

APPENDIX B

GENERAL LISTING OF CAMPUS CONFINED SPACES

University of Michigan Ann Arbor Campus & Health System Confined Space List

Note: These are examples based on prior knowledge of the space. Supervisors may use this as a guideline in classifying spaces at the work site.

Type of Space	Personnel Involved	Hazard	Most Likely Type of Permit
Certain sections of Utility Tunnels (refer to specific POR listing at end of table*)	Steam fitters, sheet metal workers, plumbers, asbestos workers, welders, pipe coverers, painters	Heat stress, restrictive spaces, high pressure (60 lb. pressure) steam lines, chemical use, welding	General Permit Required Confined Spaces identified within tunnel system (note listing)
Electrical Manholes	High voltage electricians	High voltage electricity, possible contaminant build-up (gases) due to location	General Permit Required Confined Space
Sanitary sewer system and manholes	Plumbers, electricians, masons	Combustible gases, hydrogen sulfide (use appropriate meter), slippery surfaces, biological contamination, flooding	Hazardous Entry Permit Required Confined Space
Storm sewer	Plumbers, electricians, masons	Carbon monoxide, oxygen deficiency, hydrogen sulfide	General Permit Required Confined Space
Underground storage tanks	Sheet metal workers, welders	Lack of ventilation, residual or stored chemicals and their vapors, explosive or flammable chemicals	Hazardous Entry Permit Required Confined Space
Above ground storage tanks	see above	see above	see above
Crawlspace	Electricians, welders, plumbers, painters	Restrictive work site	Non-Permit Required Confined Spaces. If lack of natural ventilation or safety hazard, then General Permit Required Confined Space
Boilers (steam sides and fire flu)	Welders	Heat, lack of ventilation, configuration	General Permit Required Confined Space
Sump stations	Plumbers, welders	Contaminants from sump system, hydrogen sulfide, biological contamination, electrical/mechanic, oxygen deficiency	General Permit Required Confined Space

Type of Space	Personnel Involved	Hazard	Most Likely Type of Permit
Electrical Vaults	Electricians	Electrical, lack of ventilation, restrictive work site	General Permit Required Confined Space
Telecommunications manholes	UM-Tel personnel	Vapors/gases can be carried by entrance ducts	General Permit Required Confined Space
Fume Hood Ductwork (interior)	Sheet metal, welders	Toxic or flammable gases or vapors, chemical residues, restrictive work site	General Permit Required Confined Space
Air Handling Units	HVAC personnel	Restrictive work site	Non-Permit Required Confined Space
Chimneys	Masons, powerhouse personnel	Depends on location	Non-Permit Required Confined Space. Exception: if chemical, biological, or radioactive contaminants are burned within, then General or Hazardous Entry Permit Required Confined Space (contact OSEH)
Interstitial Spaces	Maintenance, HVAC, electrical personnel	Restrictive work site	Non-Permit Required Confined Space

* Sections of tunnel considered confined spaces: from POR 212 to North hall; from POR 615 to the President's Residence; from POR 717 to Lorch Hall; and from the condensate meter area east of POR 811 to Kelsey Museum.

While it is standard practice to have all tunnel exits unlocked from the tunnel side, exits from the tunnels into the Central Power Plant (CPP) are locked from both sides with warning signs posted at the last exit or intersection before it. *Security procedures require that DPS be notified of all tunnel entries and exits.*

Notes:

- 1) A Hot Work Permit is required if performing cutting, welding, brazing, torch soldering, high speed metal grinding, or open flame tasks within any type of confined space.
- 2) If a space's characteristics or hazards change, the type of permit required may also change. This is determined by re-evaluating the confined space.
- 3) Confined spaces may exist that are not identified within this chart. If there are any questions regarding the status of a space, it should be evaluated or re-evaluated, and entered according to procedures required for the hazards that are present.

University of Michigan Health System

Confined Space List

Note: This is a listing of specific locations. The UM Health System also contains many of the confined spaces identified in the General Listing.

Location	Description	General Comments / Potential Hazards	* Most Likely Type of Permit
UH Dock 5 Area	Fuel tank pump pit; 15,000 gallon tank; 2 enclosed pumps	Lack of ventilation; residual or stored chemicals and vapors inhalation or explosion hazard.	Hazardous Entry Permit
UH Dock 5 Area	Manhole cover outside Dock 5; high voltage wiring; 15 feet deep.	Refrigerant gases located approximately 15 feet away could pose threat of oxygen deficiency.	General Permit
UH Dock 5 Area	Sump pump; under truck well; access by man hole cover; about 5 feet deep.	Possible biologicals or electrical/mechanical hazards; oxygen deficiency.	General Permit
B2H264M	Condenser Pit; three separate accesses	Three accesses; lack of ventilation; possible chemical hazards from water treatment; flooding hazard.	General Permit
B2H264M	Electrical Vault Pit; 10 feet deep	Lack of ventilation.	General Permit
TC Expansion - 4200Z Shaft	TC Elevator Penthouse	Lack of ventilation and falling hazard.	General Permit
Near Helicopter Pad, and B2H264M	Thermal Basin	Possible engulfment; possible chemical hazards from water treatment.	Hazardous Entry Permit
F2232V (Shaft SF-232)	MCHC Gift Shop Exhaust Fan Room	Good drafting; door can't be opened from the inside; no lights.	Non-permit
MCHC - outdoors under canopy	Generator radiator pit; general exhaust for Taubman Center	Area has good drafting.	Non-permit
B2H264M	Day tank diesel fuel	Disable fire system (auto shut door) when working in room.	Not a confined space
CGC Dock	Acid Neutralizer Tank Vault	Lack of ventilation; possible chemical hazards from waste water.	General Permit

* Permit type may change if hazards in the area change.