containing postconsumer recovered materials.

GSA lists polyester carpet made of recovered materials on its current New Item Introductory Schedule (NIIS), which is effective until September 30, 1995. EPA has identified two companies that manufacture carpet fiber with 100 percent postconsumer PET. One of these vendors is currently listed under GSA's NIIS contract. An item may be listed on the NIIS for up to 3 years; during that time, the item can be purchased by Federal agencies while testing is conducted and data are gathered to ensure the product's performance. If the item is acceptable and demand warrants, it may be placed under a permanent method of supply. EPA understands that GSA plans to convert the NIIS for polyester carpet to a regular supply schedule in the near future.

4. Specifications

GSA currently does not have separate specifications for polyester carpet made of recovered materials, but does require that carpet containing recovered materials meet the same technical requirements as carpet made from virgin materials. Examples of GSA's specifications for polyester carpet include pile density, pile weight, twist, colorfastness, tuft bind, and

flammability. The test methods required to verify these specifications are consistent with those of other organizations (e.g., ASTM).

The Agency's recommendations for polyester carpet obviously need not be considered in cases where Federal specifications require the use of carpet made with nylon, wool, or other materials, or where the procuring agency determines that polyester carpet does not have suitable performance characteristics for an application. However, if a specification allows flexibility in choosing the type of carpet fiber, EPA recommends that procuring agencies evaluate whether polyester carpet is appropriate to meet their needs, and, if so, to specify polyester carpet containing recovered materials.

E. Floor Tiles and Patio Blocks

The draft RMAN for floor tiles and patio blocks recommended recovered material content levels in the range of 90 - 100 percent postconsumer rubber or rubber blends for floor tiles and patio blocks and 90 -100 percent total recovered materials for floor tiles and patio blocks containing plastic or plastic blends.

1. Summary of Comments and Agency's Response

a. No commenters opposed the recommendations for patio blocks.

b. The Agency received two sets of comments pertaining to its recommendations for floor tiles. Both commenters believed that the floor tile products proposed for designation in the CPG are "specialty products" for use in limited applications and are not designed to meet ASTM and government performance standards and aesthetic standards for other applications, such as standard office flooring. One commenter recommended that EPA clearly identify the floor tile products as specialty products to prevent their use in applications for which they are not designed. Another commenter indicated that the floor tiles designated in the proposed CPG would cost more than other floor covering products currently used by government and may not be available in sufficient quantities to meet the government's demand for floor tile.

RCRA section 6002 does not require procuring agencies to purchase products that are not suitable for their needed application or that are not available at a reasonable cost. The types of floor tiles available with recovered materials content are generally used in a wide range of industrial and commercial settings that are best characterized as heavy-duty applications. These applications include indoor uses such as entrances or reception areas of office buildings, work stations, laboratories, shopping malls, schools, restaurants, and airports. Outdoor uses include restrooms and showers, skating rinks, tennis courts, boat docks, and industrial flooring. EPA does not know of any floor tiles containing recovered materials that have been used as standard office flooring. Therefore, as described in section VI.E.2 below, EPA is recommending that when procuring agencies require floor tiles for use in heavy-duty commercial-type applications, that

they seek floor tiles containing recovered materials. If floor tiles containing recovered materials suitable for other uses, such as standard office flooring, become available in the future, the Agency will consider revising its recommendations to incorporate these applications.

EPA did not receive any substantive information indicating that the available floor tile products meet applicable ASTM and government performance standards. The General Services Administration's Federal Supply Schedule for resilient flooring (Household and Commercial Furnishings, 72IB) requires that vinyl composition tile meet ASTM F1066, solid vinyl tile meet Federal Specification SS-T-312b, Type 11, rubber tile meet ASTM F-1344, and that residential grade vinyl composition tile be marked as "residential grade" in the commercial brochure. EPA recommends that procuring agencies evaluate the floor tile product's suitable applications prior to purchasing to ensure that the above-referenced or other applicable performance standards are met.

2. Preference Program

In Section C-5 of the RMAN, EPA recommends that, for floor tiles used in heavy duty commercial-type applications and for patio blocks, procuring agencies establish minimum materials content standards for these items containing recovered rubber or plastic. Examples of heavy-duty commercial-type applications include, but are not limited to, entrance/reception areas of office buildings, industrial flooring, laboratories, and fitness centers. EPA recommends that procuring agencies establish the standards within the range of recovered materials content levels shown in Table C-5 of the RMAN. EPA's recommendation does not preclude procuring agencies from purchasing floor tiles or patio blocks manufactured from another material. It simply recommends that procuring agencies, when purchasing floor tiles or patio blocks made from rubber or plastic, purchase these items made from recovered materials.

3. Background

Table 2 provides information on the availability of floor tiles and patio blocks made of recovered materials. Each entry reflects data from a manufacturer; however, manufacturers names are not listed.

Table 2
Recovered Materials Content of Floor Tiles and Patio Blocks

Product	Material	Postconsumer Materials (%)	Total Recovered Materials (%)
Floor Tiles (heavy-duty/ commercial use)	Rubber	75 - 95	95
	Rubber	75 - 95	75 - 95
	Rubber	90	90
	Rubber	99	99
	Rubber	98	98
	PVC	100 20	100 100
	PVC	100	100
	PVC	Not available	100
	PVC Mixed plastic	Not available Not available	100 Not available
	PVC	0	90 - 100
Patio Blocks	Rubber	Not available	Not available
	Rubber	100	100
	Rubber	100	100
	Composite plastics	20	100
	Plastic/wood	60	100
	Rubber/plastic	80 - 90	Up to 90

a. Floor tiles. EPA has information on 10 manufacturers and/or distributors of floor tiles containing recovered materials. The recovered materials used in these products include rubber derived from old tires, and various plastic resins, most commonly PVC (i.e., vinyl). Five of the 10 companies make floor tiles with postconsumer tire rubber, with recovered materials content levels ranging from 75 - 99 percent. The companies add a small amount of virgin rubber, adhesive fabric, or coloring agents to their products. All five companies market their products nationally for heavy-duty applications such as entrance ways in airports and stores, furniture showrooms, skating rinks, and fitness centers. For floor tiles made of rubber, EPA recommends minimum postconsumer recovered materials content levels between 90 and 100 percent.

Five of the 10 companies nationally market floor tiles made from recovered plastic, mainly PVC, in a range of 90 to 100 percent total recovered materials, with 20 to 100 percent postconsumer resin. A few types of floor tile are made of 90 to 100 percent preconsumer PVC from swimming pool liners, roof membranes, and automobile dashboard cutouts. These interlocking tiles are used in various applications, such as fitness centers, bathrooms, and cafeterias. Another type of tile is made of 100 percent postconsumer PVC from car doors and fender strips. These interlocking tiles are used for heavy-duty applications such as entrance vestibules, work areas behind cashier counters, and under heavy equipment in fitness centers. Because supplies of postconsumer PVC are not widely available, for floor tiles made of recovered plastic, EPA recommends total recovered materials content levels between 90 and 100 percent.

As previously stated, EPA does not know of any floor tiles containing recovered materials that have been used as standard office flooring and therefore, is limiting its RMAN recommendations to floor tiles used in heavy-duty commercial-type applications.

b. Patio blocks. EPA has information on six manufacturers of patio blocks made with recovered materials. The recovered materials used to make these products include rubber derived from old tires and blends of plastics resins (e.g., HDPE and LDPE), rubber/plastic, and rubber/wood. Two manufacturers offer patio blocks containing 100 percent postconsumer tire rubber. One manufacturer offers a product made of a rubber/plastic blend containing 80 - 90 percent postconsumer recovered materials. Based on this information, for patio blocks containing rubber or rubber blends (e.g., rubber/plastic or rubber/wood), EPA recommends recovered materials content levels of 90 - 100 percent postconsumer recovered materials.

Two manufacturers offer patio blocks made with blends of recovered plastic materials. One of these manufacturers produces patio blocks made with composite plastic (HDPE and LDPE) containing 20 percent postconsumer recovered materials and 100 percent total recovered materials. The other manufacturer offers patio blocks made of a plastic/wood blend containing 60 percent postconsumer materials and 100 percent total recovered materials. Because some of the resins used to make patio blocks are not widely available at this time from postconsumer sources (e.g., LDPE), for patio blocks made of plastic or plastic blends, EPA recommends total recovered materials content levels in a range from 90 - 100 percent.

4. Specifications

Floor tiles made of recovered rubber or plastic have been used in a variety of heavy-duty applications, including fitness centers, bathrooms, cafeterias, entrance vestibules, work areas, and laboratories. These uses are consistent with the potential uses by procuring agencies. Patio blocks made of recovered materials have been used in the construction of garden walkways and trails. EPA is not aware of any specifications that prohibit the use of recovered materials in the manufacture of floor tiles or patio blocks.

EPA knows of one specification for rubber floor tiles, ASTM F 1344, "Standard Specification for Rubber Floor Tile." This specification does not preclude the use of recovered materials in the manufacture of floor tiles. EPA is not aware of any specifications for patio blocks.

IX. Recommendations for Transportation Products

Part D of the RMAN contains EPA's recommendations for transportation products. In Section D-1, EPA makes recommendations for temporary traffic control devices.

A. Temporary Traffic Control Devices

The draft RMAN for temporary traffic control devices recommended a recovered materials content range of 50-100 percent for traffic cones containing PVC, HDPE or crumb rubber; a 100% recovered materials content level for traffic barricades containing HDPE, LDPE, PET; and a 100 percent recovered materials content level for Type I and II barricades made with fiberglass. In addition, a postconsumer content range of 80-100 percent was recommended for traffic barricades made from HDPE, LDPE and PET (see 59 FR 18912).

1. Summary of Comments and Agency's Response

a. In proposing to designate traffic control devices as items for inclusion in the Agency's procurement guidelines, EPA also requested information on the use of other recovered materials, such as wood and metal, in the manufacture of traffic cones and barricades (see 59 FR 18874, April 20, 1994). A commenter referred the Agency was referred to a trade publication article which describes the amount of recovered material in various steel products (see The Recycling Magnet, Fall 1994, published by the Steel Recycling Institute). This publication states that "all steel products contain either 25 to 30 percent or virtually 100 percent content when made with North American steel," depending on whether the steel is produced in basic-oxygen furnaces (25-30 percent) or electric arc furnaces (100 percent). Subsequent information obtained from the Steel Recycling Institute indicate that these figures represent all recovered materials, both pre- and postconsumer. Based on this information, the RMAN also includes recommendations for recovered materials content levels for barricades containing steel.

b. Two commenters expressed concerns regarding the availability and practicability of manufacturing traffic cones using recovered materials as recommended in the draft RMAN. Both commenters acknowledged using 20-25 percent recovered material in "black-based" traffic cones, where an upper PVC component is connected to a plastic or rubber base. However, they indicated that they were unable to manufacture PVC traffic cones in flow molding processes using any percentage of recovered PVC.

EPA contacted several manufacturers of PVC traffic cones that claim they used recovered PVC in their products to confirm their use of recovered material. Though some reported initial difficulties using recovered PVC, they stated they are currently using recovered PVC in both injection and flow molding operations for manufacturing cones. Thus, EPA believes it is appropriate to recommend recovered materials content ranges for these items.

c. One commenter, representing the North American steel industry, indicated that the steel used in the construction of traffic barricades is either steel angles or flat rolled steel plates. The commenter provided information that the angles made in North America contain 100 percent recovered steel and that the flat rolled steel plates contain at least 25 percent recovered materials. No reference was made to the amount of postconsumer steel used in the manufacture of steel components for barricades. This information is consistent with other information obtained by the Agency. Thus, EPA is recommending a recovered materials content range of 25 - 100 percent recovered materials.

2. Preference Program

In Section D-1 of the RMAN, EPA recommends that, based on the recovered materials content levels shown in Table D-1, procuring agencies establish minimum content standards for traffic cones and Type I and Type II traffic barricades.

3. Background

a. Traffic cones. As shown in Table 3, traffic cones are currently manufactured using LDPE, PVC, and crumb rubber from tires. Percentages of recovered LDPE and PVC range 50 to 100 percent, with the postconsumer contents of these materials ranging up to 15 percent. The base of the cones is typically manufactured from 20 to 100 percent crumb rubber from whole scrap tires or buffings recovered during the retreading process. "Buffings" meet the definition of postconsumer recovered materials contained in Section 203 of Executive Order 12873.

Based on this information, in Section D-1 of the RMAN, EPA recommends recovered materials content levels in the range of 50-100 percent total recovered materials for traffic cones, consisting of recovered plastic materials, rubber from whole scrap tires or derived from the retreading process, or blends of the two materials. At this time, due to the fact that many of the traffic cones identified by EPA contain relatively small percentages of postconsumer recovered rubber and plastics, EPA is not recommending that procuring agencies establish a postconsumer recovered materials content standard. Should procuring agencies establish postconsumer recovered materials content standards, the supply of traffic cones meeting the standards might not be sufficient. Most manufacturers of these products indicated that they were seeking to increase percentages of postconsumer recovered content, however.

b. Traffic barricades. As shown in Table 3, Type I and Type II traffic barricades are

typically made from steel, HDPE, PET, LDPE, fiberglass or combinations of these materials. For barricades containing recovered plastic, percentages of postconsumer recovered plastic range from 50 to 100 percent, with total recovered materials content at 100 percent. Four of the five manufacturers use 80-100 percent postconsumer recovered plastic. As noted above, additional information provided and obtained during the comment period indicates that traffic barricades made of steel generally contain recovered steel in the range of 25-100 percent, depending on the manufacturing process used. Little information is available on the postconsumer content level in steel barricade products. Based on this information, EPA is recommending recovered steel levels in a range from 25-100 percent for barricades containing steel.

Additionally, based on the information in Table 3, for Type I and II traffic barricades, EPA is recommending a minimum recovered materials content level of 100 percent total recovered materials content. EPA recommends postconsumer recovered plastic levels in a range from 80-100 percent for barricades containing recovered plastic resins.

4. Specifications

Section 635 of "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-85" contains the Federal specifications for temporary traffic control devices. This section includes descriptions of various temporary traffic control devices. EPA examined the specifications and found that Section 635.02 does not preclude the use of recovered materials in these devices. The Federal specifications reference the requirements contained in the "Manual on Uniform Traffic Control Devices" (MUTCD), published by FHWA, which also do not preclude use of recovered materials.

In addition to the Federal specifications, state procuring agencies may have additional materials or performance requirements for temporary traffic control devices. Several state procuring agencies have additional requirements and programs to test or confirm material properties of traffic control devices prior to acceptance of shipment. Most currently available traffic control devices containing recovered materials are able to meet or exceed specific state requirements. In addition, at least five states explicitly specify a preference for traffic control devices made from recovered materials. One commenter representing several state highway departments suggested that the problems associated with the use of reclaimed materials in temporary traffic control devices are expected to be minimal.

TABLE 3.-- RECOVERED MATERIALS CONTENT IN TRAFFIC CONES AND TRAFFIC BARRICADES

Type of Product	Material	Postconsumer materials (percent)	Total recovered materials (percent)
Traffic Cones	PVC	3-15	68-92
	PVC	6-7	50
	PVC	0	100
	Crumb Rubber	15-25	15-25
	Crumb Rubber-base LDPE-cone	50-100 0	100 50
Traffic Barricades (Types I and II)	HDPE	50-100	100
	HDPE	80-100	100
	HDPE	99-100	100
	HDPE + LDPE	90	100
	HDPE + PET	80-100	100
	Fiberglass	0	100
	Steel (angles)* Steel (plate)**	....	100 25-30

* Generally made of steel manufactured in electric arc furnaces that use 100% recovered steel.

** Generally made of steel manufactured in basic-oxygen furnaces that use 25%-30% recovered steel.

X. Recommendations for Park and Recreation Products

Part E of the RMAN contains EPA's recommendations for park and recreation products. In Section E-1, EPA makes recommendations for playground surfaces and running tracks.

A. Playground Surfaces and Running Tracks

The draft RMAN for playground surfaces and running tracks recommended recovered materials content levels in a range from 90 - 100 percent postconsumer rubber or plastic recovered materials.

1. Summary of Comments and Agency's Response

The Agency did not receive any comments suggesting modifications of its recommendations.

2. Preference Program

In Section E-1 of the RMAN, EPA recommends that, based on the recovered materials content levels shown in Table E-1, procuring agencies establish minimum recovered materials content standards for use in purchasing playground surfaces and running tracks made of rubber or plastic. EPA's recommendation does not preclude procuring agencies from purchasing playground surfaces or running tracks manufactured from other materials. It simply recommends that procuring agencies, when purchasing playground surfaces or running tracks made from rubber or plastic, purchase these items made from recovered materials.

3. Background

Tables 4 and 5 provide information on the availability of playground surfaces and running tracks made of recovered materials, respectively. Each entry represents data from a manufacturer or distributor; however, company names are not listed.

Table 4
Recovered Materials Content of Playground Surfaces

Product	Material	Postconsumer Material (%)	Total Recovered Materials (%)
Playground surfaces	Rubber/asphalt	60 (tires)/ 40 (asphalt)	100
	Rubber	100	100
	Rubber	100	100
	Rubber	90	90
	Rubber	50	50
	Rubber	100	100
	Rubber	100	100
	Rubber	100	100
	Rubber/compost	100	100
	Rubber/PVC	80 (rubber)/20 (PVC)	100
	PVC	100	100
	Rubber	100	100
	Rubber	100	100
	Rubber	90	90
	Rubber	90	90
	Rubber	90	90
	Rubber	100	100
	Rubber	100	100
	Rubber	100	100
	Rubber	100	100
	Rubber	100	100

Table 5

Recovered Materials Content of Running Tracks

Product	Material	Postconsumer Material (%)	Total Recovered Materials (%)
Running Tracks	Rubber	77	77
	Rubber	100	100
	Rubber	100 (90 - 95 for colored products)	100
	Rubber	100	100

a. Playground surfaces. EPA has identified 20 manufacturers/distributors of playground surfaces made with recovered materials. These companies offer products made of postconsumer rubber derived from old tires, with a range of 50 to 100 percent postconsumer rubber. Three of these companies use other recovered materials as well, including blends of rubber/asphalt, rubber/compost, and rubber/PVC. One of these companies also makes playground surfaces of 100 percent postconsumer PVC. Fourteen of the 20 companies offer playground surfaces made with 100 percent postconsumer materials. All but one of the 20 companies offers this product with 90 percent or greater postconsumer materials. Therefore, for playground surfaces made of rubber or plastic, EPA recommends recovered materials content levels in a range of 90 - 100 percent postconsumer materials.

b. Running tracks. Some of the companies that make playground surfaces also make running tracks of postconsumer rubber from tires. EPA obtained information from four of these companies, each of which offers running tracks containing 77 - 100 percent postconsumer rubber. Three of the four companies offer running tracks containing 100 percent postconsumer recovered rubber. One of these companies also offers a colored running track that contains 90 - 95 percent postconsumer recovered rubber. Those companies that do not use 100 percent postconsumer recovered materials use either a layer of virgin resin to provide added spike resistance, or use 5 to 10 percent preconsumer rubber for coloring. One of these companies constructed the 1984 Olympic running tracks with recovered materials, and has constructed running tracks for universities, schools, and state governments. Based on this information, for running tracks made of rubber or plastic, EPA recommends recovered materials content levels in a range from 90 - 100 percent postconsumer recovered materials.

4. Specifications

GSA does not have specifications for playground surfaces or running tracks; however, Federal agency installations of these products must comply with applicable State or local construction codes, as well as standards set by the Consumer Product Safety Commission and the Americans With Disabilities Act. The Consumer Product Safety Commission requires that playground surfaces meet certain performance standards to reduce head injuries, including ASTM F 1292 pertaining to impact attenuation standards. Playground surfacing and running tracks must also comply with the Americans With Disabilities Act which provides that mobility-impaired persons cannot be prohibited from access to public places.

Running tracks are not listed in GSA's Federal Supply Schedule, but playground surfaces are listed [Group 78, Part 1, Schedule C; Class 7830; Special Item Number (SIN) 192-37e, "Playground Equipment, Safety Surfacing, and Replacement Parts"]. At least one contractor under this SIN offers playground surfaces made with recovered rubber.

XI. Recommendations for Landscaping Products

Part F of the RMAN contains EPA's recommendations for landscaping products. In Sections F-1 and F-2, respectively, EPA makes recommendations for hydraulic mulch products and for yard trimmings compost.

A. Hydraulic Mulch Products

The draft RMAN for hydraulic mulch recommended that procuring agencies establish minimum content standards for hydraulic mulch products based on the following recommendations: paper-based hydraulic mulch products should contain 100 percent postconsumer recovered materials and wood-based hydraulic mulch products should contain 100 percent recovered wood and/or recovered paper.

1. Summary of Comments and Agency's Response

a. EPA received no comments on the draft content levels. One commenter recommended that hydraulic mulch products containing postconsumer paper be given preference over hydraulic mulch products containing other recovered materials because paper is more prevalent in the waste stream than wood.

While paper is more prevalent than wood in the *municipal* waste stream, there are large quantities of wood waste in the construction and demolition waste stream. The majority of this wood waste meets the statutory definition of "recovered materials," but cannot be considered to be "postconsumer recovered materials." The quantities generated are substantial and significant, however. Additionally, recovery of this wood is increasing (see 59 FR 18855-18856, April 20,

1994). While RCRA favors products containing post-consumer recovered paper over products containing other types of recovered paper and requires procuring agencies to favor products containing recovered materials over products containing no recovered materials, Congress did not mandate that products containing postconsumer paper would take precedence over products containing other recovered materials.

As explained above, substantial quantities of wood and paper are present in the solid waste stream, and the manufacture of hydraulic mulch provides an opportunity for the use of these materials. For this reason, EPA does not believe that it is appropriate to establish a preference for the use of one material over the other.

b. Another commenter questioned whether preferences for wood-based hydraulic mulch products should be limited to those made from construction scrap or postconsumer wood. The commenter noted that several wood-based hydraulic mulch manufacturers chip trees, and argued that all virgin wood chips and wood scrap should be excluded as feedstock.

RCRA section 1004(19) defines "recovered materials" as "waste material and by-products which have been recovered or diverted from solid waste, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process." Consistent with this definition, the commenter is correct in asserting that, when a hydraulic mulch manufacturer chips trees, the resulting feedstock is not a recovered material. By contrast, hydraulic mulch containing wood diverted or recovered from solid waste, such as from old pallets, construction and demolition debris, or furniture manufacturers, is a product containing recovered materials. EPA does not believe that all "wood scrap" can be excluded, however, because these materials meet the RCRA definition of a "recovered material:" they are recovered or diverted from solid waste and not reused within the original manufacturing process.

c. The commenter also stated that preferences for wood-based hydraulic mulch products should be limited to those made from construction scrap or postconsumer wood because there are many uses for wood chips but few uses for wood recovered from construction and demolition sites.

EPA believes that the fact that there are other uses for wood chips that meet the RCRA definition of "recovered materials" is not a sufficient reason for limiting the scope of materials used in wood-based hydraulic mulch products to construction scrap or postconsumer wood. Following such logic, EPA would not designate paper-based hydraulic mulch products because there are many other uses for recovered paper. Such an approach would be contrary to the Agency's goal of increasing the amount of recovered materials used in all products, where practicable. As EPA designates more products containing recovered materials -- even recovered materials that have other established uses -- there will be greater demand for the products and, therefore, expanded opportunities for collection and usage of any type of recovered material that can be used in the manufacture of the products.

2. Preference Program

In Section F-1 of the RMAN, EPA recommends that procuring agencies establish minimum content standards for hydraulic mulch products based on the following content levels: paper-based hydraulic mulch products should contain 100 percent postconsumer recovered materials and wood-based hydraulic mulch products should contain 100 percent recovered wood and/or paper. EPA further recommends that procuring agencies base the recovered materials content on the dry weight of the fiber, exclusive of any dyes, wetting agents, seeds, fertilizer, or other non-cellulosic additives.

3. Background

The majority of manufacturers about which EPA has information are using recovered materials at a content level of 100 percent. Depending on the manufacturer, the recovered materials used are postconsumer and over-issue paper, recovered wood, or a combination of recovered paper and wood.

Paper-based hydraulic mulch is produced using recovered paper as a feedstock. Postconsumer newspapers are the primary recovered paper used, but some manufacturers are mixing in over-issue newspapers and/or magazines, and postconsumer corrugated containers, office paper, and telephone books.

Paper-based hydraulic mulch is manufactured primarily by cellulose insulation manufacturers. EPA is aware of 37 manufacturers that produce both cellulose insulation and hydraulic mulch. Recovered paper content ranges between 80 and 100 percent, with the majority of these manufacturers using 100 percent postconsumer paper.

Wood-based hydraulic mulch generally is manufactured with 100 percent wood fibers, which are separated from wood scraps, wood chips, and bark. At least one manufacturer of wood-based hydraulic mulch produces a blended product containing 50 percent recovered paper. Another manufacturer produces wood-based hydraulic mulch products containing 100 percent postconsumer recovered wood and blends of postconsumer recovered wood and paper.

4. Specifications

In the draft RMAN, EPA noted that the States of California, Illinois, Michigan, Pennsylvania, Texas, Virginia, and Washington allow the use of paper-based hydraulic mulch. EPA requested information about other state specifications allowing the use of paper-based hydraulic mulch. The States of Missouri and New Hampshire commented that their specifications permit the use of this product in one or more applications. In addition, the State of Georgia commented that its specifications allow the use of wood-based hydraulic mulch products and that paper-based hydraulic mulch products should not present a significant problem.

In the proposed CPG, EPA noted that federal and state specifications can be a barrier to increased use of hydraulic mulch products. EPA further noted that some state specifications prohibit the use of paper-based hydraulic mulch based on reasons ranging from lack of information to previous performance problems with paper-based hydraulic mulch. Some of the agencies' experience was more than ten years old, however, and did not reflect improvements to quality made by hydraulic mulch manufacturers since the agencies last tested the product (see 59 FR 18877, April 20, 1994).

The States of Indiana, Ohio, and Missouri commented that they had encountered performance problems with paper-based mulch in various applications. Indiana has determined that wood-based mulch performs satisfactorily as a tackifier, and Missouri's specifications allow use of paper-based mulch as an overspray in seeding. Ohio stated that it had used hydraulic mulch unsuccessfully on highway slopes but did not specify whether the mulch was used in seeding or erosion control applications. Ohio currently is working with manufacturers to retest their products.

The State of Indiana further commented that mulching materials should be allowed based on documented field performance, rather than a generic specification. EPA agrees. Under RCRA section 6002(c)(1), a procuring agency is not required to purchase a designated item if the agency can document that the product does not meet the agency's reasonable performance requirements. Under RCRA, procuring agencies should not subject hydraulic mulch products to more stringent test conditions than would be used for other products for similar applications, nor adopt specifications that are more stringent than required for the application. EPA's general recommendations for specifications revision are found in Section I of the RMAN.

B. Yard Trimmings Compost

The draft RMAN for compost recommended the use of compost made from yard trimmings, leaves, and/or grass clippings in such applications as landscaping, seeding of grass or other plants on roadsides and embankments, as nutritious mulch under trees and shrubs, and in erosion control and soil reclamation.

1. Summary of Comments and Agency's Response

The Agency did not receive any comments on the draft RMAN for yard trimmings compost.

2. Preference Program

In Section F-2 of the RMAN, EPA recommends that procuring agencies purchase or use compost made from yard trimmings, leaves, and/or grass clippings for use in such applications as

landscaping, seeding of grass or other plants on roadsides and embankments, as nutritious mulch under trees and shrubs, and in erosion control and soil reclamation.

EPA further recommends that those procuring agencies that have an adequate volume of yard trimmings, leaves, and/or grass clippings, as well as sufficient space for composting, should implement a composting system to produce a mature, high-quality compost from these materials for use in landscaping and other applications.

3. Background

Composting is a biological process of stabilizing organic matter under controlled conditions into a product that is rich in humus and provides organic matter and nutrients to the soil. Compost serves as an alternative method of managing those organics that would otherwise be landfilled. Yard trimmings are the least controversial feedstock for compost. When grass clippings are included with leaves and other yard trimmings, the resulting compost can serve as a suitable nitrogen source with an optimal carbon/nitrogen ratio for most applications.

Compost can be used in agriculture, horticulture, silviculture (growing of trees), and in landscaping. It is used as a soil conditioner, soil amendment, lawn top dressing, potting soil mixture, rooting medium, and mulch for shrubs and trees, and for improvement of golf and other sports turf. It also can be used in erosion control and in land reclamation and revegetation of roadsides after road construction. As a result, compost should have wide applicability to procuring agencies for landscaping, gardening, seeding, and other applications.

Because of the high volume of yard trimmings currently discarded each year, there is no shortage of raw materials that would preclude composting facilities from supplying large volumes of yard trimmings compost. A significant portion of the yard trimmings is being composted, and the percentage is increasing. At the end of 1992, there were nearly 3,000 composting facilities in the U.S. Thus, the quantity of compost available from local sources is expected to increase in the near future.

The State of Maine has developed quality standards for compost products used by several state agencies or purchased with state funds. The quality standards have been set for six types of compost products, ranging from topsoil (three classes), to wetland substrate, to mulch (two classes). For each of these types of compost product, standards for maturity, odor, texture, nutrients, Ph, salt content, organic content, pathogen reduction, heavy metals, foreign matter, moisture content and density have been established. EPA has placed a copy of this regulation, "Chapter 560 Standards for Compost Products", in the docket for the draft RMAN.

4. Specifications

Procuring agencies should ensure that there is no language in their specifications for fertilizers and soil amendments that would preclude or discourage the use of compost. For

instance, if specifications address the use of straw or hay in roadside revegetation projects, procuring agencies should assess whether compost could be substituted for straw or hay or used in combination with them.

The Composting Council is helping to define and develop industry-wide standards for composts. The standards will include a Standard Operating Guide for composting facilities, which is currently available in draft form from The Composting Council, as well as standards for suitability of different types of composts for different markets, depending on the content of the compost.

XII. Recommendations for Non-Paper Office Products

Part G of the RMAN contains EPA's recommendations for non-paper office products. EPA makes recommendations for office recycling containers and office waste receptacles (Section G-1), plastic desktop accessories (Section G-2), toner cartridges (Section G-3), binders (Section G-4), and trash bags (Section G-5).

A. Office Recycling Containers and Office Waste Receptacles

The draft RMAN for office recycling containers and office waste receptacles recommended recovered materials content levels for plastic containers and receptacles in a range from 20 - 100 percent postconsumer plastic. For containers and receptacles made of paper, the RMAN referred procuring agencies recommendations for paper and paper products contained in Part A of the RMAN. For steel container and receptacles the draft RMAN recommended the highest amount of postconsumer recovered content practicable.

1. Summary of Comments and Agency's Response

a. The Agency received one comment specific to the draft RMAN which stated that the Agency's recommended postconsumer recovered material content level for plastic containers and receptacles was too low. This commenter did not provide any supporting information indicating what higher level should be recommended.

In the draft RMAN, EPA recommended a postconsumer recovered material content range for plastic containers and receptacles of 20-100 percent. Since the upper level is already at 100%, the Agency assumes the commenter was referring to the recommended lower limit of 20%. As discussed in the methodology section of the draft RMAN, the Agency used information gathered from public sources, information provided by other federal agencies, and its own research in recommending recovered materials content levels. In addition, EPA noted that many items are purchased locally, rather than from central sources, meaning that the recovered material content levels are likely to vary substantially (see 59 FR 18894). The recovered material content levels recommended for containers and receptacles in the draft RMAN are representative of the

information gathered and the potential variability in local purchases. Since the commenter did not provide any information to substantiate a change in the draft recovered materials content levels, the Agency is finalizing its recommendations as issued in the draft RMAN.

b. In the draft RMAN, EPA noted its lack of information on the recovered materials content for steel containers and receptacles and requested such information. A commenter referred the Agency to a trade publication which describes the amount of recovered material in various steel products (see **The Recycling Magnet**, Fall 1994, published by the Steel Recycling Institute). This publication states that "all steel products contain either 25 to 30 percent or virtually 100 percent content when made with North American steel," depending on whether the steel is produced in basic-oxygen furnaces (25-30 percent) or electric arc furnaces (100 percent). Subsequent information obtained from the Steel Recycling Institute indicates that these figures represent all recovered materials, both pre- and postconsumer. Based on this information, the Agency is recommending recovered materials content levels for steel receptacles and containers in the range of 25 - 100 percent.

2. Preference Program

In Section G-1 of the RMAN, EPA recommends that, based on the recovered materials content levels shown in Table G-1, procuring agencies establish minimum content standards when purchasing plastic, paper, or steel office recycling containers and office waste receptacles. EPA recommends that when purchasing office recycling containers and waste receptacles made from plastic or steel, procuring agencies use the recovered materials content levels shown in Table G-1 of the RMAN; when the items are made from paper, procuring agencies should purchase them containing recovered paper, as specified in EPA's recommendations for paper and paper products contained in Part A of the RMAN.

EPA's recommendation for office recycling containers and office waste receptacles containing recovered materials would not preclude procuring agencies from purchasing containers or receptacles manufactured using another material, such as wood. It simply recommends that procuring agencies, when purchasing office recycling containers or office waste receptacles manufactured from plastic, steel, or paper, should seek such containers made with recovered materials as recommended in Table G-1.

3. Background

EPA knows of at least four manufacturers that produce office recycling containers and office waste receptacles made with recovered materials in the range of 20 - 100 percent postconsumer recovered plastic, by weight. Containers are available through GSA's Federal Supply Schedule 72 VII B, "Recycling Collection Containers and Specialty Waste Receptacles."

GSA also has fiberboard recycling containers available through its Special Order Program. In addition, EPA's paper procurement guideline (old 40 CFR Part 250) contains recommended

postconsumer recovered materials content levels for paperboards. (As previously discussed, EPA's recommendations for paper products are found in Part A of the RMAN.)

Also, all steel products contain roughly 25-30 percent recovered materials when produced from basic-oxygen furnaces and 100 percent when made in electric arc furnaces.

4. Specifications

According to the information available to EPA, there are no national or Federal specifications that preclude the use of recovered materials content in the manufacture of office recycling containers or waste receptacles. In lieu of referencing national or Federal specifications, EPA recommends that procuring agencies incorporate recovered materials content requirements into solicitation or contract documents when purchasing these products.

B. Plastic Desktop Accessories

The draft RMAN for plastic desktop accessories recommended recovered materials content levels for these items was 25-80 percent postconsumer recovered polystyrene.

1. Summary of Comments and Agency's Response

EPA received one comment specific to the draft RMAN for plastic desktop accessories.

a. One Federal Agency which provides supplies to the federal government, commented that while many of the designated items (card holders; push-pins; rulers; various office sorters, files, and organizers; self-adhesive note holders; and pencil cups) are available within the recommended ranges, not all plastic desktop accessories proposed for designation in the CPG are available through their sources of supply with the minimum recommended 25 percent postconsumer recovered material. GSA recommended that for other plastic desktop accessories (that are not available through GSA supply sources with 25-80 percent postconsumer materials), EPA should recommend that agencies procure these items with the maximum amount of recovered materials practicable. These items include staplers, electric pencil sharpeners, calendar pads and stands, and stacking desk trays.

As discussed in the methodology section of the draft RMAN, EPA used information gathered from public sources, information provided by other Federal agencies, and its own research in recommending recovered materials content levels. In addition, the Agency noted that many items are purchased locally, rather than from central sources, meaning that the recovered materials content levels are likely to vary substantially (see 59 FR 18894). The recovered material content levels recommended for plastic desktop accessories in the draft RMAN are representative of the information gathered and the potential variability that may exist in local purchasing. EPA notes that RCRA section 6002(c) requires procuring agencies to procure designated items to the

extent they are available. In addition, EPA notes that the recovered material content levels issued in the FEDERAL REGISTER are recommended levels and that, under RCRA section 6002(i)(3), each procuring agency should develop a preference program to procure items with the highest percentage of recovered materials practicable, regardless of whether the items contain the recommended recovered material content levels specified in the RMAN.

Since plastic desktop accessories are or can be made with the range of recovered materials recommended in the draft RMAN, the Agency believes that the recommended content levels are justified. Therefore, EPA is recommending that procuring agencies use the content levels for plastic desktop accessories originally recommended in the draft RMAN. In such cases where these items are not available containing the recommended ranges of recovered materials content, EPA recommends that procuring agencies seek these items with the highest percentage of recovered materials practicable.

2. Preference Program

In Section G-2 of the RMAN, EPA recommends that, based on the recovered materials content levels should in Table G-2, procuring agencies establish minimum content standards for plastic desktop accessories.

EPA's recommendation does not preclude procuring agencies from purchasing a desktop accessory manufactured from another material, such as, paper, wood, or steel. It simply recommends that procuring agencies, when purchasing plastic desktop accessories, purchase these accessories made from recovered materials.

3. Background

EPA knows of at least three manufacturers that produce plastic desktop accessories with recovered materials content in the range of 25-80 percent postconsumer recovered plastic, by weight. In addition, several office products distributors carry these accessories as part of their product lines. GSA makes many of these products available through its Federal Supply Schedule.

Currently, EPA has information on plastic desktop accessories made from postconsumer recovered polystyrene only. In the draft RMAN, EPA requested information on whether desk accessories are being made from other recovered plastic materials and the recovered materials content levels of those items. The Agency received no additional information during the public comment period in this regard.

4. Specifications

According to the information available to EPA, there are no national or Federal specifications that preclude the use of recovered materials in the manufacture of plastic desktop accessories. In lieu of referencing national or Federal specifications, procuring agencies usually

incorporate recovered materials content requirements into their solicitation or contract documents when purchasing these products.

C. Remanufactured Toner Cartridges

The draft RMAN for toner cartridges recommended that procuring agencies establish procedures for purchasing remanufactured toner cartridges using the substantially equivalent alternative option, as set forth in RCRA section 6002(i)(3). The draft RMAN recommended that procuring agencies adopt one or both of the following approaches: (1) procure toner cartridge remanufacturing services or (2) procure remanufactured toner cartridges as products.

1. Summary of Comments and Agency's Response

EPA received two comments on the draft RMAN regarding the Agency's recommendation to purchase remanufactured toner cartridges only. The commenters raised two major issues: scope of recommendations and recovered materials content recommendations.

a. Scope of Recommendations

As discussed in Section IV.G.4 of the CPG, two commenters requested that EPA include, in its designation, new toner cartridges made from recovered materials. Based on these comments, EPA changed its designation from "remanufactured toner cartridges" to "toner cartridges" to include new toner cartridges made from recovered materials as well as remanufactured toner cartridges. To correspond with the CPG, the Agency has changed the title of this section of the RMAN from "remanufactured toner cartridges" to "toner cartridges" and has added the procurement of new toner cartridges made with recovered materials as a third approach to procuring toner cartridges.

b. Recovered Materials Content Recommendations

The commenters further requested that EPA recommend recovered materials content levels for new toner cartridges made with recovered materials and provided information on the recovered materials content of toner cartridges manufactured by their companies.

The Agency is not recommending recovered materials content levels for new toner cartridges made with recovered materials at this time. EPA did not recommend recovered materials content levels for new toner cartridges in the draft RMAN and the Agency believes that, before making its recommendation, it is useful to obtain the views of the public. EPA intends to use the information provided by the commenters, in addition to our own research, to develop draft recommended recovered materials content levels for new toner cartridges made with recovered materials in the next update to the RMAN. In the meantime, EPA recommends that

procuring agencies, when purchasing toner cartridges made with recovered materials, purchase toner cartridges with the highest recovered materials content available.

2. Preference Program

In Section G-3 of the RMAN, EPA recommends that procuring agencies establish procedures for purchasing remanufactured toner cartridges using the substantially equivalent alternative option, as set forth in RCRA section 6002(i)(3). When purchasing new toner cartridges made with recovered materials, EPA recommends that procuring agencies establish minimum content standards, as set forth in RCRA 6002(i)(1).

EPA recommends that procuring agencies adopt one or more of the following approaches: (1) procure toner cartridge remanufacturing services, (2) procure remanufactured toner cartridges as products, or (3) procure new toner cartridges made with recovered materials. As at proposal, EPA further recommends that procuring agencies establish policies that give priority to remanufacturing the agencies' expended toner cartridges. In other words, under these policies, procuring agencies would first procure toner cartridge remanufacturing services for any accumulated expended cartridges. When such services are unavailable or not practicable, then procuring agencies should obtain remanufactured toner cartridges or new toner cartridges made with recovered materials from vendors of these items. Although EPA is unable to recommend recovered materials content levels for new toner cartridges at this time, the Agency recommends that procuring agencies, when purchasing new toner cartridges, purchase them with the highest amount of recovered materials practicable.

3. Background

a. Remanufactured toner cartridges. Toner cartridge remanufacturing services are available and increasing in usage. Over the past few years, the number of vendors that offer toner cartridge remanufacturing services has increased substantially. As of December 1994, GSA's New Item Introductory Schedule for remanufactured toner cartridges listed 117 vendors. In addition, GSA has two vendors that provide remanufactured toner cartridges to its supply program. Also, Federal Prison Industries remanufactures a broad line of toner cartridges for laser printers, copiers, and facsimile machines.

As discussed in Section III.A. of this document, minimum content standards are not appropriate for remanufactured items because a core part of the item is reused in the new product, rather than used as a raw material as in the recycling process. Although certain components of a remanufactured toner cartridge may contain recovered materials, it is inappropriate for EPA to recommend that procuring agencies establish minimum content standards for remanufactured toner cartridges.

b. New toner cartridges made with recovered materials. EPA is aware of at least two manufacturers that produce new toner cartridges with recovered materials content. The

recovered materials content levels reported by these manufacturers ranges from 21 to 45 percent, by weight.

4. Specifications

GSA has set forth procedures by which remanufacturers providing remanufactured toner cartridges to its stock program are to disassemble, clean, replace parts within, refill, and reassemble expended cartridges. EPA is not aware of any Federal or national specifications that preclude the use of recovered materials in the manufacture of new toner cartridges.

D. Binders

The draft RMAN for binders recommended a recovered materials content range of 50-60 percent recovered materials for the plastic component of plastic covered binders and referred to the paper products guideline for recovered materials content recommendations for chipboard binders (see 59 FR 18913, April 20, 1994). As discussed in the final CPG, pressboard binders are also included in the designation and, therefore, recommendations for recovered materials content levels for pressboard binders are included in the RMAN.

1. Summary of Comments and Agency's Response

The Agency received four comments on the draft RMAN for binders, one of which is addressed in the general comment section of this document.

a. One commenter strongly supported the Agency's use of "recovered materials content" levels for plastic covered binders on the basis that postconsumer plastic materials are not readily available and quantities are extremely limited.

b. Another commenter stated that EPA does not have the authority under RCRA section 6002 to establish postconsumer content requirements for binders containing pressboard or chipboard or for any other designated item except paper and paper products.

The Agency disagrees with the assertion that recommending postconsumer recovered content levels for items other than paper and paper products is outside the scope of the Agency's authority. We believe that Congress directed the Agency to establish a preference for postconsumer recovered paper over preconsumer recovered paper regardless of whether it is a product or a component of a product.

c. One commenter, representing a Federal agency that serves as a central supplier to other agencies, stated that, based on a survey of binder suppliers and bidders, a maximum content level of 50 percent recovered materials would be acceptable for some general purpose binders, but

recommended that a recovered materials content level of no more than 20% was proper for binders in which strength, tear properties and cold crack resistance are required.

Based on this comment, EPA conducted additional research on the recovered materials content levels in plastic binders. This research supported the commenter's concern that the recommended recovered materials content level of 60 percent for plastic binders may be too high and that a 50 percent recovered materials content level should be the maximum level recommended. We also found that a number of manufacturers believe that general purpose plastic covered binders with 25 percent recovered materials content level can meet all performance requirements, including those for strength, tear resistance, and cold crack resistance. For these reasons, EPA is recommending that the recovered materials content level for plastic binders be changed from the 50%-60% as recommended in the draft RMAN to 25-50 percent recovered materials.

2. Preference Program

In Section G-4 of the RMAN, EPA recommends that, based on the recovered materials content levels shown in Table G-4, procuring agencies establish minimum content standards for the plastic covering used in plastic-covered binders. The chipboard or paperboard component of a plastic-covered binder or a binder covered with another material, such as cloth, are covered under EPA's recommendations for paper and paper products in Part A of the RMAN. In addition, EPA recently issued revisions to the paper and paper product guideline in a draft RMAN which can be found at 60 FR 14182, March 15, 1995. EPA also recommends that, for uncovered chipboard and pressboard binders, procuring agencies establish minimum content standards consistent with EPA's recommended recovered materials content levels for paperboard (shown in Part A of the RMAN) and the March 1995 draft Paper Products RMAN. EPA's recommendations do not preclude procuring agencies from purchasing binders covered with or manufactured using another material. It simply recommends that procuring agencies, when purchasing binder types designated in the procurement guidelines, purchase these binders containing recovered materials.

3. Background

EPA has information on a number of manufacturers that produce plastic-covered binders with recovered plastic content in the covering and chipboard and pressboard binders with recovered paper content. Based on the Agency's research, the manufacturers of the plastic-covered binders generally use recovered plastic in a range of 25-50 percent by weight. At least one of the manufacturers of plastic-covered binders with recovered plastic content sells its binders through GSA's New Item Introductory Schedule.

Several states have also issued solicitations for plastic-covered and chipboard binders containing recovered materials.

4. Specifications

GSA's specification for binders, A-A-2549A, "Binder, Loose-Leaf (Ring)," covers four types of binders, including cloth bound, flexible cover; cloth bound, stiff cover; plastic bound, flexible cover; and plastic bound, stiff cover. There are no requirements in this specification that preclude the use of recovered materials in the plastic covering of plastic-covered binders. Prior to issuing the draft RMAN, EPA had information suggesting that one test method cited in the specification, the Cold Crack test, may prohibit the use of recovered plastic in the covering for plastic-covered binders. In the draft RMAN, the Agency requested additional information on the ability of vendors to meet this specification when using recovered plastics. A summary of the information received is discussed in the above "Response to Public Comments" section.

According to the information available to EPA, there are no national or Federal specifications that preclude the use of recovered paper in the manufacture of chipboard or pressboard binders.

E. Plastic Trash Bags

The draft RMAN for plastic trash bags recommended recovered materials content levels in a range from 30 - 100 percent postconsumer recovered plastic.

1. Summary of Comments and Agency's Response

The Agency received three comments on the draft RMAN.

a. One commenter suggested that the lower level of the recommended recovered materials content range included in the draft RMAN was too low, but provided no information to substantiate that claim.

b. Two other commenters suggested that the recommended recovered materials content levels in the draft RMAN were too high. One of these commenters suggested that the use of postconsumer HDPE and L/LDPE for trash bags would reduce the available supply of these materials for use in other products and suggested that bags meeting the recommended content range of 30 - 100 percent postconsumer materials may not be available. The other commenter, representing a Federal agency that provides supplies to the Federal government, indicated that the availability of trash bags within the recommended recovered materials content levels may be limited and suggested that the lower limit of the range should be reduced to 10 percent postconsumer materials.

In response to the comments, EPA conducted additional research on the recovered materials content available in trash bags. The Agency contacted a number of suppliers to discuss the recovered materials content levels contained in their products. The information obtained from

these suppliers supports the commenters' claim that the recovered materials content range for plastic trash bags should be lowered. In sum, these suppliers indicated that puncture, tear resistance, and bag strength performance are compromised at recovered material content levels above 10 percent and that, in general, bags with recovered materials content levels above 10 percent cannot meet all of the GSA performance specifications. In addition, suppliers expressed concern about the lack of availability of quality postconsumer plastics used as feedstock for their products which can result in a variance in the actual recovered materials content included in their products. Suppliers who do make bags with higher percentages of recovered materials content stated that those bags could not meet the GSA specifications for bags used for outdoor and medical waste applications. Based on these comments and the additional research conducted by EPA, the Agency is recommending in the final RMAN that the recovered materials content level range for plastic trash bags be 10 -100 percent postconsumer material instead of the 30 - 100 percent postconsumer recommended in the draft RMAN.

2. Preference Program

In Section G-5 of the RMAN, EPA recommends that, based on the recovered materials content levels shown in Table G-4, procuring agencies establish minimum content standards for plastic trash bags. EPA's recommendation does not preclude procuring agencies from purchasing trash bags manufactured using another material, such as paper. It merely recommends that a procuring agency, when purchasing plastic trash bags, purchase these items made from recovered materials.

3. Background

EPA has information on a number of manufacturers that produce trash bags with postconsumer recovered materials content ranging from 10 - 100 percent and whose products can meet the GSA performance specifications for trash bags. In general, our information shows that for those bags used for office and food service applications, higher recovered materials content can be used since the performance specifications are not as stringent as for those bags used in outdoor or medical waste applications. (The specifications for the outdoor and medical wastes include increased rip and tear resistance specifications.) The National Association of State Purchasing Officials' Recycled Product Database, which provides detailed information on state purchases of products containing recovered materials, lists 88 different contracts for plastic "liners" with recovered materials content. In addition, trash bags with recovered materials content are available from the GSA "Supply Catalog."

4. Specifications

GSA's Commercial Item Description (CID) for general purpose plastic bags, A-A-2299B, covers plastic trash bags for office and food service use. CID A-A-1668D, covers rip resistant bags for outdoor and medical waste applications. These CID's are based on performance

requirements. According to the information available to EPA, neither CID A-A-2299B or A-A-1668D preclude the use of recovered materials content in the manufacture of plastic trash bags.

In addition, several states, including Michigan, Nebraska, Minnesota, Delaware, and Wisconsin, have their own specifications for plastic trash bags containing recovered materials.

XIII. Recommendations for Miscellaneous Products

Part H of the RMAN is reserved for recommendations for designated items that do not fall within the other product categories. Because EPA is not designating any items in the miscellaneous products category at this time in the Comprehensive Procurement Guideline, EPA is not including any recommendations in this category of the RMAN.