Furniture - Office

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Did you know?

Both the Building Owners Management Association (BOMA) BESt certification process and the Manitoba Green Building Policy, which requires Leadership in Energy and Environmental Design (LEED) certification, has optional credits for sustainable product selection. "Green" furniture selection may be a critical component of certification.

Minimum Sustainable Recommendations

Office furniture and panel systems purchased must be either GREENGUARD or SCS Indoor Advantage certified. For types of furniture that are not certified under these programs, requirements are as follows:

1. Wood materials used in furniture must be grown and harvested in a sustainable manner. Select wood products that contain an environmental certification that is recognized in Canada such as: Canadian Standards Association (CSA), Forest Stewardship Council (FSC), and Sustainable Forestry Initiative (SFI) certified sources.
2. Foam cushioning shall be manufactured without the use of HCFCs.
3. Adhesives used in construction, including fiberboard binders must be formaldehyde-free.
4. Furniture glues and adhesives must be low VOC or VOC free (water-based adhesives)
   a. Vendor shall supply a Material Safety Data Sheets (MSDS) for all adhesives used in manufacturing process.
5. Metal components must be powder coated.
6. Metal components must contain recycled content preferably including post-consumer content.
   a. Minimum average 30% recycled content
7. Plastic components shall contain a post-consumer recycled content.
8. Fabric options must include biodegradable or recycled content.
   a. Fabric dyes shall be non-toxic. Vendor shall submit a MSDS for any additional chemical used to treat fabric for such purposes as mothproofing, inhibiting mold, mildew resistance and flame retarding.
9. Lighting components shall be equipped with energy efficient lighting.
10. Furniture must be durable, easy to maintain and easy to disassemble and recycle.

Other Things to Consider

Purchasing specifications should also outline requirements for:

1. Furniture off-gassing prior to distribution
2. Minimal packaging (i.e. bulk and/or reusable packaging such as blanket wraps).
   a. Corrugated cartons should have a minimum of 30% post consumer recycled content, as outlined by the Environmental Choice Eco Logo guidelines.
   b. The supplier should accept the packaging for reuse, recycling or recovery.
   c. The packaging is reusable by the end user or can be recycled locally.

3. Clear and comprehensive maintenance and repair instructions as well as an inventory number for replacement parts.

Finally, in keeping with provincial commitments to minimize greenhouse gas emissions and solid waste production, the vendor should be encouraged to develop sustainable delivery strategies;

1. Product delivery consolidations
2. Efficient transportation logistics
3. Proper route planning
4. No idling of vehicles during product delivery
5. Use of fuel efficient delivery vehicles

When furniture is being selected for a project seeking a green building certification such as LEED®, make sure that the furniture purchased meets the requirements set out in the rating system's criteria.

What are the issues?

Furniture including chairs and other types of seating, desks, tables, filing, storage cabinets and their associated components and accessories are made from a variety of materials including wood, wood-based products, metal, plastics, fabric etc. There are a number of environmental impacts associated with furniture manufacturing, use and disposal.

Furniture made from wood obtained through poor forest harvesting practices often leads to soil erosion, deterioration of watersheds and loss of plant and animal species. Furniture made from exotic woods like teak and mahogany has lead to the destruction of habitat, the loss of biodiversity and has forced indigenous people living off the environment out of their habitat.

Some types of inexpensive "wood" furniture are made from fiberboard (e.g., particleboard, plywood etc). Conventional particleboard can be manufactured using urea formaldehyde as the binding agent. This conventional particleboard can emit formaldehyde into the surrounding air throughout its lifecycle. The U.S. Environmental Protection Agency (EPA) classifies formaldehyde as a suspected carcinogen.

Furniture with foam-filled cushions can pose other perils. Hydrochlorofluorocarbons (HCFCs) can be used as a blowing agent to create the polyurethane foam cushions and this chemical is known to damage the Ozone Layer. Because of the impact of HCFCs on the Ozone, they are scheduled for complete elimination by 2030 (Montreal Protocol). In addition, because polyurethane foam is highly flammable, it is commonly treated with fire-retardant chemicals called polybrominated diphenyl ethers, (PBDEs). PBDE's are persistent in the environment and are suspected carcinogens.

Metal coating operations (i.e., coating application, curing and drying) used to create durable and corrosion resistant metal furnishings result in the release of a number of toxic pollutants. Common plating processes release heavy metals such as chromium, nickel and cyanide into the air and wastewater. In addition the cleaning

processes associated in metal coating operations results in the release of numerous volatile organic compounds (VOCs) including xylene, toluene and glycol ethers. Health effects associated with these pollutants include eye, nose, throat, and skin irritation; nausea, vomiting, headache, and dizziness; and liver and kidney damage. (U.S. EPA Final Rule To Reduce Toxic Air Pollutants From Surface Coating of Metal Furniture, Fact Sheet 2002).

Adhesives used to glue veneers and laminates to wood/particle board, in foam fabrication, upholstering and paint finishes applied to wood and metal furnishings, contain numerous VOCs, including formaldehyde. These VOC's contribute to indoor air pollution during both furnishing manufacturing and during furniture use.

What are the options?

The furniture industry has come a long way in recent years. Manufacturers now offer a variety of sustainable furnishing options.

Many furniture manufacturers offer certified wood products. Requesting furniture made from certified sources such as The Forestry Stewardship Council (FSC) helps reduce the potential impacts associated with forest harvesting, promotes sustainability supporting watershed protection, biodiversity and local community development.

A number of naturally derived adhesives and resins are being used as a binding agent for fiberboard (e.g., particle board and plywood). While use of alternative binding agents is fairly recent, concern over the health impacts of formaldehyde in emissions is hastening the search for alternatives.

The types of blowing agents used to produce polyurethane foam cushions are also being modified to more benign choices. Blowing agents such as water and carbon dioxide are becoming the norm. This is largely because of the imminent ban on the use of HCFCs.

As an alternative to metal plating, many furniture manufacturers offer powder coating metal finishes. Powder coating is a type of dry paint coating, which is applied as a free-flowing, dry powder. The coating is typically applied electrostatically and then cured using heat. Powder coating does not require a solvent to keep the binder and filler parts in a liquid suspension form.

Selecting GREENGUARD certified furniture, helps organizations ensure that their furniture will not contribute to any indoor air quality issues associated with the types of adhesives, blowing agents, and furniture coatings. Selecting GREENGUARD Indoor Air Quality Certified products gives assurance, by an unbiased third party, that products designed for use in office environments and other indoor spaces meet strict chemical emissions limits. Some examples of available GREENGUARD certified products include chairs, casework, desks, systems furniture and cabinetry.

Another furniture certification option commonly available is SCS Indoor Advantage. This third party certification also helps organizations ensure that their furniture purchases will not contribute to any indoor air quality issues.