

Specifying Healthy Healthcare Interiors for HSE Capital Projects

The HSE's brief is to specify build and refurbish healthy healthcare buildings and environments for patients and staff. The products which the HSE specify for healthcare building interiors should create a healthy recovery and working environment.

Chemicals of Concern

There are many chemicals of concern and toxins used to manufacture modern building interior products. But the US Healthier Hospitals Initiative focus on 4 primary chemicals of concern and challenge their suppliers provide furniture free of these chemicals;

1. **Formaldehyde** is used widely to manufacture pressed wood products (wall paneling, fiberboard and furniture). Formaldehyde is also a component of glues and adhesives, and a preservative in paints and coating products. Formaldehyde is a pungent-smelling semi volatile organic compound (SVOC) which is released slowly over a long period of time. Formaldehyde is a carcinogen. Health effects include eye, nose, and throat irritation and exposure may cause leukemia, nose and throat cancers.
2. **Polyvinyl chloride (PVC)** is used in resilient flooring (includes rubber), ceiling tile coatings, carpet backing, window treatments, furniture, wall and corner guards, wall covering and upholstery fabric. Phthalates (softeners) added to PVC plastic to make it more flexible, is a known reproductive and developmental toxicant.
3. **Halogenated Flame Retardants** are chemicals added to products to inhibit fire ignition, but also contain either halogen chlorine or halogen bromine in their chemical composition. Halogenated flame retardants are found in fabrics, furniture, electronic equipment and foam cushions. Halogenated flame retardants have been linked to thyroid disruption, reproductive and neurodevelopment problems, immune suppression, and in some cases cancer.
4. **Perfluorinated compounds (PFCs)** are chemicals with which make materials stain and water resistant. PFC finishes are common in the high traffic environments associated with hospitals and medical facilities. PFCs can be found in carpets, upholstery, fabric and furniture, and other places where stain resistance or water repellency is preferred.

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The challenge for healthcare facilities is to specify products free from known chemicals of concern and other toxins. Therefore suppliers are challenged to supply products which meet the healthy healthcare specification. Each HSE Estates capital project design team should ask the following questions as part of the healthcare building interior specification?

1. Do the interior furniture and/or finish products have an **EU eco-label certification** or equivalent?



2. If **wood or timber** is used in this product, has the wood or timber been certified legal and sustainable sources under either the Forest Stewardship Council (FSC) or the Programme for Endorsement of Forest Certification Schemes (PEFC) or any other certified “verification of source” and sustainable forestry practices?

3. Has any **Environmental Product Declaration or Life Cycle Assessment (LCA)** been carried out on the interior furniture and/or finish product? Environmental Product Declarations provides environmental information in a common format, based on common rules, known as Product Category Rules (PCR). Product Category Rules for construction products have been developed in the UK, France, the Netherlands, Scandinavia, and Germany amongst others.

4. Does the product label or material safety data sheet show **Volatile organic compounds (VOCs)** emissions as $\mu\text{g}/\text{m}^2$ per hr? The Section 01350 test sets emissions exposure standards for formaldehyde and 80 other chemical VOCs. Products that contain VOCs include: paints, lacquers, paint strippers, adhesives, sealants, wall panels, pressed wood furniture, flooring, furnishings and carpet.

5. Do glues and resins used in **Medium Density Fibreboard (MDF)** give rise to low formaldehyde emissions, consistent with emission class Furniture E1 Grade, as per European Norm BS EN 312:2003 or similar standard?

6. Please confirm if interior furniture and/or finish products contain any of the following **Chemicals of Concern**;
 - a. Formaldehyde ☐
 - b. Phthalates (plasticizers) added to make plastic more flexible ☐
 - c. Halogenated Flame Retardants ☐
 - d. Perfluorinated compounds ☐
 - e. None of the above ☐

References

1. Healthcare Design Magazine. Jean Hansen on Healthier Interiors April 2013.
2. Toxic Chemicals in Building Materials Healthy Building Network 2008.
3. National Action Plan on Green Procurement Ireland 2012.
4. OPW Furniture Division: Ireland makes Sustainable Furniture Purchasing Work.