

Sub-Category	Product	Product Type	Required Attribute (Or function unless specified)	Recommended Attribute (Or function unless specified)	Comments
<b>BUILDING CONSTRUCTION</b>					
<b>Bathroom Fixtures</b>	Shower and restroom dividers/partitions (R)	<a href="#">Steel</a>	CPG		LMS 10 2113.13 r2 Metal Toilet Compartments does not address recycled content.
		Plastic	CPG 20 - 100% recovered plastic, including 20-100% postconsumer content		
<b>Building Construction, Renovation, and Maintenance</b>	<a href="#">Building insulation (R, ES)</a>	Rock wool	Energy Star CPG 75% recovered slag	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	LMS 07 2100 for mineral wool states: Minimum 75 percent. Pre-consumer (Post-Industrial) content.
		Fiberglass	Energy Star CPG 20-25% recovered glass	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	LMS 07 2100 Glass fiber blankets and board states: Recycled Content: Minimum 25 percent. Comply with ASTM D5360.
		Cellulose loose-fill and spray-on	Energy Star CPG 75% postconsumer paper	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Perlite composite board	CPG 23% postconsumer paper	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Rigid foam	Energy Star CPG 9% recovered material	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Foam-in-place	Energy Star CPG 5% recovered material	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Glass fiber reinforced	Energy Star CPG 6% recovered material	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Phenolic rigid foam	Energy Star CPG 5% recovered material	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Plastic, non-woven batt	Energy Star CPG 100% recovered and/or postconsumer plastics	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
		Plastic insulating foam for residential and commercial construction (BP)	Energy Star BioPreferred 7% minimum biobased content	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
	<a href="#">Ceiling Fans (ES)</a>		ENERGY STAR		
	<a href="#">Composite panels (BP)</a>	Interior Panels	BioPreferred 55% minimum biobased content		
		Plastic Lumber	BioPreferred 23% minimum biobased content		
		Structural Interior Panels	BioPreferred 89% minimum biobased content		
		Structural Wall Panels	BioPreferred 94% minimum biobased content CPG 80-100% recovered wood waste, bagasse, and paper	EcoLogo/UL 2818 GREENGUARD Certification Cradle to Cradle Certified SCS Indoor Advantage Gold	
	<a href="#">Doors and skylights (ES)</a>		ENERGY STAR		Neither LMS 08 1100 Metal Doors and Frames nor 08 8000 Glazing mention Energy Star. Need to research to see if infiltration requirements in spec comply with Energy Star and FEMP requirements.
	<a href="#">Erosion control materials (BP)</a>		BioPreferred 77% biobased content		
	<a href="#">Floor tiles *</a>	Plastic	CPG 90-100% recovered plastic	Cradle to Cradle Certified NSF/ANSI 332 GECA Floor Coverings GreenCircle Certified Environmental Facts for Flooring Products TCNA: ANSI A138.1/Green Squared International Living Future Institute: Living Product Challenge 1.0 Sustainable Materials Rating Technology (SMaRT) International Living Future Institute: Declare FloorScore SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification Global Recycled Standard	LMS 09 6500 Resilient Flooring requires minimum recovered (recycled) material content 90-100 percent of postconsumer materials in accordance with EPA's CPG.
	<a href="#">Patio blocks (R)</a>	Rubber	CPG 90-100% postconsumer rubber or rubber blends		
		Plastic	CPG 90-100% recovered plastic or plastic blends		
<a href="#">Fluid-Filled Transformers (ES, BP)</a>	Synthetic ester-based	BioPreferred 66% biobased content			
	Vegetable oil-based	BioPreferred 95% biobased content		Currently no LMS includes fluid-filled transformers.	

	Structural fiberboard	Paper	CPG 80-100% recovered wood waste, bagasse, and paper BioPreferred 94% minimum biobased content	Cradle to Cradle Certified SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification	
	Modular threshold ramps @	Steel	CPG 25-100% recovered steel, including 16-67% postconsumer content		
		Aluminum	CPG 10% recovered aluminum		
		Rubber	CPG 100% postconsumer rubber		
	Nonpressure pipes (R)	Steel	CPG		Nonpressure pipe is defined as DWV pipes used for drainage, sanitary waste and vents and are described in LANL Master Specs 22 1316 and 1413 but do not address the postconsumer or the recovered material content. Specification for steel pipes is generally based on ASTM A74. Cannot find any specific ASTM standard for recycled steel material.
		High-Density Polyethylene (HDPE)	CPG 100% postconsumer high density polyethylene		At LANL, HDPE is for pressure only (nat gas, option for water)
		Polyvinyl Chloride (PVC)	CPG 25-100% recovered polyvinyl chloride, including 5-15% postconsumer content		Nonpressure pipe is defined as DWV pipes used for drainage, sanitary waste and vents and are described in LANL Master Specs 22 1316 and 1413 where PVC have been specified but did not address the postconsumer or the recovered material content. Spec is based on ASTM D2665 and D3034. The ASTM standard that addressed the recycled PVC material is ASTM F1732.
		Concrete	CPG		Neither LMS 33 3000 r7 Sanitary Sewer nor 33 4000 r3 Storm Drainage Utilities currently list concrete as an option.
	Roofing materials (R, BP, ES)	Steel	CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>		LMS 07 0413 r4 Metal Roof Panels lists 25% recycled content.
		Aluminum	CPG 20-90% recovered aluminum, including 20-90% postconsumer content		Aluminum is listed in LMS 07 6200 r4 Sheet Metal Flashing and Trim; however, no minimum recycled content percentage is given.
		Fiber	CPG 50-100% recovered fiber or fiber composite, including 50-100% postconsumer content		ALL Non-METAL ROOFING: Neither LMS 07 5213.13 r2 nor 5217 r1 have recycled or biobased content. Need to check specified manufacturer's websites to see if the specified materials actually have any recycled or biobased content. Some of the Sandia Specs have minimum requirements and one specifies an Energy Star roofing system.
		Rubber	CPG 100% recovered rubber, including 12-100% postconsumer content		
		Plastic/composites	CPG 100% postconsumer plastic or plastic/rubber composite		
		Plastic (polyol)	BioPreferred 20% biobased content		
	Windows (ES)		ENERGY STAR		No specific mention of Energy Star and FEMP in LMS 08 5113r3. Need to do more research to see if infiltration requirements in spec comply with Energy Star and FEMP requirements.
HVAC	Chillers	Air-Cooled Chillers Water-Cooled Chillers	FEMP		ESM Chapter 6 states that new equipment systems can not contain CFCs or HCFCs. Most (if not all) vendors or manufacturers follows the Clean Air Act and US Code regulation, and are currently using the accepted HFC refrigerants. ESM Chapter 14, Sustainable Design, incorporated DOE Order 430.2B requirements including achieving LEED Gold certification for new construction and purchase of energy efficient products with ENERGY STAR rating.
	Heat Pumps, Air-Source (ES)		ENERGY STAR SNAP		
	Boilers (ES)	Commercial	FEMP ENERGY STAR		
	Centrifugal pumping system (FEMP)		While no federal requirement applies, FEMP offers purchasing guidance for centrifugal pumping systems.		
	Furnaces (ES)		ENERGY STAR		
	Commercial Gas Water Heaters (ES)		ENERGY STAR		
	Light commercial heating and cooling (ES)		ENERGY STAR		LMS 23 7413 r3, Packaged, Outdoor, Central-Station, Air-Handling Units, requires ASHRAE 90.1
	Ventilation fans (ES)		ENERGY STAR		LMS 23 3400 r1 Fans does not mention Energy Star.
Miscellaneous	Concrete and asphalt release fluids (BP)		BioPreferred 87% biobased content		<a href="#">LMS 03 3001 r11 Reinforced Concrete specifies mineral oil.</a>
	Fire Suppression and explosion protection (SNAP)	Total flooding agents	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
		Streaming applications	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
		Halon substitutes	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
Water tank coatings (BP)		BioPreferred 59% biobased content			
<b>TRAFFIC CONTROL PRODUCTS</b>					
	Channelizers (R)	Plastic	CPG 25-95% recovered plastic, including 25-95% postconsumer content		
		Rubber	CPG 100% postconsumer rubber (base only)		
		Plastic	CPG 25-90% recovered plastic, including 25-95% postconsumer content		

Delineators (R)	Rubber	CPG 100% postconsumer rubber (base only)		
	Steel	CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>		
Flexible delineators (R)	Plastic	CPG 25-85% recovered plastic, including 25-85% postconsumer content		
Parking stops (R)	Plastic or rubber	CPG 100% postconsumer plastic and/or rubber		
	Concrete	CPG 25-70% recovered concrete containing ground granulated blast furnace slag 20-40% recovered concrete containing coal fly ash		
Signage (R)	Plastic	CPG 80-100% recovered plastic signs, including 80-100% postconsumer content 80-100% recovered plastic sign posts/supports; including 80-100% postconsumer content		Signage - LANL or subcontractors supply traffic control signs as a portion of road and highway projects.
	Aluminum	CPG 25% postconsumer aluminum signs		The sign material used by LANL and subcontractors is aluminum. It is not specific in the master spec. 10 1405 r3 Exterior Signage.
	Steel	CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>		
Traffic barricades (R)	Plastic	CPG 100% recovered plastic, including 80-100% postconsumer content		
	Steel	CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>		
	Fiberglass	CPG 100% recovered fiberglass		
Traffic cones (R)	Plastic	CPG 50-100% recovered plastic		
	Rubber	CPG 50-100% crumb rubber		

LANDSCAPING					
	Compost (R)	Yard trimmings, food waste, manure, biosolids, or other recovered organic materials	CPG 100% recovered organic materials		32 9219 Seeding and 32 9223 Sodding – Compost/fertilizer from recovered organic material. The compost available locally is from the County of Los Alamos Solid Waste Division. If the compost is used on the LANL property, test results (Biosolid Sampling) will need to be submitted for compliance with EPA Guide to the Part 503 Rule for metals, pathogen, nitrogen, and PCBs. Selective placement of material would have to be considered concerning potential for storm water run-off. 32 9300 Plants – same as above
		Biobased Compost Materials	BioPreferred 95% biobased content		
	Compost activators and accelerators (BP)		BioPreferred 95% biobased content		
	Hydraulic mulch (R)	Paper-based hydraulic mulch	CPG 100% postconsumer paper		503 Rule for metals, pathogen, nitrogen, and PCB's.
		Wood-based hydraulic mulch	CPG 100% recovered wood and paper		
	Landscape irrigation services (WS)			WaterSense	32 8400 Planting Irrigation – Design for water conservation
	Lawn and garden edging (R)		CPG 30-100% recovered plastic and/or rubber, including 30-100% postconsumer content		
	Plastic Lumber Landscaping Timber and Posts (R)		95-100% other mixed recovered resins, including 50-100% postconsumer content 100% recovered mixed plastics/sawdust including 50% postconsumer content 75-100% recovered high density polyethylene including 25-100% postconsumer content 95% recovered high density polyethylene/fiberglass including 75% postconsumer content		
Weather- or sensor-based irrigation control technologies (WS)			WaterSense	32 8400 Planting Irrigation – Design for water conservation	
ROADWAY CONSTRUCTION					
	Concrete and asphalt release fluids (BP)		BioPreferred 87% biobased content		<a href="#">LMS 03 3001 r11 Reinforced Concrete specifies mineral oil.</a>
	Erosion control materials (BP)		BioPreferred 77% biobased content		<a href="#">LMS 01 5705 r5 refers to drawings. See LID Standard Details (G20, future).</a>
BUILDING INTERIOR					
	Fire suppression and explosion protection (SNAP)	Total flooding agents	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
		Streaming applications	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
		Halon substitutes	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
	Signage (R)	Plastic	CPG 80-100% recovered plastic signs, including 80-100% postconsumer content 80-100% recovered plastic sign posts/supports, including 80-100% postconsumer content		
		<a href="#">Aluminum</a>	CPG 25% postconsumer aluminum signs		LMS 10 1410 r3 does not mention this.
		Steel	CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>		
Water Coolers (ES)		ENERGY STAR SNAP			

BUILDING FINISHES					
	Carpet (BP)	Woven, tufted, or knitted fiber and a backing system	BioPreferred 7% minimum biobased content		LMS 09 86813 and 6816 include some requirements for recycled content and/or recyclability.
	Carpet cushion (R)	Bonded polyurethane	CPG 15-50% old carpet cushion, including 15-50% postconsumer content		
		Jute	CPG 40% postconsumer burlap		
		Synthetic fibers	CPG 100% recovered carpet fabrication scrap		
		Rubber	CPG 60-90% recovered tire rubber, including 60-90% postconsumer content		LMS 09 6816 r2 Sheet Carpet states: Polymeric Cushion: Preference will be given to recycled content cushion backings
	Compact fluorescent lamps (CFLs) (ES)		ENERGY STAR		Needs update to replace "energy efficient" with "Energy Star."
	Downlights (ES)		ENERGY STAR		Update 26 5100 to include FEMP-designated performance requirements.
	Floor tiles (heavy duty/commercial) (R)	Rubber	CPG 90-100% postconsumer rubber	Cradle to Cradle Certified NSF/ANSI 332 GECA Floor Coverings TCNA: ANSI A138.1/Green Squared International Living Future Institute: Living Product Challenge 1.0 Sustainable Materials Rating Technology (SMaRT) International Living Future Institute: Declare FloorScore SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification Global Recycled Standard	LMS 09 6500 Resilient Flooring requires minimum recovered (recycled) material content 90-100 percent of postconsumer materials in accordance with EPA's CPG.
		Plastic	90-100% recovered plastic	Cradle to Cradle Certified NSF/ANSI 332 GECA Floor Coverings TCNA: ANSI A138.1/Green Squared International Living Future Institute: Living Product Challenge 1.0 Sustainable Materials Rating Technology (SMaRT) International Living Future Institute: Declare FloorScore SCS Indoor Advantage Gold EcoLogo/UL 2818 GREENGUARD Certification Global Recycled Standard	
	Fluorescent ballasts (FEMP)		FEMP		update 26 5100 to include FEMP-designated performance requirements.
	Fluorescent luminaires (FEMP)		FEMP		update 26 5100 to include FEMP-designated performance requirements.
	LED lighting (ES)		ENERGY STAR	GSA's Proving Ground	
	Light fixtures (ES)		ENERGY STAR		update 26 5100 to include ENERGY STAR-qualified and FEMP-designated performance requirements.
	Lighting controls (ES)		ENERGY STAR		LMS 26 2726 r5 Wiring Devices does not mention energy star.
REFRIGERATION AND AIR CONDITIONING [SNAP, ES]					
	Chillers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes FEMP	GSA's Proving Ground	Covered in ESM Chapter 6. ESM states that new refrigeration equipment systems can not contain CFCs or HCFCs. Most (if not all) vendors or manufacturers follows the Clean Air Act and US Code regulation, and are currently using the accepted HFC refrigerants. ESM Chapter 14, Sustainable Design, incorporated the DOE Order 430.2B requirements including purchase of energy efficient products with ENERGY STAR rating.
	Cold storage warehouses		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
	Commercial freezers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star		
	Commercial refrigerators		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP		
	Commercial ice makers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP		
	Non-Mechanical Heat Transfer Systems				
	Industrial Process air conditioning				
	Industrial process refrigeration systems		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes		
	Retail food refrigeration				
	Very low temperature refrigeration systems				
	Water coolers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star		Energy and water efficient electric water coolers are specified in Plumbing Fixture Spec Section 22 4200 r4. Equipment specified are GreenSpec listed and used HFC-134a refrigerant.
PARK AND RECREATION					
	Bike racks (R)	Steel	CPG 25-35% recovered steel, including 16% postconsumer content		
		HDPE	CPG 100% recovered HDPE, including 100% postconsumer content		
	Park benches and picnic tables (R)	Plastic	CPG 100% recovered plastic, including 90-100% postconsumer content		
		Plastic Composite	CPG 100% recovered plastic composites, including 50-100% postconsumer content		

	PAVING MATERIALS AND PRODUCTS (P)	Aluminum	CPG 25% recovered aluminum, including 25% postconsumer content		
		Concrete	CPG 25-40% recovered concrete		
		Steel	CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>		
	Plastic fencing (R)	Plastic	CPG 90-100% recovered plastic, including 60-100% postconsumer content		
	Running tracks (R)	Rubber or Plastic	CPG 90-100% postconsumer rubber or plastic		
	Signage (R)	Plastic	CPG 80-100% recovered plastic signs, including 80-100% postconsumer content 80-100% recovered plastic sign posts/supports, including 80-100% postconsumer content		
		Aluminum	CPG 25% postconsumer aluminum signs		Not mentioned in 10 1405 r3 Exterior Signage.
Steel		CPG See EPA guidance at <a href="http://www.epa.gov/cpg">www.epa.gov/cpg</a>			

**KITCHENS**

	Cafeteria Equipment and Products	Vending machines (ES)	ENERGY STAR SNAP		
		Commercial hot food holding cabinets (ES)	ENERGY STAR		
		Commercial freezers (ES)	ENERGY STAR SNAP		
		Commercial refrigerators (ES)	ENERGY STAR SNAP		
		Commercial Steam Cookers(ES)	ENERGY STAR		
		Commercial fryers (ES)	ENERGY STAR		
		Food cleaners (BP)	BioPreferred 53% biobased content		
		Commercial Griddles (ES)	ENERGY STAR		
		Commercial Ice Makers (FEMP)	ENERGY STAR SNAP FEMP		
		Commercial Ovens (ES)	ENERGY STAR		

**MISCELLANEOUS**

	Dehumidifiers (ES)		ENERGY STAR SNAP		
	Water tank coatings (BP)		BioPreferred 59% biobased content		
	Wood and concrete sealers (BP)	Membrane concrete sealers	BioPreferred 11% biobased content		LMS 09 9100 r4 Painting specifies Green Seal GS-11, Paints, Coatings, Stains and Sealer. Also, "When available, provide materials compliant with USDA BioPreferred bio-based content minimum
		Penetrating liquids	BioPreferred 79% biobased content		