

Worksheet 3.8C

Indoor air quality considerations during fitouts

Component	Factors to control	Design/management options
From outside the building		
Climate	Air temperature and humidity	Optimise ventilation
Outside air ventilation and infiltration	Intake air quality	Select location of intake to reduce non-designed air entry
Infiltration of water	Unwanted moisture entry	Design and maintain waterproof construction; ensure moisture does not form in heating, ventilation and air conditioning (HVAC) systems
From the building and HVAC systems		
Building design	Natural or mechanical ventilation	Building depth, location and orientation
Adhesives and sealants	Solvent emissions	Chose low-emission products
Glass	Lamination inter-layers and coatings	Impact on indoor air quality (IAQ) unknown as yet
Metals	Pre-painting	Impact on IAQ unknown as yet
Termite control	Chemicals	Use mechanical over chemical controls
Timber preservation	Use of toxic chemicals	Avoid where possible; use durable timbers
Brick and block	Natural radioactivity	Found to be low in a range of products
Timber framing	Volatiles affecting sensitive individuals	Impact on IAQ unknown as yet
Thermal insulation	Fibre and volatile organic compound (VOC) emissions	Product selection
HVAC systems	Generation, transfer and removal of air contaminants	System design and maintenance
Interior design generally	Pollutants sources, ventilation flow	Material selection, ventilation design
Plywood/laminated veneer lumber (LVL)	Formaldehyde and VOCs	Select low-emission products
Reconstituted wood based panels/veneers	Formaldehyde and VOCs	Select low-emission products and overlay adhesives
Plastic laminates	VOCs	Select low-emission adhesives

Component	Factors to control	Design/management options
Plaster/gypsum board	Few emissions but sinks for pollutants	
Ceramic tiles	Emissions from adhesives and grouts	Select low-emission adhesives
Wallpaper	Formaldehyde and VOCs	Low-emission products; delay occupancy
Paints	Solvents and additive vapours during and after application	Low-emission products
Carpet	Odour and VOCs; accumulation of contaminants	Low-emission adhesives; cleaning methods; walk-off mats
Linoleum	VOCs from adhesives	Low-emission products
Vinyl	Long-term emissions of volatiles and plasticisers	Low-emission products
Furnishing and furniture	Formaldehyde and VOCs from components and surface treatments; dust collection	Low-emission products; avoid thick fibre coverings
Equipment and appliances	VOCs and ozone from photocopiers and printers; combustion products from gas and fuel appliances	Low-emission products; exhaust flues
Occupant activities	Smoking, cooking, hobbies, cleaning	Smoking prohibition, range hoods, cleaning regime
Pest management	Pesticide residue, indoor and outdoor	Product usage
Cleaning	VOCs from cleaning products; dust disturbance	Low emission/toxicity products; high efficiency vacuum cleaners
Interior renovation practices	Pollutant transfer through building	Isolate the area

Adapted from the CSIRO BCE Technical Report TR97/3, December 1997