

## PVC Free Building Material Alternatives

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This list surveys many of the primary categories of building materials where PVC is commonly used and is organized by the CSI numbering system commonly used in commercial building specifications. While there are products for all building types represented here, the emphasis is on materials suitable for commercial/institutional buildings. It is intended to provide a representative sampling of products and materials that do not contain PVC and are commercially available for a variety of applications. It is not intended to be comprehensive. In a rapidly changing market, the completeness and accuracy of this information cannot be guaranteed.

Inclusion on this list does not imply endorsement of any product or manufacturer, nor any warranty of the appropriateness of listed products for a particular application.

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3/31/2006 update

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Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
		application, composition	features, installation, use, maintenance, performance /durability	use & life cycle	buy, install, maintain	contact info	
*** 02480 - MARINE WORK *** (Piers, docking)							
FSC certified wood	Sylvania Massaranduba	FSC certified decking and marine wood				Sylvania, Sante Fe, NM, 800-468-6139	<a href="http://www.certifiedwood.com">www.certifiedwood.com</a>
	Greenheart	Tropical wood. Check for FSC certification of sustainable harvest					
Concrete							
Coated Steel							
*** 02600 - DRAINAGE & SEWER SYSTEMS (piping)*** see 15100 for full discussion of pipes							
HDPE (High Density Polyethylene)	ADS	Drainage				Advanced Drainage Systems, Hilliard, OH 800-821-6710	<a href="http://www.ads-pipe.com">www.ads-pipe.com</a>
Recycled HDPE	EcoFirst	minimum 50% recycled (30% post consumer) for drainage	performance exceeds AASHTO M294 requirements			Hancor, Inc., Findlay, OH 888-FOR PIPE	<a href="http://www.hancor.com">www.hancor.com</a>
	EcoFlo	Post industrial recycled for drainage				Prinsco, Prinsburg, MN 800-992-1725	<a href="http://www.prinsco.com">www.prinsco.com</a>
	Wisconsin Plastic Drain Tile	Post industrial recycled for drainage				Plastic Drain Tile, Jefferson WI 800-362-6642	<a href="http://www.draintile.com">www.draintile.com</a>
Copper							
Ductile Iron							
Concrete							

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Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 02810 - IRRIGATION (piping & fittings) *** (note many of these companies make both PE & PVC products)							
Copper	many					widely available	
HDPE	Jain	pipe & fittings				Jain Irrigation, Columbus, OH 888-473-7539	<a href="http://www.jains.com">www.jains.com</a>
	Antelco	PE pipe and acetal fittings				Antelco, Longwood FL 800- 869-7597, Berry Hill Irrigation	<a href="http://www.berryhilldrip.com/PolyPg.htm">www.berryhilldrip.com/PolyPg.htm</a>
	Drip Rite	pipe & fittings				DripRite Irrigation Roseville, CA 916- 797-8707	<a href="http://www.driprr.com">www.driprr.com</a>
	Isco	pipe & fittings				Isco Industries, Louisville, KY 800- 345-ISCO	<a href="http://www.isco-pipe.com">www.isco-pipe.com</a>
	Pepco	pipe and low flow fittings				Pepco, Fresno CA 800-695-7171	<a href="http://www.pepcoirrigation.com">www.pepcoirrigation.com</a>
	Freedom Plastics	PE pipe only. Also make PVC				Freedom Plastics 800-356-9432	<a href="http://www.freedomplastics.com">www.freedomplastics.com</a>
	Netafim	PE pipe only. Also make PVC				Netafim Fresno, CA 559 453 6800	<a href="http://www.Netafim-usa.com">www.Netafim-usa.com</a>
	Star	irrigation supplies				Star Nursery, Henderson, NV	<a href="http://www.yardsupply.com">www.yardsupply.com</a>
	Oxford	PE Pipe only				Oxford Plastics Embros, ON 800.263.0502	<a href="http://www.oxfordplasticsinc.com">www.oxfordplasticsinc.com</a>
	Dig	complete irrigation kits				DigCorp Vista CA (760) 727-0914	<a href="http://www.digcorp.com">www.digcorp.com</a>
Recycled Tire Rubber & HDPE	Aquapour	PE Soaker hose					<a href="#">Many web distributors</a>
HDPE & Aluminum	Irriline					Irriline, Vancouver, BC, (604) 608- 4315	<a href="http://www.irriline.com">www.irriline.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 02820 - FENCING ***							
Galvanized steel/Polyolefin	Permafused II	alternative to vinyl clad galvanized chain link	Claims to outlast PVC, have better UV resistance. In black, green, tan, brown			Master Halco, 888-MHFENCE, Orange CA	<a href="http://www.fenceonline.com">www.fenceonline.com</a>
*** 06150 - DECKING & RAILING (see full HBN report on plastic lumber at <a href="http://www.healthybuilding.net">www.healthybuilding.net</a> ) ***							
*** 07100 - WATERPROOFING (Water stops) ***							
TPV (Thermoplastic vulcanizite)	JPS Earth Shield	elastomeric rubber ribbed center bulb preformed fittings	*Pro: withstands high temperatures			JPS Earth Shield, Lk Elsinore, CA, 800-821-3859	<a href="http://www.jpsspecialties.com">www.jpsspecialties.com</a>
Bitumen asphalt	Henry Synkoflex	non swelling preformed adhesive				Henry, Huntington Park, CA, 323-583-5000	<a href="http://www.henry.com">www.henry.com</a>
Butyl rubber/ clay	Henry Hydroflex	expands with water contact				Henry, Huntington Park, CA, 323-583-5000	<a href="http://www.henry.com">www.henry.com</a>
Butyl Rubber/ Bentonite	CETCO RX	expands with water contact				Cetco, Arlington Heights, Ill, 800-527-9948	<a href="http://www.cetco.com">www.cetco.com</a>
Butyl rubber/ clay	MME Hydrotite	expands with water contact				MME, Mississauga, Ontario, 800-663-6633	<a href="http://www.multiurethanes.com">www.multiurethanes.com</a>
Butyl rubber/ clay	Green Streak SwellStop	expands with water contact, for non moving joints	Beware: Green Streak also makes & sells PVC and chlorinated rubber stops			Ontario, CA, 800-325-9504	<a href="http://www.greenstreak.com">www.greenstreak.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 07450 - SIDING ***							
Note that PVC siding has been connected with mold problems due to entrapment of moisture							
FSC Certified Sustainably harvested wood				Pro: Third party verification of sustainable forestry		Forest Ethics database of suppliers	<a href="http://www.forestethics.org/html/eng/468.shtml">www.forestethics.org/html/eng/468.shtml</a>
	Almquist Lumber	flooring, plywood, molding laminates, some siding, melamine; not all FSC. FSC certified woods are the redwood, tan, oak, and madrone.				Almquist Lumber, Blue Lake, CA, 707-668-5652	<a href="http://www.almquistlumber.com">www.almquistlumber.com</a>
	Big Creek	FSC redwood; they do flooring, siding, framing.				Big Creek Lumber, Davenport, CA, 800-464-2770	<a href="http://www.big-creek.com">www.big-creek.com</a>
	CedarPro	FSC cedar siding - T&G, bevel & log cabin				ForestChoice, Stockton, CA, (209) 932-5008	<a href="http://www.forestchoice.com">www.forestchoice.com</a>
	Menominee Tribal Enterprises	FSC multiple species, siding, decking.				Menominee, Neopit, WI, 715-756-2314	<a href="http://www.menominee.edu/mte">www.menominee.edu/mte</a>
	Windfall Lumber	FSC certified and salvaged flooring, cedar and fir siding				Windfall, Olympia, WA, 360-352-2250	<a href="http://www.windfalllumber.com">www.windfalllumber.com</a>
Engineered wood	CollinsWood TruWood	Lap board siding		*Pro: SCS certified 50% recycled/reclaimed wood FSC certified available		Collins Company, Portland, OR, 800-329-1219	<a href="http://www.collinswood.com">www.collinswood.com</a>
OSB (Oriented Strand Board)	Louisiana Pacific	Board siding of aspen and pine and MDI binder	25 year warranty (prorated after 5 yrs)	*Pro: no formaldehyde binder, uses fast growing species instead of old growth *Con: MDI hazardous in manufacture		Louisiana Pacific, Portland, OR, 800-648-6893	<a href="http://www.lpcorp.com/">http://www.lpcorp.com/</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
Textured plywood	APA T1-11	Board siding		*Pro: combined sheathing & siding = less material use *Con: needs higher quality logs than OSB. Uses phenol formaldehyde binder	one of lowest cost alternatives	Tacoma, WA, 253-565-6600	<a href="http://www.apawood.org">www.apawood.org</a>
Stucco	Many	Coating with cement and lime or polymer (acrylic or butyl) or combination	Integral color can make painting unnecessary	*Con: cement has high embodied energy, polymers release toxins in manufacture	less than brick, more than others	Many. Stucco Manufacturers Assoc or yellow pages under stucco for local contractor	<a href="http://www.stuccomfgassoc.com">www.stuccomfgassoc.com</a>
Brick	Many	Masonry facing	Durable low maintenance		Most \$\$, but longest lasting, least maintenance	Many. Brick Industry Assoc	<a href="http://www.bia.org">www.bia.org</a>
Fiber cement	James Hardie, Hardie Board	Board or shingle siding of wood waste and cement	Durable (50 year warranty) low maintenance	*Pro: wood process waste fiber *Con: high embodied energy in cement	competitive w/metal, plastics, OSB, hard board	James Hardie Building Products, 800-942-7343	<a href="http://www.jameshardie.com">www.jameshardie.com</a>
Polyethylene/wood	Boise HomePlate	Board siding of PE (PC) and wood waste (PC & PI+C70)	Durable, 3 yr unlimited, 2 owner 50 yr prorated warranty, 16' lengths, wood heft & look	*Pro: all waste materials, no formaldehyde or other binders	similar w/metal, fiber cement, OSB, hardboard	Boise Cascade 866-274-6758	<a href="http://www.bc.com/homeplate/">www.bc.com/homeplate/</a>
Polypropylene	Nailite	Board or shingle siding.	Low maintenance, 8yr to life prorated warranty			Miami, FL Nailite, 888-300-0070	<a href="http://www.nailiteinternational.com">www.nailiteinternational.com</a>
	Certainteed Cedar Impressions	Board or shingle siding. Note Certainteed also makes vinyl siding as well.	Low maintenance, 50 year failure warranty, 7 year "excessive fade"			CertainTeed, 800-233-8990;	<a href="http://www.certainteed.com">www.certainteed.com</a>
	Alcoa Mastic Cedar Discovery	Beware: Alcoa makes many vinyl sidings as well				Alcoa Home Exteriors, Pittsburgh, PA, 800-962-6973	<a href="http://www.mastic.com">www.mastic.com</a>
	Louisiana Pacific	Beware: LP makes many vinyl sidings as well				Louisiana Pacific, Portland, OR, 800-648-6893	<a href="http://www.lpcorp.com">www.lpcorp.com</a>
	Alside Pelican Bay					Alside, Akron, Ohio, 800-922-6009	<a href="http://www.alside.com">www.alside.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 07530 - ROOF MEMBRANES for low slope roofs***							
Most membranes listed here are available as Energy Star surfaces							
TPO (Thermoplastic Polyolefin)	Stevens EP	Commercial / residential polyester reinforced membrane	White, gray, colors or black, heat weldable, weather like EPDM w/o the seam failure issues. Use 60mm or thicker for durability	*Pro: white for cool roofs, can be down-cycled	competitive or less than PVC	Stevens Roofing, Holyoke, MA 800-621-ROOF	<a href="http://www.stevensroofing.com">www.stevensroofing.com</a>
	Firestone UltraPly					Firestone, Carmel, IN, 800-428-4442	<a href="http://www.firestonebpco.com">www.firestonebpco.com</a>
	many more					Carlisle, GAF, Genflex, Johns Mansville, Mule Hide, more	
EPDM (Ethylene Propylene Diene Monomer)	Firestone Rubbergard MaxFR	Commercial / residential membrane	Black, White Energy Star now available			Firestone, Carmel, IN, 800-428-4442	<a href="http://www.firestonebpco.com">www.firestonebpco.com</a>
FPO (Flexible Polyolefin Alloy)	Sarnafil T	Commercial membrane	White, heat weldable	*Pro: white color for cool roofs, can be down-cycled <i>(NOTE: most Sarnafil products are PVC and poorly labeled)</i>		Sarna, Canton, MA 800-576-2358	<a href="http://www.sarnafilus.com">www.sarnafilus.com</a>
MBM (Modified Bitumen) SBS (Styrene Butadiene Styrene)	Conglas, MB Technology,	Commercial / residential asphaltic rubber membrane of styrene-butadiene styrene added to asphalt	torch applied	* Con: asphalt & styrene butadiene manufacture have significant toxic emissions		Consolidated Fiberglas Products	<a href="http://conglas.com">http://conglas.com</a>
MBM (Modified Bitumen) APP (Acstatic polypropylene)	Firestone and others	Commercial / residential asphaltic rubber membrane (atactic polypropylene added to asphalt)	hot asphalt, torch or cold applied	*Con: high emissions from hot asphalt application		Firestone, Carmel, IN, 800-428-4442 and many other manufacturers	<a href="http://www.firestonebpco.com">www.firestonebpco.com</a>
Metal	Many	Commercial / residential rigid					
*** 07712 - GUTTERS AND DOWNSPOUTS ***							
Aluminum	Many						
Copper	Not recommended			Con: toxic to aquatic life			

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
<b>*** 08000 - DOORS &amp; WINDOW FRAMES ***</b>							
Note: PVC windows have been susceptible to excess expansion and shrinkage under temperature changes, causing leaks between frame and wall. Note that many composite windows are part PVC and that PVC jamb liners and other parts are included in many "non PVC" windows							
Wood (FSC certified)	Andersen	Residential and light commercial	*Pro: Low thermal expansion coef *Con: requires more maintenance than PVC but if maintained should last longer. Clad products or engineered wood products will require less.	Seek recycled, reclaimed and/or FSC certified sustainably harvested wood. Companies listed give pref to FSC. Note many wood windows have PVC jamb liners.		Andersen Window, Bayport, MN 612-439-5150	<a href="http://www.andersenwindows.com">www.andersenwindows.com</a>
	H Window					H Window, Ashland, WI 715-685-2793	<a href="http://www.hwindow.com">www.hwindow.com</a>
Wood/ clad with aluminum or fiberglass	Milgard, Weathershield, Marvin, Sierra Pacific, Kolbe, Cara-daco, Fibertec, Andersen & more	Residential and light commercial. Wood with thin protective cladding of aluminum or fiberglass	*Pro: Much lower thermal expansion coefficient, maintenance free and generally more durable than PVC.	*Con: Fiberglass & aluminum processing emits significant air pollution. Fiberglass difficult to recycle, no recycled content		Milgard, 1-800-MILGARD and many more	<a href="http://www.milgard.com">www.milgard.com</a>
Fiberglass	Pella Impervia	Commercial / residential, polyester resins and glass fibers mixed and extruded. Carado uses Timberstrand eng wood core.	*Pro: Much lower thermal expansion coefficients and generally more durable than PVC. Low maintenance	*Con: Fiberglass processing emits significant air pollution. Difficult to recycle, no recycled content	Less than custom wood frames but more than other standard types	Pella, Murray, Ky	<a href="http://www.pellaimpervia.com/">www.pellaimpervia.com/</a>
	Fibertec, Inline and others					Fibertec / Inline, Ontario, Canada, 888-232-4956 / 416-679-1171	<a href="http://www.inlinefiberglass.com">www.inlinefiberglass.com</a>
Recycled HDPE (high density polyethylene)	Center Industries		*Pro: Much lower thermal expansion coefficients and generally more durable than PVC. Low maintenance	*Pro: 90% recycled HDPE		Center Industries Sioux Center, IA 800-281-4049 866-722-1488	<a href="http://www.center-industries.com">www.center-industries.com</a>
ABS (acrylonitrile-butadiene-styrene)/ ASA (acrylic-styrene-acrylonitrile)	Thermal Line	Window frame made from Compozit™ C/G, a coextruded composite based on Cyclac™ ABS with a UV resistant exterior coating of Geloy™ ASA both from GE Plastics		*Con: ABS has significant toxic problems in manufacture		Mandan, ND 800-662-1832	<a href="http://www.tlwindows.com">www.tlwindows.com</a>



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Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
Aluminum	Many		*Pro: durable & low maintenance. Lower thermal expansion. *Con: Higher heat loss even with added thermal break. Prone to indoor condensation	*Pro: can use recycled materials *Con: energy intensive to make		Many suppliers.	
*** 08800 - GLAZING ACCESSORIES - TAPE ***							
Butyl Rubber	<b>Tremco, Bostik</b>						
Polyethylene	<b>AdChem, Frank Lowe</b>						
Silicone rubber sealants	<b>Tremco, GE, others</b>						

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 09510 - ACOUSTICAL CEILING TILE ***							
Note: beware of PVC as protective scrubbable surface coating. Ethylene vinyl acetate (EVA) sometimes used as a coating is not PVC despite the "vinyl" in the name							
Mineral wool	Armstrong	recycled mineral wool & newsprint paper	Humiguard 10-15 year mold/mildew warranty NOTE: some Armstrong ceiling products use vinyl latex surface finish	*Pro: 25-85% recycled content - mineral wool (mostly PI from steel industry waste ) & newsprint paper. Armstrong has aggressive PC recycling program for old panels.		Armstrong World Industries, Lancaster, PA 877-276-7876	<a href="http://www.ceiling.com">www.ceiling.com</a>
	USG	recycled mineral wool & newsprint paper	*Pro: Astro has high NRC rating of .50 to .60, a CAC rating of 35 to 39 and a high LR (light reflectance) value of .85. "Aegis Microbe Shield" treatment for mold mildew resistant w/10-30 yr warranty(humidity not water) NOTE: some USG products come vinyl faced: Clean Room ClimaPlus, Orion 210, Premier Hi-Lite ClimaPlus, SHEETROCK® Brand Lay-in Clean Room Vinyl.	*Pro: 40-85% recycled content - mineral wool (mostly PI from steel industry waste ) & newsprint paper. Some PC recycling of old panels from "select customers"		USG, Chicago, IL 800.874.4968	<a href="http://www.usg.com">www.usg.com</a>
Perlite	Chicago-Metallic Eurostone	Eurostone has perlite, ceramic clay and a liquid glass binder, no phenol resins; also glass reinforced gypsum, fabric/fiberglass, metal (steel/aluminum), drywall	*Pro: not support mold, bacteria, or fungus, impervious to water, humidity, heat and flame, 30 yr + life			Chicago Metallic Corporation, Chicago, IL, 708-563-4600	<a href="http://www.chicago-metallic.com">www.chicago-metallic.com</a>
Wood fiber	Tectum	aspen wood fibers in an inorganic hydraulic cement binder, commonly used in schools,	*Pro: more durable *Con: lower acoustical performance, harder to cut		more expensive than standard ACT	Tectum, Inc, Newark, OH (888) 977-9691, (740) 345-9691	<a href="http://www.tectum.com">www.tectum.com</a> .

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
<b>*** 09640 - WOOD FLOORING (incl bamboo)*** (as substitute for 09650 vinyl resilient floor)</b>							
Wood	ForestWorld	FSC certified plank and floating floors				Forest World, Middleburg, VT, 802-382-8888	<a href="http://www.forestworld.com">www.forestworld.com</a>
	Earthsource	FSC certified plank and floating floors				Earth Source, Oakland, CA, 866-549-9663, 510-2087257	<a href="http://www.earthsourcewood.com">www.earthsourcewood.com</a>
	EcoTimber	FSC certified plank and floating floors				Ecotimber, San Rafael, CA 415.258.8454	<a href="http://www.ecotimber.com">www.ecotimber.com</a>
Bamboo	Bamboo Hardwoods, Flooring Alternatives, Moso, PlyBoo, Smith & Fong, Timbergrass, and many others	standard plank flooring product made from laminated bamboo (also available in floating floor)	*Pro: more resilient than red oak, good water resistance	*Pro: rapidly renewable resource (4 years to maturity) *Con: unknown labor practices in SE Asia, some bamboos use urea formaldehyde binders	comparable to hardwood floor	See resilient chart	See resilient flooring chart
<b>*** 09650 - RESILIENT FLOORING *** (see resilient flooring chart at <a href="http://www.healthybuilding.net">www.healthybuilding.net</a> for more detail)</b>							
Natural linoleum	Forbo (Marmoleum, Artoleum), Armstrong DLW, Prontolino, Nova, Tarkett	plant based tile and sheet goods from flax linseed oil, wood flour, pine resins, and natural colorants, sheet good w/ jute backing or tile with polyester backing	*Pro: anti static, anti bacterial, long wear life (40+ yrs?), minimal maintenance requirements (no stripping and waxing), *Con: not recommended for wet environments. NOTE: Forbo is heavier duty commercial grade than Armstrong	Pro:rapidly renewable, decomposes in dump *Con: Outgases VOCs (no known carcinogens or repro development toxins, but can be allergen problem for certain sensitive people)	\$3 - \$6 installed in 02	See resilient chart	See resilient chart
Cork	Expanko, Duro Design, Flooring Alternatives Gerbert, We Cork, Wicanders and many other manufacturers	tile and plank and floating floor from natural cork	*Pro: anti bacterial, mildew, mold, rot resistant, fire retardant, thermal, vibration & acoustic barrier, soft, warm under foot, self healing, thermally stable, hypo-allergenic, durable, long wear life (many high traffic installs from 1920s still in use), minimal maintenance(no stripping and waxing)	*Pro: rapidly renewable (harvestable every 9-10 years for 100-150 yrs) healthy for tree, Often use cork waste *Con: Some manufacturers use urea formaldehyde binders	\$3 - \$8 installed in 01	See resilient chart	See resilient chart

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Polyolefin	Amtico Stratica	polymer resin/ ethylene copolymer product akin to high end vinyl, comes in 333 mm (13'1/2) & 500 mm 19" squares and 100mm (4") X 1000mm (39") planks. (Base sheet is 1000mm square)	wood and stone prints, drop in replacement for vinyl, Highly stain resistant, claim 10X tough as lino (same Surlyn wear layer as golf balls 10 yr wear out guarantee) no waxing, claims low impact and reflected noise	*Pro: low VOC, solvent free adhesive, certified ISO 14001, recyclable *Con: petrochemical based, due to adhesives probably only practical for post industrial recycling	\$6.50/sf per Amtico rep in 01 in CA), equal install, no maint.	Amtico Intl., Atlanta, GA 404-267-1900	<a href="http://www.stratica.com/">www.stratica.com/</a>
	Tarkett Daflex Nova, SuperNova	French product - beware most of Tarkett's line is PVC				Tarkett USA Houston , TX 800-USS-TILE	<a href="http://www.tarkett-commercial.com">www.tarkett-commercial.com</a>
Polyethylene/ limestone	LifeTile/ LifeLine	Enomer - 80% limestone & 20% polyethylene	no wax and strip, acrylic adhesives, Fire Class 1 ASTM E648-99	*Pro: 50% PI recycled content, low emission		Upofloor, Finland	<a href="http://www.lifelinefloors.com/en">www.lifelinefloors.com/en</a>
	Stonescape	limestone and ethylene acrylic polymers	no wax and strip, much harder than VCT, ASTM E-648/662 Class 1.			American Biltrite (Amtico) Canada, Ontario 905-507-2400	<a href="http://www.american-biltrite.com">www.american-biltrite.com</a>
Resin laminate	WilsonArt	Kraft paper impregnated with melamine and phenolic resins	No wax & strip, Fier Class 1 or A available	*Pro: renewable paper content, GreenGuard VOC certified		Wilsonart, Temple, TX 800-433-3222	<a href="http://www.wilsonart.com">www.wilsonart.com</a>
Rubber	Nora, Mondo, ToMarket, Dodge Regupol and many other manufacturers	Both virgin and recycled rubber sheet and tile goods	+antibacterial, mildew, mold, rot resistant, long wear life, some are no wax/no strip, others require wax	Rubber floorings differ widely. Some outgas VOCs, have odor, others are very clean	\$3- \$10/sf in 01	See resilient chart	See resilient chart
Concrete	local contractor	polished concrete	no wax and strip	*Pro: No VOC, Con: hard under foot			<a href="http://www.concretenetwork.com/concrete/polishing">www.concretenetwork.com/concrete/polishing</a>
Terrazo	Enviroglas	recycled glass in epoxy	highly durable, wide variety of colors avail, no wax and strip	*Pro: hi PC content Con: hard under foot		Plano, TX 888-523-7894	<a href="http://www.enviroglasproducts.com">www.enviroglasproducts.com</a>
Concrete & recycled glass	IceStone	75% recycled glass in cement, like terrazo	highly durable, wide variety of colors avail, no wax and strip	*Pro: hi PC content, Con: hard under foot		Icestone, NYC, NY 714-24-4900	<a href="http://www.icestone.biz">www.icestone.biz</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 09680 - CARPET (PVC is used for backing) *** (See carpet chart for more detail)							
Natural fibers (Jute, other grasses)	many manufacturers	Broadloom carpet					
Polyolefin	Shaw Eco solution/ EcoWorx	Nylon 6 tile on thermoplastic polyolefin back (All Shaw will be PVC free by 2005)		*Pro: true closed loop recyclable, chemicals being screened by MDBC for low toxicity		Shaw Contract, Dalton GA 800-441-7429	<a href="http://www.shawcontract.com">www.shawcontract.com</a>
PVB (Polyvinyl butryal)	Collins & Aikman ethos	Nylon 6,6 on PVB backing (Note: some C&A backings contain PVC. All faces ar available with PVB)		*Pro: 96% post consumer recycled content, whole carpet recyclable into backing		Tandus - C&A Floorcoverings, Dalton, GA	<a href="http://www.tandus.com">www.tandus.com</a>
Polypropolene	Lees Unibond & Unibond RE	Nylon 6,6 on polypro unibond backing, RE product uses biobased resin to laminate backings (NOTE Lees Thermobond backing contains PVC)		*Pros: some recycled content in face (all PI) and biobased content in binder. *Con: Backing only downcycled		Lees Carpet, Glasgow VA 800-545-9765	<a href="http://www.leescarpet.com">www.leescarpet.com</a>
Reuse	Milliken EarthSquare Renewal process	Renewal process of deep cleaning, retexturing and restyling modular carpet 2X for up to 30 year life. (can be done on many non Milliken carpets)	*Pro: Non VOC adhesive is releasable for easier change out	*Pro: true reuse, tho limited to two reuses cycles before down-cycling, company wide approach to enviro issues		Milliken, Spartanburg, SC, 877-E2-RENEW	<a href="http://www.earthsquare.com/">www.earthsquare.com/</a>
Polyurethane	Milliken Image	Polyurethane modular carpet in 3' tile	*Pro: Non VOC adhesive is releasable for easier change out, 3' tiles mean fewer seams, custom patterns available	*Pro: designed for EarthSquare process. *Con: only 4% recycled content, urethane only downcycled		Milliken, Spartanburg, SC 864-503-2506	<a href="http://www.milliken.com">www.milliken.com</a>
Urethane	Mohawk Evergreen	Nylon 6 Broadloom & modular carpet - also do woven backless carpet		*Pro: closed loop recycling (face only limited capacity, *Con: urethane backing only downcycled		Mohawk, Atlanta GA, SW office, Marty Spillman, 909-898-4600	<a href="http://www.mohawkcarnet.com">www.mohawkcarnet.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
Urethane	Interface Wabi & Sabi / NexStep	Nylon 6,6 20" tile on high density urethane NexStep backing, (NOTE Some Interface backings contain PVC) Also have	*Pro: polycarbonate seam sealer moisture impervious, Non VOC adhesive is releasable for easier change out	*Pro: incorporates recycled material, "zipper" for easy 100% recycling, some solar power in manufacture, low energy dye process. Will recycle or repurpose old carpet *Con: Can only downcycle at this time. Not closed loop		Interface, Atlanta GA, 770-437-6800	<a href="http://www.interfaceinc.com">www.interfaceinc.com</a>
	Mannington	Nylon 6,6 broadloom on urethane backing				Mannington, Commercial Calhoun GA 800-241-2262	<a href="http://www.mannington.com">www.mannington.com</a>
*** 09700 - 09900 - WALL COVERINGS ***							
Note: PVC wall coverings are associated with serious mold problems due to entrapment of moisture in wall cavity							
Wood fiber/ polyester	Innvironments Allegory	Also have products made from sisal, cellulose, honey suckle vines, and cork NOTE: Some Innovations products contain vinyl	Type II rating, Class A flame, washable, but not scrubbable, more permeable than vinyl. Not for high moisture areas	*Pro: no heavy metals or formaldehyde, low emissions	\$13/yd in 6/2000	Innovations in Wallcoverings NY, NY, 212-807-6300	<a href="http://www.innovationsusa.com">www.innovationsusa.com</a>
Polyethylene	Surface IQ	Note: Also have PVC products	Type II, Class A, stain resistant and scrubbable, antimicrobial	*Pro: no BFRs, heavy metals or formaldehyde		Len-Tex, N. Walpole, NH 03609 603-445-2342	<a href="http://www.lentexcorp.com">www.lentexcorp.com</a>
	Xorel		38 designs, 400 colorways, water repellent, stain resistant and aggressively scrubbable, inherently flame retardant Class A & Class 1, anti-bacterial, antifungal and anti-staph, self healing, no fade in 10 years of use	*Pro: non toxic	\$21.50/yd+	Carnegie Fabrics, Rockville Cntr, NY 516-678-6770 800-727-6770	<a href="http://www.xorel.com">www.xorel.com</a>
Cellulose/ polyester	Roos Moment Environmental		Type I, Class A flame, washable			Roos Intl, Deerfield, FL 800-888-2776	<a href="http://www.momentwallcoverings.com">www.momentwallcoverings.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
Polyester/ Cellulose	Envision	Non woven cellulose polyester blend	Type I & II, Class A, breathable and scrubbable			Tapeter Decorative Wall Solutions, Deerfield Beach, FL 877-867-4430	
Polyester	Pallas Cares & Terratex	Polyester, and recycled polyester, (NOTE: Pallas also produces vinyl wall coverings).	Some use Avora FR flame and stain resistant	recyclable	\$20-\$55/yd (05/02)	Pallas, Green Bay, WI 800-4PALLAS, 920-468-1600	<a href="http://www.pallastextiles.com">www.pallastextiles.com</a>
	DesignTex	100% recycled & poly blends w/natural fibers (NOTE: some Design Tex products are vinyl)	9 colorways		\$18/yd	DesignTex 800-221-1540	<a href="http://www.dtex.com">www.dtex.com</a>
Bio fibers	Natural Environments	Variouos lines from linen and mulberry fibers, flax, recycled paper, water-based vegetable dyes, and glass fibers				Muraspec NA, Randolph, MA 800-717-5651	<a href="http://www.muraspecna.com">www.muraspecna.com</a>
Cellulose	Duraprene	reprocessed cellulose fibers from tree farms bonded in latex under high pressure	Class A fire rating, equiv to Type II vinyl, abrasion and stain resistant, washable and scrubbable		\$15-18/yd (2/02)	Blumenthal 860-824-8000	<a href="http://www.blumenthalwallcovering.com">www.blumenthalwallcovering.com</a>
Recycled paper	Dialtones, Thatch	Japanese phonebooks		50-75% recycled phone books, rest paper pulp	\$13.50-\$15/yd (05/02)	Pallas, Green Bay, WI 800-4PALLAS	<a href="http://www.pallastextiles.com">www.pallastextiles.com</a>
Polychromatic finish coatings	Polmyx, Zolotone	look for low VOC water-based formulas	100s of color combinations, Class A fire rating, stain resistant, abrasion resistant, washable, scrubbable, resistant to fungus and bacteria, unlike vinyl, can be touched up		\$4.5 to \$13/yd	Tri-Kes Wall-covering Source, Dallas, TX, 800-200-8120	<a href="http://www.zolatone.com/">www.zolatone.com/</a>
Wool/ Ramie	McDonough Collection		Custom high end fabric	Pro: low impact manufacturing	\$59/yd	DesignTex 800-221-1540	<a href="http://www.dtex.com">www.dtex.com</a>
Wood fiber	Tectum	See 09510 acoustical ceiling tile				Tectum, Newark, OH, 888-977-9691	<a href="http://www.tectum.com">www.tectum.com</a>
Fabric	many manufacturers	Many other natural fiber and other fabric alternatives are available					

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 10260 - DOOR and WALL PROTECTION ***							
Recycled High density polyethylene (HDPE)	InPro EnviroGT	Handrails and corner guards from recycled HDPE & FSC certified wood				InPro Corp., Muskego, WI, 800-222-5556	<a href="http://www.inprocorp.com">www.inprocorp.com</a>
Metal (Stainless steel, aluminum, brass and bronze)	Tubular Specialties and Pawling	grab rails, corner guards				Tubular Specialties, Los Angeles, CA, 800-225-5876 (see also Pawling below)	<a href="http://www.calltsm.com">www.calltsm.com</a>
Aluminum & bamboo	Acrovyn G5			bamboo is more rapidly renewable than wood		C/S (Construction Specialties), Lebanon, NJ 908-236-0800	<a href="http://www.c-sgroup.com">www.c-sgroup.com</a>
ABS/ Polycarbonate	Acrovyn 3000			Note: do not use chlorine bleach as polycarbonate may leach bisphenol-A		C/S (Construction Specialties), Lebanon, NJ 908-236-0800	<a href="http://www.c-sgroup.com">www.c-sgroup.com</a>
Polycarbonate (Lexan)	Pawling and Tubular Specialties	corner guards (Note: many of Pawlings products contain vinyl)		Note: do not use chlorine bleach as polycarbonate may leach bisphenol-A		Pawling, NY, (800) 431-0101 (see also above for Tubular )	<a href="http://www.pawling.com">www.pawling.com</a>
Wood	Pawling and others	handrails				Many	



## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
<b>*** 10400 - SIGNAGE ***</b>							
Aluminum							
Acrylic							
PVA/urethane							
photopolymer/ polyester							
<b>*** 10800 - BATH (shower curtains) ***</b>							
Note: PVC shower curtains have serious outgassing problems							
Nylon	Valiant			Look for reversed bottom hem for water runoff	\$10-30	Valiant Products, Denver, CO., 800-347-2727	<a href="http://www.valiantproducts.com">www.valiantproducts.com</a>
Polyethylene	Brookstone Tyvek				\$20	Brookstone, 800-846-3000	<a href="http://www.brookstone.com">www.brookstone.com</a>
PEVA	Ikea	50% EVA, 50% PE			\$2 - 16		<a href="http://www.ikea.com">www.ikea.com</a>
Polyester	Ikea		Pro: breathable		\$10-15		<a href="http://www.ikea.com">www.ikea.com</a>
Polyester, Nylon	A-1 Textiles, Hospi-Tel		Pro: breathable		\$10 (wholesale only)	Chatsworth, CA, 800-351-1819, East Orange, NJ 07017 (973) 678-7100	<a href="http://www.a1textiles.com">www.a1textiles.com</a>
Cotton	many		Con: requires more care (regular washing and airing) to keep mold free	Pro: renewable resource, available in organic cotton	\$15-60		
Cotton Duck Canvas	Green Home, Real Goods		Pro: better at resisting absorption of water than regular cotton		\$26 - 90	Green Home 415.282.6400	<a href="http://www.greenhome.com">www.greenhome.com</a>
Glass	many	rigid door					
none		design open shower without curtain					
<b>*** 10800 - BATH (shower surrounds) ***</b>							

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 12490 - WINDOW TREATMENTS *** See 9700 wall coverings for more discussion of fabrics							
TPO (Thermoplastic polyolefin)	Mecho EcoVeil	EarthTex TPO	washable, UV resistant, flame retardant, antimicrobial, with similar strength and dimensional stability, but lighter weight	recyclable, screened by MBDC protocol		MechoShade, Long Island, NY 718-729-2020	<a href="http://www.mechoshade.com">www.mechoshade.com</a>
Fiberglass	Lutron Vimco	Note: Lutron's polyester fabrics are vinyl coated, The Hexcel and Nollite fiberglass fabrics are PVC free	mesh and blackout shades, all all meet NFPA-701 fire			Ashland, VA 800-446-1503	<a href="http://www.vimco.com">www.vimco.com</a>
	Draper	3-G Mermel & Hexcel acrylic coated fiberglass & Rockland cotton/poly	mesh and blackout shades, all all meet NFPA-701 fire			Draper, Spiceland, IN 800-238-7999	<a href="http://www.draperinc.com">www.draperinc.com</a>
Polyester/polyurethane	Hunter Douglas/Nysan Greenscreen	Trevira® CS polyester with polyurethane coating	mesh and blackout shades, meet NFPA-701 fire			Calgary, Alberta Canada 403-204-8675	<a href="http://www.nysan.com">www.nysan.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
<b>*** 12500 - FURNITURE ***</b>							
	<b>Herman Miller Mirra</b>	Chair w/mesh instead of upholstery (no BFRs) and no PVC parts		*Pro: recyclable, MBDC protocol to get rid of toxics		Herman Miller, Zeeland MI, 888-443-4357	<a href="http://www.hermanmiller.com">www.hermanmiller.com</a>
	<b>Steelcase Think, Jersey Seating</b>	Chair w/water-blown cushioning foams, no adhesives		*Pro: chrome-, and adhesive-free, and powder-coated metal finishes. High recycled content; recyclable. MBDC protocol		Steelcase, Grand Rapids, MI 888-STEELCASE	<a href="http://www.steelcase.com">www.steelcase.com</a>
	<b>Knoll Life</b>			Pro: chrome free, low VOC, high recycled content, recyclable, MBDC protocol		Knoll, New York, NY 212-343-4125	<a href="http://www.knoll.com">www.knoll.com</a>
<b>*** 12500 - FURNITURE/UPHOLSTERY *** See 9700 wall coverings for more discussion of fabrics</b>							
<b>Wool/ Ramie</b>	<b>Climatex Lifecycle</b>	Wool/Ramie blend, no carcinogens, toxic chemicals or heavy metals		*Pro: low impact manufacture, compostable at end of life		Carnegie Fabrics 800-727-6770, Rockville Centre, NY, 516-678-6770	<a href="http://www.carnegiefabrics.com">www.carnegiefabrics.com</a>
<b>Natural fibers</b>	<b>many</b>	Many other natural fiber and other fabric alternatives are available				DesignTex	
<b>Polyester/ Cotton</b>	<b>EnviroLeather</b>	designed for medical and dental chairs, tables and stools.		passed 01350 IAQ standard, Class 1 Fire w/o brominated flame retardants		LDICorp, Gonic, NH 866-332-0700	<a href="http://www.ldisolutions.com">www.ldisolutions.com</a>
<b>Polyethylene</b>	<b>Xorel</b>	See description above under wall coverings				See Carnegie Fabrics	<a href="http://www.xorel.com">www.xorel.com</a>
<b>Nylon</b>	<b>HBF</b>						
<b>Polyurethane</b>	<b>DesignTex, Deepan, Human Scale, Architex, Jhane Bharnes, Ultra Fabrics</b>						

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
<b>*** 15100 &amp; 15400 - BUILDING SERVICES PIPING &amp; PLUMBING (pipes)***</b>							
HDPE (High Density Polyethylene)	CPChem Performance Pipe	High Density Polyethylene plastic often used in natural gas, water supply, sewer, perimeter drain pipe and relining applications	*Pro: light, flexible, more resilient than PVC, stronger in cold weather, joints are fused rather than glued for better seal (almost leak free) and no fumes, long continuous coils, *Con: high expansion coefficient (3X PVC) that must be accommodated in high temp fluctuation environments, not recommended for high temperature apps (140+F)	*Pro: Relatively clean production, no heavy metals, lower embodied energy (1/3 of PVC), easy to recycle	Varies. Can be least expensive plastic (\$.40/lf for 4" compared to \$1.20 for PVC in 94, 25-35% more expensive in 2002), Fusion installation takes more time, but comes in long continuous rolls	CPChem 800-527-0662	<a href="http://www.CPChem.com/performancepipe">www.CPChem.com/performancepipe</a>
	Rinker, QWH, Quail					Endot Industries 800-345-3990	<a href="http://www.endot.com/market">www.endot.com/market</a>
	Isco					Isco Industries, Louisville, KY, 800-345-4726	<a href="http://www.isco-pipe.com">www.isco-pipe.com</a>
PEX (Cross linked polyethylene)	Vanguard	Radiant heating systems and potable water distribution applications, including hot water	*Pro: same advantages as HDPE, but also can be used in high temperature applications	*Con: can't be recycled		Vanguard Piping, Action Sales, San Jose, CA, 408-406-3218	<a href="http://www.vanguardpipe.com">www.vanguardpipe.com</a>
PP (Polypropylene)	Aquatherm	potable-water, hydronic-heating, and other pressurized piping applications	*Pro: very durable, no hammer, wide temperature range, quick heat fusion leak proof joining, low thermal conductivity (less condensation and heat loss). Can be used in high temp apps (180F 100PSI, low COF, acid resistant,	*Pro: Relatively clean production, no heavy metals, or BFRs, can be recycled, but not back into pipe (downcycled)	Lower than copper in 04, labor costs lower	Aquatherm Piping Systems, LLC,	

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
Vitrified Clay		Fired clay used in industrial and sewer applications	*Pro: highly chemical resistant, lowest thermal expansion coefficient, most durable of all pipe materials, many manufacturers give 100 year warranties . Narrower trench, less heavy equipment needs for install. *Con: heavy (but can be used in small lighter lengths)	*Pro: Low toxic manufacture, non toxic disposal, totally recyclable, low embodied energy (1/3 of PVC),	Materials costs comparable to PVC, installation costs comparable or less.	Clay Pipe Institute, Lake Geneva WI, 262-248-9094	<a href="http://www.ncpi.org">www.ncpi.org</a>
	Gladding Mc Bean & Co.					Gladding McBean, Lincoln CA, 916-645-9525	<a href="http://www.gladdingmcbear.com">www.gladdingmcbear.com</a>
	Mission Clay					Mission Clay, Corona CA, 909-277-4600	<a href="http://www.missionclay.com">www.missionclay.com</a>
Cast iron		Primarily used in sanitary and storm drain, and soil/waste piping and venting	*Pro: low thermal expansion coefficient (1/5 of PVC), quieter, very durable	*Pro: US foundries make entirely from recycled scrap steel and iron	material up to 2X as expensive as PVC, installation can be lower	Cast Iron Soil Pipe Institute, widely available. Avoid McWane due to serious OSHA violations	<a href="http://www.cispi.org">www.cispi.org</a>
ABS (Acrylonitrile-Butadiene-Styrene)			*Con: nearly twice the thermal expansion coefficient of PVC	*Con:- slightly more energy intensive to produce, also has significant toxic problems in manufacture	equal to PVC for 4" pipe in 94	widely available	
*** 15100 & 15400 - BUILDING SERVICES PIPING & PLUMBING (corrosion wrap) ***							
Polyethylene	Polyken 900					Tyco Adhesives, Norwood, MA, 800-343-7875	<a href="http://www.polyken.com">www.polyken.com</a>
	Tapecoat					Tapecoat, 847-8668500	<a href="http://www.tapecoat.com">www.tapecoat.com</a>
*** 15450 - FUEL OIL AND GASOLINE SYSTEMS ***							
Polyethylene	Enviroflex					Total Con-tainment, Oaks, PA, 877-66TOTAL	<a href="http://www.totalcontainment.com">www.totalcontainment.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 16100 - ELECTRICAL CABLES ***							
Note: Insulation is often PVC, but has been eliminated from many subway systems internationally and from many US military applications due to fire smoke hazards							
XLP / XLPE (Thermoset Crosslinked Polyethylene)	General	XHHW-2, USE-2 RHH/RHW-2	Building wire (alternate to PVC insulated THHN), XHHW for genrl purpose, color coded, USE-2 for burial or wet apps		upcharge over PVC THHN varies by size, ~50% for AWG2, (2001 local SF electric house)	General Cable, Highland Heights, Kentucky, 859-572 8000	<a href="http://www.generalcable.com">www.generalcable.com</a>
	Cerrowire	XHHW-2, USE-2 RHH/RHW-2	resin maker is Scapa Polymerics			Cerro Wire & Cable, Hartselle, AL 256-773-2522	<a href="http://www.cerrowire.com">www.cerrowire.com</a>
	Exelene					Nexans Energy, New Holland PA 717 354 6200	<a href="http://www.nexansenergy.com">www.nexansenergy.com</a>
	Service Wire	VW-1, XHHW-2, USE-2, RHH/RHW-2				Service Wire Culloden, WV 800-624-3572	<a href="http://www.servicewire.com">www.servicewire.com</a>
	Southwire, Solonon	Substitute for PVC coated NM B, THHN, and THWN building wire (also datawire)				Southwire Company, Carrolton Ga., 800-444-1700	<a href="http://www.southwire.com">www.southwire.com</a>
	Nual	aluminum conductor with XLP insulation				Alcan, Atlanta, GA 800-347-0571	<a href="http://www.cable.alcan.com">www.cable.alcan.com</a>
LLDPE (Linear Low Density Polyethylene)	Belden, Carol	Low smoke polyethylene or Linear low density polyethylene, used in airports, security, military other places where smoke from a fire is high concern					

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
*** 16000 - CONDUIT, DUCT & EMT & JUNCTION BOXES ***							
HDPE (High Density Polyethylene)	CPCHEM Performance Pipe	High density polyethylene (ENT)	*Pro:D69 More flexible, ductile, and resilient than PVC, stronger in cold weather, joints are fused or pressure fit rather than glued for better seal and no fumes, lower COF = easier to run cable, *Con: higher thermal expansion coef but can handle it.		varies, sometimes cheaper, currently (early 02 25-35% more expensive material costs. Similar installation. Better maintenance+A 127e costs	Chevron Phillips Chemical (CPCHEM), Plano TX 800-527-0662,	<a href="http://www.CPCHEM.com/performancepipe">www.CPCHEM.com/performancepipe</a>
	Arco PermaGuard					Arco, Elyria, OH 800-321-7914	<a href="http://www.arcocorp.com">www.arcocorp.com</a>
	Endot					Endot Industries, Rockaway NJ, 800-443-6368	<a href="http://www.endot.com/market">www.endot.com/market</a>
	Vikimatic					TVC Communications San Clemente, CA 1-800-755-1415	<a href="http://tvccatalog.tvcinc.com">http://tvccatalog.tvcinc.com</a>
	Lamson & Sessions	Most L&S product line is PVC. Just beginning to offer HDPE				Lamson & Sessions, Cleveland OH, 216-464-3400	<a href="http://www.lamson-sessions.com">www.lamson-sessions.com</a>
PP (Polypropylene)	MyCableShop	low smoke, flexible conduit				Cheektowaga NY 866-449 4498	<a href="http://www.mycableshop.com">www.mycableshop.com</a>
Galvanized Steel or Aluminum	Allied Tube	Conduit (EMT)				Allied Tube, Harvey IL 800-882-5543, widely available	<a href="http://www.alliedtube.com">www.alliedtube.com</a>

## PVC Free Building Material Alternatives

Material	Brands	Description	Characteristics	Impacts	Cost	Manufacturer	Web links
Fiberglass	Champion	can replace PVC coated conduit in corrosive environments. Also make trays	Pro: low coefficient of friction			Champion Fiberglass, Spring, TX 281-353-5052	<a href="http://www.championfiberglass.com">www.championfiberglass.com</a>
Fiberglass Reinforced Epoxy	FRE					FRE Composites, Quebec Canada, 888-849-9909, 503 799-6610	<a href="http://www.frecomposites.com">www.frecomposites.com</a>
Nylon	Endot					Endot Industries, Rockaway NJ, 800-443-6368	<a href="http://www.endot.com/market">www.endot.com/market</a>
	Sealcon Standard and Superflex	liquid tight flexible conduit				Sealcon Centennial, CO (303) 699-1135	<a href="http://www.sealconusa.com">www.sealconusa.com</a>
	Liquitite Corrlok	liquid tight flexible conduit				Electri-Flex, IL (800) 323-6174	<a href="http://www.electriflex.com">www.electriflex.com</a>
Coated steel	Type ATX, ZHLA, CEA or ACEA	liquid tight flexible conduit - steel with polyurethane				Electri-Flex, IL (800) 323-6174	<a href="http://www.electriflex.com">www.electriflex.com</a>

This list surveys many of the primary categories of building materials where PVC is commonly used and is organized by the CSI numbering system commonly used in commercial building specifications. While there are products for all building types represented here, the emphasis is on materials suitable for commercial/institutional buildings. It is intended to provide a representative sampling of products and materials that do not contain PVC and are commercially available for a variety of applications. It is not intended to be comprehensive. In a rapidly changing market, the completeness and accuracy of this information cannot be guaranteed.

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