









Fire and Smoke Rating Summary for UMHC Healthcare (Inpatient, I-2) Facilities

NOTE: THIS IS A SUMMARY TO ASSIST IN MAINTAINING THE INTEGRITY OF UMHC HEALTH CARE BARRIERS, ASSUMING EXISTING CONSTRUCTION TYPES, FULL BUILDING SPRINKLING AND FIRE ALARM. THIS DOES NOT REPLACE A FULL CODE ANALYSIS. CODES REFERENCED INCLUDE MICHIGAN BUILDING CODE 2015, NPFA 101 2012, AND OTHER REFERENCED NFPA CODES.

Symbol	Type of Assembly	Fire rating of wall	Door/ Frame Rating	Door/Frame Clearances (Gaps)	Hardware	Glazing in interior door	Glazing in sidelight, transom or interior window up to 25% of wall	Interior window over 25% of wall area	Damper
 SMOKE BARRIER	Smoke barrier. <i>Note the following requirements apply to assemblies that are only smoke barriers. If the barrier is also used for a fire barrier, a partition limiting the passage of smoke, a corridor wall limiting the passage of smoke, it will need to comply with those requirements also.</i>	1 hour. Must extend from exterior wall to exterior wall or occupancy separation wall.	20 minute or substantial doors such as 1 3/4" wood door. Hollow metal frame	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer required. At cross corridor smoke barrier doors only, no latch is required. Astrigals are highly recommended at double doors as maximum clearances are difficult to achieve. <i>If the smoke barrier is also a corridor wall, fire rated, etc, the door will need to comply with those requirements also (such as latching, rating). *</i>	Glazing required in cross-corridor doors. 20 minute Fire Protective. Marking: D-20 Size limited by manufacturers testing.	45 minute Fire Protective Marking: OH-45	60 minute Fire Resistive Marking: W-60	Smoke damper, if the ductwork is open to more than one smoke compartment (Generally required)
 1-HOUR FIRE BARRIER	Hazardous rooms: Storage of combustible materials over 100 SF, all soiled utility rooms, JC over 100 SF, Labs with hazardous materials, boiler rooms, fuel fired heater, paint shop, maintenance shop, trash room, med gas storage rooms, Electrical rooms containing dry type transformers over 112.5 KVA. Fire Command Center.	1 hour	45 minutes (C)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer and latch required. Astrigals are recommended at double doors as maximum clearances are difficult to achieve.	45 minute fire protective glazing DH-45 to maximum size tested	45 minute fire resistive DH-45 in sidelite or transom, OH-45 in interior window, to max size tested.	1 hour Fire Resistive Marking: W-60 Size limited as tested by manufacturer	No flex ductwork penetration permitted. No damper required.
 2-HOUR FIRE BARRIER	More Hazardous rooms: generator rooms, battery rooms, hyperbaric facilities inside a building	2 hour	90 minutes (B)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer and latch required, may have special requirements based on hazard. Astrigals are highly recommended at double doors as maximum clearances are difficult to achieve.	90 minute Fire Resistive Marking: ≤ 100 sq in D-H-90 >100 sq in D-H-W-90	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	90 minute fire damper if over 100 sq in. May have special requirements based on hazard.
	Stair Enclosures	2 hour	90 minutes (B)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer and latch required. Door swings in direction of egress. Astrigals are recommended at double doors as maximum clearances are difficult to achieve. Limits on door hold-opens	90 minute Fire Resistive Marking: ≤ 100 sq in D-H-90 >100 sq in D-H-W-90	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	No utilities run through stair enclosure
	Open shafts serving multiple floors, Escalator enclosures, Elevator enclosures	2 hour	90 minutes (B)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer and latch required. Astrigals are recommended at double doors as maximum clearances are difficult to achieve.	90 minute Fire Resistive Marking: ≤ 100 sq in D-H-90 >100 sq in D-H-W-90	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	90 minute fire and smoke damper
	Horizontal Exit *** Entire barrier (wall)	2 hour	90 minutes (B)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer and latch required. Door hold open permitted. Swings in direction of egress, usually dual egress at cross corridor.* Astrigals are recommended at double doors as maximum clearances are difficult to achieve.	90 minute Fire Resistive Marking: ≤ 100 sq in D-H-90 >100 sq in D-H-W-90	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	90 minute fire and smoke damper
	Occupancy Separation (two hour between Healthcare and Business, or Healthcare and Ambulatory Healthcare)	2 hour	90 minutes (B)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Closer and latch required. Door hold open permitted. Swings in direction of egress, usually dual egress at cross corridor.* Astrigals are recommended at double doors as maximum clearances are difficult to achieve.	90 minute Fire Resistive Marking: ≤ 100 sq in D-H-90 >100 sq in D-H-W-90	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	2 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-120 Size limited as tested by manufacturer	90 minute fire damper if over 100 sq in
 3-HOUR FIRE BARRIER	3 hour barrier (where required by code or to limit fire alarm ring-through)	3 hour	3 hour (A)	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4". Combustible floor coverings cannot extend under a 3 hour door.	Closer and latch required. Door hold open may be permitted. Swing in the direction of egress, may be dual-egress. Astrigals are recommended at double doors as maximum clearances are difficult to achieve.	100 sq in or less only, D-H-180	Unusual and may not be available. 3 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-180 Size limited as tested by manufacturer	Unusual and may not be available. 3 hour Fire Resistive Glazing in Fire Resistive Frame Marking: W-180 Size limited as tested by manufacturer	3 hour fire damper
 PARTITION LIMITING THE TRANSFER OF SMOKE	Existing hazardous rooms: Existing storage of combustible materials over 100 SF, JC under 100 SF.	None, "capable of resisting the passage of smoke". Can stop at intact lay-in ceiling if it is not used as a plenum	20 minute or substantial doors such as 1 3/4" wood door. Hollow metal frame	Clearance between top and vertical edges of the door and frame, and meeting edges of doors in pairs shall be 1/16" to 3/16" in steel doors and less than 1/8" in wood doors. Bottom clearance maximum 3/4".	Latch required and closer required. * Astrigals are recommended at double doors as maximum clearances are difficult to achieve.	Tempered	Tempered	Tempered	Not required
 CORRIDOR OR SUITE PARTITION LIMITING THE TRANSFER OF SMOKE	Corridor partition, walls surrounding a suite of rooms in a healthcare occupancy.	None, "capable of resisting the passage of smoke". Can stop at intact lay-in ceiling	20 minute or substantial doors such as 1 3/4" wood door. Hollow metal frame	1/4" gap permitted to be reasonably smoke tight. 1" maximum clearance at the bottom of the door.	Latch required. Closer not required but can be installed for convenience or air pressure requirements. Gasketing not required, may be installed for air pressure or acoustical reasons. * Astrigals are recommended at double doors as maximum clearances are difficult to achieve. Doors to corridors should not swing into the corridor; if they do they must swing 180 degrees, project no more than 7" when open, and cannot extend more than half the width of the corridor at any point in their swing.	Tempered	Tempered	Tempered	Not required
 NON PATIENT SUITE (NP) NON PATIENT PATIENT CARE SUITE (NS) NON SLEEPING PATIENT CARE SUITE (S) SLEEPING	Rooms within suites	No requirements, no wall required (unless it is a hazardous room as noted above)	No requirements; must swing if more than 10 occupants	NA	No requirements.	Tempered	Tempered	Tempered	Not required
	Combustible storage less than 50 SF including lockers in alcove.	Can be in alcove open to corridor	NA	45 minutes (C) or sprinkler protected glass, if door framing does not interfere with sprinkler wetting.		NA	NA	NA	Not required
 SPG SPG	Atrium walls (can be used as smoke barrier)	sprinkler protected glass or one hour wall			Closer and latch.	45 minute DH	OH 45	One hour fire resistive W 60	
	Room name "C" or "E"	Communication and Electrical Rooms (without containing dry type transformers over 112.5 KVA)	20 minute or substantial doors such as 1 3/4" wood door. Hollow metal frame		Lock/latch for security.	NA	NA	NA	Not required

* Can be Won Door
*** Horizontal exits are rare, and require standpipes and fire alarm pulls. Typically created when travel distances to exits become to long. CVC Level 2A.

RELATED CODE INFORMATION ON DOORS

SLIDING DOORS	Sliding doors can be used where the room occupancy is less than 10.	Currently unaware of any fire-rated sliding door (other than WonDoor)	NA		Self latching at corridor or as required by assembly	Tempered	NA	NA	NA
DELAYED EGRESS	Delayed egress is permitted for 15 seconds at non-hazardous rooms. Push (crash) bar preferred rather than a magnetic lock. Must unlock with fire alarm, sprinkler flow, loss of power, and must sound an alarm. Signage and emergency lighting required. No longer limited to only one delayed egress in the path of egress.								
DOOR LOCKING IN THE PATH OF EGRESS	Behavioral Health exception: Infant/security/emergency department exception: Everywhere else (not really locked)	Locking in the direction of egress is permitted when patients might pose a security threat. Only one locking device is permitted per door. Unlocking required by one of the following three means: 1. remote control from within the locked smoke compartment, 2. keying of all locks to keys carried by staff at all times, 3. other reliable means available to the staff at all times	Locking in the direction of egress is permitted when patients might be at risk. Must have full smoke detection OR doors can be remotely unlocked at staff location. Only one locking device is permitted per door. Unlocking required by one of the following three means: 1. remote control from within the locked smoke compartment, 2. keying of all locks to keys carried by staff at all times, 3. other reliable means available to the staff at all times	Locks must unlock upon loss of power, smoke detection or waterflow in sprinkler system.	Door locking in the direction of egress must unlock upon any of the following: sensor of approaching occupant, loss of power, manual release device (button labeled PUSH TO EXIT), fire alarm, activation of fire sprinkler or detection system. Merely pulling a fire alarm pull does not need to unlock the door.				