Sub-Category	Product	Product Type	Required Attribute (Or function unless specified)	Comments
BUILDING CONSTRUCTION				
Bathroom Fixtures	Shower and restroom dividers/partitions (R)	Steel	See EPA guidance at www.epa.gov/cpg	
		Plastic	20 - 100% recovered plastic, including 20-100% postconsumer content	
	Building insulation (R, ES)	Rock wool	75% recovered slag	No biobased, post consumer or recovered material included in current specs. For normally used fiberglass and rigid foam, content levels can be included in the next update. Owens-Corning has fiberglass insulation with 35%recycled content. They also have rigid foam with 20% recycled content. May want to add some of the other insulation materials to the specs (rock wool, cellulose, foam in place, insulating foam).
		Fiberglass	20-25% recovered glass	
		Cellulose loose-fill and spray-on	75% postconsumer paper	
		Perlite composite board	23% postconsumer paper	
		Rigid foam	9% recovered material Foam Board Rigid - polyisoanurate (roof & concrete bldgs) • No HBCDs • No VOCs	
		Foam-in-place	5% recovered material Foam – polyisoanurate or polyurethane (preinsulated metal siding) • GREENGUARD • 23% biobased	
		Glass fiber reinforced	6% recovered material	
		Phenolic rigid foam	5% recovered material	
		Plastic, non-woven batt	100% recovered and/or postconsumer plastics	
		Plastic insulating foam for residential and commercial construction (BP)	7% minimum biobased content	
	Ceiling Fans (ES)		ENERGY STAR	
	Composite panels (BP)	Interior Panels	55% minimum biobased content *No VOCs • GREENGUARD* • EcoLogo 020 • D-100% PC recycled*	
		Plastic Lumber	23% minimum biobased content *No VOCs • GREENGUARD* • EcoLogo 020 • D-100% PC recycled*	
		Structural Interior Panels	89% minimum biobased content *No VOCs • GREENGUARD* • EcoLogo 020 • D-100% PC recycled*	
		Structural Wall Panels	94% minimum biobased content * No VOCs • GREENGUARD* • EcoLogo 020 • D-100% PC recycled*	
	Doors and skylights (ES)		ENERGY STAR	No specific mention of Energy Star and FEMP in existing specs. Need to do more research to see if infiltration requirements in spec comply with Energy Star and FEMP requirements. Can incorporate table requirements when spec is updated.
	Erosion control materials (BP)	Woven and non-woven fiber materials	77% minimum biobased content (7/23/2012 compliance date)	
	Floor tiles (R)	Plastic	90-100% recovered plastic • EcoLogo 152 • FloorScore*	look at the VAT and Sheet Vinyl specs and add appropriate requirements. The table under Building Finishes does not include VAT or Sheet Vinyl.
	Patio blocks (R)	Rubber	90-100% postconsumer rubber or rubber blends	
		Plastic	90-100% recovered plastic or plastic blends	
	Transformers (ES, BP)	Synthetic ester-based	66% minimum biobased content	
		Vegetable oil-based	95% minimum biobased content	

Building Construction, Renovation, and Maintenance	Structural fiberboard	Paper	80-100% recovered material	
	Modular threshold ramps ®	Steel	25-100% recovered steel, including 16-67% postconsumer content	
		Aluminum	10% recovered aluminum	
		Rubber	100% postconsumer rubber	
	Nonpressure pipes (R)	Steel	See EPA guidance at www.epa.gov/cpg	Nonpressure pipe is defined as DWV pipes used for drainage, sanitary waste and vents and are described in LANL Master Specifications 22 1316 and 1413 but did not addressed 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.
		HDPE	100% postconsumer high density polyethylene	At LANL, HDPE is for pressure only (nat gas, option for water)
		PVC	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 Specifications 22 1316 and 1413 where PVC have been specified but did not addressed the postconsumer or the recovered material content. Specification is based on ASTM D2665 and D3034. The ASTM standard that addressed the recycled PVC material is ASTM F1732.
		Concrete	See EPA guidance at www.epa.gov/cpg	33 4000 Storm Drainage Utilities – The only piping in the EPA guides are recycle material for use in non-pressure piping system. All the Civil master spec.s are for pressure systems except "plastic" pipe for storm water drainage and electrical conduit. The EPA product manufacturers list has three drainage pipe and one conduit manufacturer. These present possibilities but seem limited at this time.
	Roofing materials (R, BP, ES)	Steel	See EPA guidance at www.epa.gov/cpg	1st, the steel that would be used as a structural roofing material is addressed in 05 3000. 2nd, this sect. would have to be expanded to comply since it currently doesn't address use of recyled material.
		Aluminum	20-90% recovered aluminum, including 20-90% postconsumer content	Aluminum is not a material permissible for use a structural metal deck (i.e., 05 3000) nor should it be since it's not strong enough to carry gravity & lateral / diaphragm loads.
		Fiber	50-100% recovered fiber or fiber composite, including 50-100% postconsumer content	ALL ROOFING: None of the current specs and the two new ones have any recycled or biobased content. LANL will look at incorporating the requirements when LANL update the specs which LANL is currently working on. Will 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	100% recovered rubber, including 12-100% postconsumer content	
		Plastic/composites	100% postconsumer plastic or plastic/rubber composite	
		Plastic (polyol)	20% biobased content ENERGY STAR and FEMP	
		Roof Coating	20% - Minimum Biobased Content	
		Roofing Sealant	• EcoLogo 045 • No VOCs • D-energy efficient • D-remanufactured* • D+-50% biobased*	
	Wood/Lumber		• Salvaged lumber* • Forest Stewardship Council Certified* • No added urea-formaldehyde resins*	
	Windows (ES)		ENERGY STAR	No specific mention of Energy Star and FEMP in existing specs. Need to do more research to see if infiltration requirements in spec comply with Energy Star and FEMP requirements. Can incorporate table requirements when spec is updated.
	Air-cooled chillers (FEMP)		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 the DOE Order 430.2B requirements including achieving LEED Gold certification for new construction and purchase of energy efficient products with ENERGY STAR rating.

HVAC	Air-source heat pumps (ES)		ENERGY STAR	
	Boilers (ES)		ENERGY STAR	
	Centrifugal pumping system (FEMP)		FEMP	
	Commercial heat pumps (FEMP)		FEMP	
	Commercial unitary air conditioners (FEMP)		FEMP	
	Electric water heaters (FEMP)		FEMP	
	Furnaces (ES)		ENERGY STAR	
	Gas water heaters (FEMP)		Heat pump • EF 2 • FEMP Designated *Energy Star • If heat pump not feasible, designated electric storage water heaters Tankless • FEMP Designated *Energy Star	
	Light commercial heating and cooling (ES)		ENERGY STAR	
	Programmable thermostats		ENERGY STAR suspended its standard but see the ENERGY STAR web site for information	
	Room AC (ES)		ENERGY STAR	
	Ventilating fans (ES)		ENERGY STAR	
	Water-cooled chillers (FEMP)		FEMP	
Miscellaneous	Concrete and asphalt release fluids (BP)		87% minimum biobased content	
	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 substitute manufacturers	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes	
	Water tank coatings (BP)		59% biobased content	
TRAFFIC CONTROL PRODUCTS				
	Channelizers (R)	Plastic	25-95% recovered plastic, including 25-95% postconsumer content	
		Rubber	100% postconsumer rubber (base only)	
	Delineators (R)	Plastic	25-90% recovered plastic, including 25-95% postconsumer content	
		Rubber	100% postconsumer rubber (base only)	
		Steel	See EPA guidance at www.epa.gov/cpg	
	Flexible delineators (R)	Plastic	25-85% recovered plastic, including 25-85% postconsumer content	
	Parking stops (R)	Plastic or rubber	100% postconsumer plastic and/or rubber	
		Concrete	20-40% recovered concrete containing coal fly ash	
		Concrete	25-70% recovered concrete containing ground granulated blast furnace slag	
	Signage (R)	Plastic	80-100% recovered plastic signs, including 80-100% postconsumer content	Signage – Subcontractors supplies traffic control signs as a portion of road and highway projects.
		Aluminum	25% postconsumer aluminum signs	The sign material used by LANL and subcontractors is aluminum. It is not specific in the master spec. but this could be noted in the documents.
		Plastic	80-100% recovered plastic sign posts/supports, including 80-100% postconsumer content	
		Steel	See EPA guidance at www.epa.gov/cpg	
	Traffic barricades (R)	Plastic	100% recovered plastic, including 80-100% postconsumer content	
		Steel	See EPA guidance at www.epa.gov/cpg	
		Fiberglass	100% recovered fiberglass	
	Traffic cones (R)	Plastic	50-100% recovered plastic	
		Rubber	50-100% crumb rubber	

LANDSCAPING				
	Compost (R)	Yard trimmings, food waste, manure, biosolids, or other recovered organic materials	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 PCB's. Selective placement of material would have to be considered concerning potential for storm water run-off. 32 9300 Plants – 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 PCB's
		Compost Materials	95% minimum biobased content	
	Compost activators and accelerators (BP)		95% minimum biobased content (7/23/2012 compliance date)	
	Hydraulic mulch (R)	Paper-based hydraulic mulch	100% postconsumer paper	503 Rule for metals, pathogen, nitrogen, and PCB's.
		Wood-based hydraulic mulch	100% recovered wood and paper	
	Landscape irrigation services (WS)		WaterSense	32 8400 Planting Irrigation – Design for water conservation
	Lawn and garden edging (R)		30-100% recovered plastic and/or rubber, including 30-100% postconsumer content	
	Plastic lumber landscaping timber and posts (R)		75-100% recovered high density polyethylene, including 25-100% postconsumer content	
			100% recovered mixed plastics/sawdust, including 50% postconsumer content	
			95% recovered high density polyethylene/fiberglass, including 75% postconsumer content	
			95-100% other mixed recovered resins, including 50-100% 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)		87% minimum biobased content	
	Erosion control materials (BP)	woven and non-woven fiber materials	77% minimum biobased content (7/23/2012 compliance date)	
	Pavement treatment (DfE)			
	Railroad grade crossing surfaces (R)	Concrete	15-20% recovered coal fly ash	
		Rubber	85-95% recovered tire rubber	
		Steel	See EPA guidance at www.epa.gov/cpg	
		Wood	90-97% recovered wood or wood composite, including 90-97% postconsumer content	
		Plastic	100% recovered plastic or plastic composite, including 85-95% postconsumer content	
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 substitute manufacturers	Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes	
	Signage (R)	Plastic	80-100% recovered plastic signs, including 80-100% postconsumer content	
		Aluminum	25% postconsumer aluminum signs	
		Plastic	80-100% recovered plastic sign posts/supports, including 80-100% postconsumer content	
		Steel	See EPA guidance at www.epa.gov/cpg	
	Water Coolers (ES)		ENERGY STAR	

BUILDING FINISHES				
	Carpet (BP)	Woven, tufted, or knitted fiber and a backing system	7% minimum biobased content	For carpet backing specifies highest % available but 0% is not acceptable. Also specifies that carpet be 100% recyclable. Can incorporate table requirements when spec is updated. DCARR
	Carpet cushion (R)	Bonded polyurethane	15-50% old carpet cushion, including 15-50% postconsumer content	
		Jute	40% postconsumer burlap	
		Synthetic fibers	100% recovered carpet fabrication scrap	
		Rubber	60-90% recovered tire rubber, including 60-90% postconsumer content	
	Compact fluorescent lamps (CFLs) (ES)		FEMP DESIGNATED ENERGY STAR	update to replace "energy efficient" with "Energy Star."
	Downlight luminaires (FEMP)		FEMP DESIGNATED ENERGY STAR	update 25 5100 to include FEMP-designated performance requirements.
	Floor tiles (heavy duty/commercial) (R)	Rubber	90-100% postconsumer rubber	
		Plastic	90-100% recovered plastic	
	Fluorescent ballasts (FEMP)		FEMP	update 25 5100 to include FEMP-designated performance requirements.
	Fluorescent luminaires (FEMP)		FEMP	update 25 5100 to include FEMP-designated performance requirements.
	Fluorescent tube lamps (FEMP)		FEMP	update 25 5100 to include FEMP-designated performance requirements.
	LED lighting		ENERGY STAR	
	Light fixtures (ES)		ENERGY STAR	update 25 5100 to include ENERGY STAR-qualified and FEMP-designated performance requirements.
	Lighting controls (FEMP)		FEMP	
REFRIGERATION AND AIR CONDITIONING [SNAP, ES]				
	Chillers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	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 Energy Star, FEMP	
	Commercial freezers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Commercial refrigerators		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star	
	Commercial ice machines		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Heat transfer		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Household refrigerators and freezers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Industrial Process air conditioning		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Industrial process refrigeration systems		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Retail food refrigeration		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	
	Very low temperature refrigeration systems		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	

	Water coolers		Significant New Alternatives Policy (SNAP) Program for ozone-depleting chemical substitutes Energy Star, FEMP	Energy and water efficient electric water coolers are specified in Rev 4 of Plumbing Fixture Specification Section 22 4200. Equipment specified are GreenSpec listed and used HFC-134a refrigerant.
PARK AND RECREATION				
	Bike racks (R)	Steel	25-30% recovered steel, including 16% postconsumer content	
		Plastic	100% postconsumer high density polyethylene	
	Park benches and picnic tables (R)	Plastic	100% recovered plastic, including 90-100% postconsumer content	
		Plastic Composite	100% recovered plastic composites, including 50-100% postconsumer content	
		Aluminum	25% postconsumer aluminum	
		Concrete	15-40% recovered concrete	
		Steel	Steel - See EPA guidance at www.epa.gov/cpg	
	Plastic fencing (R)	Plastic	90-100% recovered plastic, including 60-100% postconsumer content	
	Running tracks (R)	Rubber or Plastic	90-100% postconsumer rubber or plastic	
	Signage (R)	Plastic	Plastic- 80-100% recovered plastic signs, including 80-100% postconsumer content	
		Aluminum	Aluminum- 25% postconsumer aluminum signs	
		Plastic	Plastic- 80-100% recovered plastic sign posts/supports, including 80-100% postconsumer content	
		Steel	Steel- See EPA guidance at www.epa.gov/cpg	
KITCHENS				
	Cafeteria Equipment and Products	Beverage vending machines (ES)	ENERGY STAR (new energy conservation standards eff. 09/31/2012)	
		Commercial hot food holding cabinets (ES)	ENERGY STAR	
		Commercial freezers (ES	ENERGY STAR	
		Commercial refrigerators - solid door (ES)	ENERGY STAR	
		Commercial refrigerators - glass door (ES)	ENERGY STAR	
		Commercial ice machines (ES)	ENERGY STAR	
		Commercial pressureless steamers (ES)	ENERGY STAR	
		Commercial fryers (ES)	ENERGY STAR (eff. 4/22/11 includes large vat gas and electric fryers)	
		Food cleaners (BP)	53% minimum biobased content	
		Griddles (ES)	ENERGY STAR	
		Ice machines (FEMP)	FEMP	
		Ovens (ES)	ENERGY STAR	
MISCELLANEOUS				
	Dehumidifiers (ES)		ENERGY STAR	
	Electric motors (FEMP)		FEMP (new standards for small electric motors eff. 03/09/2015)	NEMA "Premium" motors in Section 26 0700 meet FEMP efficiency requirements.
	Water tank coatings (BP)		59% minimum biobased content	
	Wood and concrete sealers (BP)	Membrane concrete sealers	11% minimum biobased content	
		Penetrating liquids	79% minimum biobased content	