

**SCHOOL DISTRICT OF MANAWA
BUILDINGS & GROUNDS COMMITTEE MEETING
AGENDA**

Google Meet joining info

Video call link: <https://meet.google.com/rtj-xwuv-dvy>

Or dial: (US) +1 316-778-8044 PIN: 440 302 677#

Date: September 14, 2022

Time: 5:00 p.m.

Hybrid Meeting Format (In-person Meeting for Board of Education at MES Board Room, 800 Beech Street & Virtual Components)

Board Committee Members: Griffin (C), Hollman, and Jepson

In Attendance:

Timer: _____ **Recorder:** _____

1. Review Room Capacity per Fire Egress Code (Information / Action)
2. Review MS/HS Exterior Message Board Quotes (Information / Action)
3. Review MES Playground Inspection Report by Jodi L. Traas, Certified Playground Inspector of Aegis Corporation (Information / Action)
4. Consider Endorsement of MES Playground Improvement Plan Phase I (Information / Action)
 - a. Removal of damaged/unsafe equipment
 - b. Excavation pricing
 - c. Wood chip price
 - d. Other
5. Consider Endorsement of Picnic Tables (Information / Action)
 - a. 1 ADA Hex Table per building
 - b. 4 Standard Hex Tables per building
6. Review and Endorse Hoffman Post-referendum Projects (Information / Action)
 - a. Site Lighting for MS/HS West Parking Lot (Northland Electric) - On order
 - b. Auto Operator on Atrium Door (Mr. McGregor is actively working on this project with Tri City Glass and Door but no schedule has been set to complete the work.)
 - c. Ag Animal Room Exhaust (Push button on/off versus HVAC Programming - Trane)

- ~~d. Green Space Re-seed (Mr. Casey of Casey Landscaping indicates Sept. is prime time to get this work completed.)~~
- 7. Discuss School Security Improvement or Enhancement (Information / Action)
- 8. Fisher Track is providing two signs for care of the rubberized surfacing (Information)
- 9. Discuss covering over rubberized track where athletes walk or the lawnmower drives (Information / Action)
- 10. No Buildings & Grounds Monthly Budget Summary
- 11. Finalize Review of Key Performance Indicators (Information / Action)
- 12. Buildings & Grounds Committee Planning Guide (Information)
- 13. Set Next Meeting Date: _____
- 14. Next Meeting Items:
 - a. Review, Update, and Prioritize 1 to 5 Year Section of the Maintenance Plan
 - b. District Safety Plan, Reunification Plan, and Associated Projects
 - c. Long-term Maintenance Plan - Pfefferle as Presented [Operation Efficiencies]
 - d. Custodial/Maintenance Plan - Pfefferle as Presented (Information / Action)
 - e. School Forest New Management Plan (Information / Action)
 - f. Other
- 15. Adjourn

CHAPTER 10

MEANS OF EGRESS

User notes:

About this chapter: Chapter 10 provides the general criteria for designing the means of egress established as the primary method for protection of people in buildings by allowing timely relocation or evacuation of building occupants. Both prescriptive and performance language is utilized in this chapter to provide for a basic approach in the determination of a safe exiting system for all occupancies. It addresses all portions of the egress system (exit access, exits and exit discharge) and includes design requirements as well as provisions regulating individual components. The requirements detail the size, arrangement, number and protection of means of egress components. Functional and operational characteristics that will permit the safe use of components without special knowledge or effort are specified.

The means of egress protection requirements work in coordination with other sections of the code, such as protection of vertical openings (see Chapter 7), interior finish (see Chapter 8), fire suppression and detection systems (see Chapter 9) and numerous others, all having an impact on life safety. Chapter 10 is subdivided into four main sections: general (Sections 1003–1015), exit access (Sections 1016–1021), exit (Sections 1022–1027) and exit discharge (Section 1028). Special allowances for the unique requirements for assembly spaces (Section 1029) and emergency escape and rescue openings (Section 1030) complete the chapter. Chapter 10 of this code is duplicated in Chapter 10 of the International Fire Code®; however, the International Fire Code contains one additional section on maintenance of the means of egress system in existing buildings.

Code development reminder: Code change proposals to sections preceded by the designation [F] will be considered by the International Fire Code Development Committee during the 2019 (Group B) Code Development Cycle. See explanation on page iv.

SECTION 1001 ADMINISTRATION

1001.1 General. Buildings or portions thereof shall be provided with a *means of egress* system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of *means of egress* components required to provide an *approved means of egress* from structures and portions thereof.

1001.2 Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of *exits* or the minimum width or required capacity of the *means of egress* to less than required by this code.

[F] SECTION 1002 MAINTENANCE AND PLANS

[F] 1002.1 Maintenance. *Means of egress* shall be maintained in accordance with the *International Fire Code*.

[F] 1002.2 Fire safety and evacuation plans. Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the *International Fire Code*. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of the *International Fire Code*.

SECTION 1003 GENERAL MEANS OF EGRESS

1003.1 Applicability. The general requirements specified in Sections 1003 through 1015 shall apply to all three elements of the *means of egress* system, in addition to those specific requirements for the *exit access*, the *exit* and the *exit discharge* detailed elsewhere in this chapter.

1003.2 Ceiling height. The *means of egress* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor.

Exceptions:

1. Sloped ceilings in accordance with Section 1207.2.
2. Ceilings of *dwelling units* and *sleeping units* within residential occupancies in accordance with Section 1207.2.
3. Allowable projections in accordance with Section 1003.3.
4. *Stair* headroom in accordance with Section 1011.3.
5. Door height in accordance with Section 1010.1.1.
6. *Ramp* headroom in accordance with Section 1012.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas of public and private parking garages in accordance with Section 406.2.2.
8. Areas above and below *mezzanine* floors in accordance with Section 505.2.

1003.3 Protruding objects. Protruding objects on *circulation paths* shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 where a minimum headroom of 80 inches (2032 mm) is provided over any circulation paths, including walks, *corridors*, *aisles* and passageways. Not more than 50 percent of the ceiling area of a *means of egress* shall be reduced in height by protruding objects.

Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).

MEANS OF EGRESS

A barrier shall be provided where the vertical clearance above a circulation path is less than 80 inches (2032 mm) high above the finished floor. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the finished floor.

1003.3.2 Post-mounted objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the finished floor. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (686 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

Exception: These requirements shall not apply to sloping portions of *handrails* between the top and bottom riser of *stairs* and above the *ramp* run.

1003.3.3 Horizontal projections. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finished floor shall not project horizontally more than 4 inches (102 mm) into the *circulation path*.

Exception: *Handrails* are permitted to protrude 4½ inches (114 mm) from the wall or *guard*.

1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of *accessible routes*.

1003.4 Slip-resistant surface. Circulation paths of the *means of egress* shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the *means of egress*, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), *ramps* complying with Section 1012 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the *ramp* shall be equipped with either *handrails* or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors not required to be *accessible* by Chapter 11.
2. A *stair* with a single riser or with two risers and a tread is permitted at locations not required to be *accessible* by Chapter 11 where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one *handrail* complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the *stair*.
3. A step is permitted in *aisles* serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be *accessible* by

Chapter 11, provided that the risers and treads comply with Section 1029.14 and the *aisle* is provided with a *handrail* complying with Section 1029.16.

Throughout a story in a Group I-2 occupancy, any change in elevation in portions of the *means of egress* that serve nonambulatory persons shall be by means of a *ramp* or sloped walkway.

1003.6 Means of egress continuity. The path of egress travel along a *means of egress* shall not be interrupted by a building element other than a *means of egress* component as specified in this chapter. Obstructions shall not be placed in the minimum width or required capacity of a *means of egress* component except projections permitted by this chapter. The minimum width or required capacity of a *means of egress* system shall not be diminished along the path of egress travel.

1003.7 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required *means of egress* from any other part of the building.

Exception: Elevators used as an accessible *means of egress* in accordance with Section 1009.4.

SECTION 1004 OCCUPANT LOAD

1004.1 Design occupant load. In determining *means of egress* requirements, the number of occupants for whom *means of egress* facilities are provided shall be determined in accordance with this section.

1004.2 Cumulative occupant loads. Where the path of egress travel includes intervening rooms, areas or spaces, cumulative *occupant loads* shall be determined in accordance with this section.

1004.2.1 Intervening spaces or accessory areas. Where occupants egress from one or more rooms, areas or spaces through others, the design *occupant load* shall be the combined *occupant load* of interconnected accessory or intervening spaces. Design of egress path capacity shall be based on the cumulative portion of *occupant loads* of all rooms, areas or spaces to that point along the path of egress travel.

1004.2.2 Adjacent levels for mezzanines. That portion of the *occupant load* of a *mezzanine* with required egress through a room, area or space on an adjacent level shall be added to the *occupant load* of that room, area or space.

1004.2.3 Adjacent stories. Other than for the egress components designed for convergence in accordance with Section 1005.6, the *occupant load* from separate stories shall not be added.

1004.3 Multiple function occupant load. Where an area under consideration contains multiple functions having different occupant load factors, the design *occupant load* for such area shall be based on the floor area of each function calculated independently.

1004.4 Multiple occupancies. Where a building contains two or more occupancies, the *means of egress* requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same *means of egress* system, those egress components shall meet the more stringent requirements of all occupancies that are served.

1004.5 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.5. For areas without *fixed seating*, the occupant load shall be not less than that number determined by dividing the floor area under consideration by the *occupant load* factor assigned to the function of the space as set forth in Table 1004.5. Where an intended function is not listed in Table 1004.5, the *building official* shall establish a function based on a listed function that most nearly resembles the intended function.

Exception: Where *approved* by the *building official*, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design *occupant load*.

1004.5.1 Increased occupant load. The *occupant load* permitted in any building, or portion thereof, is permitted to be increased from that number established for the occupancies in Table 1004.5, provided that all other requirements of the code are met based on such modified number and the *occupant load* does not exceed one occupant per 7 square feet (0.65 m²) of occupiable floor space. Where required by the *building official*, an *approved aisle*, seating or fixed equipment diagram substantiating any increase in *occupant load* shall be submitted. Where required by the *building official*, such diagram shall be posted.

1004.6 Fixed seating. For areas having *fixed seats* and *aisles*, the *occupant load* shall be determined by the number of *fixed seats* installed therein. The *occupant load* for areas in which *fixed seating* is not installed, such as waiting spaces, shall be determined in accordance with Section 1004.5 and added to the number of *fixed seats*.

The *occupant load* of *wheelchair spaces* and the associated companion seat shall be based on one occupant for each *wheelchair space* and one occupant for the associated companion seat provided in accordance with Section 1108.2.3.

For areas having *fixed seating* without dividing arms, the *occupant load* shall be not less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The *occupant load* of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

1004.7 Outdoor areas. *Yards*, *patios*, occupied roofs, *courts* and similar outdoor areas accessible to and usable by the building occupants shall be provided with *means of egress* as required by this chapter. The *occupant load* of such outdoor areas shall be assigned by the *building official* in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, *means of egress* requirements for the

**TABLE 1004.5
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit gallery and museum	30 net
Assembly with fixed seats	See Section 1004.6
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	150 gross
Concentrated business use areas	See Section 1004.8
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
Group H-5 fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mall buildings—covered and open	See Section 402.8.2
Mercantile	60 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. Floor area in square feet per occupant.

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building shall be based on the sum of the *occupant loads* of the building plus the outdoor areas.

Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one *means of egress*.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

1004.8 Concentrated business use areas. The occupant load factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the *building official*, the occupant load for concentrated business use areas shall be the actual *occupant load*, but not less than one occupant per 50 square feet (4.65 m²) of gross occupiable floor space.

1004.9 Posting of occupant load. Every room or space that is an assembly occupancy shall have the *occupant load* of the room or space posted in a conspicuous place, near the main *exit* or *exit access doorway* from the room or space, for the intended configurations. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

SECTION 1005 MEANS OF EGRESS SIZING

1005.1 General. All portions of the *means of egress* system shall be sized in accordance with this section.

Exception: *Aisles* and *aisle accessways* in rooms or spaces used for assembly purposes complying with Section 1029.

1005.2 Minimum width based on component. The minimum width, in inches (mm), of any *means of egress* components shall be not less than that specified for such component, elsewhere in this code.

1005.3 Required capacity based on occupant load. The required capacity, in inches (mm), of the *means of egress* for any room, area, space or story shall be not less than that determined in accordance with Sections 1005.3.1 and 1005.3.2:

1005.3.1 Stairways. The capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where *stairways* serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the *stairways* serving that story.

Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communication* system in accordance with Section 907.5.2.2.

2. Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1029.6.2 indicated for stepped aisles for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.

3. Facilities with *open-air assembly seating* shall be permitted to the capacity factors in Section 1029.6.3 indicated for stepped aisles for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

1005.3.2 Other egress components. The capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.

Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communication* system in accordance with Section 907.5.2.2.
2. Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1029.6.2 indicated for level or ramped *aisles* for *means of egress* components other than *stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.
3. Facilities with *open-air assembly seating* shall be permitted to the capacity factors in Section 1029.6.3 indicated for level or ramped *aisles* for *means of egress* components other than *stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

1005.4 Continuity. The minimum width or required capacity of the *means of egress* required from any story of a building shall not be reduced along the path of egress travel until arrival at the public way.

1005.5 Distribution of minimum width and required capacity. Where more than one *exit*, or access to more than one *exit*, is required, the *means of egress* shall be configured such that the loss of any one *exit*, or access to one *exit*, shall not reduce the available capacity or width to less than 50 percent of the required capacity or width.

1005.6 Egress convergence. Where the *means of egress* from stories above and below converge at an intermediate level, the capacity of the *means of egress* from the point of convergence shall be not less than the largest minimum width or the sum of the required capacities for the *stairways* or *ramps* serving the two adjacent stories, whichever is larger.

1005.7 Encroachment. Encroachments into the required *means of egress* width shall be in accordance with the provisions of this section.

1005.7.1 Doors. Doors, when fully opened, shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half.

Exceptions:

1. Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch maximum (178 mm) encroachment where both of the following conditions exist:
 - 1.1. The hardware is mounted to the side of the door facing away from the adjacent wall where the door is in the open position.
 - 1.2. The hardware is mounted not less than 34 inches (865 mm) nor more than 48 inches (1219 mm) above the finished floor.
2. The restrictions on door swing shall not apply to doors within individual *dwelling units* and *sleeping units* of Group R-2 occupancies and *dwelling units* of Group R-3 occupancies.

1005.7.2 Other projections. *Handrail* projections shall be in accordance with the provisions of Section 1014.8. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width not more than 1½ inches (38 mm) on each side.

Exception: Projections are permitted in corridors within Group I-2 Condition 1 in accordance with Section 407.4.3.

1005.7.3 Protruding objects. Protruding objects shall comply with the applicable requirements of Section 1003.3.

SECTION 1006 NUMBER OF EXITS AND EXIT ACCESS DOORWAYS

1006.1 General. The number of *exits* or *exit access doorways* required within the *means of egress* system shall comply with the provisions of Section 1006.2 for spaces, including *mezzanines*, and Section 1006.3 for *stories* or occupied roofs.

1006.2 Egress from spaces. Rooms, areas or spaces, including *mezzanines*, within a *story* or *basement* shall be provided with the number of *exits* or access to *exits* in accordance with this section.

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two *exits* or *exit access doorways* from any space shall be provided where the design *occupant load* or the *common path of egress travel*

distance exceeds the values listed in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

1. The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative *occupant loads*.
2. *Care suites* in Group I-2 occupancies complying with Section 407.4.

1006.2.1.1 Three or more exits or exit access doorways. Three *exits* or *exit access doorways* shall be provided from any space with an occupant load of 501 to 1,000. Four *exits* or *exit access doorways* shall be provided from any space with an occupant load greater than 1,000.

1006.2.2 Egress based on use. The numbers of *exits* or access to *exits* shall be provided in the uses described in Sections 1006.2.2.1 through 1006.2.2.6.

1006.2.2.1 Boiler, incinerator and furnace rooms. Two *exit access doorways* are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m²) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two *exit access doorways* are required, one is permitted to be a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1006.2.2.2 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two *exits* or *exit access doorways*. Where two *exit access doorways* are required, one such doorway is permitted to be served by a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.

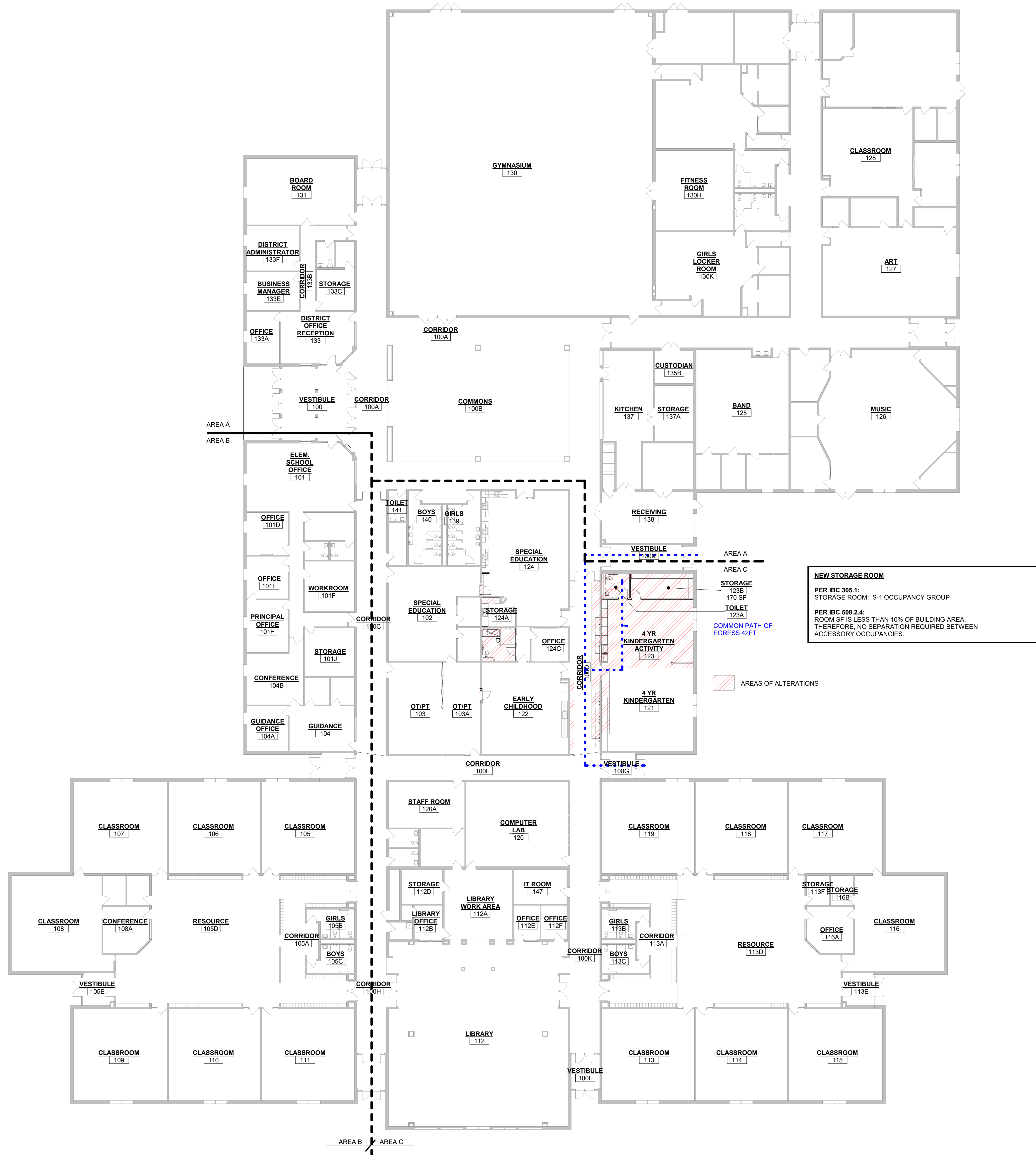
All portions of machinery rooms shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway*. An increase in *exit access* travel distance is permitted in accordance with Section 1017.1.

Exit and *exit access doorways* shall swing in the direction of egress travel, regardless of the *occupant load* served. *Exit* and *exit access doorways* shall be tight fitting and self-closing.

1006.2.2.3 Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m²), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two *exits* or *exit access doorways*.

Exit access travel distance shall be determined as specified in Section 1017.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720

	A	B	C	D	E	F
1	Number	Name	Area SF	Capacity Factor SF/Occ	Capacity	Door Width Req (36 in is min)
2	123	4 YR KINDERGARTEN ACTIVITY	662	20	33	6.6
3	121	4 YR KINDERGARTEN	892	20	44	8.8
4	116	CLASSROOM	982	20	49	9.8
5	115	CLASSROOM	961	20	48	9.6
6	114	CLASSROOM	939	20	46	9.2
7	113	CLASSROOM	954	20	47	9.4
8	120	COMPUTER LAB	964	20	48	9.6
9	122	EARLY CHILDHOOD	860	20	43	8.6
10	103	OT/PT	552	20	27	5.4
11	102	SPECIAL EDUCATION	793	20	39	7.8
12	111	CLASSROOM	954	20	47	9.4
13	110	CLASSROOM	939	20	46	9.2
14	109	CLASSROOM	961	20	48	9.6
15	107	CLASSROOM	961	20	48	9.6
16	106	CLASSROOM	939	20	46	9.2
17	105	CLASSROOM	954	20	47	9.4
18	129	CLASSROOM	1219	20	60	12
19	128	CLASSROOM	921	20	46	9.2
20	127	ART	1292	20	64	12.8
21	126	MUSIC	1756	20	87	17.4
22	125	BAND	1041	20	52	10.4
23	124	SPECIAL EDUCATION	1156	20	57	11.4
24	118	CLASSROOM	939	20	46	9.2
25	119	CLASSROOM	954	20	47	9.4
26	117	CLASSROOM	961	20	48	9.6
27	108	CLASSROOM	982	20	49	9.8
28	103A	OT/PT	388	20	19	3.8
29	100B	COMMONS	2319	7	331	66.2
30	130	GYMNASIUM	8909	7	1272	254.4



NEW STORAGE ROOM
 PER IBC 305.1:
 STORAGE ROOM: S-1 OCCUPANCY GROUP
 PER IBC 508.2.4:
 ROOM SF IS LESS THAN 10% OF BUILDING AREA.
 THEREFORE, NO SEPARATION REQUIRED BETWEEN
 ACCESSORY OCCUPANCIES.

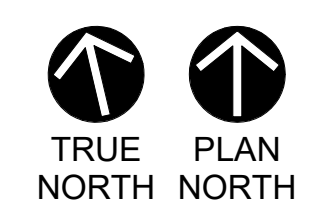
CODE SHEET KEY

- FIRE EXTINGUISHER
- FIRE EXTINGUISHER TYPE "K"
- EXIT LIGHT
- AREA OF LEVEL 2 ALTERATION
- EGRESS PATH

BUILDING DATA SUMMARY

- APPLICABLE CODES:**
- BUILDING ACCESSIBILITY AND LIFE SAFETY:
 - 2015 IBC - International Building Code
 - 2015 IEBC - Existing Building Code
 - Wisconsin SPS 302
 - 2015 IECC - International Energy Conservation Code
 - 2009 ICC/ANSI A117.1 - American National Standards Institute
- BUILDING AREA:**
- Existing First Floor: 81,786 sf
 - First Floor Alterations: 1,372 SQ. FT.
 - Level 2 Alterations: <50%
- BUILDING OCCUPANCIES / TYPE (IBC CH. 305):**
- Primary Occupancy:
 - E Education
 - Secondary Occupancy:
 - E / A-2 Cafeteria / Commons (per IBC 303.1.3)
 - E / A-3 Gymnasium (per IBC 303.1.3)
 - B Administrative Offices
 - S-2 Storage / Mechanical
 - Accessory Occupancy:
 - S-1 Storage
- TYPE OF CONSTRUCTION (IBC CH. 6 & 7):**
- All existing construction is Construction Type IIB
 - All alterations shall be Construction Type IIB
- MEANS OF EGRESS / OCCUPANT LOAD (IBC CH. 10):**
- Egress paths and occupant load unchanged.
 - 4 YR KINDERGARTEN (121 & 123) COMBINED ROOM OCCUPANT LOAD 28 PERSONS BASED ON LOCAL BUILDING OFFICIAL AND SCHOOL PLANNING STANDARDS - 60SF/ PERSON, IBC 1004.2.
- PLUMBING CALCULATIONS (IBC CH. 29):**
- LAV= LAVATORY
 - WC= WATER CLOSET
 - UR= URINAL
 - DF= DRINKING FOUNTAIN
- REMODEL AREA: OCCUPANT LOAD UNCHANGED - REQ'D: NONE
 - PROVIDED: 2 WC, 4 LAV'S
- ACCESSIBILITY (IBC CH. 11, IEBC CH. 508):**
- The new construction and all Level 2 zones meet all accessibility requirements per IBC Chapter 11 and ANSI A117.1 (2009 Edition)
- SPRINKLER SYSTEM / FIRE SAFETY:**
- Existing building not sprinklered

1 CODE PLAN
 SCALE 1/16" = 1'-0"



CONSTRUCTION SET

CONSULTANT:



MANAWA ELEMENTARY SCHOOL - ALTERATIONS
 MANAWA MIDDLE/HIGH SCHOOL - ADDITIONS & ALTERATIONS
PART 1 - MANAWA ELEMENTARY SCHOOL
 800 BEECH STREET
 MANAWA, WI 54949

MARK	DATE
ISSUED:	2019-07-08
PROJECT NO:	18268
CAD DWG FILE:	
DRAWN BY:	DGG
CHECKED BY:	KDP
COPYRIGHT © 2019	HOFFMAN PLANNING, DESIGN & CONSTRUCTION, INC.
SHEET TITLE:	

CODE PLAN

SHEET NUMBER:

1-GI-101

	A	B	C	D	E	F
1	Number	Name	Area SF	Capacity Factor SF/Occ	Capacity	Door Width Req (36 in is min)
2	F-330	ACTIVITY ROOM	1187	50	23	4.6
3	F-331	AG LAB	575	50	11	2.2
4	F-313	ART ROOM	1755	50	35	7
5	E-222	AT-RISK CLASSROOM	720	20	36	7.2
6	D-418	BAND	1809	20	90	18
7	C-405	BIOLOGY	1279	50	25	5
8	F-304	BUSINESS	934	50	18	3.6
9	D-409	CHORUS	1039	20	51	10.2
10	E-207	CLASSROOM	860	20	43	8.6
11	E-208	CLASSROOM	860	20	43	8.6
12	E-209	CLASSROOM	867	20	43	8.6
13	E-210	CLASSROOM	852	20	42	8.4
14	E-216	CLASSROOM	872	20	43	8.6
15	E-217	CLASSROOM	851	20	42	8.4
16	E-221	CLASSROOM	848	20	42	8.4
17	E-301	CLASSROOM	838	20	41	8.2
18	E-302	CLASSROOM	839	20	41	8.2
19	E-303	CLASSROOM	838	20	41	8.2
20	F-321	CLASSROOM	847	20	42	8.4
21	F-336	CLASSROOM	982	20	49	9.8
22	D-421	COMMONS	4117	7	588	117.6
23	F-030	COMPUTER LAB	382	20	19	3.8
24	F-312	FABRICATION LAB	1543	50	30	6
25	C-400	FCS LAB	956	50	19	3.8
26	LL-104	FITNESS ROOM	2988	50	59	11.8
27	A-528	GYMNASIUM	9586	7	1369	273.8
28	E-220	HIGH SCHOOL COLLABORATION	1580	20	79	15.8
29	E-218	MEDIA CENTER	2682	50	53	10.6
30	F-326	METALS SHOP	1578	50	31	6.2
31	C-121	MIDDLE SCHOOL CLASSROOM	800	20	40	8
32	C-122	MIDDLE SCHOOL CLASSROOM	812	20	40	8
33	C-123	MIDDLE SCHOOL CLASSROOM	800	20	40	8
34	C-131	MIDDLE SCHOOL CLASSROOM	850	20	42	8.4

	A	B	C	D	E	F
35	C-138	MIDDLE SCHOOL CLASSROOM	854	20	42	8.4
36	C-132	MIDDLE SCHOOL COLLABORATION	1302	20	65	13
37	C-124	MIDDLE SCHOOL SCIENCE	987	50	19	3.8
38	C-401	PHYSICAL SCIENCE	1274	50	25	5
39	E-203	SPECIAL EDUCATION	561	20	28	5.6
40	E-204	SPECIAL EDUCATION	559	20	27	5.4
41	E-206	SPECIAL EDUCATION	627	20	31	6.2
42	F-305	STEAM CLASSROOM	911	50	18	3.6
43	F-319	STEAM LAB / WOODS	1792	50	35	7

WALL PRIORITY LEGEND		
PRIORITY #	PLAN GRAPHIC	PARTITION TYPE
HIGHEST 1	2FW	2 HOUR - FIRE WALL
2	2FB	2 HOUR - FIRE BARRIER
MEDIUM 3	1FB	1 HOUR - FIRE BARRIER
4	1FP	1 HOUR - FIRE PARTITION
LOWEST		WALL TO LIMIT THE TRANSFER OF SMOKE DURING AND GLAZING FOR BORROWED LIGHTS ARE NOT RATED

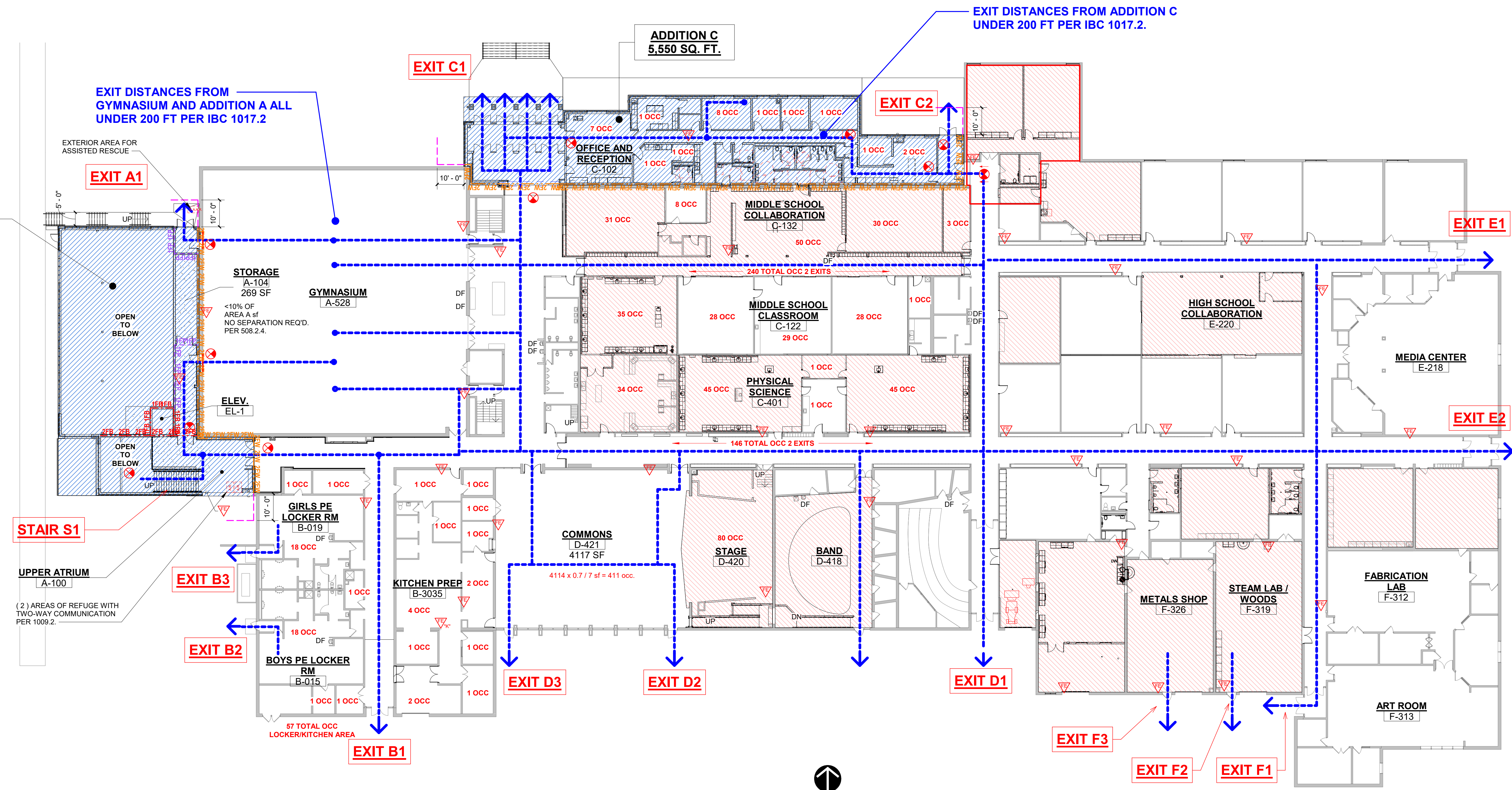
NOTE: - PARTITIONS WITH A HIGHER PRIORITY # TAKE PRECEDENCE OVER PARTITIONS WITH A LOWER PRIORITY # - SEE AE-501 FOR DETAILS
- PLEASE REFERENCE SPECIFICATION SECTION 014219 REFERENCE STANDARDS FOR U.L. SYSTEMS

CODE SHEET KEY	
	FIRE EXTINGUISHER
	FIRE EXTINGUISHER TYPE "K"
	EXIT LIGHT
	EGRESS PATH
	AREA OF REFUGE
	EXTERIOR AREA FOR ASSISTED RESCUE
	AREAS OF ADDITION
	AREAS OF ALTERATION
	OUTLINE OF AREA PROHIBITED DURING CONSTRUCTION DUE TO EXCEEDING EXIT DISTANCE
	LOT LINE PER IBC TABLE 602 PER 705.4.1 (2) EXISTING WALLS ALL >1 HOUR ASSEMBLY PER IBC CHAPTER 7

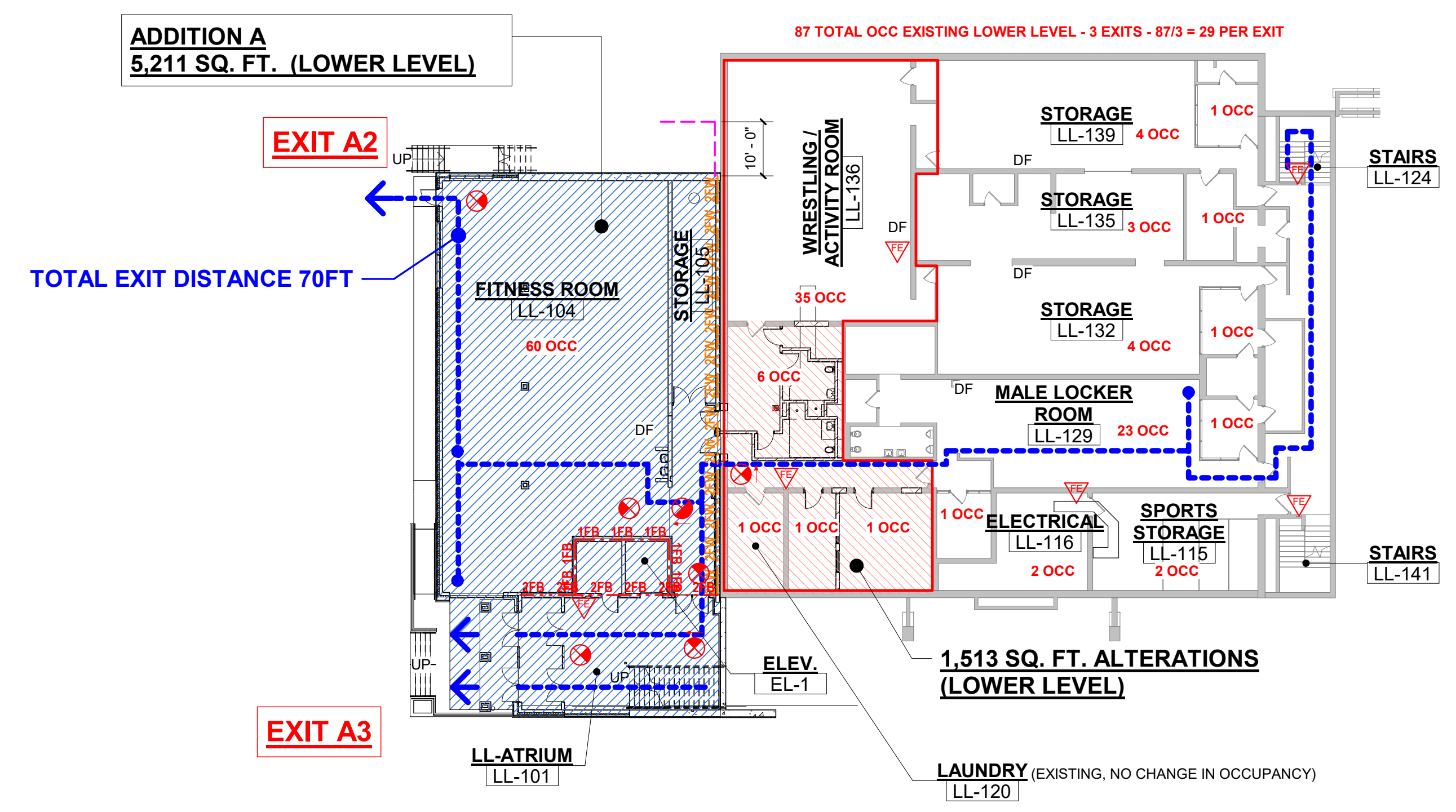
BUILDING DATA SUMMARY:	
APPLICABLE CODES:	
Building, Accessibility, and Life Safety:	2015 IBC and IEBC as modified per Wisconsin SPS 362
	2013 ASHRAE 90.1 (Energy Compliance) per SPS 363.04(1)
	2009 ICC/ANSI A117.1
Fire Protection:	2009 IFC
Plumbing:	2009 IPC as modified per Wisconsin SPS 381 through 387
HVAC:	2015 IMC as modified per Wisconsin SPS 364
	2015 IFGC as modified per Wisconsin SPS 365
Electrical:	2011 NEC as modified per Wisconsin SPS 316
BUILDING OCCUPANCIES (IBC CH. 3)	
PRIMARY	E Education
SECONDARY	E (A-2) Cafeteria / Commons (per IBC 303.1, exc. 4)
	E (A-3) Gymnasium, Fitness (per IBC 303.1, exc. 4)
	B Administrative Offices
	S-1 Storage / Mechanical
IBC CH. 4 - SPECIAL DETAILED REQTS.	
	404.3, exception 1: Atrium not sprinklered.
	404.4: Provide Fire Alarm.
	404.5: Smoke Control: no smoke control system required due to only connecting two stories.
IBC CH. 5 - BUILDING AREA	
SUMMARY DESCRIPTION OF BUILDING AREAS	
Two building additions totaling approximately 12,258 square feet:	
A new North main entry leading into a new administration area with offices, conference rooms and work areas, approx. 5550 square feet.	
A fitness addition: approx. 6708 square feet.	
Create new two-story entry from west parking lot including open stairway to second level and elevator serving existing locker rooms area and main floor of school.	
Create new school and community fitness center with separate entrance that can be open without opening the entire school.	
Create changing rooms and locker area for community members to use fitness center.	
Allow for future addition of fitness mezzanine inside new fitness center.	
Old weight room area is available for storage and other uses.	
Several remodeled programmed areas:	
Shop area	
Stage/ Commons area	
Special Education	
Collaboration area	
Administration Area	
Middle School	
Science area	

EGRESS WIDTH CALCULATIONS	
GYMNASIUM	OCCUPANT LOAD 1048 PER LOCAL BUILDING OFFICIAL. 1048 OCC. X 2' / OCC. = 210' EXIT WIDTH REQUIRED. MIN. (4) EXITS REQ'D PER 1006.2.1.1 (16) 34.5" DOOR OPENINGS PROVIDED = 552" DISTRIBUTED PER 1007.1.2 697 OCC. TO EAST DOORS. 117 OCC. TO S.E. DOORS. 117 OCC. TO S.W. DOORS. 117 OCC. TO N.W. DOORS.
EXIT A1 - FIRST FLOOR	117 OCCUPANTS REQUIRED EXIT WIDTH: 117 OCC. X 2' / OCC. = 24" PROVIDED: (1) 34.5" DOOR OPENINGS = 34.5"
EXIT A2 - LOWER LEVEL	30 OCCUPANTS REQUIRED EXIT WIDTH: 30 OCC. X 2' / OCC. = 6" PROVIDED: (1) 34.5" DOOR OPENING = 34.5"
EXIT A3 - LOWER LEVEL:	295 OCCUPANTS (255 FIRST FLOOR, 30 LOWER LEVEL) REQUIRED EXIT WIDTH: 295 OCC. X 2' / OCC. = 59" PROVIDED: (4) 34.5" DOOR OPENINGS = 138"
EXIT C1 FIRST FLOOR:	1012 OCCUPANTS (700 GYM, 195 CLASSROOMS, 95 COMMONS, 10 STAGE, 12 NEW ADDITION) REQUIRED EXIT WIDTH: 1012 OCC. X 2' / OCC. = 203" PROVIDED: (8) 34.5" DOOR OPENINGS = 276"
EXIT C2 FIRST FLOOR:	207 OCCUPANTS (12 NEW ADDITION, 195 CLASSROOMS) REQUIRED EXIT WIDTH: 207 OCC. X 2' / OCC. = 42" PROVIDED: (2) 34.5" DOOR OPENINGS = 69"
EXITS E1, E2, F1, F2, D1, D2, D3, B1, B2 AND B3 ALL FIRST FLOOR:	NO ADDITIONAL OCCUPANT LOAD. EXISTING EXITS TO REMAIN.
STAIR S1	206 OCCUPANTS (117 GYM, 18 KITCHEN / LOCKERS, 63 COMMONS, 7 STAGE) REQUIRED STAIR WIDTH: 201 OCC. X 3' / OCC. = 62" PROVIDED: 91"

IBC CH. 29 - PLUMBING SYSTEMS	
LAV= LAVATORY WC= WATER CLOSET UR= URINAL DF= DRINKING FOUNTAIN	
ADDITION A - 60 PERSON CAPACITY - REQ'D: 2 WC, 2 LAVS, 1 DF PROVIDED: 3 WC, 3 LAVS, 2 DF	
ADDITION C - 20 PERSON CAPACITY - REQ'D: 1 WC, 1 LAV PROVIDED: 2 WCs, 4 LAVS	
NO ADDITIONAL DRINKING FOUNTAINS REQUIRED.	
MIDDLE SCHOOL ALTERATION AREA - 50 ADDITIONAL STUDENTS + 4 STAFF. 25 MALES: REQ'D: 1 WC, 1 LAV PROVIDED: 2 WC, 2 UR, 3 LAVS	
25 FEMALES: REQ'D: 1 WC, 1 LAVS PROVIDED: 4 WC, 3 LAVS	
STAFF: REQ'D: 1WC, 1 LAV PROVIDED: 1 WC, 1 LAV	
REQ'D: 1 DF PROVIDED: 1 DF	
HIGH SCHOOL ALTERATION AREA - NO ADDITIONAL STUDENTS OR STAFF. FEMALES: REQ'D: NONE PROVIDED: 3WC, 3 LAV	
MALES: REQ'D: NONE PROVIDED: 2WC, 1 UR, 3 LAV	
STAFF REQ'D: NONE PROVIDED: 2 WC, 2 LAV	



1 FIRST FLOOR CODE PLAN
SCALE 1" = 20'-0"



2 LOWER LEVEL CODE PLAN - AREA A
SCALE 1" = 20'-0"

IBC CH. 29 - PLUMBING SYSTEMS	
LAV= LAVATORY WC= WATER CLOSET UR= URINAL DF= DRINKING FOUNTAIN	
ADDITION A - 60 PERSON CAPACITY - REQ'D: 2 WC, 2 LAVS, 1 DF PROVIDED: 3 WC, 3 LAVS, 2 DF	
ADDITION C - 20 PERSON CAPACITY - REQ'D: 1 WC, 1 LAV PROVIDED: 2 WCs, 4 LAVS	
NO ADDITIONAL DRINKING FOUNTAINS REQUIRED.	
MIDDLE SCHOOL ALTERATION AREA - 50 ADDITIONAL STUDENTS + 4 STAFF. 25 MALES: REQ'D: 1 WC, 1 LAV PROVIDED: 2 WC, 2 UR, 3 LAVS	
25 FEMALES: REQ'D: 1 WC, 1 LAVS PROVIDED: 4 WC, 3 LAVS	
STAFF: REQ'D: 1WC, 1 LAV PROVIDED: 1 WC, 1 LAV	
REQ'D: 1 DF PROVIDED: 1 DF	
HIGH SCHOOL ALTERATION AREA - NO ADDITIONAL STUDENTS OR STAFF. FEMALES: REQ'D: NONE PROVIDED: 3WC, 3 LAV	
MALES: REQ'D: NONE PROVIDED: 2WC, 1 UR, 3 LAV	
STAFF REQ'D: NONE PROVIDED: 2 WC, 2 LAV	

CONSTRUCTION SET

2-GI-101



Estimate #: 113233
Option: 10mm Message Center

Created Date: 2/1/2022 3:38:23PM

990 Jameson Street
 Neenah, WI 54956
 Ph: (920) 731-4852
 Web: <http://www.tlcsign.com>

Salesperson:	Karissa Akey	Prepared For:	Manawa School District
Email:	Karissa@TLCSign.com	Contact:	Dean Marzofka
		Office Phone:	(920) 596-2524
		Office Fax:	(920) 596-5308
		Email:	dmarzofka@manawaschools.org
		Bill to Address:	800 Beech St. Manawa, WI 54949

Upgrade EMC

Option: 10mm Message Center

	Quantity	Unit Price	Subtotal
--	----------	------------	----------

1	1	\$27,268.14	\$27,268.14
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Scope of Work:

Provide labor, materials, and equipment to remove existing EMC and install new 10mm Watchfire Message Center. Assumes using existing electrical, if there is not enough electrical there then an electrician will have to take care of that portion and the cost is not included in this quote. Subject to site survey, permitting, and final renderings.

Reference 113233 REV 0 page 1

Message Center Specs:

- Double Face Display, 10mm pixel pitch
- Matrix: 60 lines by 240 columns
- Cabinet size: 29" H x 8' 3" L x 5" D, Viewing Area: 24" x 8' W
- Full Color, Min. 1.2 Quintillion Colors
- 7 lines/48 characters at 3" type
- Communication: 4G Wireless w/ 5 Year Cellular Data Plan
- Includes Temp Sensor
- Front Ventilation
- Viewing Angle: 150 degree horizontal/95 degree vertical
- Ignite OP Software included. Computer to run the software provided by customer.
- Plays video up to 30 FPS
- Electrical Service & Energy: 120V, 10 amps per face/20 amps total single phase service. Estimated cost per day to run: \$.87
- 5 year Manufacture Warranty on all electronics.



Estimate #: 113233
Option: 10mm Message Center

Created Date:2/1/2022 3:38:23PM

990 Jameson Street
Neenah, WI 54956
Ph: (920) 731-4852
Web: <http://www.tlcsign.com>

Notes

Approximate 6-12 week lead time.
Sign permit & permit acquisition cost to be added to final invoice if any are needed.
Additional shipping may apply.
Subject to site survey and inspection of signage.
Electrical circuit to the sign not included.
Does not include any repairs needed to existing signage.
Estimate valid for 30 days. However, steel and aluminum prices may vary and actual cost will be used do to volatile market prices for these products.
50% down payment Balance due upon completion.

Subtotal: \$27,268.14
Total: \$27,268.14

Payment Terms: Net 30; Balance due in 30 days.

Client Reply Request for Option: 10mm Message Center

- Estimate Accepted "As Is". Please proceed with Order.
- Changes required, please contact me.

Other: _____
SIGN: _____ Date: / /

Print Date: 2/22/2022 12:20:23PM

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Trusted, Loyal, Creative



Estimate #: 113233
Option: 16mm Message Center

Created Date: 2/1/2022 3:38:23PM

990 Jameson Street
 Neenah, WI 54956
 Ph: (920) 731-4852
 Web: <http://www.tlcsign.com>

Salesperson:	Karissa Akey	Prepared For:	Manawa School District
Email:	Karissa@TLCSign.com	Contact:	Dean Marzofka
		Office Phone:	(920) 596-2524
		Office Fax:	(920) 596-5308
		Email:	dmarzofka@manawaschools.org
		Bill to Address:	800 Beech St. Manawa, WI 54949

Upgrade EMC

Option: 16mm Message Center

	Quantity	Unit Price	Subtotal
--	----------	------------	----------

1	1	\$23,686.79	\$23,686.79
----------	---	-------------	-------------

Scope of Work:

Provide labor, materials, and equipment to remove existing EMC and install new 10mm Watchfire Message Center. Assumes using existing electrical, if there is not enough electrical there then an electrician will have to take care of that portion and the cost is not included in this quote. Subject to site survey, permitting, and final renderings.

Reference 113233 REV 0 page 2

Message Center Specs:

- Double Face Display, 16mm pixel pitch
- Matrix: 36 lines by 144 columns
- Cabinet size: 29" H x 8'-3" W x 5", Viewing Area: 24" x 8' W
- Full Color, Min. 18.0 Quadrillion Colors
- 4 lines/28.8 characters at 4" type
- Communication: 4G Wireless w/ 5 Year Cellular Data Plan
- Includes Temp Sensor
- Front Ventilation
- Viewing Angle: 140 degree horizontal/70 degree vertical
- Ignite Software included. Computer to run the software provided by customer.
- Electrical Service & Energy: 120V, 5 amps per face/10 amps total single phase service. Estimated cost per day to run: \$.43
- 5 year Manufacture Warranty on all electronics.



Estimate #: 113233
Option: 16mm Message Center

Created Date:2/1/2022 3:38:23PM

990 Jameson Street
Neenah, WI 54956
Ph: (920) 731-4852
Web: <http://www.tlcsign.com>

Notes

Approximate 6-12 week lead time.
Sign permit & permit acquisition cost to be added to final invoice if any are needed.
Additional shipping may apply.
Subject to site survey and inspection of signage.
Electrical circuit to the sign not included.
Does not include any repairs needed to existing signage.
Estimate valid for 30 days. However, steel and aluminum prices may vary and actual cost will be used do to volatile market prices for these products.
50% down payment Balance due upon completion.

Subtotal: \$23,686.79
Total: \$23,686.79

Payment Terms: Net 30; Balance due in 30 days.

Client Reply Request for Option: 16mm Message Center

- Estimate Accepted "As Is". Please proceed with Order.
- Changes required, please contact me.

Other: _____
SIGN: _____ Date: / /

Print Date: 2/22/2022 12:20:23PM

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Trusted, Loyal, Creative



Estimate #: 113233
Option: New Poly Faces

Created Date: 2/1/2022 3:38:23PM

990 Jameson Street
 Neenah, WI 54956
 Ph: (920) 731-4852
 Web: <http://www.tlcsign.com>

Salesperson:	Karissa Akey	Prepared For:	Manawa School District
Email:	Karissa@TLCSign.com	Contact:	Dean Marzofka
		Office Phone:	(920) 596-2524
		Office Fax:	(920) 596-5308
		Email:	dmarzofka@manawaschools.org
		Bill to Address:	800 Beech St. Manawa, WI 54949

Upgrade EMC

Option: New Poly Faces

		Quantity	Unit Price	Subtotal
1	Scope of Work: Provide labor, materials, and equipment to remove existing poly faces and install new. Size: 1' 11" H x 8' 1 1/4" W Assumes completed at the same time as the EMC is changed otherwise additional travel time will be added. Reference Design 113233 REV 0	1	\$1,170.98	\$1,170.98

Notes

Approximate 6-12 week lead time.
 Sign permit & permit acquisition cost to be added to final invoice if any are needed.
 Additional shipping may apply.
 Subject to site survey and inspection of signage.
 Electrical circuit to the sign not included.
 Does not include any repairs needed to existing signage.
 Estimate valid for 30 days. However, steel and aluminum prices may vary and actual cost will be used do to volatile market prices for these products.
 50% down payment Balance due upon completion.

Subtotal: \$1,170.98
Total: \$1,170.98

Payment Terms: Net 30; Balance due in 30 days.

Client Reply Request for Option: New Poly Faces

- Estimate Accepted "As Is". Please proceed with Order.
 Changes required, please contact me.

Other: _____
SIGN: _____ **Date:** / /

Print Date: 2/22/2022 12:20:23PM

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Trusted, Loyal, Creative



Estimate #: 113233
Option: New ACM Panel with Logo Graphics

Created Date: 2/1/2022 3:38:23PM

990 Jameson Street
 Neenah, WI 54956
 Ph: (920) 731-4852
 Web: <http://www.tlcsign.com>

Salesperson:	Karissa Akey	Prepared For:	Manawa School District
Email:	Karissa@TLCSign.com	Contact:	Dean Marzofka
		Office Phone:	(920) 596-2524
		Office Fax:	(920) 596-5308
		Email:	dmarzofka@manawaschools.org
		Bill to Address:	800 Beech St. Manawa, WI 54949

Upgrade EMC

Option: New ACM Panel with Logo Graphics

		Quantity	Unit Price	Subtotal
1	Scope of Work: Provide labor, materials, and equipment to remove existing ACM panels with Wolf Logo and install new. Subject to site survey, permitting, and final renderings. Reference Design 113233 REV 0	1	\$955.32	\$955.32

Notes

Approximate 6-12 week lead time.
 Sign permit & permit acquisition cost to be added to final invoice if any are needed.
 Additional shipping may apply.
 Subject to site survey and inspection of signage.
 Electrical circuit to the sign not included.
 Does not include any repairs needed to existing signage.
 Estimate valid for 30 days. However, steel and aluminum prices may vary and actual cost will be used do to volatile market prices for these products.
 50% down payment Balance due upon completion.

Subtotal: \$955.32
Total: \$955.32

Payment Terms: Net 30; Balance due in 30 days.

Client Reply Request for Option: New ACM Panel with Logo Graphics

- Estimate Accepted "As Is". Please proceed with Order.
 Changes required, please contact me.

Other: _____
 SIGN: _____ Date: / /

Print Date: 2/22/2022 12:20:23PM

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Trusted, Loyal, Creative



Estimate #: 113233
Option: Permit

Created Date: 2/1/2022 3:38:23PM

990 Jameson Street
 Neenah, WI 54956
 Ph: (920) 731-4852
 Web: <http://www.tlcsign.com>

Salesperson:	Karissa Akey	Prepared For:	Manawa School District
Email:	Karissa@TLCSign.com	Contact:	Dean Marzofka
		Office Phone:	(920) 596-2524
		Office Fax:	(920) 596-5308
		Email:	dmarzofka@manawaschools.org
		Bill to Address:	800 Beech St. Manawa, WI 54949

Upgrade EMC

Option: Permit

		Quantity		Subtotal
1	Sign Permit - At Cost if needed TLC Acquisition Fee: \$100.00	0	\$0.00	\$100.00

Notes

Approximate 6-12 week lead time.
 Sign permit & permit acquisition cost to be added to final invoice if any are needed.
 Additional shipping may apply.
 Subject to site survey and inspection of signage.
 Electrical circuit to the sign not included.
 Does not include any repairs needed to existing signage.
 Estimate valid for 30 days. However, steel and aluminum prices may vary and actual cost will be used do to volatile market prices for these products.
 50% down payment Balance due upon completion.

Subtotal: \$100.00
Total: \$100.00

Payment Terms: Net 30; Balance due in 30 days.

Client Reply Request for Option: Permit

- Estimate Accepted "As Is". Please proceed with Order.
- Changes required, please contact me.

Other: _____
SIGN: _____ **Date:** / /

Print Date: 2/22/2022 12:20:23PM

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Trusted, Loyal, Creative

Risk Management Playground Survey Summary

Prepared For:	Carmen O'Brien, Business Manager
Prepared By:	Jodi Traas, CPSI, Director of Education & Risk Services
Date of Visit:	September 6, 2022
Purpose of Visit:	Manawa Elementary School Playground Safety Survey
Attendees:	Dr. Melanie Oppor, Danni Brauer, Arty Pethke, Diane Teuscher, Carmen O'Brien
Enclosed:	CPSC Handbook for Public Playgrounds Loss Control Recommendations & Areas of Success

Discussion Overview

Thank you to the staff for taking the time to walk through the playground to review the observations with me last week as well as review the successes of the safety survey. I parked at the front of the elementary school and proceeded to walk around the side of the building without checking into the office or obtaining a visitor pass. I carried a red duffle bag, the playground inspection kit. I approached the playground and entered onto the blacktop area during the second recess. I hung out on the black top area for roughly ten minutes talking with students before entering the play equipment area. After five minutes near the play equipment a Kindergarten teacher approached me and asked if she could help me. I explained I was meeting with Carmen. She offered to take me to Carmen and I asked if she could radio Carmen. She had her radio with her, but it was not charged enough to call. I then inquired if another staff member could contact Carmen with their radio. She was a special education staff member and stated her radio channel could not reach Carmen or the office. Finally, there was a student teacher who had her radio, and she called the office to let her know of my arrival.

During the last lunch recess of the day, I also arrived unannounced, without a visitor badge, and in time the math specialist approached me as well and began talking with me. I asked her if she was aware of who I might be, and she stated she thought I was the photographer coming to take photos.



The playground supervisors were attentive, kind and addressed situations with the students as they arose. The light blue matching t-shirts, the kinder crew, worn by staff were not only fun but adorable and a cohesive team!

Playground Supervision Loss Control Recommendations:

2022-1: Playground Supervisors should wear yellow or reflective vests to allow students or other staff members to find them quickly on the playground in the case of an emergency.

2022-2: Playground Supervisors should spread out to cover the entire play area and practice "zoning". Constant movement/rotation around the play area to ensure the area is covered and all play areas in use are properly supervised. During both recesses observed, supervisors were located near the play equipment only. While this is centrally located, students often hid around the corner of the building and sat under the tree up on the hill from the blacktop. The constant movement will allow supervisors to hear conversations and address any bullying or inappropriate behaviors taking place. An example of zoning is moving from the blacktop to the play equipment and then to the side field where football was being played.

2022-3: Immediately address strangers on the playground by determining if they have a visitor badge and calling the office via the radio to inform the office of an unknown person on the playground. Make sure all radios are fully charged for the day and supervisors are carrying the radios out to the playground. *Train staff on the new frequencies of the radios.* There seem to be some confusion with how to contact the office since receiving the new radios.

During my playground safety surveys, I rarely find that almost all playground pieces are played upon. At Manawa Elementary, students were optimizing the play equipment and utilizing almost all pieces of play equipment as well as the blacktop area and grassy area. I would first like to comment on the condition and maintenance of the play equipment. The age of the pieces varies; however, the equipment has been very well maintained and maintenance issues are addressed timely and swiftly. This is a great compliment to the facility staff and administration that there is not missing bolts, etc. observed.

Playground Maintenance Loss Control Recommendations:

Melanie, Danni, Arty & Diane, all joined me to review the concerns noted below following the survey. The playground equipment is very well maintained. This is a credit to the facilities staff.

2022-4: Conduct monthly inspections on the play equipment and document these inspections. This is an essential risk management practice should a serious injury occur, and a potential liability claim arise.

2022-5: Identify all equipment by age designation. Place stickers on the equipment showing the age designation such as 2-5 years or 5-12 years for the community to be aware of the age groups. This is also essential so 4K students do not play on equipment designed for older students.

2022-6: Head Entrapment Hazards are serious and three were noted on the day of the survey. CPSC Handbook, (pages 51-52). Head entrapment is a completely bounded opening between 3.5"-9".



- 1) The first was found on the Playworld Systems. This *may* be adjusted by moving the bottom portion upward and reducing the opening to less than 3.5" which is currently allowing the torso probe to enter through and restricting the head probe access, hence causing a head entrapment. This is a high hazard.
- 2) The second was found on the Little Tikes Equipment. This head entrapment *may* also be adjusted since the protective barrier/guardrail was placed over by one slot/hole making the head entrapment.
- 3) The third was found on a bench/storage unit placed inside the play area. Benches are not covered under play equipment standards, however, once placed in the play area are expected to follow the

guidelines. More importantly, it has a life-threatening hazard, so removal of the bench is recommended. Please do not use the bench in another area where young children may be present.



2022-7: The Playworld Systems piece of equipment is missing a piece attaching the two pieces of equipment. Staff removed the damaged piece and placed barriers so there is no fall hazard. Using manufacturer hardware and pieces is always recommended. Contact Playworld Systems to determine what the cost of replacement parts for this piece of equipment to determine next steps.



2022-8: Remove parallel bars since gymnastics equipment is not recommended for public playgrounds. Spotters are not on the playground and multiple students may utilize the bars at one time.



2022-9: One playground piece of equipment I had difficulty finding who was the manufacturer. Perhaps someone else will have better luck? There are pieces of hardware that stick out and are sharp to the touch. If possible, rotate/move this rectangular hardware inward so that the sharp corners do not stick out.

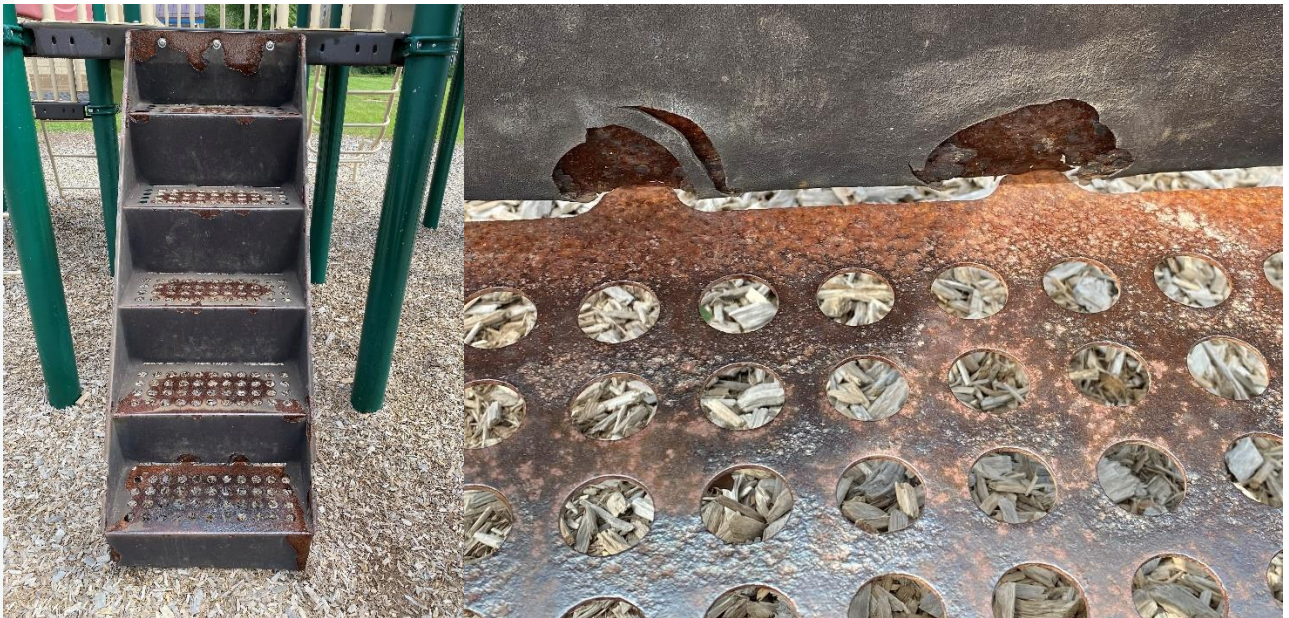


2022-10: Burke Swings: The support pole indicates the surface material (wood chips) should be at a higher level. Falls to the surface are responsible for 68% of all injuries. Replenish these surface materials annually to maintain the proper depth. Obtain documentation from the supplier of playground surfacing materials to ensure they comply with ASTM F1292 Playground Safety Surfacing Standard, ASTM F2075 Engineered Wood Fiber, or ASTM F1951 Accessibility if applicable. *Great Burke mats placed underneath so as not to displace playground surface materials.*

Consider placing the swings at different heights to accommodate various students. Delighted to see accessible swing in bay.



2022-11: Little Tikes Play Equipment missing hardware. Replace missing hardware.

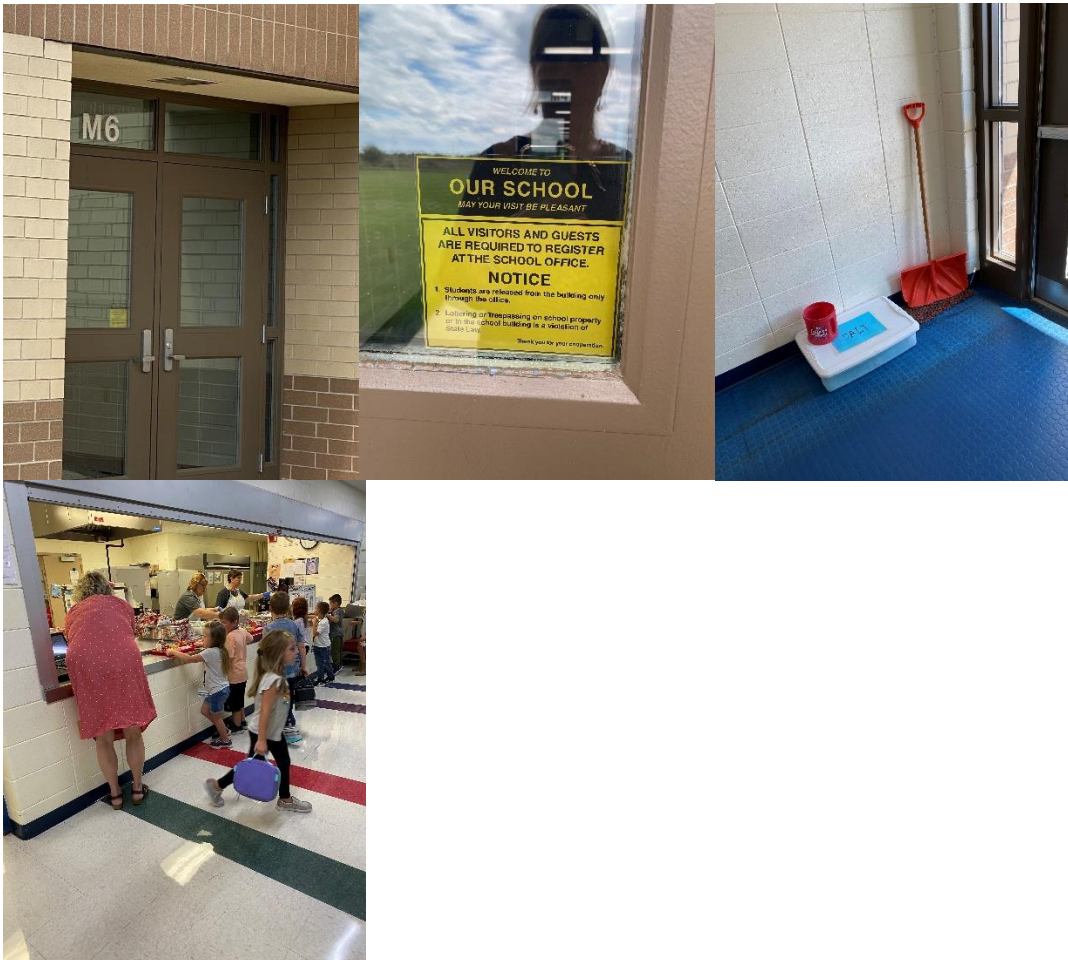






2022-12: Little Tikes Play Equipment Steps/Surface hazard. The coating on the steps/platforms of this equipment is peeling away and has allowed corrosion and decreased structural integrity. This is found throughout the entire piece of play equipment where the coating is in place on the steps, bridge, and platform. The peeling can cause a trip hazard, sharp at times exposing the metal, corrosion and one bottom step metal structural integrity is in serious condition. Recommend contacting the manufacturer regarding the condition of this equipment to determine cost and any steps available to replace these portions. Corrosion has also begun on the tan protective barrier noted above this step. The manufacturer will also be able to give the district the time frame of the age of the equipment and life span.

School Security



Excellent school security practices were noted from outside of the school building.

- Every external door was locked. The front door was unlocked, however, once inside the vestibule I was unable to enter the elementary school building. I attempted to enter an outside door and students did not let me in the door even though I shook the door and waited for them to come and open the door. They had even seen me speaking with staff out on the playground prior to this time so were familiar with my presence.
- All doors and windows were identified with letters and numbers and easy to read from the outside and inside of the building.
- Doors have good visitor signage directing visitors to the front entrance.

- Visitor badges are on easily identifiable lanyards so that staff may quickly notice if a visitor is wearing the badge.
- Visitor badges are kept away from the sign-in log so they may not be just grabbed and used without proper sign-in. Badges are numbered and school secretary ensures they are returned and keeps track.
- Vestibules had shovels, brooms, and salt ready for inclement weather and to assist in reducing slips and falls.
- ***Please note: Classroom doors were not checked to see if in the closed and locked position, however, this is recommended following the Sandy Hook Commission report.***
- Traffic Control Procedure Observed. I was present at the end of the school day and observed the Principal, Danni, not releasing the school buses to leave until parent pick-up was complete. This is an excellent practice. Bus pick-up is in a separate location in the back of the school building, roadway and separate from the parent pick-up in the front of the building also reducing exposure to incidents.

Security Loss Control Recommendations:

2022-13: Several staff observed me walking in the hall with my duffel bag, no visitor badge or school personnel accompanying my presence. I was not stopped to ask if I may be assisted to the office or office alerted to my presence in the building. Any person without a visitor badge, known or unknown to staff, must be addressed in the building according to the district policy.

2022-14: Consider lunchroom *breakaway* lanyards to be worn by students. While students return the lanyards after scanning them for lunch the lanyards can be a choking hazard.

Thank you for all your time during my visit last week. I look forward to answering any additional questions of the Building & Grounds Committee this evening or any others that may arise after perusal of my report. Please do not hesitate to reach out with any questions while I understand we reviewed much of this information last week, there is incredible amount of information.

Have a great and safe day,

Jodi L. Traas

Public Playground Safety Handbook



U.S. Consumer Product Safety Commission
Saving Lives and Keeping Families Safe





U.S. CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

December 29, 2015

The U.S. Consumer Product Safety Commission's ("CPSC" or "Commission") *Public Playground Safety Handbook* was first published in 1981 under the name *A Handbook for Public Playground Safety*. The recommendations in the *Handbook* are focused on playground-related *injuries* and mechanical mechanisms of injury; falls from playground equipment have remained the largest single hazard pattern associated with playground use. Since the first edition, the Commission has included recommendations that playgrounds not be installed over concrete, asphalt, or paved surfaces to address serious head injuries due to falls from the equipment. Additionally, the Commission has made suggestions for commonly used loose-fill and unitary surfacing materials (*e.g.*, wood mulch, pea gravel, sand, gym mats, and shredded/recycled rubber mulch) that provide head impact attenuation and can mitigate the hazard presented by falls from playground equipment. Maintaining the focus on falls, the *Handbook's* surfacing recommendations are based on the surfacing material's energy absorbing effectiveness.

During the past 35 years, innovations in technology have led to new playground equipment and surfacing practices. Voluntary standards for equipment and impact attenuation for protective surfacing have evolved. The 2010 edition of the *Handbook*, the most recent version, still discusses common materials, but also covers new surfacing systems that are specifically designed and tested to comply with ASTM F1292, the voluntary standard for measuring impact attenuation of surfacing. Maintaining that focus, Section 2.4 of the *Handbook* identifies shredded/recycled rubber mulch as an "Appropriate Surfacing" product, given that this product can meet the impact attenuation requirements of ASTM F1292, as long as minimum depths of the material are maintained, as specified in Table 2 of Section 2.5. This notation is solely focused on the impact attenuation to minimize serious head injuries, and not on other aspects that may pose other risks, such as chemical exposure or ingestion.

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1. INTRODUCTION

In recent years, it is estimated that there were more than 200,000 injuries annually on public playgrounds across the country that required emergency room treatment. By following the recommended guidelines in this handbook, you and your community can create a safer playground environment for all children and contribute to the reduction of playground-related deaths and injuries.

1.1 Scope

This handbook presents safety information for public playground equipment in the form of guidelines. Publication of this handbook is expected to promote greater safety awareness among those who purchase, install, and maintain public playground equipment. Because many factors may affect playground safety, the U.S. Consumer Product Safety Commission (CPSC) staff believes that guidelines, rather than a mandatory rule, are appropriate. These guidelines are not being issued as the sole method to minimize injuries associated with playground equipment. However, the Commission believes that the recommendations in this handbook along with the technical information in the ASTM standards for public playgrounds will contribute to greater playground safety.

Some states and local jurisdictions may require compliance with this handbook and/or ASTM voluntary standards. Additionally, risk managers, insurance companies, or others may require compliance at a particular site; check with state/local jurisdictions and insurance companies for specific requirements.

1.2 Intended Audience

This handbook is intended for use by childcare personnel, school officials, parks and recreation personnel, equipment purchasers and installers, playground designers, and any other members of the general public (e.g., parents and school groups) concerned with public playground safety and interested in evaluating their respective playgrounds. Due to the wide range of possible users, some information provided may be more appropriate for certain users than others. The voluntary standards listed in 1.4.1 contain more technical requirements than this handbook and are primarily intended for use by equipment manufacturers, architects, designers, and any others requiring more technical information.

1.3 What is a Public Playground?

“Public” playground equipment refers to equipment for use by children ages 6 months through 12 years in the playground areas of:

- Commercial (non-residential) child care facilities
- Institutions
- Multiple family dwellings, such as apartment and condominium buildings
- Parks, such as city, state, and community maintained parks
- Restaurants
- Resorts and recreational developments
- Schools
- Other areas of public use

These guidelines are not intended for amusement park equipment, sports or fitness equipment normally intended for users over the age of 12 years, soft contained play equipment, constant air inflatable play devices for home use, art and museum sculptures (not otherwise designed, intended and installed as playground equipment), equipment found in water play facilities, or home playground equipment. Equipment components intended solely for children with disabilities and modified to accommodate such users also are not covered by these guidelines. Child care facilities, especially indoor, should refer to ASTM F2373 — *Standard Consumer Safety Performance Specification for Public Use Play Equipment for Children 6 Months Through 23 Months*, for more guidance on areas unique to their facilities.

1.4 Public Playground Safety Voluntary Standards and CPSC Handbook History

- 1981 – First CPSC *Handbook for Public Playground Safety* was published, a two-volume set.
- 1991 – *Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment*, ASTM F1292, was first published.
- 1991 – Two-volume set was replaced by a single-volume handbook, which contained recommendations based on a COMSIS Corporation report to the CPSC (*Development of Human Factors Criteria for Playground Equipment Safety*).

- 1993 – First version of voluntary standard for public playground equipment, ASTM F1487 — *Standard Consumer Safety Performance Specification for Playground Equipment for Public Use*, was published (revisions occur every 3 to 4 years).
- 1994 – Minor revisions to the *Handbook*.
- 1997 – *Handbook* was updated based on (1) staff review of ASTM F1487, (2) playground safety roundtable meeting held October 1996, and (3) public comment received to a May 1997 CPSC staff request.
- 2005 – First version of voluntary standard for playground equipment intended for children under two years old, ASTM F2373 — *Standard Consumer Safety Performance Specification for Public Use Play Equipment for Children 6 Months Through 23 Months*, was published.
- 2008 – *Handbook* was updated based on comments received from members of the ASTM F15 Playground Committees in response to a CPSC staff request for suggested revisions. Significant revisions are listed below.

1.4.1 ASTM playground standards

Below is a list of ASTM technical performance standards that relate to playgrounds.

- **F1487** *Standard Consumer Safety Performance Specification for Playground Equipment for Public Use*.
- **F2373** *Standard Consumer Safety Performance Specification for Public Use Play Equipment for Children 6 Months through 23 Months*.
- **F1292** *Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment*.
- **F2075** *Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment*.
- **F2223** *Standard Guide for ASTM Standards on Playground Surfacing*.
- **F2479** *Standard Guide for Specification, Purchase, Installation and Maintenance of Poured-In-Place Playground Surfacing*.
- **F1951** *Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment*.
- **F1816** *Standard Safety Specification for Drawstrings on Children's Upper Outerwear*.
- **F2049** *Standard Guide for Fences/Barriers for Public, Commercial, and Multi-Family Residential Use Outdoor Play Areas*.
- **F1148** *Standard Consumer Safety Performance Specification for Home Playground Equipment*.
- **F1918** *Standard Safety Performance Specification for Soft Contained Play Equipment*.

1.5 Significant Revisions for 2008

1.5.1 Equipment guidelines

- Age ranges expanded to include children as young as 6 months based on ASTM F2373
- Guidelines for track rides and log rolls added
- Exit zone requirements for slides harmonized with ASTM F1487

1.5.2 Surfacing guidelines

- Critical height table revised
- Suggestions for surfacing over asphalt added

1.5.3 General guidelines

- Suggestions on sun exposure added

1.5.4 Other revisions

- Editorial changes to make the *Handbook* easier to understand and use

1.6 Background

The safety of each individual piece of playground equipment as well as the layout of the entire play area should be considered when designing or evaluating a playground for safety. Since falls are a very common playground hazard pattern, the installation and maintenance of protective surfacing under and around all equipment is crucial to protect children from severe head injuries.

Because all playgrounds present some challenge and because children can be expected to use equipment in unintended and unanticipated ways, adult supervision is highly recommended. The handbook provides some guidance on supervisory practices that adults should follow. Appropriate equipment design, layout, and maintenance, as discussed in this

handbook, are also essential for increasing public playground safety.

A playground should allow children to develop gradually and test their skills by providing a series of graduated challenges. The challenges presented should be appropriate for age-related abilities and should be ones that children can perceive and choose to undertake. Toddlers, preschool- and school-age children differ dramatically, not only in physical size and ability, but also in their intellectual and social skills. Therefore, age-appropriate playground designs should accommodate these differences with regard to the type, scale, and the layout of equipment. Recommendations throughout this handbook address the different needs of toddlers, preschool-age, and school-age children; “toddlers” refers to children ages 6 months through 2 years of age, “preschool-age” refers to children 2 through 5 years, and “school-age” refers to children 5 through 12 years. The overlap between these groups is anticipated in terms of playground equipment use and provides for a margin of safety.

Playground designers, installers and operators should be aware that the Americans with Disabilities Act of 1990 (ADA) is a comprehensive civil rights law which prohibits discrimination on the basis of disability. Titles II and III of the ADA require, among other things, that newly constructed and altered State and local government facilities, places of public accommodation, and commercial facilities be readily accessible to and usable by individuals with disabilities. Recreation facilities, including play areas, are among the types of facilities covered by titles II and III of the ADA.

The Architectural and Transportation Barriers Compliance Boards – also referred to as the “Access Board” – has developed accessibility guidelines for newly constructed and altered play areas that were published October 2000. The play area guidelines are a supplement to the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Once these guidelines are adopted as enforceable standards by the Department of Justice, all newly constructed and altered play areas covered by the ADA will be required to comply. These guidelines also apply to play areas covered by the Architectural Barriers Act (ABA).

Copies of the play area accessibility guidelines and further technical assistance can be obtained from the U.S. Access Board, 1331 F Street, NW, Suite 1000, Washington, DC 20004-1111; 800-872-2253, 800-993-2822 (TTY), www.access-board.gov.

1.7 Playground Injuries

The U. S. Consumer Product Safety Commission has long recognized the potential hazards that exist with the use of playground equipment, with over 200,000 estimated emergency room-treated injuries annually. The most recent study of 2,691 playground equipment-related incidents reported to the CPSC from 2001-2008 indicated that falls are the most common hazard pattern (44% of injuries) followed by equipment-related hazards, such as breakage, tip over, design, and assembly (23%).¹ Other hazard patterns involved entrapment and colliding other children or stationary equipment. Playground-related deaths reported to the Commission involved entanglement of ropes, leashes, or clothing; falls; and impact from equipment tip over or structural failure.

The recommendations in this handbook have been developed to address the hazards that resulted in playground-related injuries and deaths. The recommendations include those that address:

- The potential for falls from and impact with equipment
- The need for impact attenuating protective surfacing under and around equipment
- Openings with the potential for head entrapment
- The scale of equipment and other design features related to user age and layout of equipment on a playground
- Installation and maintenance procedures
- General hazards presented by protrusions, sharp edges, and crush or shear points

1.8 Definitions

Barrier — An enclosing device around an elevated platform that is intended to prevent both inadvertent and deliberate attempts to pass through the device.

Composite Structure — Two or more play structures attached or functionally linked, to create one integral unit that provides more than one play activity.

Critical Height — The fall height below which a life-threatening head injury would not be expected to occur.

¹O'Brien, Craig W.; Injuries and Investigated Deaths Associated with Playground Equipment, 2001–2008. U.S. Consumer Product Safety Commission: Washington DC, October, 2009.

Designated Play Surface — Any elevated surface for standing, walking, crawling, sitting or climbing, or a flat surface greater than 2 inches wide by 2 inches long having an angle less than 30° from horizontal.

Embankment Slide — A slide that follows the contour of the ground and at no point is the bottom of the chute greater than 12 inches above the surrounding ground.

Entanglement — A condition in which the user's clothes or something around the user's neck becomes caught or entwined on a component of playground equipment.

Entrapment — Any condition that impedes withdrawal of a body or body part that has penetrated an opening.

Fall Height — The vertical distance between the highest designated play surface on a piece of equipment and the protective surfacing beneath it.

Footing — A means for anchoring playground equipment to the ground.

Full Bucket Seat Swing — A swing generally appropriate for children under 4 years of age that provides support on all sides and between the legs of the occupant and cannot be entered or exited without adult assistance.

Geotextile (filter) Cloth — A fabric that retains its relative structure during handling, placement, and long-term service to enhance water movement, retard soil movement, and to add reinforcement and separation between the soil and the surfacing and/or sub-base.

Guardrail — An enclosing device around an elevated platform that is intended to prevent inadvertent falls from the elevated surface.

Infill — Material(s) used in a protective barrier or between decks to prevent a user from passing through the barrier (e.g., vertical bars, lattice, solid panel, etc.).

Loose-Fill Surfacing Material — A material used for protective surfacing in the use zone that consists of loose particles such as sand, gravel, engineered wood fibers, or shredded rubber.

Preschool-Age Children — Children 2 years of age through 5 years of age.

Projection — Anything that extends outward from a surface of the playground equipment and must be tested to determine whether it is a protrusion or entanglement hazard, or both.

Protective Barrier — See Barrier.

Protective Surfacing — Shock absorbing (i.e., impact attenuating) surfacing material in the use zone that conforms to the recommendations in §2.4 of this handbook.

Protrusion — A projection which, when tested, is found to be a hazard having the potential to cause bodily injury to a user who impacts it.

Roller Slide — A slide that has a chute consisting of a series of individual rollers over which the user travels.

School-Age Children — Children 5 years of age through 12 years of age.

Slide Chute — The inclined sliding surface of a slide.

Stationary Play Equipment — Any play structure that has a fixed base and does not move.

Supervisor — Any person tasked with watching children on a playground. Supervisors may be paid professionals (e.g., childcare, elementary school or park and recreation personnel), paid seasonal workers (e.g., college or high school students), volunteers (e.g., PTA members), or unpaid caregivers (e.g., parents) of the children playing in the playground.

Toddlers — Children 6 months through 23 months of age.

Tube Slide — A slide in which the chute consists of a totally enclosed tube or tunnel.

Unitary Surfacing Material — A manufactured material used for protective surfacing in the use zone that may be rubber tiles, mats, or a combination of energy absorbing materials held in place by a binder that may be poured in place at the playground site and cures to form a unitary shock absorbing surface.

Upper Body Equipment — Equipment designed to support a child by the hands only (e.g., horizontal ladder, overhead swinging rings).

Use Zone — The surface under and around a piece of equipment onto which a child falling from or exiting from the equipment would be expected to land. These areas are also designated for unrestricted circulation around the equipment.

2. GENERAL PLAYGROUND CONSIDERATIONS

2.1 Selecting a Site

The following factors are important when selecting a site for a new playground:

Site Factor	Questions to Ask	If yes, then...Mitigation
Travel patterns of children to and from the playground	Are there hazards in the way?	Clear hazards.
Nearby accessible hazards such as roads with traffic, lakes, ponds, streams, drop-offs/cliffs, etc.	Could a child inadvertently run into a nearby hazard? Could younger children easily wander off toward the hazard?	Provide a method to contain children within the playground. For example, a dense hedge or a fence. The method should allow for observation by supervisors. If fences are used, they should conform to local building codes and/or ASTM F-2049.
Sun exposure	Is sun exposure sufficient to heat exposed bare metal slides, platforms, steps, & surfacing enough to burn children?	Bare metal slides, platforms, and steps should be shaded or located out of direct sun. Provide warnings that equipment and surfacing exposed to intense sun can burn.
	Will children be exposed to the sun during the most intense part of the day?	Consider shading the playground or providing shaded areas nearby.
Slope and drainage	Will loose fill materials wash away during periods of heavy rain?	Consider proper drainage re-grading to prevent wash outs.

2.1.1 Shading considerations

According to the American Academy of Dermatology, research indicates that one in five Americans will develop some form of skin cancer during their lifetime, and five or more sunburns double the risk of developing skin cancer. Utilizing existing shade (e.g., trees), designing play structures as a means for providing shading (e.g., elevated platforms with shaded space below), or creating more shade (e.g., man-made structures) are potential ways to design a playground to help protect children's skin from the sun. When trees are used for shade, additional maintenance issues arise, such as the need for cleaning up debris and trimming limbs.

2.2 Playground Layout

There are several key factors to keep in mind when laying out a playground:

- Accessibility
- Age separation
- Conflicting activities
- Sight lines
- Signage and/or labeling
- Supervision

2.2.1 Accessibility

Special consideration should be given to providing accessible surfaces in a play area that meets the ASTM *Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment*, ASTM F1951.

Equipment selection and location along with the type of protective surfacing are key components to ensuring the opportunity for children with disabilities to play on the playground.

2.2.2 Age separation

For playgrounds intended to serve children of all ages, the layout of pathways and the landscaping of the playground should show the distinct areas for the different age groups. The areas should be separated at least by a buffer zone, which could be an area with shrubs or benches. This separation and buffer zone will reduce the chance of injury from older, more active children running through areas filled with younger children with generally slower movement and reaction times.

2.2.3 Age group

In areas where access to the playground is unlimited or enforced only by signage, the playground designer should recognize that since child development is fluid, parents and caregivers may select a playground slightly above or slightly below their child's abilities, especially for children at or near a cut-off age (e.g., 2-years old and 5-years old). This could be for ease of supervising multiple children, misperceptions about the hazards a playground may pose to children of a different age, advanced development of a child, or other reasons. For this reason, there is an overlap at age 5.

Developmentally a similar overlap also exists around age 2; however, due to the differences in ASTM standards and entrapment testing tools, this overlap is not reflected in the handbook. Playgrounds used primarily by children under the supervision of paid, trained professionals (e.g., child-care centers and schools) may wish to consider separating playgrounds by the facility's age groupings. For example, a child-care facility may wish to limit a playground to toddlers under 2 exclusively and can draw information from this guide and ASTM F2373. A school, on the other hand, may have no children under 4 attending, and can likewise plan appropriately. Those who inspect playgrounds should use the intended age group of the playground.

2.2.4 Conflicting activities

The play area should be organized into different sections to prevent injuries caused by conflicting activities and children running between activities. Active, physical activities should be separate from more passive or quiet activities. Areas for playground equipment, open fields, and sand boxes should be located in different sections of the playground. In addition, popular, heavy-use pieces of equipment or activities should be dispersed to avoid crowding in any one area.

Different types of equipment have different use zones that must be maintained. The following are general recommendations for locating equipment within the playground site. Specific use zones for equipment are given in §5.3.

- Moving equipment, such as swings and merry-go-rounds, should be located toward a corner, side, or edge of the play area while ensuring that the appropriate use zones around the equipment are maintained.
- Slide exits should be located in an uncongested area of the playground.
- Composite play structures have become increasingly popular on public playgrounds. Adjacent components on composite structures should be complementary. For example, an access component should not be located in a slide exit zone.

2.2.5 Sight lines

Playgrounds that are designed, installed, and maintained in accordance with safety guidelines and standards can still present hazards to children. Playgrounds should be laid out to allow parents or caregivers to keep track of children as they move throughout the playground environment. Visual barriers should be minimized as much as possible. For example, in a park situation, playground equipment should be as visible as possible from park benches. In playgrounds with areas for different ages, the older children's area should be visible from the younger children's area to ensure that caregivers of multiple children can see older children while they are engaged in interactive play with younger ones.

2.2.6 Signage and/or labeling

Although the intended user group should be obvious from the design and scale of equipment, signs and/or labels posted in the playground area or on the equipment should give some guidance to supervisors as to the age appropriateness of the equipment.

2.2.7 Supervision

The quality of the supervision depends on the quality of the supervisor's knowledge of safe play behavior. Playground designers should be aware of the type of supervision most likely for their given playground. Depending on the location and nature of the playground, the supervisors may be paid professionals (e.g., childcare, elementary school or park and recreation personnel), paid seasonal workers (e.g., college or high school students), volunteers (e.g., PTA members), or unpaid caregivers (e.g., parents) of the children playing in the playground.






Parents and playground supervisors should be aware that not all playground equipment is appropriate for all children who may use the playground. Supervisors should look for posted

signs indicating the appropriate age of the users and direct children to equipment appropriate for their age. Supervisors may also use the information in Table 1 to determine the suitability of the equipment for the children they are supervising. Toddlers and preschool-age children require more attentive supervision than older children; however, one should not rely on supervision alone to prevent injuries.

Supervisors should understand the basics of playground safety such as:

- Checking for broken equipment and making sure children don't play on it.
- Checking for and removing unsafe modifications, especially ropes tied to equipment, before letting children play.
- Checking for properly maintained protective surfacing.
- Making sure children are wearing foot wear.

TABLE 1. EXAMPLES OF AGE APPROPRIATE EQUIPMENT

 <p>Toddler – Ages 6-23 months</p> <ul style="list-style-type: none"> • Climbing equipment under 32" high • Ramps • Single file step ladders • Slides* • Spiral slides less than 360° • Spring rockers • Stairways • Swings with full bucket seats 	 <p>Preschool – Ages 2-5 years</p> <ul style="list-style-type: none"> • Certain climbers** • Horizontal ladders less than or equal to 60" high for ages 4 and 5 • Merry-go-rounds • Ramps • Rung ladders • Single file step ladders • Slides* • Spiral slides up to 360° • Spring rockers • Stairways • Swings – belt, full bucket seats (2-4 years) & rotating tire 	 <p>Grade School – Ages 5-12 years</p> <ul style="list-style-type: none"> • Arch climbers • Chain or cable walks • Free standing climbing events with flexible parts • Fulcrum seesaws • Ladders – Horizontal, Rung, & Step • Overhead rings*** • Merry-go-rounds • Ramps • Ring treks • Slides* • Spiral slides more than one 360° turn • Stairways • Swings – belt & rotating tire • Track rides • Vertical sliding poles
<p>* See §5.3.6</p>	<p>** See §5.3.2</p>	<p>*** See §5.3.2.5</p>

- Watching and stopping dangerous horseplay, such as children throwing protective surfacing materials, jumping from heights, etc.
- Watching for and stopping children from wandering away from the play area.

2.3 Selecting Equipment

When selecting playground equipment, it is important to know the age range of the children who will be using the playground. Children at different ages and stages of development have different needs and abilities. Playgrounds should be designed to stimulate children and encourage them to develop new skills, but should be in scale with their sizes, abilities, and developmental levels. Consideration should also be given to providing play equipment that is accessible to children with disabilities and encourages integration within the playground.

Table 1 shows the appropriate age range for various pieces of playground equipment. This is not an all-comprehensive list and, therefore, should not limit inclusion of current or newly designed equipment that is not specifically mentioned. For equipment listed in more than one group, there may be some modifications or restrictions based on age, so consult the specific recommendations in §5.3.

2.3.1 Equipment not recommended

Some playground equipment is not recommended for use on public playgrounds, including:

- Trampolines
- Swinging gates
- Giant strides
- Climbing ropes that are not secured at both ends.
- Heavy metal swings (e.g., animal figures) – These are not recommended because their heavy rigid metal framework presents a risk of impact injury.
- Multiple occupancy swings – With the exception of tire swings, swings that are intended for more than one user are not recommended because their greater mass, as compared to single occupancy swings, presents a risk of impact injury.
- Rope swings – Free-swinging ropes that may fray or otherwise form a loop are not recommended because they present a potential strangulation hazard.
- Swinging dual exercise rings and trapeze bars – These are rings and trapeze bars on long chains that are generally considered to be items of athletic equipment and are not recommended for public playgrounds. *NOTE: The recommendation against the use of exercise rings does not apply to overhead hanging rings such as those used in a ring trek or ring ladder (see Figure 7).*



2.4 Surfacing

The surfacing under and around playground equipment is one of the most important factors in reducing the likelihood of life-threatening head injuries. A fall onto a shock absorbing surface is less likely to cause a

serious head injury than a fall onto a hard surface. However, some injuries from falls, including broken limbs, may occur no matter what playground surfacing material is used.

The most widely used test method for evaluating the shock absorbing properties of a playground surfacing material is to drop an instrumented metal headform onto a sample of the material and record the acceleration/time pulse during the impact. Field and laboratory test methods are described in ASTM F1292 *Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment*.

Testing using the methods described in ASTM F1292 will provide a “critical height” rating of the surface. This height can be considered as an approximation of the fall height below which a life-threatening head injury would not be expected to occur. Manufacturers and installers of playground protective surfacing should provide the critical height rating of their materials. This rating should be greater than or equal to the fall height of the highest piece of equipment on the playground. The fall height of a piece of equipment is the distance between the highest designated play surface on a piece of equipment and the protective surface beneath it. Details for determining the highest designated play surface and fall height on some types of equipment are included in §5 Parts of the Playground.

2.4.1 Equipment not covered by protective surfacing recommendations

The recommendations for protective surfacing do not apply to equipment that requires a child to be standing or sitting at *ground level*. Examples of such equipment are:



Appropriate Surfacing

- Any material tested to ASTM F1292, including unitary surfaces, engineered wood fiber, etc.
- Pea gravel
- Sand
- Shredded/recycled rubber mulch
- Wood mulch (not CCA-treated)
- Wood chips



Inappropriate Surfacing

- Asphalt
- Carpet not tested to ASTM F1292
- Concrete
- Dirt
- Grass
- CCA treated wood mulch

- Sand boxes
- Activity walls at ground level
- Play houses
- Any other equipment that children use when their feet remain in contact with the ground surface

2.4.2 Selecting a surfacing material

There are two options available for surfacing public playgrounds: unitary and loose-fill materials. A playground should never be installed without protective surfacing of some type. Concrete, asphalt, or other hard surfaces should never be directly under playground equipment. Grass and dirt are not considered protective surfacing because wear and environmental factors can reduce their shock absorbing effectiveness. Carpeting and mats are also not appropriate unless they are tested to and comply with ASTM F1292. Loose-fill should be avoided for playgrounds intended for toddlers.

2.4.2.1 Unitary surfacing materials

Unitary materials are generally rubber mats and tiles or a combination of energy-absorbing materials held in place by a

binder that may be poured in place at the playground site and then cured to form a unitary shock absorbing surface. Unitary materials are available from a number of different manufacturers, many of whom have a range of materials with differing shock absorbing properties. New surfacing materials, such as bonded wood fiber and combinations of loose-fill and unitary, are being developed that may also be tested to ASTM F1292 and fall into the unitary materials category. When deciding on the best surfacing materials keep in mind that some dark colored surfacing materials exposed to the intense sun have caused blistering on bare feet. Check with the manufacturer if light colored materials are available or provide shading to reduce direct sun exposure.

Persons wishing to install a unitary material as a playground surface should request ASTM F1292 test data from the manufacturer identifying the critical height rating of the desired surface. In addition, site requirements should be obtained from the manufacturer because some unitary materials require installation over a hard surface while others do not. Manufacturer's instructions should be followed closely, as some unitary systems require professional installation. Testing should be conducted in accordance with the ASTM F1292 standard.

2.4.2.2 Loose-fill surfacing materials

Engineered wood fiber (EWF) is a wood product that may look similar in appearance to landscaping mulch, but EWF products are designed specifically for use as a playground safety surface under and around playground equipment. EWF products should meet the specifications in ASTM F2075: *Standard Specification for Engineered Wood Fiber* and be tested to and comply with ASTM F1292.

There are also rubber mulch products that are designed specifically for use as playground surfacing. Make sure they have been tested to and comply with ASTM F1292.

When installing these products, tips 1-9 listed below should be followed. Each manufacturer of engineered wood fiber and rubber mulch should provide maintenance requirements for and test data on:

- Critical height based on ASTM F1292 impact attenuation testing.
- Minimum fill-depth data.
- Toxicity.
- ADA/ABA accessibility guidelines for firmness and stability based on ASTM F1951.

Other loose-fill materials are generally landscaping-type materials that can be layered to a certain depth and resist compacting. Some examples include wood mulch, wood chips, sand, pea gravel, and shredded/recycled rubber mulch.

Important tips when considering loose-fill materials:

1. Loose-fill materials will compress at least 25% over time due to use and weathering. This must be considered when planning the playground. For example, if the playground will require 9 inches of wood chips, then the initial fill level should be 12 inches. See Table 2 below.
2. Loose-fill surfacing requires frequent maintenance to ensure surfacing levels never drop below the minimum depth. Areas under swings and at slide exits are more susceptible to displacement; special attention must be paid to maintenance in these areas. Additionally, wear mats can be installed in these areas to reduce displacement.
3. The perimeter of the playground should provide a method of containing the loose-fill materials.
4. Consider marking equipment supports with a minimum fill level to aid in maintaining the original depth of material.

5. Good drainage is essential to maintaining loose-fill surfacing. Standing water with surfacing material reduces effectiveness and leads to material compaction and decomposition.
6. Critical height may be reduced during winter in areas where the ground freezes.
7. Never use less than 9 inches of loose-fill material except for shredded/recycled rubber (6 inches recommended). Shallower depths are too easily displaced and compacted.
8. Some loose-fill materials may not meet ADA/ABA accessibility guidelines. For more information, contact the Access Board (see §1.6) or refer to ASTM F1951.
9. Wood mulch containing chromated copper arsenate (CCA)-treated wood products should not be used; mulch where the CCA-content is unknown should be avoided (see §2.5.5.1).

Table 2 shows the minimum required depths of loose-fill material needed based on material type and fall height. The depths shown assume the materials have been compressed due to use and weathering and are properly maintained to the given level.

2.4.2.3 Installing loose-fill over hard surface

CPSC staff strongly recommends against installing playgrounds over hard surfaces, such as asphalt, concrete, or hard packed earth, unless the installation adds the following layers of protection. Immediately over the hard surface there should be a 3- to 6-inch base layer of loose-fill (e.g., gravel for drainage). The next layer should be a Geotextile cloth. On top of that should be a loose-fill layer meeting the specifications addressed in §2.4.2.2 and Table 2. Embedded in the loose-fill layer should be impact attenuating mats under high traffic areas, such as under swings, at slide exits, and other places where displacement is likely. Figure 1 provides a visual representation of this information. Older playgrounds that still exist on hard surfacing should be modified to provide appropriate surfacing.

2.5 Equipment Materials

2.5.1 Durability and finish

- Use equipment that is manufactured and constructed only of materials that have a demonstrated record of durability in a playground or similar setting.

Table 2. Minimum compressed loose-fill surfacing depths

Inches	Of	(Loose-Fill Material)	Protects to	Fall Height (feet)
6*		Shredded/recycled rubber		10
9		Sand		4
9		Pea Gravel		5
9		Wood mulch (non-CCA)		7
9		Wood chips		10

* Shredded/recycled rubber loose-fill surfacing does not compress in the same manner as other loose-fill materials. However, care should be taken to maintain a constant depth as displacement may still occur.

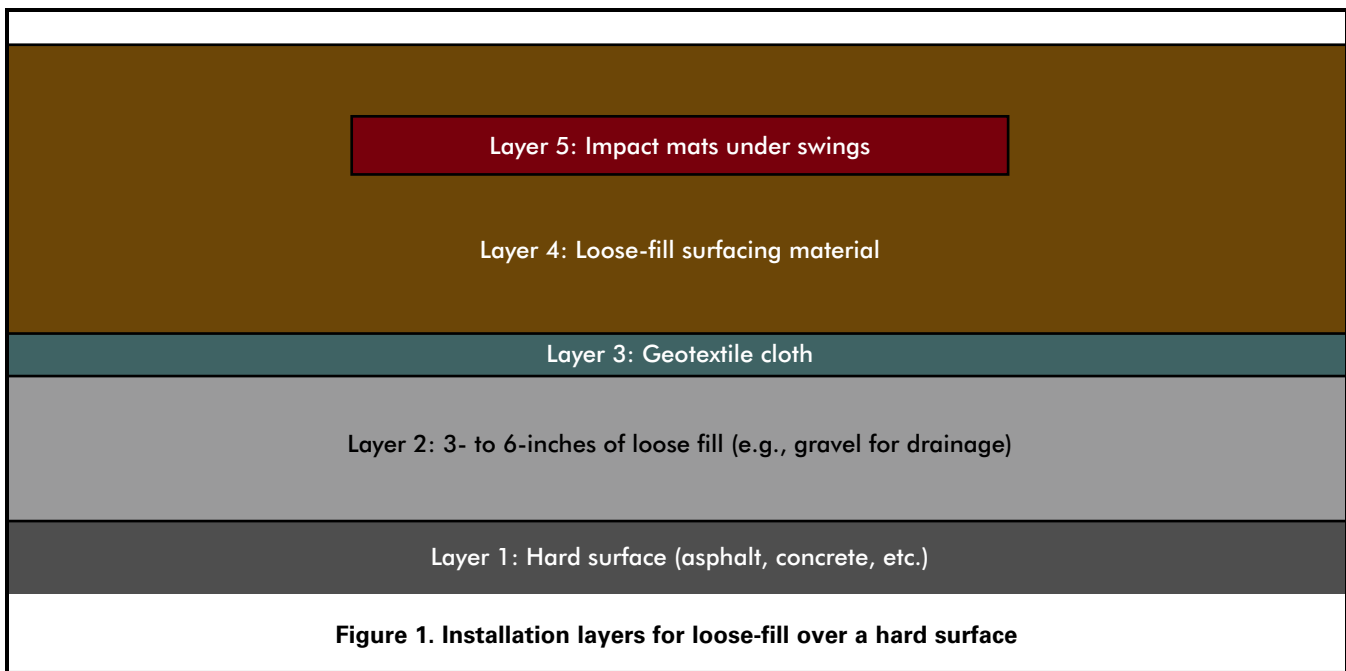


Figure 1. Installation layers for loose-fill over a hard surface

- Finishes, treatments, and preservatives should be selected carefully so that they do not present a health hazard to users.

2.5.2 Hardware

When installed and maintained in accordance with the manufacturer’s instructions:

- All fasteners, connectors, and covering devices should not loosen or be removable without the use of tools.
- All fasteners, connectors, and covering devices that are exposed to the user should be smooth and should not be likely to cause laceration, penetration, or present a clothing entanglement hazard (see also §3.2 and Appendix B).
- Lock washers, self-locking nuts, or other locking means should be provided for all nuts and bolts to protect them from detachment.
- Hardware in moving joints should also be secured against unintentional or unauthorized loosening.

- All fasteners should be corrosion resistant and be selected to minimize corrosion of the materials they connect. This is particularly important when using wood treated with ACQ/CBA/CA-B² as the chemicals in the wood preservative corrode certain metals faster than others.
- Bearings or bushings used in moving joints should be easy to lubricate or be self-lubricating.
- All hooks, such as S-hooks and C-hooks, should be closed (see also §5.3.8.1). A hook is considered closed if there is no gap or space greater than 0.04 inches, about the thickness of a dime.

2.5.3 Metals

- Avoid using bare metal for platforms, slides, or steps. When exposed to direct sunlight they may reach temperatures high enough to cause serious contact burn injuries in a matter of seconds. Use other materials that may reduce the surface temperature, such as but not limited to wood, plastic, or coated metal (see also Slides in §5.3.6).
- If bare or painted metal surfaces are used on platforms, steps, and slide beds, they should be oriented so that the surface is not exposed to direct sun year round.

2.5.4 Paints and finishes

- Metals not inherently corrosion resistant should be painted, galvanized, or otherwise treated to prevent rust.
- The manufacturer should ensure that the users cannot ingest, inhale, or absorb potentially hazardous amounts of preservative chemicals or other treatments applied to the equipment as a result of contact with playground equipment.
- All paints and other similar finishes must meet the current CPSC regulation for lead in paint.
- Painted surfaces should be maintained to prevent corrosion and deterioration.
- Paint and other finishes should be maintained to prevent rusting of exposed metals and to minimize children playing with peeling paint and paint flakes.

- Older playgrounds with lead based paints should be identified and a strategy to control lead paint exposure should be developed. Playground managers should consult the October 1996 report, CPSC Staff Recommendations for Identifying and Controlling Lead Paint on Public Playground Equipment, while ensuring that all paints and other similar finishes meet the current CPSC regulation.³

2.5.5 Wood

- Wood should be either naturally rot- and insect-resistant (e.g., cedar or redwood) or should be treated to avoid such deterioration.
- Creosote-treated wood (e.g., railroad ties, telephone poles, etc) and coatings that contain pesticides should not be used.

2.5.5.1 Pressure-treated wood

A significant amount of older playground wood was pressure-treated with chemicals to prevent damage from insects and fungi. Chromated copper arsenate (CCA) was a chemical used for decades in structures (including playgrounds). Since December 31, 2003, CCA-treated wood is no longer processed for use in playground applications. Other rot- and insect-resistant pressure treatments are available that do not contain arsenic; however, when using any of the new treated wood products, be sure to use hardware that is compatible with the wood treatment chemicals. These chemicals are known to corrode certain materials faster than others.

Existing playgrounds with CCA-treated wood

Various groups have made suggestions concerning the application of surface coatings to CCA-treated wood (e.g., stains and sealants) to reduce a child's potential exposure to arsenic from the wood surface. Data from CPSC staff and EPA studies suggest that regular (at least once a year) use of an oil- or water-based, penetrating sealant or stain can reduce arsenic migration from CCA-treated wood. Installers, builders, and consumers who perform woodworking operations, such as sanding, sawing, or sawdust disposal, on pressure-treated wood should read the consumer information sheet available at the point of sale. This sheet contains important health precautions and disposal information.

² Ammoniacal copper quat (ACQ), copper boron azole (CBA), copper azole type B (CA-B), etc.

³ CPSC Staff Recommendations for Identifying and Controlling Lead Paint on Public Playground Equipment; U.S. Consumer Product Safety Commission: Washington, DC, October 1996.

When selecting wood products and finishes for public playgrounds, CPSC staff recommends:

- Avoid “film-forming” or non-penetrating stains (latex semi-transparent, latex opaque and oil-based opaque stains) on outdoor surfaces because peeling and flaking may occur later, which will ultimately have an impact on durability as well as exposure to the preservatives in the wood.
- Creosote, pentachlorophenol, and tributyl tin oxide are too toxic or irritating and should not be used as preservatives for playground equipment wood.
- Pesticide-containing finishes should not be used.
- CCA-treated wood should not be used as playground mulch.

2.6 Assembly and Installation

- Strictly follow *all* instructions from the manufacturer when assembling and installing equipment.
- After assembly and before its first use, equipment should be thoroughly inspected by a person qualified to inspect playgrounds for safety.
- The manufacturer’s assembly and installation instructions, and all other materials collected concerning the equipment, should be kept in a permanent file.
- Secure anchoring is a key factor to stable installation, and the anchoring process should be completed in *strict* accordance with the manufacturer’s specifications.

3. PLAYGROUND HAZARDS

This section provides a broad overview of general hazards that should be avoided on playgrounds. It is intended to raise awareness of the risks posed by each of these hazards. Many of these hazards have technical specifications and tests for compliance with ASTM F1487 and F2373. Some of these tests are also detailed in Appendix B.

3.1 Crush and Shearing Points

Anything that could crush or shear limbs should not be accessible to children on a playground. Crush and shear points can be caused by parts moving relative to each other or to a fixed part during a normal use cycle, such as a seesaw.

To determine if there is a possible crush or shear point, consider:

- The likelihood a child could get a body part inside the point, and
- The closing force around the point.

Potential crush/shear hazards specific to certain pieces of equipment are identified in §5.3 Major Types of Playground Equipment.

3.2 Entanglement and Impalement

Projections on playground equipment should not be able to entangle children's clothing nor should they be large enough to impale. To avoid this risk:

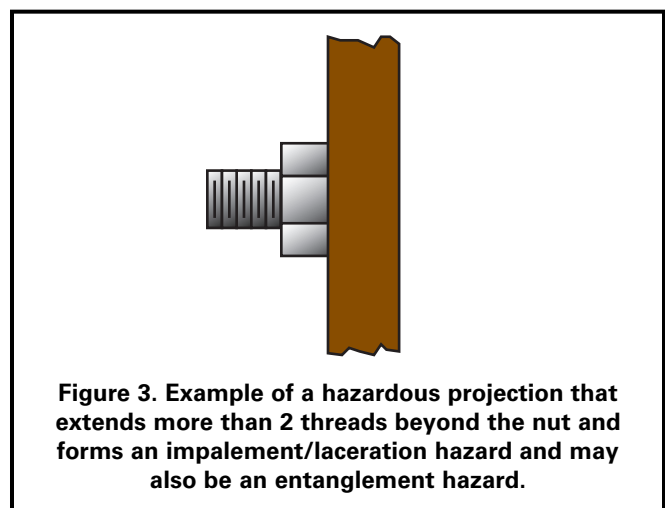
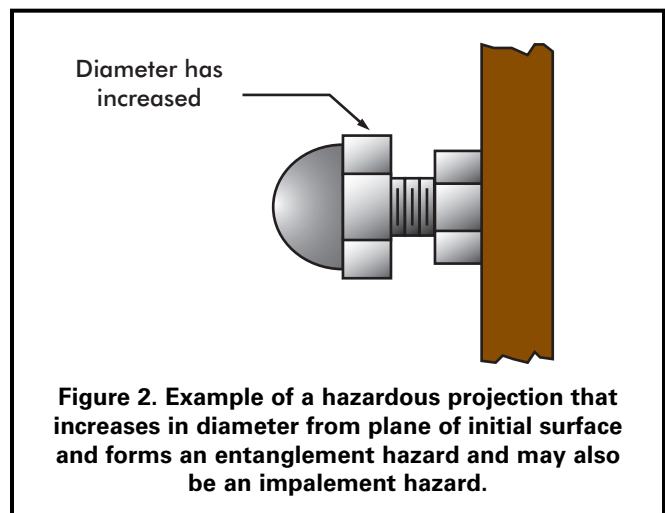
- The diameter of a projection should not increase in the direction away from the surrounding surface toward the exposed end (see Figure 2).
- Bolts should not expose more than two threads beyond the end of the nut (see Figure 3).
- All hooks, such as S-hooks and C-hooks, should be closed (see also §5.3.8.1). A hook is considered closed if there is no gap or space greater than 0.04 inches, about the thickness of a dime.
 - Any connecting device containing an in-fill that completely fills the interior space preventing entry of clothing items into the interior of the device is exempt from this requirement.

- Swings and slides have additional recommendations for projections detailed in §5.3.
- See Appendix B for testing recommendations.

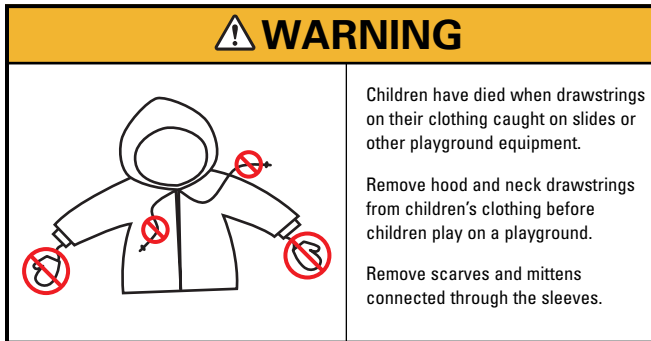
3.2.1 Strings and ropes

Drawstrings on the hoods of jackets, sweatshirts, and other upper body clothing can become entangled in playground equipment, and can cause death by strangulation. To avoid this risk:

- Children should not wear jewelry, jackets or sweatshirts with drawstring hoods, mittens connected by strings through the arms, or other upper body clothing with drawstrings.
- Remove any ropes, dog leashes, or similar objects that have been attached to playground equipment. Children can become entangled in them and strangle to death.



- Avoid equipment with ropes that are not secured at both ends.
- The following label, or a similar sign or label, can be placed on or near slides or other equipment where potential entanglements may occur.



3.3 Entrapment

3.3.1 Head entrapment

Head entrapment is a serious concern on playgrounds, since it could lead to strangulation and death. A child's head may become entrapped if the child enters an opening either feet first or head first. Head entrapment by head-first entry generally occurs when children place their heads through an

opening in one orientation, turn their heads to a different orientation, then are unable to get themselves out. Head entrapment by feet first entry involves children who generally sit or lie down and slide their feet into an opening that is large enough to permit their bodies to go through but is not large enough to permit their heads to go through. A part or a group of parts should not form openings that could trap a child's head. Also, children should not wear their bicycle helmets while on playground equipment. There have been recent head entrapment incidents in which children wearing their bicycle helmets became entrapped in spaces that would not normally be considered a head entrapment.

Certain openings could present an entrapment hazard if the distance between any interior opposing surfaces is greater than 3.5 inches and less than 9 inches. These spaces should be tested as recommended in Appendix B. When one dimension of an opening is within this range, all dimensions of the opening should be considered together to evaluate the possibility of entrapment. Even openings that are low enough for children's feet to touch the ground can present a risk of strangulation for an entrapped child. (See Figure 4). Younger children may not have the necessary intellectual ability or motor skills to reverse the process that caused their heads to become trapped, especially if they become scared or panicked.

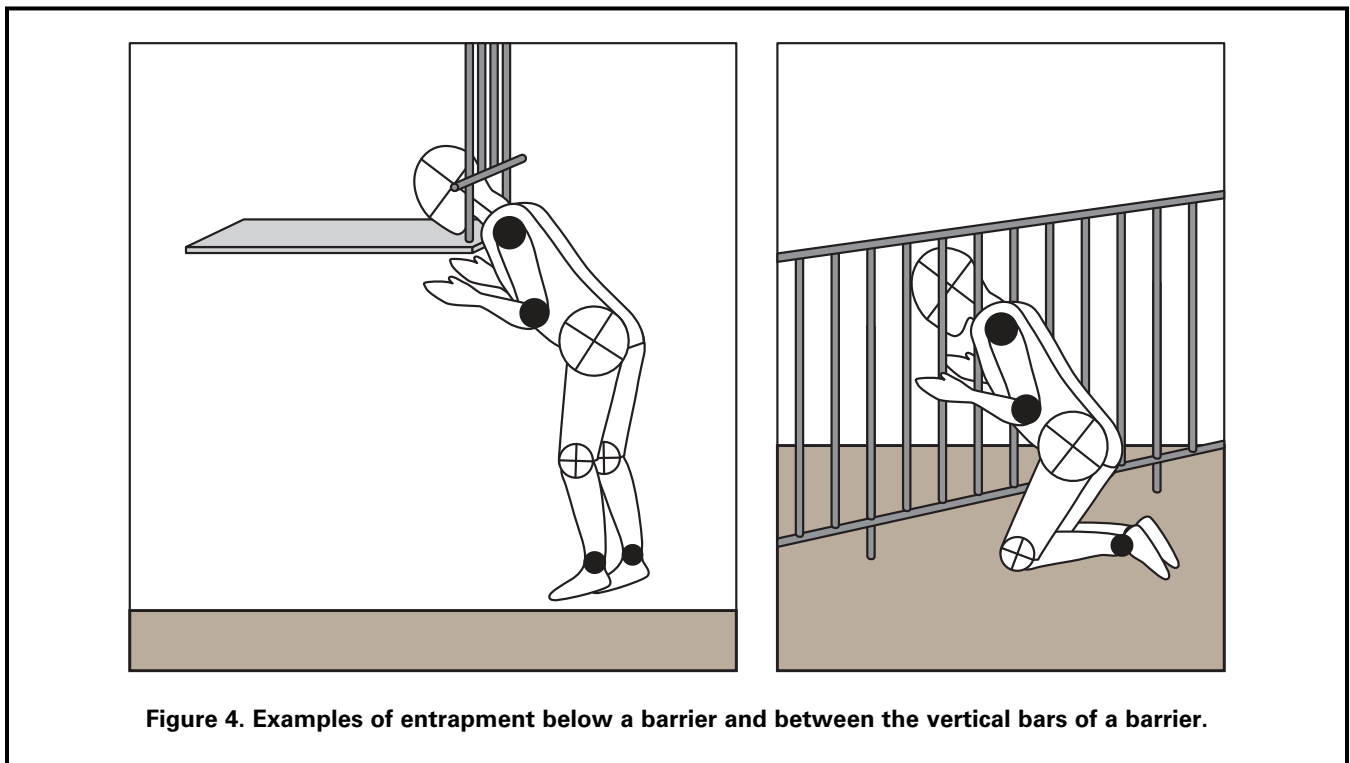


Figure 4. Examples of entrapment below a barrier and between the vertical bars of a barrier.

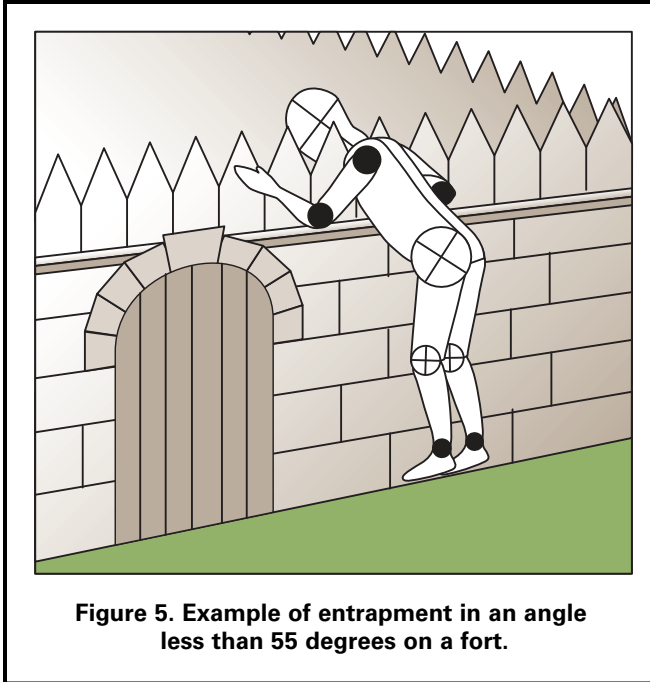


Figure 5. Example of entrapment in an angle less than 55 degrees on a fort.

3.3.2 Partially bound openings and angles

Children can become entrapped by partially bound openings, such as those formed by two or more playground parts.

- Angles formed by two accessible adjacent parts should be greater than 55 degrees unless the lowest leg is horizontal or below horizontal.
- Use the partially-bound opening test in Appendix B to identify hazardous angles and other partially-bound openings.

3.4 Sharp Points, Corners, and Edges

Sharp points, corners, or edges on any part of the playground or playground equipment may cut or puncture a child's skin. Sharp edges can cause serious lacerations if protective measures are not taken. To avoid the risk of injury from sharp points, corners and edges:

- Exposed open ends of all tubing not resting on the ground or otherwise covered should be covered by caps or plugs that cannot be removed without the use of tools.
- Wood parts should be smooth and free from splinters.
- All corners, metal and wood, should be rounded.
- All metal edges should be rolled or have rounded capping.

- There should be no sharp edges on slides. Pay special attention to metal edges of slides along the sides and at the exit (see also §5.3.6.4).
- If steel-belted radials are used as playground equipment, they should be closely examined regularly to ensure that there are no exposed steel belts/wires.
- Conduct frequent inspections to help prevent injuries caused by splintered wood, sharp points, corners, or edges that may develop as a result of wear and tear on the equipment.

3.5 Suspended Hazards

Children using a playground may be injured if they run into or trip over suspended components (such as cables, wires, ropes, or other flexible parts) connected from one piece of the playground equipment to another or hanging to the ground. These suspended components can become hazards when they are within 45 degrees of horizontal and are less than 7 feet above the protective surfacing. To avoid a suspended hazard, suspended components:

- Should be located away from high traffic areas.
- Should either be brightly colored or contrast with the surrounding equipment and surfacing.
- Should not be able to be looped back on themselves or other ropes, cables, or chains to create a circle with a 5 inch or greater perimeter.
- Should be fastened at both ends unless they are 7 inches or less long or attached to a swing seat.

These recommendations do not apply to swings, climbing nets, or if the suspended component is more than 7 feet above the protective surfacing and is a minimum of one inch at its widest cross-section dimension.

3.6 Tripping Hazards

Play areas should be free of tripping hazards (i.e., sudden change in elevations) to children who are using a playground. Two common causes of tripping are anchoring devices for playground equipment and containment walls for loose-fill surfacing materials.

- All anchoring devices for playground equipment, such as concrete footings or horizontal bars at the bottom of flexible climbers, should be installed below ground level

and beneath the base of the protective surfacing material. This will also prevent children from sustaining additional injuries from impact if they fall on exposed footings.

- Contrasting the color of the surfacing with the equipment color can contribute to better visibility.
- Surfacing containment walls should be highly visible.
- Any change of elevation should be obvious.
- Contrasting the color of the containment barrier with the surfacing color can contribute to better visibility.
- Steel-belted radials should be closely examined regularly to ensure that there are no exposed steel belts/wires.
- Care should be taken so that the tire does not collect water and debris; for example, providing drainage holes on the underside of the tire would reduce water collection.
- Recycled tire rubber mulch products should be inspected before installation to ensure that all metal has been removed.

In some situations, plastic materials can be used as an alternative to simulate actual automobile tires.

3.7 Used Tires

Used automobile and truck tires are often recycled as playground equipment, such as tire swings or flexible climbers, or as a safety product such as cushioning under a seesaw or shredded as protective surfacing. When recycling tires for playground use:

4. MAINTAINING A PLAYGROUND

Inadequate maintenance of equipment has resulted in injuries on playgrounds. Because the safety of playground equipment and its suitability for use depend on good inspection and maintenance, the manufacturer’s maintenance instructions and recommended inspection schedules should be strictly followed. If manufacturer’s recommendations are not available, a maintenance schedule should be developed based on actual or anticipated playground use. Frequently used playgrounds will require more frequent inspections and maintenance.

4.1 Maintenance Inspections

A comprehensive maintenance program should be developed for each playground. All playground areas and equipment should be inspected for excessive wear, deterioration, and any potential hazards, such as those shown in Table 3. One possible procedure is the use of checklists. Some manufacturers supply checklists for general or detailed inspections with their maintenance instructions. These can be used to ensure that inspections are in compliance with the manufacturer’s specifications. If manufacturer-provided inspection guidelines are not available, a general checklist that may be used as a guide for frequent routine inspections of public playgrounds is included at Appendix A. This is intended to address only general maintenance concerns. Detailed inspections should give special attention to moving parts and other parts that can be expected to wear. Maintenance inspections should be carried out in a systematic manner by personnel familiar with the playground, such as maintenance workers, playground supervisors, etc.

4.2 Repairs

Inspections alone do not constitute a comprehensive maintenance program. Any problems found during the inspection should be noted and fixed as soon as possible.

- All repairs and replacements of equipment parts should be completed following the manufacturer’s instructions.
- User modifications, such as loose-ended ropes tied to elevated parts, should be removed immediately.
- For each piece of equipment, the frequency of thorough

Table 3. Routine inspection and maintenance issues

- | | |
|--------------------------|--|
| <input type="checkbox"/> | Broken equipment such as loose bolts, missing end caps, cracks, etc. |
| <input type="checkbox"/> | Broken glass & other trash |
| <input type="checkbox"/> | Cracks in plastics |
| <input type="checkbox"/> | Loose anchoring |
| <input type="checkbox"/> | Hazardous or dangerous debris |
| <input type="checkbox"/> | Insect damage |
| <input type="checkbox"/> | Problems with surfacing |
| <input type="checkbox"/> | Displaced loose-fill surfacing (see Section 4.3) |
| <input type="checkbox"/> | Holes, flakes, and/or buckling of unitary surfacing |
| <input type="checkbox"/> | User modifications (such as ropes tied to parts or equipment rearranged) |
| <input type="checkbox"/> | Vandalism |
| <input type="checkbox"/> | Worn, loose, damaged, or missing parts |
| <input type="checkbox"/> | Wood splitting |
| <input type="checkbox"/> | Rusted or corroded metals |
| <input type="checkbox"/> | Rot |

inspections will depend on the type and age of equipment, the amount of use, and the local climate.

- Consult the manufacturer for maintenance schedules for each piece of equipment. Based on these schedules, a maintenance schedule for the entire playground can be created. This routine maintenance schedule should not replace regular inspections.

4.3 Maintaining Loose-Fill Surfacing

Loose-fill surfacing materials require special maintenance. High-use public playgrounds, such as child care centers and schools, should be checked frequently to ensure surfacing has not displaced significantly, particularly in areas of the playground most subject to displacement (e.g., under swings and slide exits). This can be facilitated by marking ideal surfacing depths on equipment posts. Displaced loose-fill

surfacing should be raked back into proper place so that a constant depth is maintained throughout the playground. Impact attenuating mats placed in high traffic areas, such as under swings and at slide exits, can significantly reduce displacement. They should be installed below or level with surfacing so as not to be a tripping hazard.

The following are key points to look for during regular checks of surfacing:

- Areas under swings and at slide exits. Activity in these areas tends to displace surfacing quickly. Rake loose-fill back into place.
- Pooling water on mulch surfacing. For example, wet mulch compacts faster than dry, fluffy mulch. If puddles are noticed regularly, consider addressing larger drainage issues.
- Frozen surfacing. Most loose-fill surfacing that freezes

solid no longer functions as protective surfacing. Even if the first few inches may be loose, the base layer may be frozen and the impact attenuation of the surfacing may be significantly reduced. It is recommended that children not play on the equipment under these conditions.

4.4 Recordkeeping

Records of all maintenance inspections and repairs should be retained, including the manufacturer's maintenance instructions and any checklists used. When any inspection is performed, the person performing it should sign and date the form used. A record of any accident and injury reported to have occurred on the playground should also be retained. This will help identify potential hazards or dangerous design features that should be corrected.

5. PARTS OF THE PLAYGROUND

5.1 Platforms, Guardrails and Protective Barriers

5.1.1 Platforms

- Platforms should be generally flat (i.e., within $\pm 2^\circ$ of horizontal).
- Openings in platforms should be provided to allow for drainage.
- Platforms should minimize the collection of debris.
- Platforms intended for toddlers should be no more than 32 inches from the ground.

5.1.2 Stepped platforms

On some composite structures, platforms are layered or tiered so that a child may access the higher platform without steps or ladders. Unless there is an alternate means of access/egress, the maximum difference in height between stepped platforms should be:

- Toddlers: 7 inches.
- Preschool-age: 12 inches.
- School-age: 18 inches.

An access component (such as a rung) is needed if the difference in height is more than 12 inches for preschool-age and 18 inches for school-age children.

The space between the stepped platforms should follow the recommendations to minimize entrapment hazards in enclosed openings:

- Toddlers: if the space is less than 7 inches, infill should be used to reduce the space to less than 3.0 inches.
- Preschool-age: if the space exceeds 9 inches and the height of the lower platform above the protective surfacing exceeds 30 inches, infill should be used to reduce the space to less than 3.5 inches.
- School-age: if the space exceeds 9 inches and the height of the lower platform above the protective surfacing exceeds 48 inches, infill should be used to reduce the space to less than 3.5 inches.

5.1.2.1 Fall height

- The fall height of a platform is the distance between the top of the platform and the protective surfacing beneath it.

5.1.3 Guardrails and protective barriers

Guardrails and protective barriers are used to minimize the likelihood of accidental falls from elevated platforms. Protective barriers provide greater protection than guardrails and should be designed to discourage children from climbing over or through the barrier. Guardrails and barriers should:

- Completely surround any elevated platform.
- Except for entrance and exit openings, the maximum clearance opening without a top horizontal guardrail should be 15 inches.
- Prevent unintentional falls from the platform.
- Prevent the possibility of entrapment.
- Facilitate supervision.

For example:

- Guardrails may have a horizontal top rail with infill consisting of vertical bars having openings that are greater than 9 inches. These openings do not present an entrapment hazard but do not prevent a child from climbing through the openings.
- A barrier should minimize the likelihood of passage of a child during deliberate attempts to defeat the barrier. Any openings between uprights or between the platform surface and lower edge of a protective barrier should prevent passage of the small torso template (see test in B.2.5).

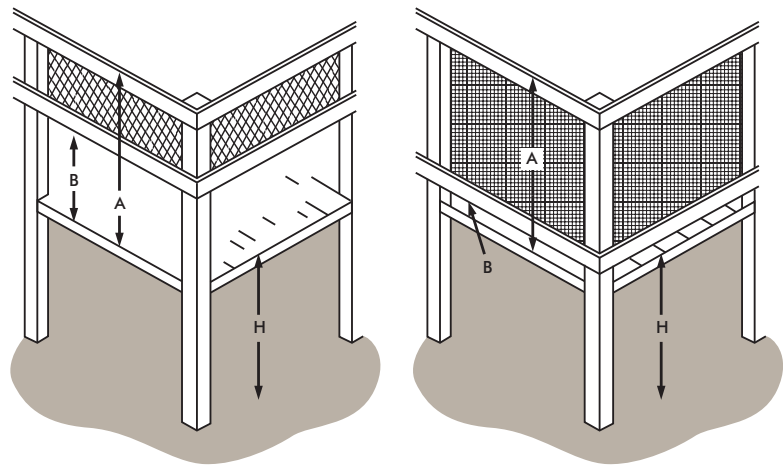
Guardrails or protective barriers should be provided on elevated platforms, walkways, landings, stairways, and transitional surfaces. In general, the younger the child, the less coordination and balance they have, therefore the more vulnerable they are to unintentional falls. Toddlers are the most vulnerable, and equipment intended for this age should use barriers on all elevated walking surfaces above 18 inches. Physical skills develop further in preschool-age children and then more with school-age children; therefore, minimum elevation recommendations for guardrails and barriers increase with each age group.

Guardrails and barriers should be high enough to prevent the tallest children from falling over the top. For guardrails, the lower edge should be low enough so that the smallest children cannot walk under it. Barriers should be low enough to prevent the smallest child from getting under the barrier in any way. This is generally done by designing the barrier so that the small torso probe (see test methods in Appendix B) cannot pass under or through the barrier. Vertical infill for protective barriers may be preferable for younger children because the vertical components can be grasped at whatever height a child chooses as a handhold.

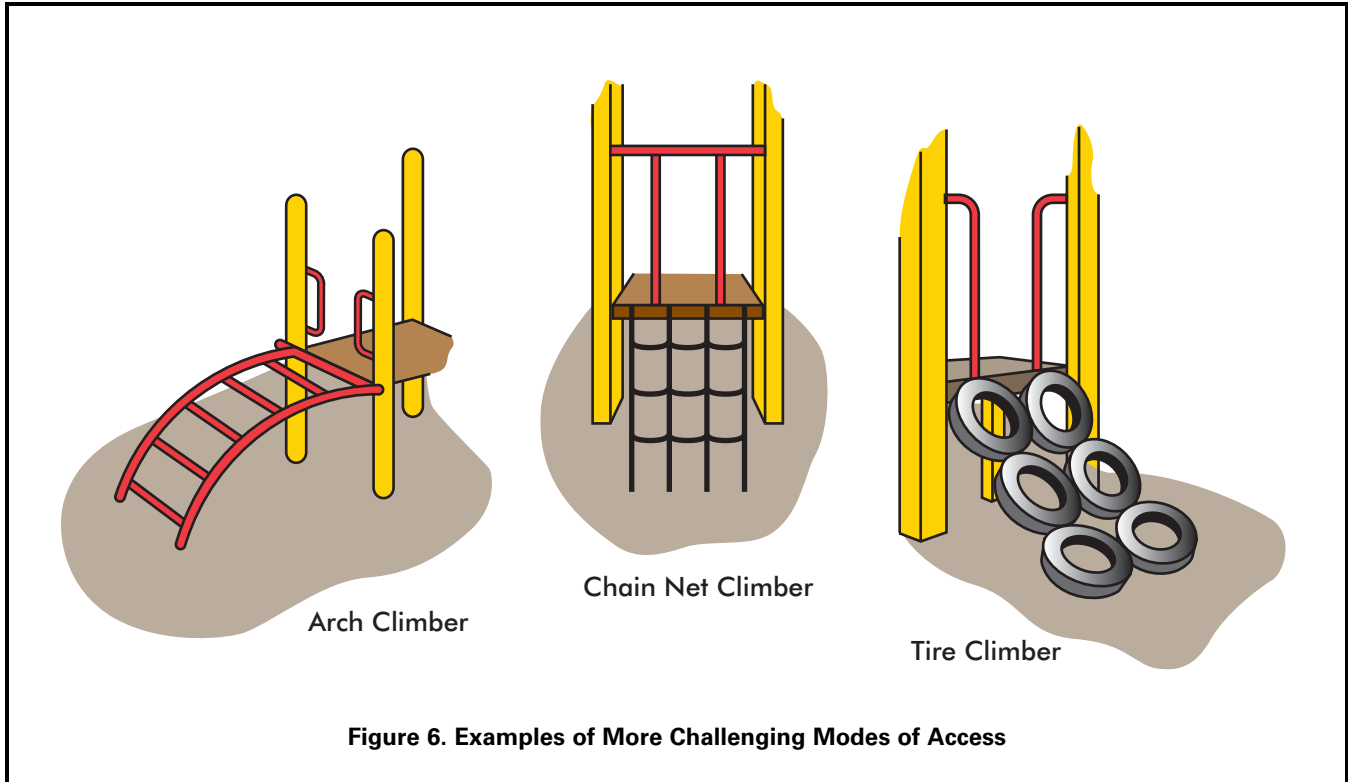
Guardrail and barrier recommendations are shown in Table 4. However, the recommendations do not apply if the guardrail or barrier would interfere with the intended use of the equipment, such as:

- Climbing equipment
- Platforms layered so that the fall height is:
 - Toddlers: 7 inches or less.
 - Preschool-age: 20 inches or less.
 - School-age: 30 inches or less.

Table 4. Guardrails and Barriers



	Guardrail	Barrier
Protects against accidental falls from platform	Yes	Yes
Discourages climbing over	No	Yes
Protects against climbing through	No	Yes
Toddlers		
A Top edge distance from platform	Not recommended	A = 24" or higher
B Bottom edge distance from platform	Not recommended	B < 3"
H Recommended when platform fall height is:	Not recommended	H = 18" or higher
Preschool-age		
A Top edge distance from platform	A = 29" or higher	A = 29" or higher
B Bottom edge distance from platform	9" < B ≤ 23"	B < 3.5"
H Recommended when platform fall height is:	20" < H ≤ 30"	H > 30"
School-age		
A Top edge distance from platform	A = 38" or higher	A = 38" or higher
B Bottom edge distance from platform	9" < B ≤ 28"	B < 3.5"
H Recommended when platform fall height is:	30" < H ≤ 48"	H > 48"



5.2 Access Methods to Play Equipment

Access to playground equipment can take many forms, such as conventional ramps, stairways with steps, and ladders with steps or rungs. Access may also be by means of climbing components, such as arch climbers, climbing nets, and tire climbers (see Figure 6).

As children develop, they gain better balance and coordination, so it is important to pick appropriate access methods based on the age group. Table 5 shows the most common methods of access and the youngest appropriate age group.

Access to platforms over 6 feet high (except for free-standing slides) should provide an intermediate standing surface so that the child can pause and make a decision to keep going up or find another way down. Children generally master access before egress, that is, they can go up before they can get back down a difficult component. Therefore, if there are more difficult access methods, it is important to have easier components for egress.

Table 5. Methods of access and egress

Method of Access	Challenge Level	Appropriate for
Ramps	Easiest	Toddlers +
Straight stairways	Easy	Toddlers +
Spiral stairways	Moderate	Toddlers* +
Step ladders	Moderate	15 months* +
Rung ladders	Moderate	Preschool* +
Arch climbers	Difficult	Preschool* +
Flexible climbers (nets, tires)	Difficult	Preschool* +
* only if an easy egress method is also provided		

5.2.1 Ramps, stairways, rung ladders, and step ladders

Ramps, stairways, rung ladders, and step ladders each have different recommendations for slope and tread dimension, but the steps or rungs always should be evenly spaced - even the spacing between the top step or rung and the surface of the platform. Table 6 contains recommended dimensions for: access slope; tread or rung width; tread depth; rung diameter; and vertical rise for rung ladders, step ladders, and stairways. Table 6 also contains slope and width recommendations for ramps. However, these recommendations are not intended to address ramps designed for access by wheelchairs.

- Openings between steps or rungs and between the top step or rung and underside of a platform should prevent entrapment.

- When risers are closed, treads on stairways and ladders should prevent the accumulation of sand, water, or other materials on or between steps.
- Climbing equipment should allow children to descend as easily as they ascend. One way of implementing this recommendation is to provide an easier, alternate means of descent, such as another mode of egress, a platform, or another piece of equipment. For example, a stairway can be added to provide a less challenging mode of descent than a vertical rung ladder or flexible climbing device (see Table 5).
- For toddlers and preschool-age children, offering an easy way out is particularly important since their ability to descend climbing components develops later than their ability to climb up the same components.

Table 6. Recommended dimensions for access ladders, stairs, and ramps*

AGE OF INTENDED USER			
Type of Access	Toddler	Preschool-age	School-age
<i>Ramps (not intended to meet ADA/ABA specifications)</i>			
Slope (vertical:horizontal)	< 1:8	≤ 1:8	≤ 1:8
Width (single)	≥ 19"	≥ 12"	≥ 16"
Width (double)	≥ 30"	≥ 30"	≥ 36"
<i>Stairways</i>			
Slope	≤ 35°	< 50°	< 50°
Tread width (single)	12-21"	≥ 12"	≥ 16"
Tread width (double)	≥ 30"	≥ 30"	≥ 36"
Tread depth (open riser)	Not appropriate	≥ 7"	≥ 8"
Tread depth (closed riser)	≥ 8"	≥ 7"	≥ 8"
Vertical rise	≤ 7"	≤ 9"	≤ 12"
<i>Step ladders</i>			
Slope	35≤65°	50-75°	50-75°
Tread width (single)	12-21"	12-21"	≥ 16"
Tread width (double)	Not appropriate	Not appropriate	≥ 36"
Tread depth (open riser)	Not appropriate	≥ 7"	≥ 3"
Tread depth (closed riser)	8"	≥ 7"	≥ 6"
Vertical rise	> 5" and ≤ 7"	≤ 9"	≤ 12"
<i>Rung ladders</i>			
Slope	Not appropriate	75-90°	75-90°
Rung width	Not appropriate	≥ 12"	≥ 16"
Vertical rise	Not appropriate	≤ 12"	≤ 12"
Rung diameter	Not appropriate	0.95-1.55"	0.95-1.55"
* entrapment recommendations apply to all openings in access components			

5.2.2 Rungs and other hand gripping components

Unlike steps of stairways and step ladders that are primarily for foot support, rungs can be used for both foot and hand support.

- Rungs with round shapes are easiest for children to grip.
- All hand grips should be secured in a manner that prevents them from turning.
- Toddlers:
 - Handrails or other means of hand support should have a diameter or maximum cross-section between 0.60 and 1.20 inches.
 - A diameter or maximum cross-section of 0.90 inches is preferred to achieve maximal grip strength and benefit the weakest children.
- Preschool- and school-age:
 - Rungs, handrails, climbing bars, or other means of hand support intended for holding should have a diameter or maximum cross-section between 0.95 and 1.55 inches.
 - A diameter or maximum cross-section of 1.25 inches is preferred to achieve maximal grip strength and benefit the weakest children.

5.2.3 Handrails

Handrails on stairways and step ladders are intended to provide hand support and to steady the user. Continuous handrails extending over the full length of the access should be provided on both sides of all stairways and step ladders, regardless of the height of the access. Rung ladders do not require handrails since rungs or side supports provide hand support on these more steeply inclined accesses.

5.2.3.1 Handrail height

Handrails should be available for use at the appropriate height, beginning with the first step. The vertical distance between the top front edge of a step or ramp surface and the top surface of the handrail above it should be as follows:

- Toddlers: between 15 and 20 inches.
- Preschool-age: between 22 and 26 inches.
- School-age: between 22 and 38 inches.

5.2.4 Transition from access to platform

Handrails or handholds are recommended at all transition points (the point where the child must move from the access component to the play structure platform).

- The handhold should provide support from the access component until the child has fully achieved the desired posture on the platform.
- Any opening between a handrail and an adjacent vertical structure (e.g., vertical support post for a platform or vertical slat of a protective barrier) should not pose an entrapment hazard.
- Access methods that do not have handrails, such as rung ladders, flexible climbers, arch climbers, and tire climbers, should provide hand supports for the transition between the top of the access and the platform.

5.3 Major Types of Playground Equipment

5.3.1 Balance beams

- Balance beams should be no higher than:
 - Toddlers: not recommended.
 - Preschool-age: 12 inches.
 - School-age: 16 inches.

5.3.1.1 Fall height

The fall height of a balance beam is the distance between the top of the walking surface and the protective surfacing beneath it.

5.3.2 Climbing and upper body equipment

Climbing equipment is generally designed to present a greater degree of physical challenge than other equipment on public playgrounds. This type of equipment requires the use of the hands to navigate up or across the equipment. “Climbers” refers to a wide variety of equipment, such as but not limited to:

- Arch climbers
- Dome climbers
- Flexible climbers (usually chain or net)
- Parallel bars
- Sliding poles



Simple Arch Climber



Geodesic Dome Climber



Overhead Horizontal Ladder



Overhead Loop Ladder

Figure 7. Examples of climbers

- Spiral climbers
- Upper body equipment (horizontal overhead ladders, overhead rings, track ride).

School-age children tend to use climbing and upper body equipment more frequently and more proficiently than preschool children. Young preschool children may have difficulty using some climbers because they have not yet developed some of the physical skills necessary for certain climbing activities (balance, coordination, and upper body strength). Older preschool children (i.e., 4- and 5-year-olds) are beginning to use flexible climbers, arch climbers, and upper body devices.

5.3.2.1 Design considerations

5.3.2.1.1 Layout of climbing components

When climbing components are part of a composite structure, their level of challenge and method of use should be compatible with the traffic flow from nearby components. Upper body devices should be placed so that the swinging movement generated by children on this equipment cannot interfere with the movement of children on adjacent structures, particularly children descending on slides. The design of adjacent play structures should not facilitate climbing to the top support bars of upper body equipment.

5.3.2.1.2 Fall Height

Climbers:

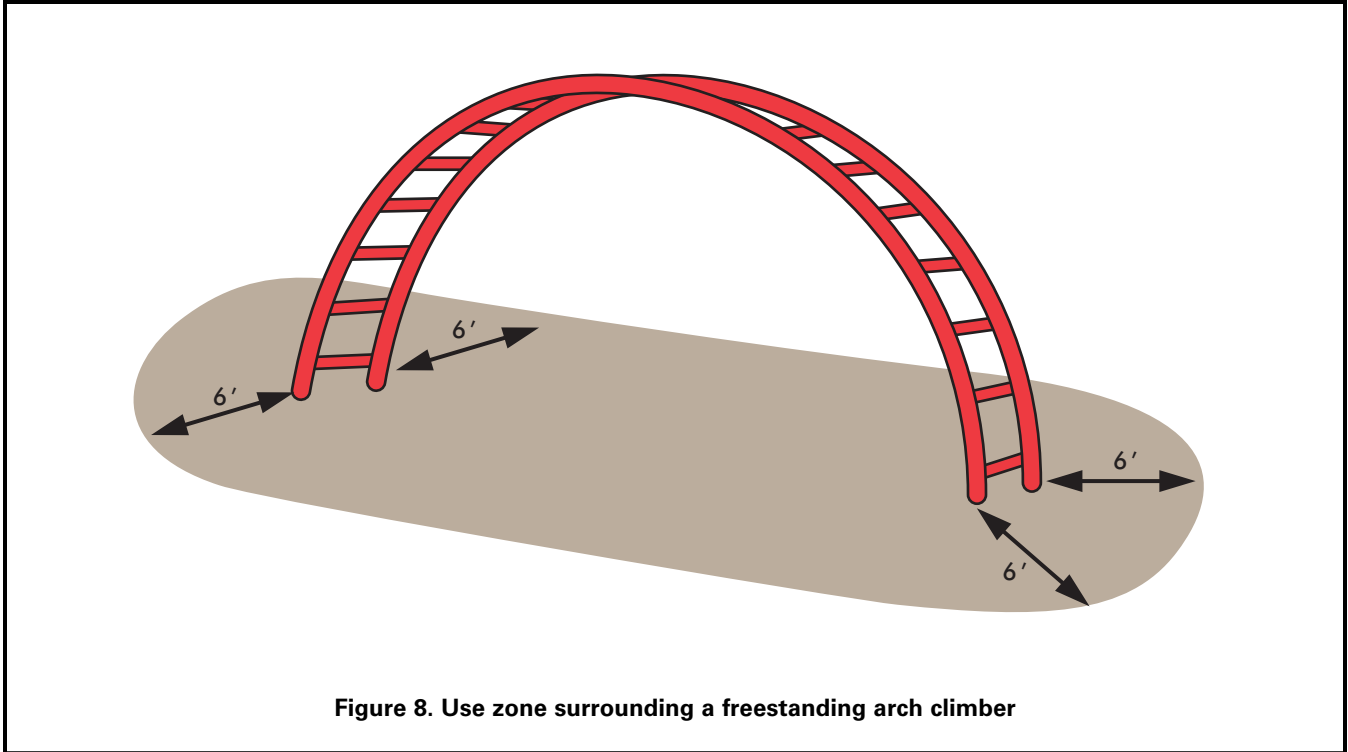
- Unless otherwise specified in this section, the fall height for climbers is the distance between the highest part of the climbing component and the protective surfacing beneath it.
- If the climber is part of a composite structure, the fall height is the distance between the highest part of the climber intended for foot support and the protective surfacing beneath it.
 - Toddlers: The maximum fall height for free standing and composite climbing structures should be 32 inches.

Upper Body Equipment:

- The fall height of upper body equipment is the distance between the highest part of the equipment and the protective surface below.

5.3.2.1.3 Climbing rungs

Some of the access methods discussed in §5.2 are also considered climbing devices; therefore, the recommendations for the size of climbing rungs are similar.



- Rungs should be generally round.
- All rungs should be secured in a manner that prevents them from turning.
- Climbing rungs should follow the same diameter recommendations as in §5.2.2.

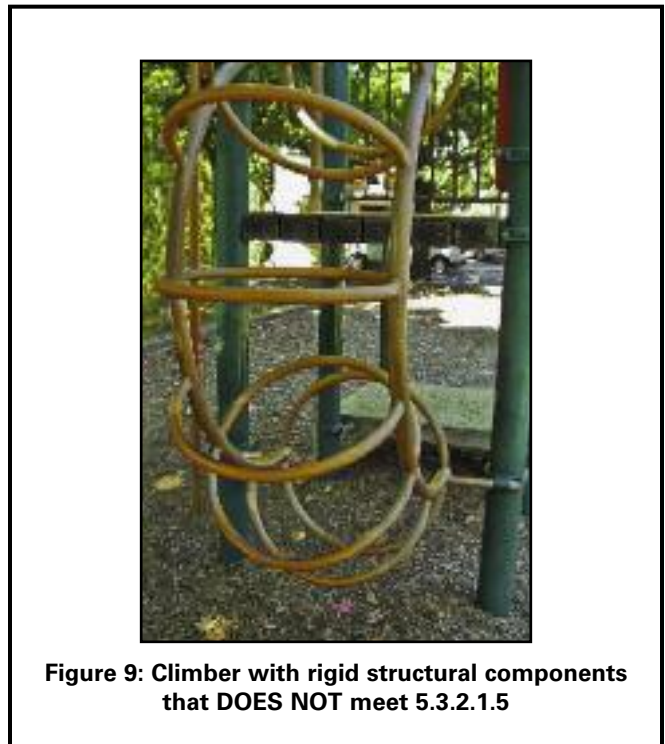
5.3.2.1.4 Use zone

- The use zone should extend a minimum of 6 feet in all directions from the perimeter of the stand alone climber. See Figure 8.
- The use zone of a climber may overlap with neighboring equipment if the other piece of equipment allows overlapping use zones and
 - There is at least 6 feet between equipment when adjacent designated play surfaces are no more than 30 inches high; or
 - There is at least 9 feet between equipment when adjacent designated play surfaces are more than 30 inches high.

5.3.2.1.5 Other considerations

- Climbers should not have climbing bars or other rigid structural components in the interior of the climber onto

which a child may fall from a height of greater than 18 inches. See Figure 9 for an example of a climber that **DOES NOT** follow this consideration.



5.3.2.2 Arch climbers

Arch climbers consist of rungs attached to convex side supports. They may be free standing (Figure 10) or be provided as a more challenging means of access to other equipment (Figure 11).

- Arch climbers should not be used as the sole means of access to other equipment for preschoolers.
- Free standing arch climbers are not recommended for toddlers or preschool-age children.
- The rung diameter and spacing of rungs on arch climbers should follow the recommendations for rung ladders in Table 6.

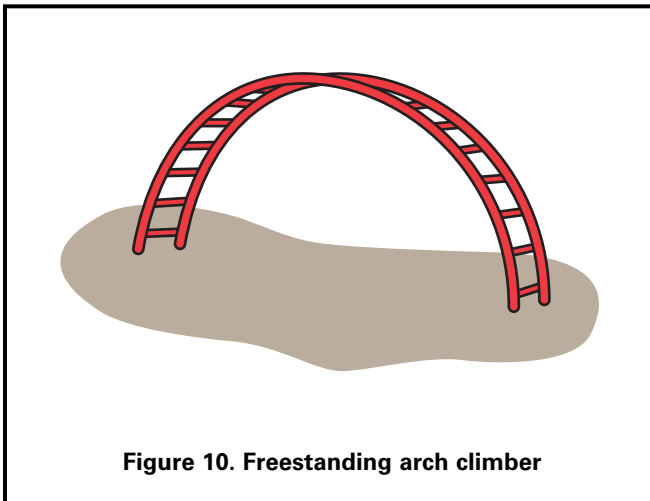


Figure 10. Freestanding arch climber

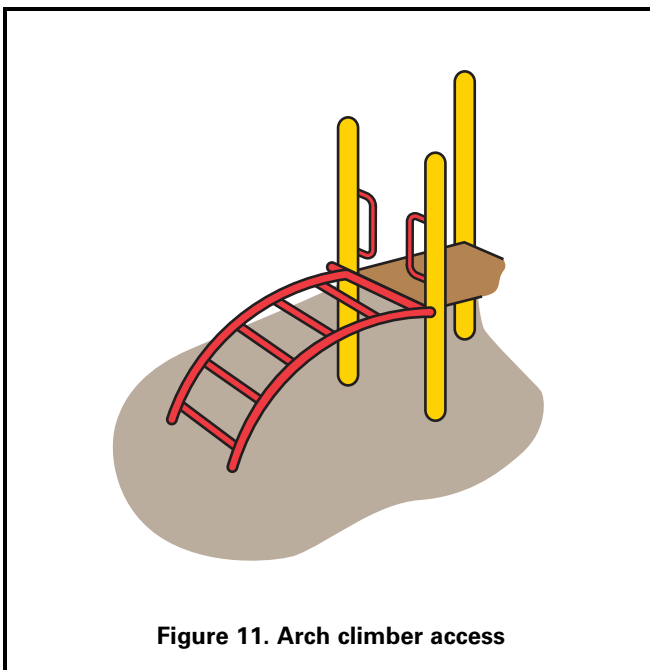


Figure 11. Arch climber access

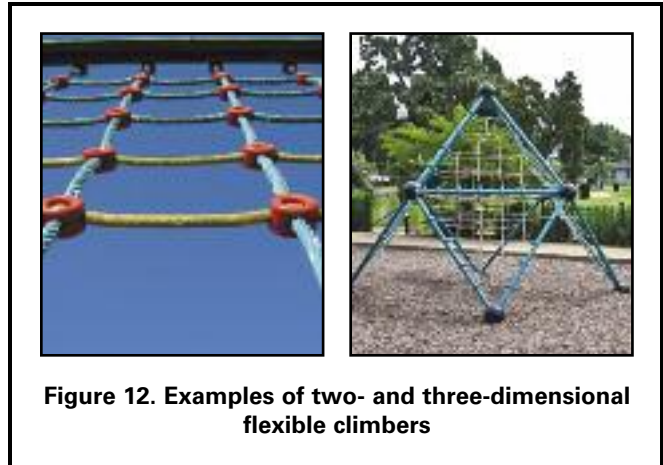


Figure 12. Examples of two- and three-dimensional flexible climbers

5.3.2.3 Flexible climbers

Flexible climbers use a grid of ropes, chains, cables, or tires for climbing. Since the flexible parts do not provide a steady means of support, flexible climbers require more advanced balance abilities than rigid climbers.

Rope, chain, and cable generally form a net-like structure that may be either two or three dimensional. See Figure 12. Tire climbers may have the tires secured tread-to-tread to form a sloping grid, or the tires may be suspended individually by chains or other means.

- Flexible climbers that provide access to platforms should be securely anchored at both ends.
- When connected to the ground, the anchoring devices should be installed below ground level and beneath the base of the protective surfacing material.
- Connections between ropes, cables, chains, or between tires should be securely fixed.
- Flexible climbers are not recommended as the sole means of access to equipment intended for toddlers and preschool-age children.
- Free-standing flexible climbers are not recommended on playgrounds intended for toddlers and preschool children.
- Spacing between the horizontal and vertical components of a climbing grid should not form entrapment hazards.
- The perimeter of any opening in a net structure should be less than 17 inches or greater than 28 inches (see Figure 13).

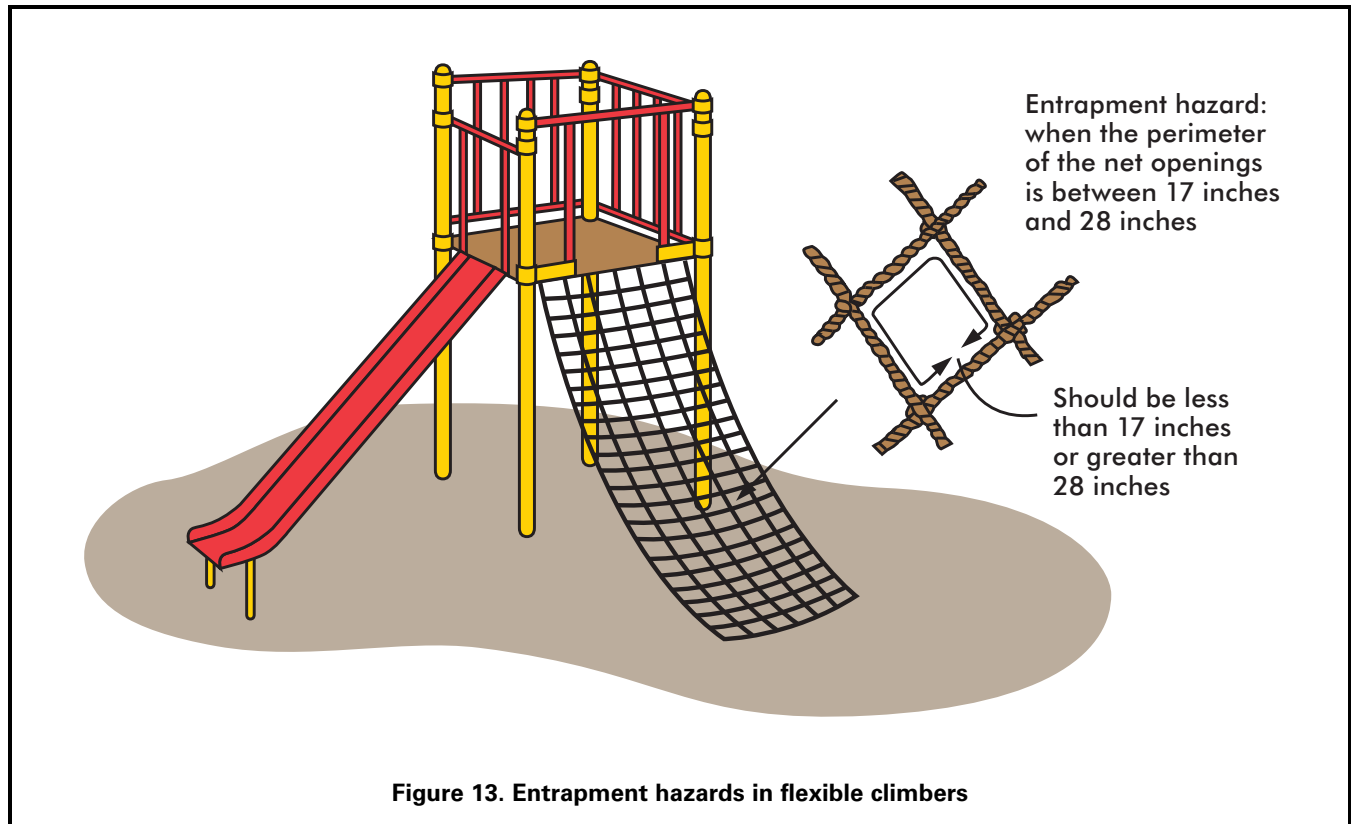


Figure 13. Entrapment hazards in flexible climbers

5.3.2.4 Horizontal (overhead) ladders

Horizontal (overhead) ladders are a type of climber designed to build upper body strength. They are designed to allow children to move across the ladder from end to end using only their hands.

Four-year-olds are generally the youngest children able to use upper body devices like these; therefore, horizontal ladders should not be used on playgrounds intended for toddlers and 3-year-olds. The recommendations below are designed to accommodate children ages 4 through 12 years.

- The first handhold on either end of upper body equipment should not be placed directly above the platform or climbing rung used for mount or dismount. This minimizes the risk of children impacting rigid access structures if they fall from the first handhold during mount or dismount.
- The horizontal distance out to the first handhold should be:
 - No greater than 10 inches but not directly above the platform when access is from a platform.
 - At least 8 inches but no greater than 10 inches when access is from climbing rungs.
- The space between adjacent rungs of overhead ladders should be greater than 9 inches to prevent entrapment.
- Horizontal ladders intended for preschool-age children should have rungs that are parallel to one another and evenly spaced.
- The maximum height of a horizontal ladder (i.e., measured from the center of the grasping device to the top of the protective surfacing below) should be:
 - Preschool-age (4 and 5 years): no more than 60 inches.
 - School-age: no more than 84 inches.
- The center-to-center spacing of horizontal ladder rungs should be as follows:
 - Preschool-age (4 and 5 years): no more than 12 inches.
 - School-age: no more than 15 inches.
- The maximum height of the take-off/landing platform above the protective surfacing should be:
 - Preschool-age (4 and 5 years): no more than 18 inches.
 - School-age: no more than 36 inches.

5.3.2.5 Overhead rings

Overhead rings are similar to horizontal ladders in terms of the complexity of use. Therefore, overhead rings should not be used on playgrounds intended for toddlers and 3-year-olds. The recommendations below are designed to accommodate children 4 through 12 years of age.

Overhead rings differ from horizontal ladders because, during use, the gripped ring swings through an arc and reduces the distance to the gripping surface of the next ring; therefore, the spacing distance recommendations for horizontal ladders do not apply.

- The first handhold on either end of upper body equipment should not be placed directly above the platform or climbing rung used for mount or dismount. This minimizes the risk of children hitting rigid access structures if they fall from the first handhold during mount or dismount.
- The horizontal distance out to the first handhold should be:
 - No greater than 10 inches but not directly above the platform when access is from a platform.
 - At least 8 inches but no greater than 10 inches when access is from climbing rungs.
- The maximum height of overhead rings measured from the center of the grasping device to the protective surfacing should be:
 - Preschool-age (4 and 5 years): 60 inches.
 - School-age: 84 inches.
- If overhead swinging rings are suspended by chains, the maximum length of the chains should be 7 inches.
- The maximum height of the take-off/landing platform above the protective surfacing should be:
 - Preschool-age (4 and 5 years): no more than 18 inches.
 - School-age: no more than 36 inches.

5.3.2.6 Sliding poles

Vertical sliding poles are more challenging than some other types of climbing equipment. They require upper body strength and coordination to successfully slide down the pole. Unlike other egress methods, there is no reverse or stop, so a child cannot change his or her mind. Children who start a sliding pole must have the strength to slide the whole way or they will fall.

- Sliding poles are not recommended for toddlers or preschool-age children since they generally don't have the upper body and/or hand strength to slide.

- Sliding poles should be continuous with no protruding welds or seams along the sliding surface.
- The pole should not change direction along the sliding portion.
- The horizontal distance between a sliding pole and any structure used for access to the sliding pole should be between 18 inches and 20 inches.
- The pole should extend at least 60 inches above the level of the platform or structure used for access to the sliding pole.
- The diameter of sliding poles should be no greater than 1.9 inches.
- Sliding poles and their access structures should be located so that traffic from other events will not interfere with the users during descent.
- Upper access should be on one level only.
- The upper access area through the guardrail or barrier should be 15 inches wide at most.

5.3.2.6.1 Fall height

- For sliding poles accessed from platforms, the fall height is the distance between the platform and the protective surfacing beneath it.
- For sliding poles not accessed from platforms, the fall height is the distance between a point 60 inches below the highest point of the pole and the protective surfacing beneath it.
- The top of the sliding pole's support structure should not be a designated play surface.

5.3.2.7 Track rides

Track rides are a form of upper body equipment where the child holds on to a handle or other device that slides along a track above his or her head. The child then lifts his or her feet and is carried along the length of the track. Track rides require significant upper body strength and the judgment to know when it is safe to let go. These are skills not developed until children are at least school-age; therefore, CPSC staff recommends:

- Track rides should not be used on playgrounds for toddlers and preschool-age children.
- Track rides should not have any obstacles along the path of the ride, including anything that would interfere in the take-off or landing areas.

- Two track rides next to each other should be at least 4 feet apart.
- The handle should be between 64 inches and 78 inches from the surfacing and follow the gripping recommendations in §5.2.2.
- Nothing should ever be tied or attached to any moving part of a track ride.
- Rolling parts should be enclosed to prevent crush hazards.

5.3.2.7.1 Fall height

- The fall height of track ride equipment is the distance between the maximum height of the equipment and the protective surface beneath it.
- Equipment support posts with no designated play surfaces are exempt from this requirement.

5.3.3 Log rolls

Log rolls help older children master balance skills and increase strength. Children must balance on top of the log as they spin it with their feet. See Figure 14.

- Log rolls are not recommended for toddlers and preschool-age children. These children generally do not possess the balance, coordination, and strength to use a log roll safely.
- Log rolls should have handholds to assist with balance.
- The handholds should follow the guidelines in §5.2.2.
- The highest point of the rolling log should be a maximum of 18 inches above the protective surface below.
- When not part of a composite structure, the use zone may overlap with neighboring equipment if the other piece of equipment allows overlapping use zones (see §5.3.9) and
 - There is at least 6 feet between equipment when adjacent designated play surfaces are no more than 30 inches high; or
 - There is at least 9 feet between equipment when adjacent designated play surfaces are more than 30 inches high.

5.3.3.1.1 Fall height

The fall height of a log roll is the distance between the highest portion of the rolling log and the protective surfacing beneath it.

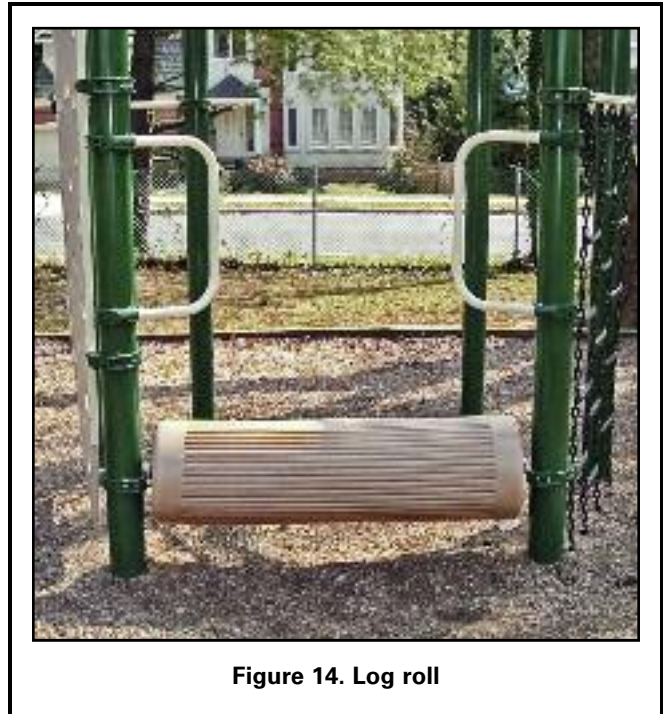


Figure 14. Log roll

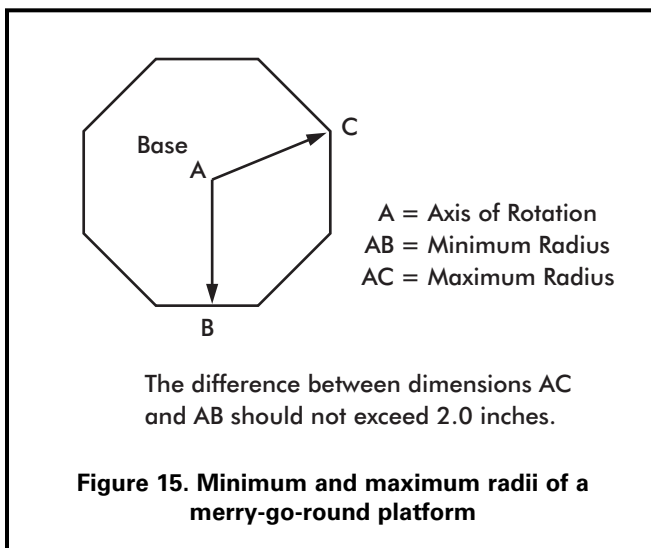
5.3.4 Merry-go-rounds

Merry-go-rounds are the most common rotating equipment found on public playgrounds. Children usually sit or stand on the platform while other children or adults push the merry-go-round to make it rotate. In addition, children often get on and off the merry-go-round while it is in motion. Merry-go-rounds may present a physical hazard to preschool-age children who have little or no control over such products once they are in motion. Therefore, children in this age group should always be supervised when using merry-go-rounds.

The following recommendations apply when the merry-go-round is at least 20 inches in diameter.

- Merry-go-rounds should not be used on playgrounds intended for toddlers.
- The standing/sitting surface of the platform should have a maximum height of:
 - Preschool: 14 inches above the protective surface.
 - School-age: 18 inches above the protective surface.
- The rotating platform should be continuous and approximately circular.
- The surface of the platform should not have any openings between the axis and the periphery that permit a rod having a diameter of 5/16 inch to penetrate completely through the surface.

- The difference between the minimum and maximum radii of a non-circular platform should not exceed 2.0 inches (Figure 15).



- The underside of the perimeter of the platform should be no less than 9 inches above the level of the protective surfacing beneath it.
- There should not be any accessible shearing or crushing mechanisms in the undercarriage of the equipment.
- Children should be provided with a secure means of holding on. Where handgrips are provided, they should conform to the general recommendations for hand gripping components in §5.2.2.
- No components of the apparatus, including handgrips, should extend beyond the perimeter of the platform.
- The rotating platform of a merry-go-round should not have any sharp edges.
- A means should be provided to limit the peripheral speed of rotation to a maximum of 13 ft/sec.
- Merry-go-round platforms should not have any up and down (oscillatory) motion.

5.3.4.1 Use zone

- The use zone should extend a minimum of 6 feet beyond the perimeter of the platform.
- The use zone may not overlap other use zones, unless the rotating equipment is less than 20 inches in diameter and the adjacent equipment allows overlap.

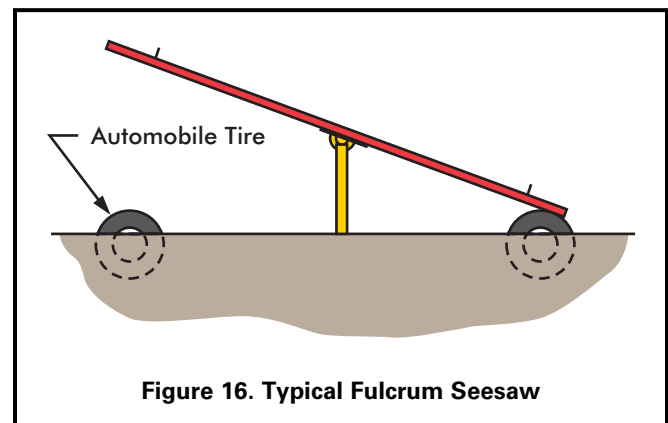
5.3.4.2 Fall height

The fall height for a merry-go-round is the distance between the perimeter of the platform where a child could sit or stand and the protective surfacing beneath it.

5.3.5 Seesaws

5.3.5.1 Fulcrum seesaws

The typical seesaw (also known as a “teeter totter”) consists of a board or pole with a seat at each end supported at the center by a fulcrum. See Figure 16. Because of the complex way children are required to cooperate and combine their actions, fulcrum seesaws are not recommended for toddlers or preschool-age children.



- The fulcrum should not present a crush hazard.
- Partial car tires, or some other shock-absorbing material, should be embedded in the ground underneath the seats, or secured on the underside of the seats. This will help prevent limbs from being crushed between the seat and the ground, as well as cushion the impact.
- The maximum attainable angle between a line connecting the seats and the horizontal is 25°.
- There should not be any footrests.

5.3.5.2 Spring-centered seesaws

Preschool-age children are capable of using spring-centered seesaws because the centering device prevents abrupt contact with the ground if one child dismounts suddenly. Spring-centered seesaws also have the advantage of not requiring two children to coordinate their actions in order to play safely. Spring-centered seesaws should follow the recommendations for spring rockers including the use of footrests (§5.3.7).

5.3.5.3 Use zone for fulcrum and spring-centered seesaws

- The use zone should extend a minimum of 6 feet from each outside edge of the seesaw.
- The use zone may overlap with neighboring equipment if the other piece of equipment allows overlapping use zones and
 - There is at least 6 feet between equipment when adjacent designated play surfaces are no more than 30 inches high; or
 - There is at least 9 feet between equipment when adjacent designated play surfaces are more than 30 inches high.

5.3.5.4 Handholds

- Handholds should be provided at each seating position for gripping with both hands and should not turn when grasped.
- Handholds should not protrude beyond the sides of the seat.

5.3.5.5 Fall height

The fall height for a seesaw is the distance between the highest point any part of the seesaw can reach and the protective surfacing beneath it.

5.3.6 Slides

Children can be expected to descend slide chutes in many different positions, rather than always sitting and facing forward as they slide. These other positions should be discouraged at all times to minimize injuries.



Slides may provide a straight, wavy, or spiral descent either by means of a tube or an open slide chute. They may be either free-standing (Figure 17), part of a composite structure, or built on the grade of a natural or man-made slope (embankment slide). Regardless of the type of slide, avoid using bare metals on the platforms, chutes, and steps. When exposed to direct sunlight the bare metal may reach temperatures high enough to cause serious contact burn injuries in a matter of seconds. Provide shade for bare metal slides or use other materials that may reduce the surface temperature such as, but not limited to, plastic or coated metal.

5.3.6.1 Slide access

Access to a stand-alone slide generally is by means of a ladder with rungs, steps, or a stairway with steps. Slides may also be part of a composite play structure, so children will gain access from other parts of the structure. Embankment slides use the ground for access.

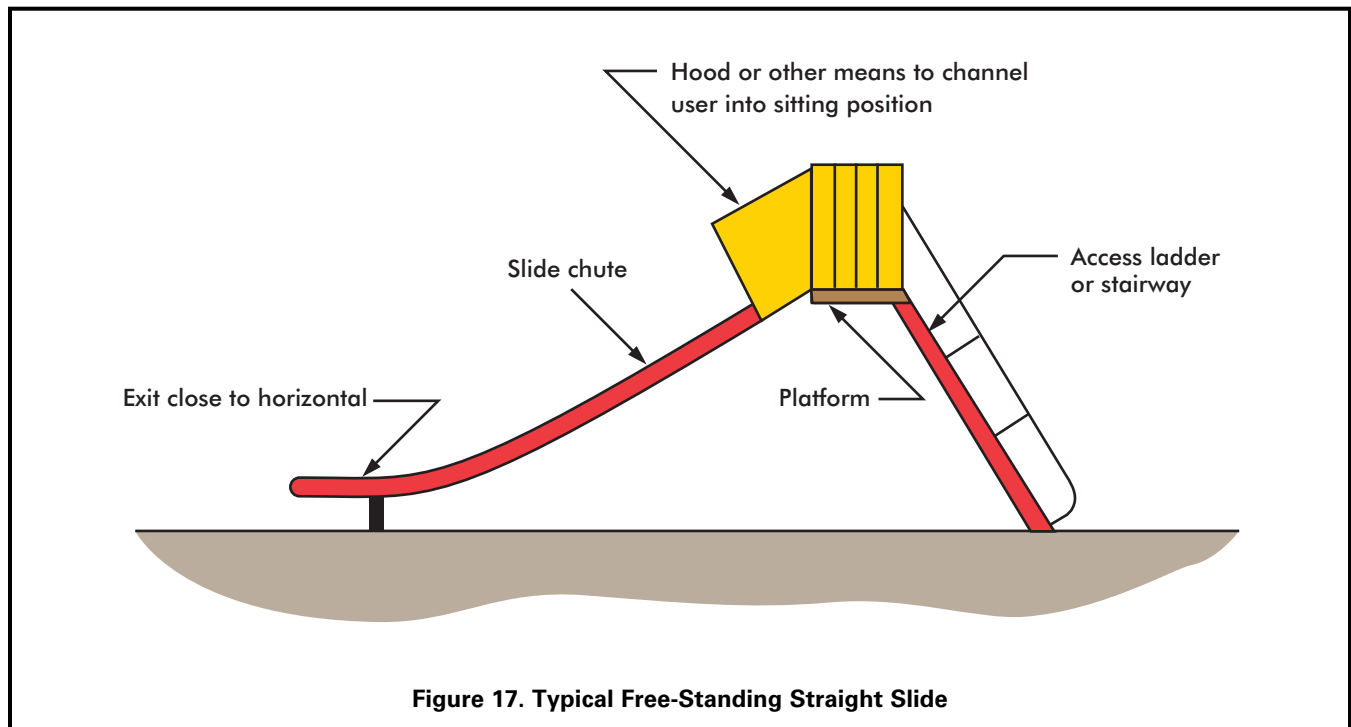


Figure 17. Typical Free-Standing Straight Slide

5.3.6.2 Slide platform

All slides should be provided with a platform with sufficient length to facilitate the transition from standing to sitting at the top of the inclined sliding surface. Embankment slides are exempt from platform requirements because they are on ground level; however, they should not have any spaces or gaps as noted below.

The platform should:

- Be at least 19 inches deep for toddlers.
- Be at least 14 inches deep for preschool-age and school-age children.
- Be horizontal.
- Be at least as wide as the slide chute.
- Be surrounded by guardrails or barriers.
- Conform to the same recommendations as general platforms given in §5.1.1.
- Not have any spaces or gaps that could trap strings, clothing, body parts, etc. between the platform and the start of the slide chute.
- Provide handholds to facilitate the transition from standing to sitting and decrease the risk of falls (except tube slides where the tube perimeter provides hand support). These should extend high enough to provide hand support for the largest child in a standing position, and low enough to provide hand support for the smallest child in a sitting position.
- Provide a means to channel a user into a sitting position at the entrance to the chute, such as a guardrail, hood, or other device that discourages climbing.

5.3.6.3 Slide chutes

5.3.6.3.1 Embankment slides

- The slide chute of an embankment slide should have a maximum height of 12 inches above the underlying ground surface. This design basically eliminates the hazard of falls from elevated heights.
- Embankment slides should follow all of the recommendations given for straight slides where applicable (e.g., side height, slope, use zone at exit, etc.).
- There should be some means provided at the slide chute entrance to minimize the use of embankment slides by children on skates, skateboards, or bicycles.

5.3.6.3.2 Roller slides

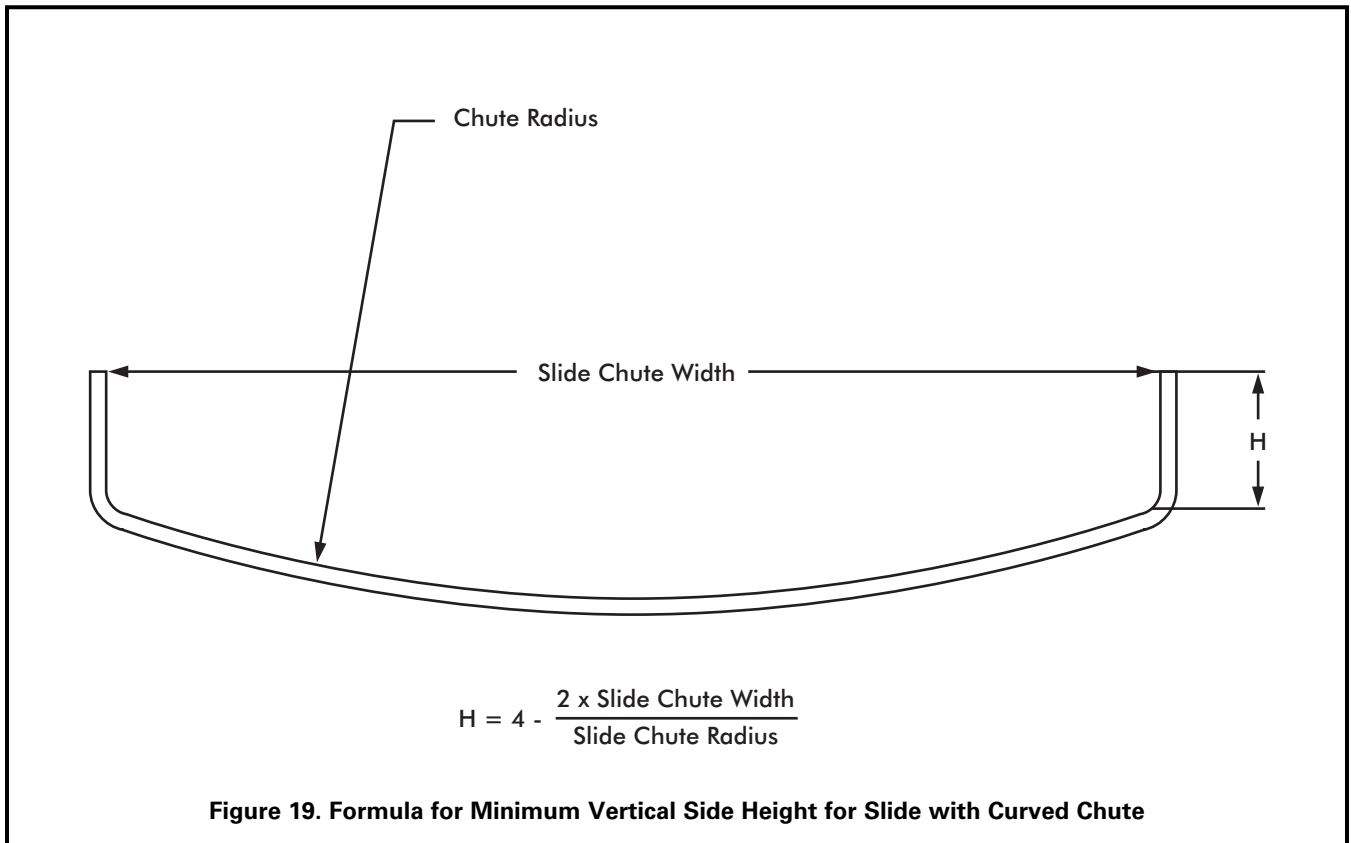
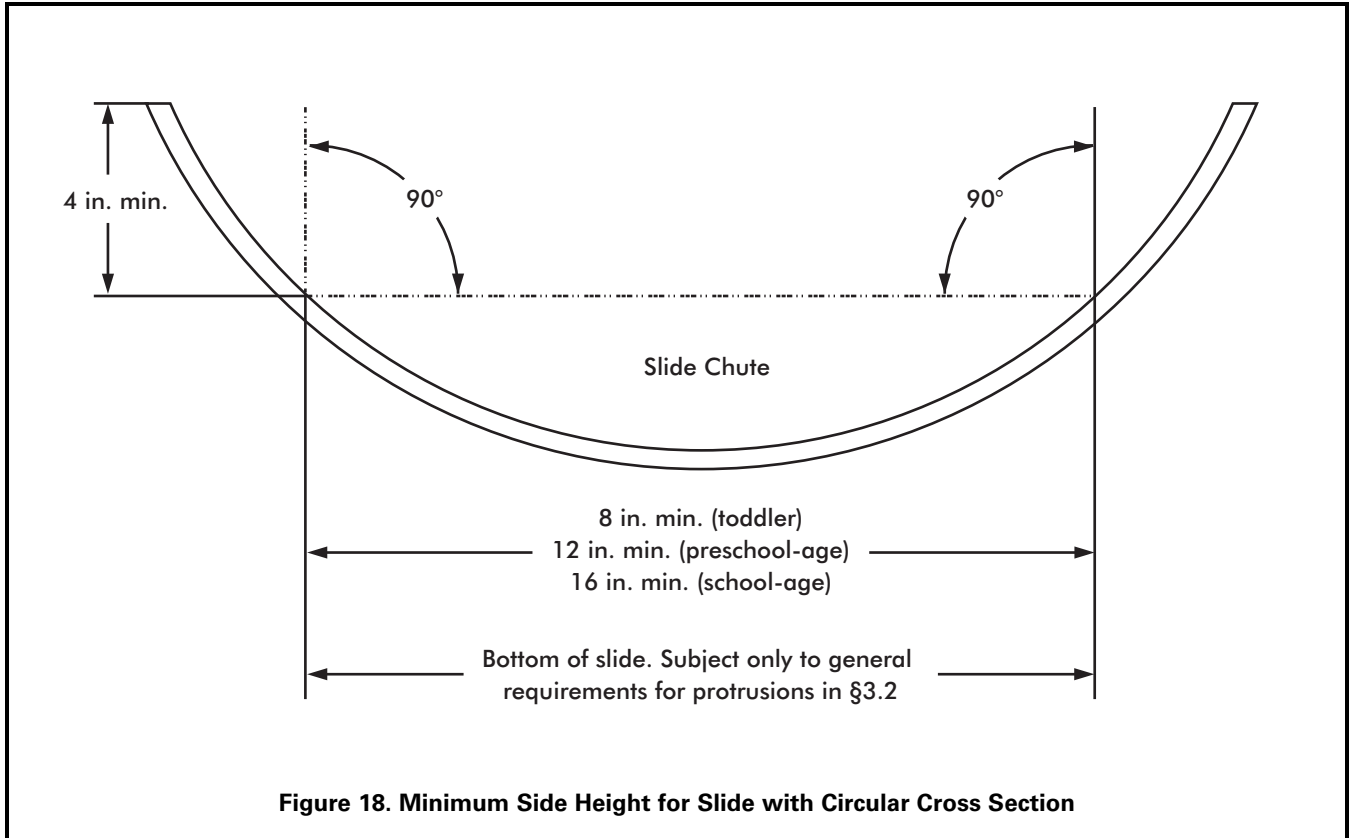
- Roller slides should meet applicable recommendations for other slides (e.g., side height, slope, use zone at exit, etc.).
- The space between adjacent rollers and between the ends of the rollers and the stationary structure should be less than 3/16 inch.
- Frequent inspections are recommended to insure that there are no missing rollers or broken bearings and that the rollers roll.

5.3.6.3.3 Spiral slides

- Spiral slides should follow the recommendations for straight slides where applicable (e.g., side height, slope, use zone at exit, etc.).
- Special attention should be given to design features which may present problems unique to spiral slides, such as lateral discharge of the user.
- Toddlers and preschool-age children have less ability to maintain balance and postural control, so only short spiral slides (one 360° turn or less) are recommended for these age groups.

5.3.6.3.4 Straight slides

- Flat open chutes should have sides at least 4 inches high extending along both sides of the chute for the entire length of the inclined sliding surface.
- The sides should be an integral part of the chute, without any gaps between the sides and the sliding surface. (This does not apply to roller slides).
- Slides may have an open chute with a circular, semicircular or curved cross section provided that:
 - A. The vertical height of the sides is no less than 4 inches when measured at right angles to a horizontal line that is 8 inches long when the slide is intended for toddlers, 12 inches long when the slide is intended for preschool-age children, and 16 inches long when the slide is intended for school-age children (Figure 18); or
 - B. For any age group, the vertical height of the sides is no less than 4 inches minus two times the width of the slide chute divided by the radius of the slide chute curvature (Figure 19).



- For toddlers:
 - The average incline of a slide chute should be no more than 24° (that is, the height to horizontal length ratio shown in Figure 20 does not exceed 0.445).
 - No section of the slide chute should have a slope greater than 30° .
 - The slide chute should be between 8 and 12 inches wide.
- For preschool- and school-age children:
 - The average incline of a slide chute should be no more than 30° (that is, the height to horizontal length ratio shown in Figure 20 does not exceed 0.577).
 - No section of the slide chute should have a slope greater than 50° .

5.3.6.3.5 Tube slides

- Tube slides should meet all the applicable recommendations for other slides (e.g., side height, slope, use zone at exit, etc.).
- Means, such as barriers or textured surfaces, should be provided to prevent sliding or climbing on the top (outside) of the tube.
- The minimum internal diameter of the tube should be no less than 23 inches.
- Supervisors should be aware of children using tube slides since the children are not always visible.

5.3.6.4 Chute exit region

All slides should have an exit region to help children maintain their balance and facilitate a smooth transition from sitting to standing when exiting. The chute exit region should:

- Be between 0 and -4° as measured from a plane parallel to the ground.
- Have edges that are rounded or curved to prevent lacerations or other injuries that could result from impact with a sharp or straight edge.
- For toddlers the chute exit region should:
 - Be between 7 and 10 inches long if any portion of the chute exceeds a 24° slope.
 - Be no more than 6 inches above the protective surfacing.
 - Have a transition from the sliding portion to the exit region with a radius of curvature of at least 18 inches.
- For preschool- and school-age the chute exit region should:
 - Be at least 11 inches long.
 - Be no more than 11 inches above the protective surfacing if the slide is no greater than 4 feet high.
 - Be at least 7 inches but not more than 15 inches above the protective surfacing if the slide is over 4 feet high.

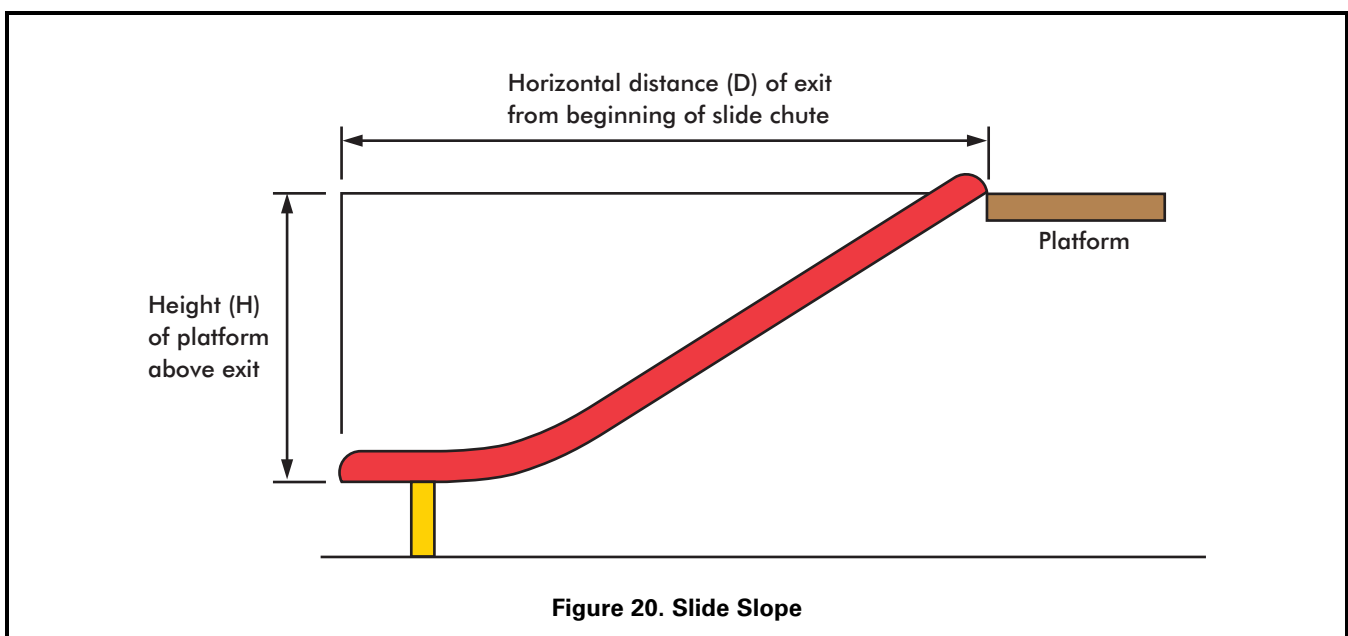


Figure 20. Slide Slope

5.3.6.5 Slide use zone

Toddlers:

- In a limited access environment
 - The use zone should be at least 3 feet around the perimeter of the slide.
 - The area at the end of the slide should not overlap with the use zone for any other equipment.
- In public areas with unlimited access
 - For a stand-alone slide, the use zone should be at least 6 feet around the perimeter.
 - For slides that are part of a composite structure, the minimum use zone between the access components and the side of the slide chute should be 3 feet.
 - The use zone at the end of the slide should be at least 6 feet from the end of the slide and not overlap with the use zone for any other equipment.

Preschool- and school-age (see Figure 21):

- The use zone in front of the access and to the sides of a slide should extend a minimum of 6 feet from the perimeter of the equipment. This recommendation does not apply to embankment slides or slides that are part of a composite structure (see §5.3.9).
- The use zone in front of the exit of a slide should never overlap the use zone of any other equipment; however, two or more slide use zones may overlap if their sliding paths are parallel.
- For slides less than or equal to 6 feet high, the use zone in front of the exit should be at least 6 feet.
- For slides greater than 6 feet high, the use zone in front of the exit should be at least as long as the slide is high up to a maximum of 8 feet.

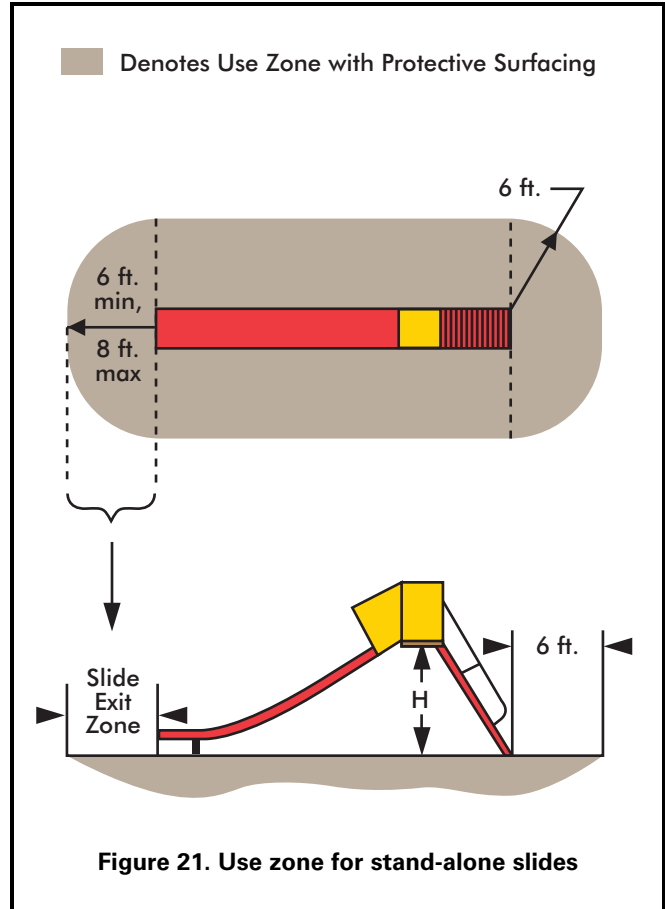
5.3.6.6 Fall height

The fall height for slides is the distance between the transition platform and the protective surfacing beneath it.

5.3.6.7 Entanglement hazard

Children have suffered serious injuries and died by getting parts of their clothing tangled on protrusions or gaps on slides.

To reduce the chance of clothing entanglement:



- Projections up to 3 inches in diameter should not stick up more than 1/8 inch from the slide.
- There should be no gaps at the tops of slides where the slide chute connects with the platform that can entangle clothing or strings.
- See Appendix B for full recommendations and details of the protrusion test procedure.

5.3.6.8 Other sliding equipment

Equipment where it is foreseeable that a primary use of the component is sliding should follow the same guidelines for entanglement that are in 5.3.6.7.

5.3.7 Spring rockers

Toddlers and preschool-age children enjoy the bouncing and rocking activities presented by spring rockers, and they are the primary users of rocking equipment. See Figure 22. Older children may not find it challenging enough.

- Seat design should not allow the rocker to be used by more than the intended number of users.



Figure 22. Example of spring rocker

- For toddlers:
 - The seat should be between 12 and 16 inches high.
 - Spring rockers with opposing seats intended for more than one child should have at least 37 inches between the seat centers.
- For preschoolers:
 - The seat should be between 14 and 28 inches high.
- Each seating position should be equipped with handgrips and footrests. The diameter of handgrips should follow the recommendations for hand gripping components in §5.2.2.
- The springs of rocking equipment should minimize the possibility of children crushing their hands or their feet between coils or between the spring and a part of the rocker.
- The use zone should extend a minimum of 6 feet from the “at rest” perimeter of the equipment.
- The use zone may overlap with neighboring equipment if the other piece of equipment allows overlapping use zones and
 - There is at least 6 feet between equipment when adjacent designated play surfaces are no more than 30 inches high; or

- There is at least 9 feet between equipment when adjacent designated play surfaces are more than 30 inches high; and
- The spring rocker is designed to be used from a seated position.

5.3.7.1 Fall height

The fall height of spring rockers is the distance between either (1) the highest designated playing surface or (2) the seat, whichever is higher, and the protective surfacing beneath it.

5.3.8 Swings

Children of all ages generally enjoy the sensations created while swinging. Mostly they sit on the swings; however, it is common to see children jumping off swings. Younger children also tend to swing on their stomachs, and older children may stand on the seats. To prevent injuries, these behaviors should be discouraged.

Swings may be divided into two distinct types:

- Single axis: Sometimes called a to-fro swing. A single-axis swing is intended to swing back and forth in a single plane and generally consists of a seat supported by at least two suspending members, each of which is connected to a separate pivot on an overhead structure.
- Multi-axis: A multi-axis swing consists of a seat (generally a tire) suspended from a single pivot that permits it to swing in any direction.

5.3.8.1 General swing recommendations

- Hardware used to secure the suspending elements to the swing seat and to the supporting structure should not be removable without the use of tools.
- S-hooks are often part of a swing’s suspension system, either attaching the suspending elements to the overhead support bar or to the swing seat. Open S-hooks can catch a child’s clothing and present a strangulation hazard. S-hooks should be pinched closed. An S-hook is considered closed if there is no gap or space greater than 0.04 inches (about the thickness of a dime).
- Swings should be suspended from support structures that discourage climbing.
- A-frame support structures should not have horizontal cross-bars.

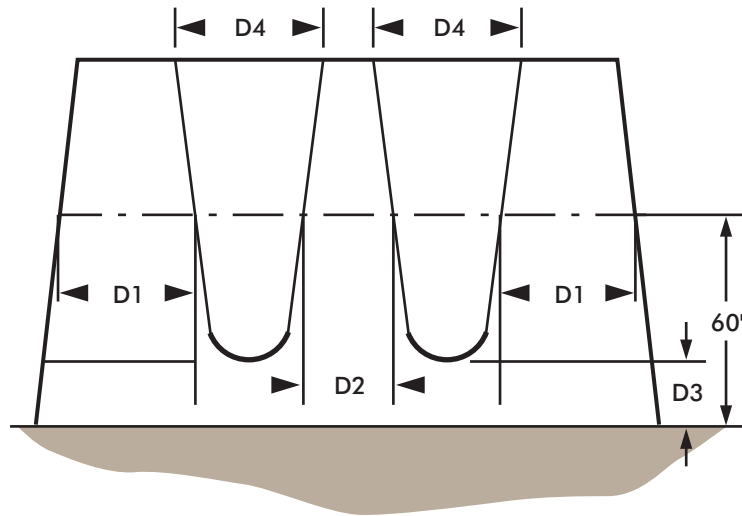


Figure 23. Minimum Clearances for Single-Axis Swings

Table 7. Minimum clearance dimensions for swings

Reason	Dimension	Toddler Full bucket	Preschool-age Belt	School-age Belt
Minimizes collisions between a swing and the supporting structure	D1	20 inches	30 inches	30 inches
Minimizes collisions between swings	D2	20 inches	24 inches	24 inches
Allows access	D3	24 inches	12 inches	12 inches
Reduces side-to-side motion	D4	20 inches	20 inches	20 inches

- Fiber ropes are not recommended as a means of suspending swings since they may degrade over time.
- Swing structures should be located away from other equipment or activities to help prevent young children from inadvertently running into the path of moving swings. Additional protection can be provided by means of a low blockade such as a fence or hedge around the perimeter of the swing area. The blockade should not be an obstacle within the use zone of a swing structure or hamper supervision by blocking visibility.

5.3.8.2 Fall height

The fall height for swings is the vertical distance between the pivot point and the protective surfacing beneath it.

5.3.8.3 Single-axis swings

5.3.8.3.1 Belt seats used without adult assistance

- The use zone to the front and rear of single-axis swings should never overlap the use zone of another piece of equipment.
- To minimize the likelihood of children being struck by a moving swing, it is recommended that no more than two single-axis swings be hung in each bay of the supporting structure.

- Swings should not be attached to composite structures.
- Swing seats should be designed to accommodate no more than one user at any time.
- Lightweight rubber or plastic swing seats are recommended to help reduce the severity of impact injuries. Wood or metal swing seats should be avoided.
- Edges of seats should have smoothly finished or rounded edges and should conform to the protrusion recommendations in 5.3.8.5.
- If loose-fill material is used as a protective surfacing, the height recommendations should be determined after the material has been compressed.

5.3.8.3.2 Full bucket seat swings

Full bucket seat swings are similar to single-axis swings since they move in a to-fro direction. However, full bucket seat swings are intended for children under 4 years of age to use with adult assistance.

- The seats and suspension systems of these swings, including the related hardware, should follow all of the criteria for conventional single axis swings.
- Full bucket seats are recommended to provide support on all sides of a child and between the legs of the occupant (see Figure 24).



Figure 24. Example of full bucket seat swings

- The full bucket seat materials should not present a strangulation hazard, such as might be presented with a rope or chain used as part of the seat.
- Openings in swing seats should conform to the entrapment criteria in §3.3.
- Full bucket seat swings should be suspended from structures that are separate from those for other swings, or at least suspended from a separate bay of the same structure.
- Full bucket seat swings should not allow the child to enter and exit alone.
- Pivot points should be more than 47 inches but no more than 96 inches above the protective surfacing.

5.3.8.3.3 Use zone for single-axis swings – belt and full bucket

The use zone in front of and behind the swing should be greater than to the sides of such a swing since children may deliberately attempt to exit from a single-axis swing while it is in motion. See Figure 25.

- The use zone for a belt swing should extend to the front and rear of a single-axis swing a minimum distance of twice the vertical distance from the pivot point and the top of the protective surface beneath it.
- The use zone for a full bucket swing should extend to the front and rear a minimum of twice the vertical distance from the top of the occupant's sitting surface to the pivot point.
- The use zone in front of and behind swings should never overlap with any other use zone.
- The use zone to the sides of a single-axis swing should extend a minimum of 6 feet from the perimeter of the swing. This 6-foot zone may overlap that of an adjacent swing structure or other playground equipment structure.

5.3.8.4 Multi-axis (tire) swings

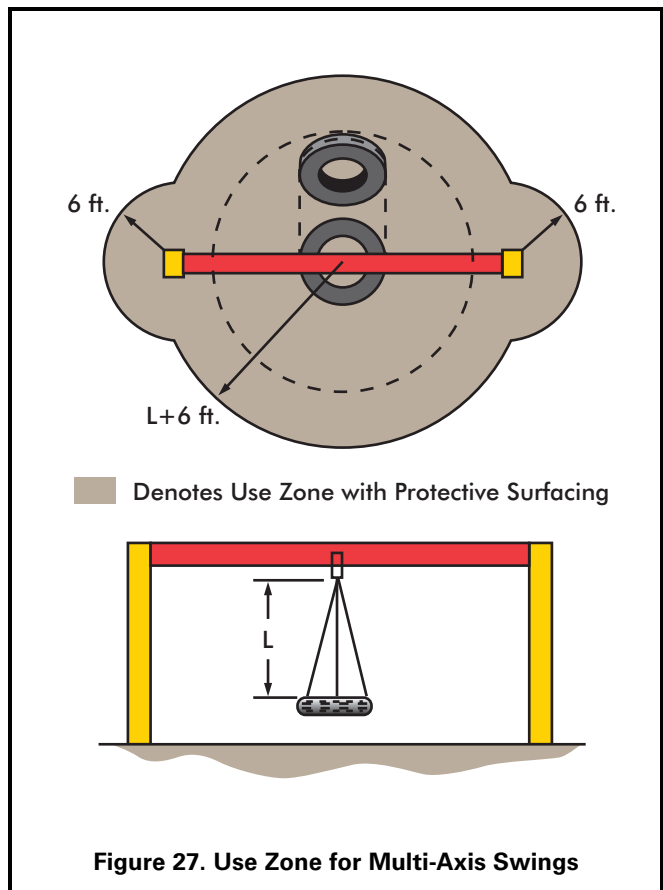
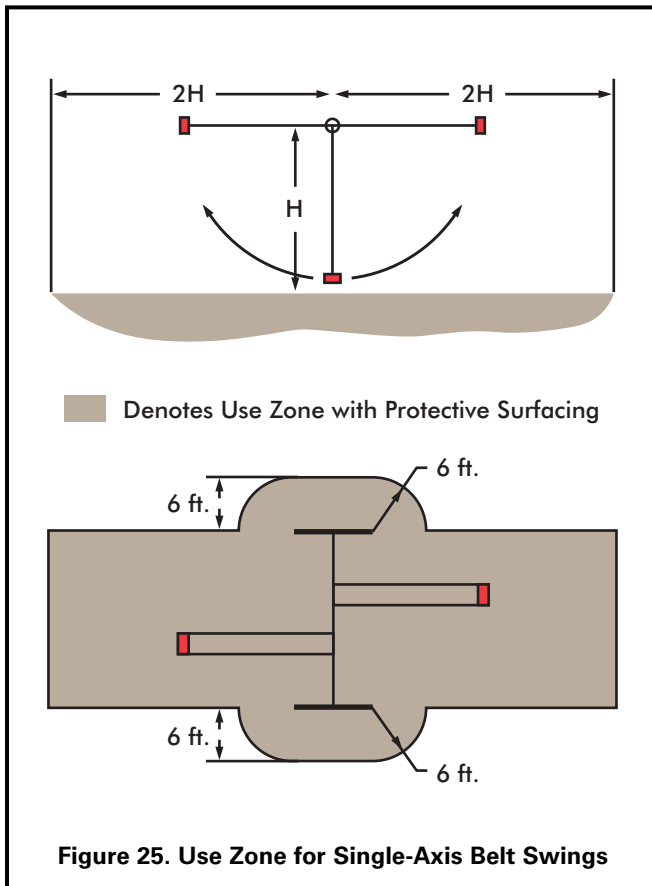
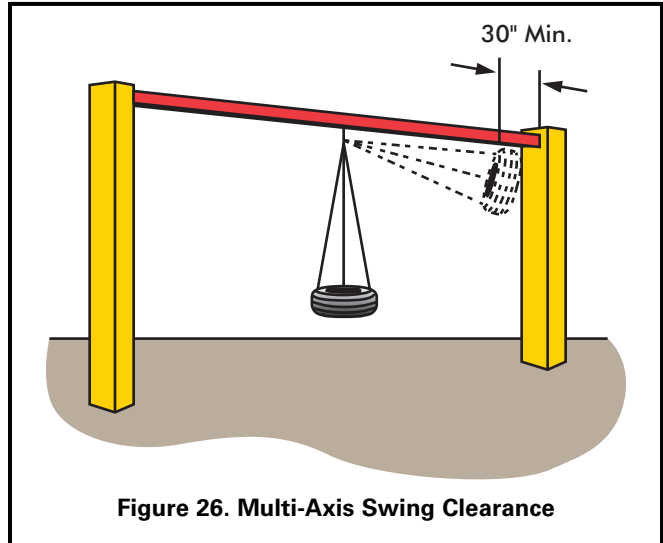
Tire swings are usually suspended in a horizontal orientation using three suspension chains or cables connected to a single swivel mechanism that permits both rotation and swinging motion in any axis.

- A multi-axis tire swing should not be suspended from a structure having other swings in the same bay.
- Attaching multi-axis swings to composite structures is not recommended.

- To minimize the hazard of impact, heavy truck tires should be avoided. Further, if steel-belted radials are used, they should be closely examined to ensure that there are no exposed steel belts or wires that could be a potential protrusion or laceration hazard. Plastic materials can be used as an alternative to simulate actual automobile tires. Drainage holes should be provided in the underside of the tire.
- Pay special attention to maintenance of the hanger mechanism because the likelihood of failure is higher for tire swings due to the added stress of rotational movement and multiple occupants.
- The hanger mechanisms for multi-axis tire swings should not have any accessible crush points.
- The minimum clearance between the seating surface of a tire swing and the uprights of the supporting structure should be 30 inches when the tire is in a position closest to the support structure (Figure 26).
- The minimum clearance between the bottom of the seat and the protective surface should not be less than 12 inches.

5.3.8.4.1 Multi-axis swing use zones

- The use zone should extend in any direction from a point directly beneath the pivot point for a minimum distance of 6 feet plus the length of the suspending members (see Figure 27). This use zone should never overlap the use zone of any other equipment.



- The use zone should extend a minimum of 6 feet from the perimeter of the supporting structure. This 6-foot zone may overlap that of an adjacent swing structure or other playground equipment structure.

5.3.8.5 Protrusions on suspended members of swing assemblies

Protrusions on swings are extremely hazardous because of the potential for impact incidents. Nothing, including bolts or other parts, on the front, back, or underside of a swing should stick out more than 1/8 of an inch. See test procedures in Appendix B.

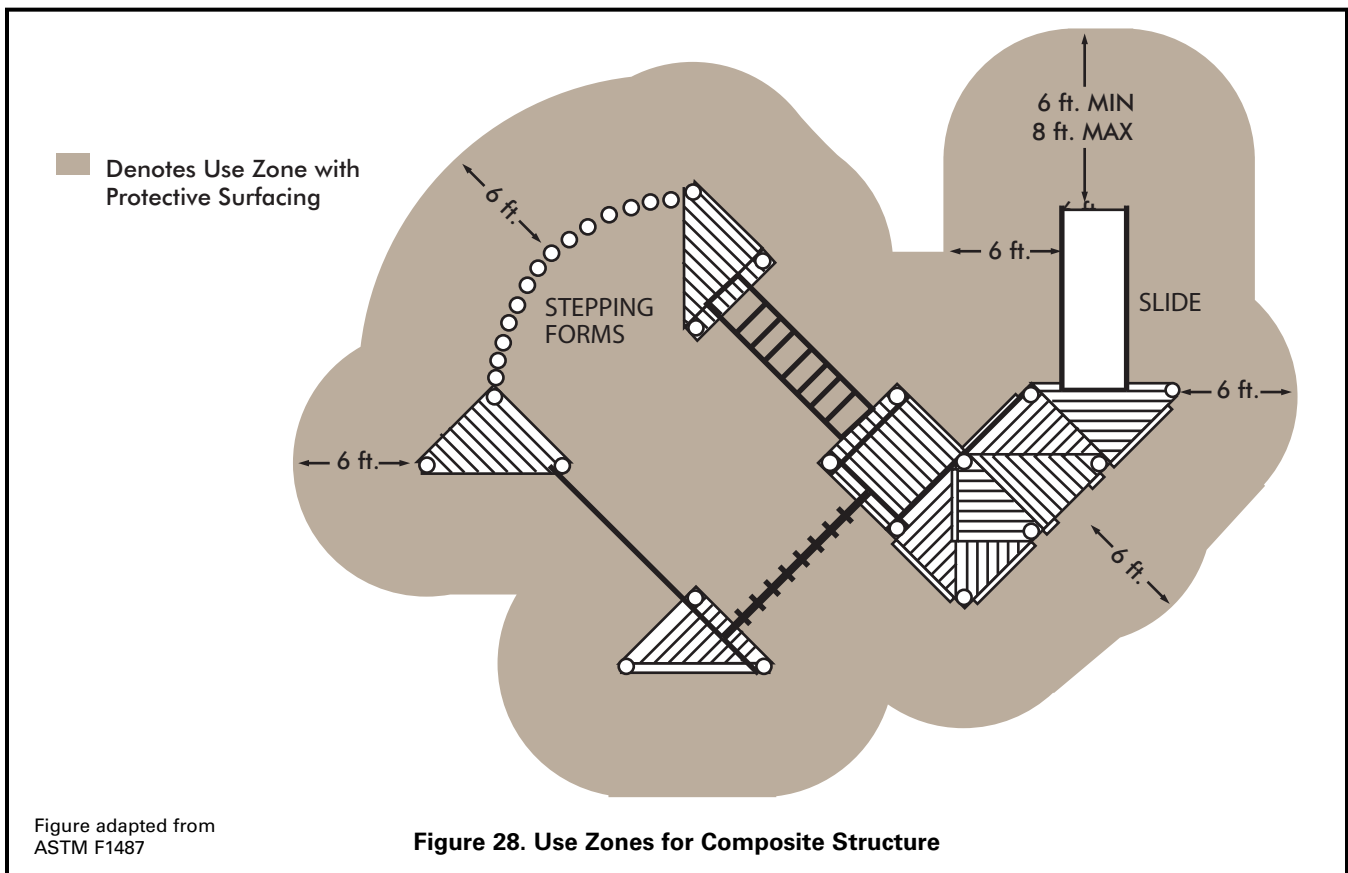
5.3.9 Fall height and use zones for composite structure

When two or more complementary play components are linked together in a composite structure (e.g., combination climber, slide, and horizontal ladder), the use zone should extend a minimum of 6 feet from the external perimeter of the structure (see Figure 28). Where slides are attached to a platform higher than 6 feet from the protective surfacing, the use zone may need to extend further in front of the slide (see §5.3.6.5).

5.3.10 Fall height and use zones not specified elsewhere

Most playground equipment belongs in one of the categories listed above. If it does not, the following general recommendations should be applied:

- The fall height of a piece of playground equipment is the distance between the highest designated playing surface and the protective surface beneath it.
- The use zone should extend a minimum of 6 feet in all directions from the perimeter of the equipment.
- The use zones of two stationary pieces of playground equipment that are positioned adjacent to one another may overlap if the adjacent designated play surfaces of each structure are no more than 30 inches above the protective surface and the equipment is at least 6 feet apart.
- If adjacent designated play surfaces on either structure exceed a height of 30 inches, the minimum distance between the structures should be 9 feet.
- Use zones should be free of obstacles.



APPENDIX A: SUGGESTED GENERAL MAINTENANCE CHECKLISTS

Surfacing (§2.4)

- Adequate protective surfacing under and around the equipment.
 - Install/replace surfacing
- Surfacing materials have not deteriorated.
 - Replace surfacing
 - Other maintenance: _____
- Loose-fill surfacing materials have no foreign objects or debris.
 - Remove trash and debris
- Loose-fill surfacing materials are not compacted.
 - Rake and fluff surfacing
- Loose-fill surfacing materials have not been displaced under heavy use areas such as under swings or at slide exits.
 - Rake and fluff surfacing

Drainage (§2.4)

- The entire play area has satisfactory drainage, especially in heavy use areas such as under swings and at slide exits.
 - Improve drainage
 - Other maintenance: _____

General Hazards

- There are no sharp points, corners or edges on the equipment (§3.4).
- There are no missing or damaged protective caps or plugs (§3.4).
- There are no hazardous protrusions (§3.2 and Appendix B).
- There are no potential clothing entanglement hazards, such as open S-hooks or protruding bolts (§2.5.2, §3.2, §5.3.8.1 and Appendix B).
- There are no crush and shearing points on exposed moving parts (§3.1).
- There are no trip hazards, such as exposed footings or anchoring devices and rocks, roots, or any other obstacles in a use zone (§3.6).

NOTES:

DATE OF INSPECTION:

Security of Hardware (§2.5)

- There are no loose fastening devices or worn connections.
 - Replace fasteners
 - Other maintenance: _____
- Moving parts, such as swing hangers, merry-go-round bearings, and track rides, are not worn.
 - Replace part
 - Other maintenance: _____

Durability of Equipment (§2.5)

- There are no rust, rot, cracks, or splinters on any equipment (check carefully where it comes in contact with the ground).
- There are no broken or missing components on the equipment (e.g., handrails, guardrails, protective barriers, steps, or rungs).
- There are no damaged fences, benches, or signs on the playground.
- All equipment is securely anchored.

Leaded Paint (§2.5.4)

- Paint (especially lead paint) is not peeling, cracking, chipping, or chalking.
- There are no areas of visible leaded paint chips or accumulation of lead dust.
 - Mitigate lead paint hazards

General Upkeep of Playgrounds (§4)

- There are no user modifications to the equipment, such as strings and ropes tied to equipment, swings looped over top rails, etc.
 - Remove string or rope
 - Correct other modification
- The entire playground is free from debris or litter such as tree branches, soda cans, bottles, glass, etc.
 - Clean playground
- There are no missing trash receptacles.
 - Replace trash receptacle
- Trash receptacles are not full.
 - Empty trash

INSPECTION BY:

Routine Inspection and Maintenance Issues

- Broken equipment such as loose bolts, missing end caps, cracks, etc.
- Broken glass & other trash
- Cracks in plastics
- Loose anchoring
- Hazardous or dangerous debris
- Insect damage
- Problems with surfacing
- Displaced loose-fill surfacing (see Section 4.3)
- Holes, flakes, and/or buckling of unitary surfacing
- User modifications (such as ropes tied to parts or equipment rearranged)
- Vandalism
- Worn, loose, damaged, or missing parts
- Wood splitting
- Rusted or corroded metals
- Rot

APPENDIX B: PLAYGROUND TESTING

B.1 Templates, Gauges, and Testing Tools

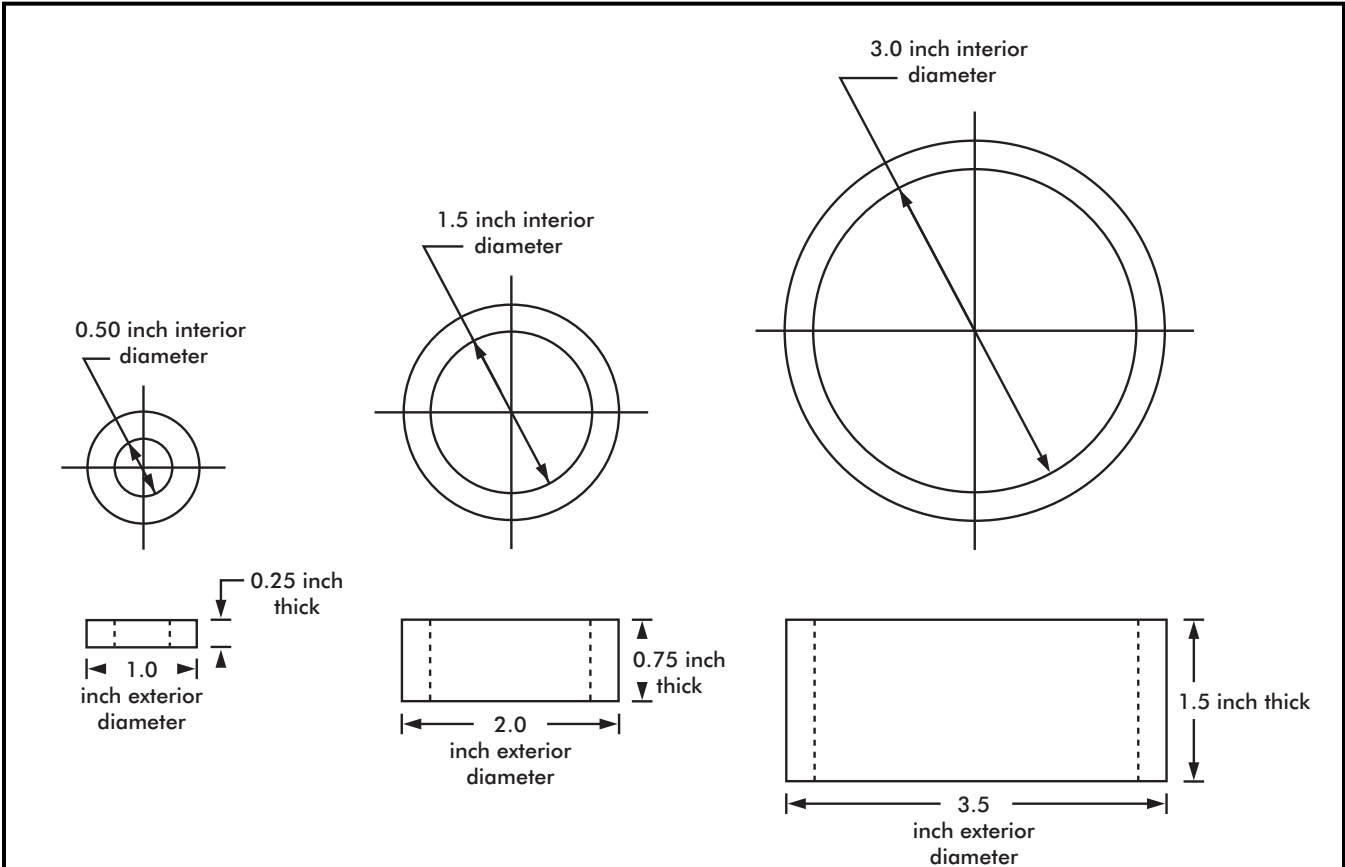
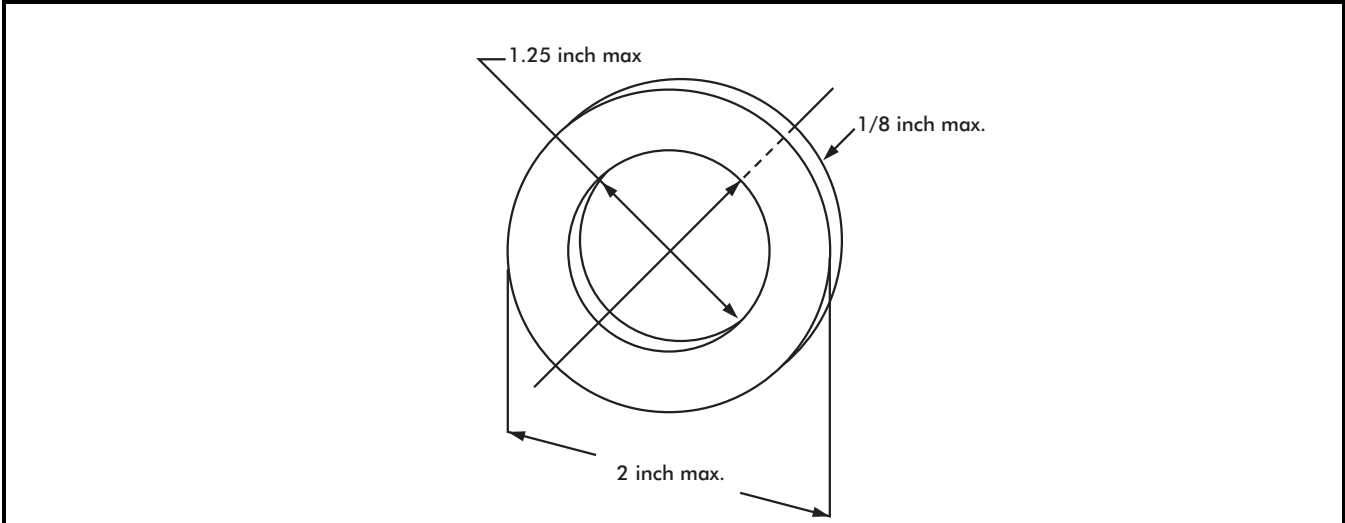


Figure B1. Projection test gauges



Note: gauge made of any rigid material

Figure B2. Projection test gauge for suspended swing assemblies and slides

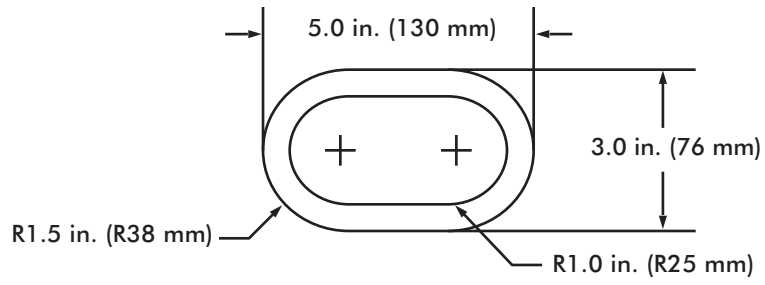


Figure B3. Toddler small torso template

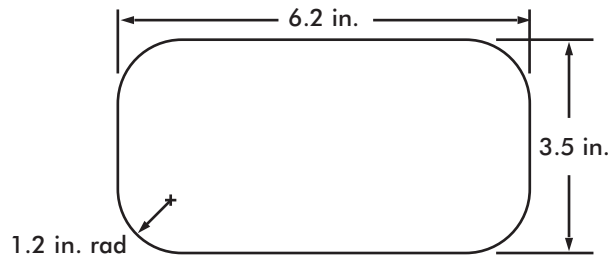


Figure B4. Preschool- and school-age small torso template

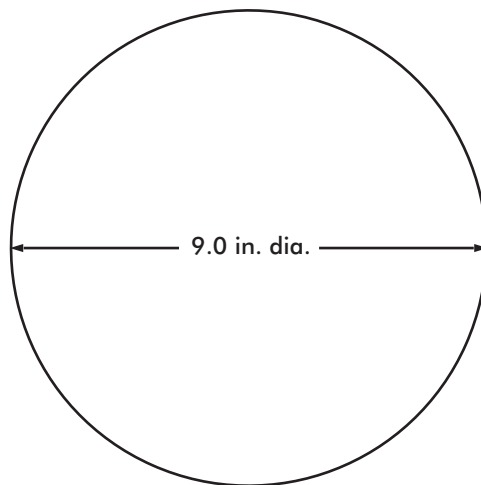
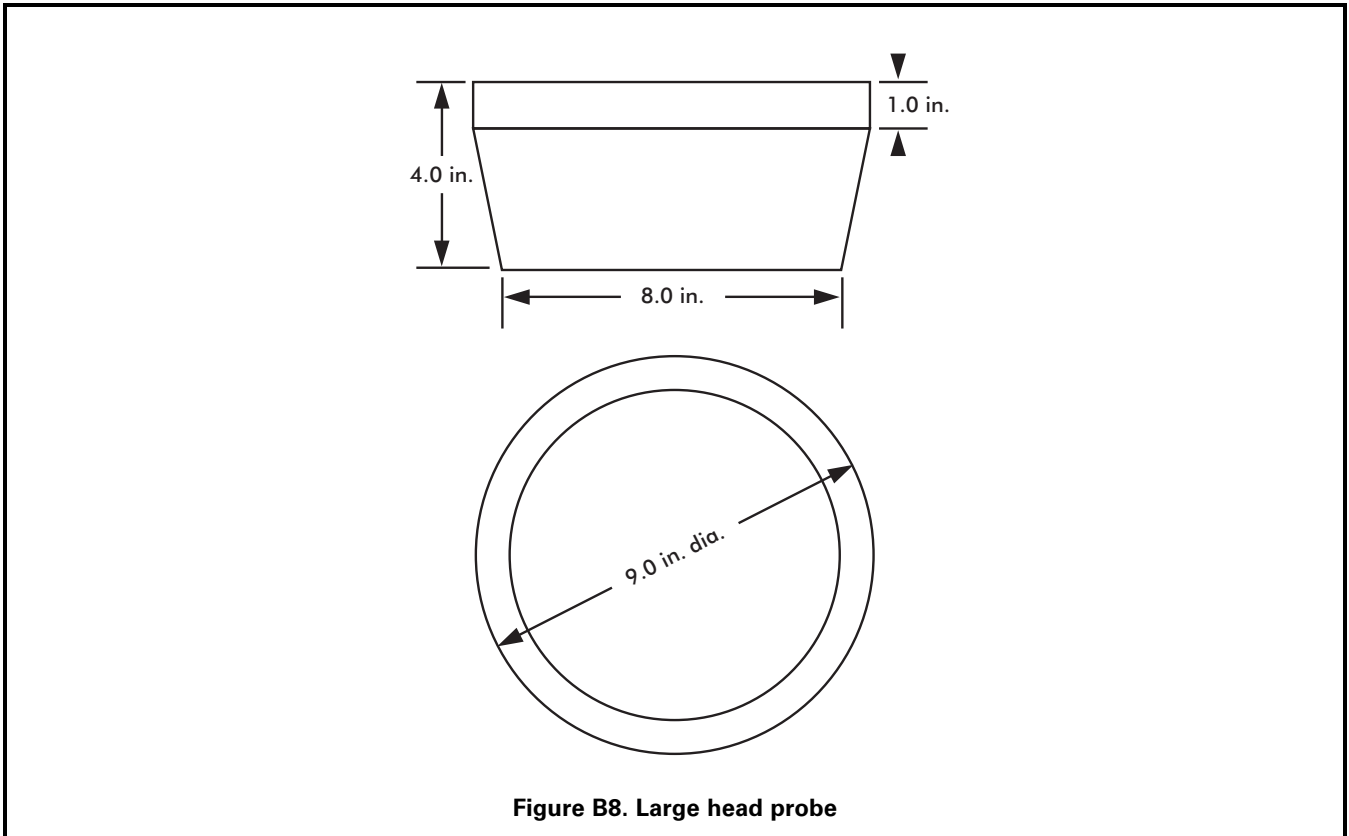
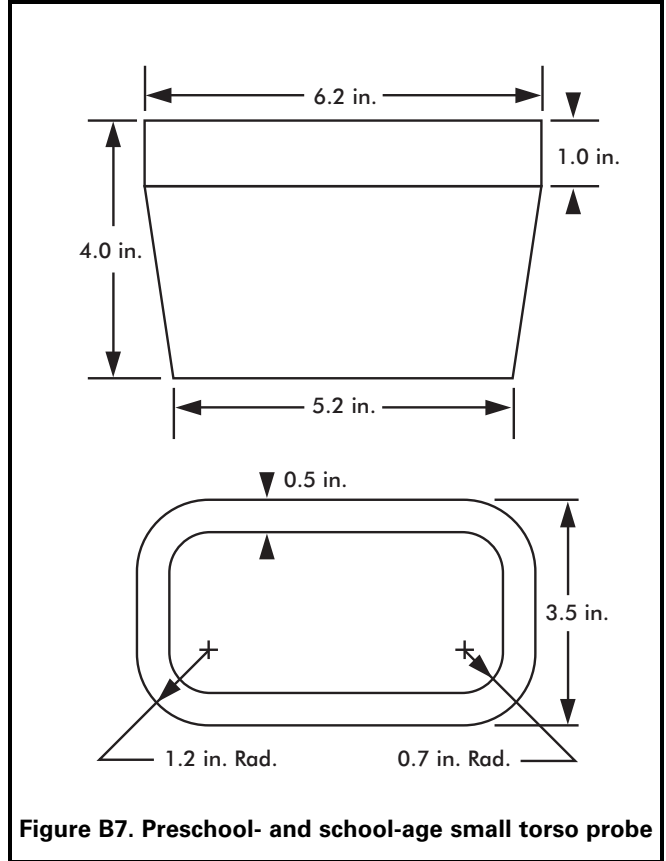
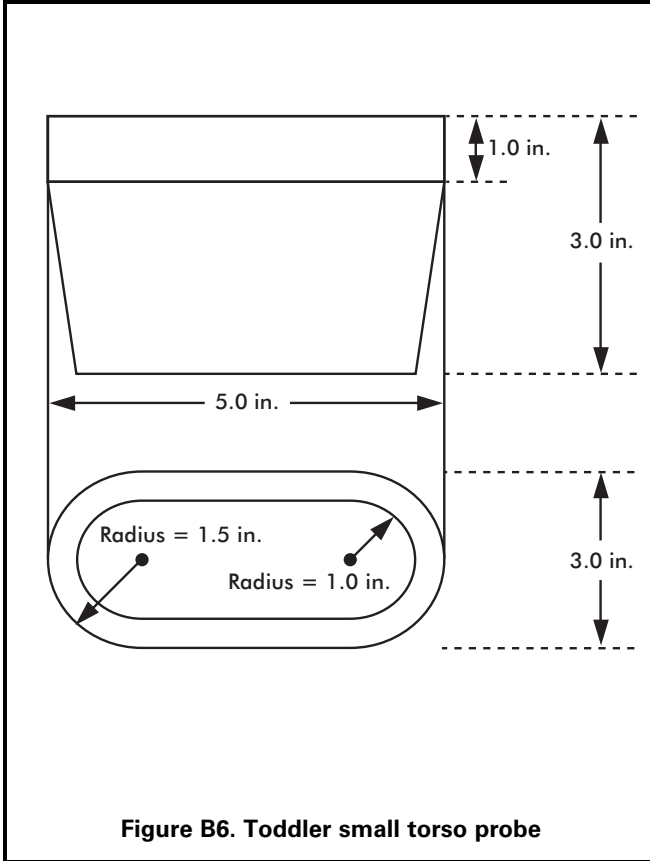


Figure B5. Large head template



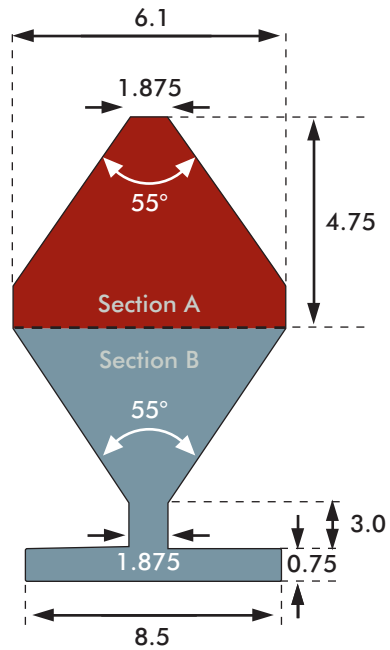


Figure B9. Preschool/School-age partially bound probe (dimensions in inches, template is 0.75 inches thick)

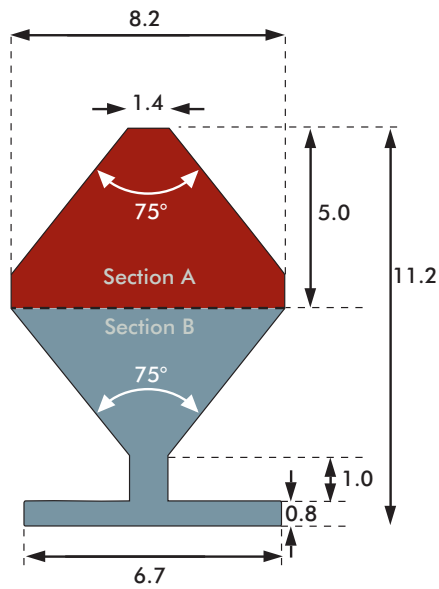


Figure B10. Toddler partially bound probe (dimensions in inches, template is 0.60 inches thick)

APPENDIX B: PLAYGROUND TESTING

B.2 Test Methods

B.2.1 Determining whether a projection is a protrusion

B.2.1.1 Test procedure

Step 1: Successively place each projection test gauge (see Figure B1) over any projection

Step 2: Visually determine if the projection penetrates through the hole and beyond the face of the gauge (see Figure B11 below).

Pass: A projection that does not extend beyond the face of the gauge passes.

Fail: A projection that extends beyond the face of any one of the gauges is considered a hazardous protrusion and should be eliminated.

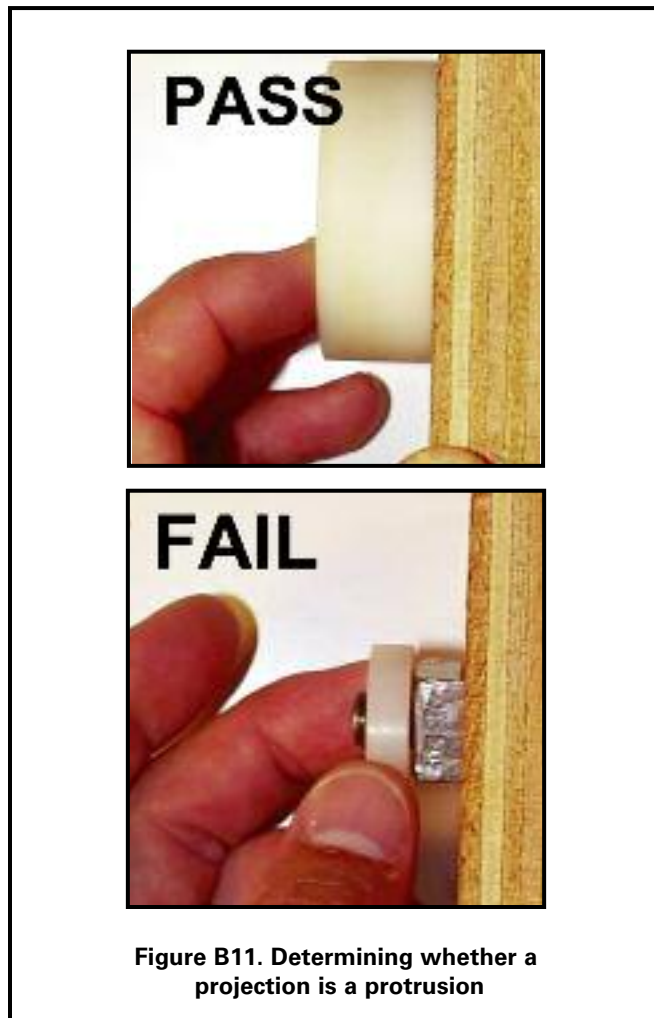


Figure B11. Determining whether a projection is a protrusion

B.2.2 Projections on suspended members of swing assemblies

Given the potential for impact incidents, projections on swings can be extremely hazardous. A special test gauge (see Figure B2) and procedure are recommended. When tested, no bolts or components in the potential impact region on suspended members should extend through the hole beyond the face of the gauge.

B.2.2.1 Test procedure

Step 1: Hold the gauge (Figure B2) vertically with the axis through the hole parallel to the swing's path of travel.

Step 2: Place the gauge over any projections that are exposed during the swing's path of travel.

Step 3: Visually determine if the projection penetrates through the hole and beyond the face of the gauge.

Pass: A projection that does not extend beyond the face of the gauge passes.

Fail: A projection that extends beyond the face of the gauge is considered a hazardous protrusion and should be eliminated.

B.2.3 Projections on slides

To minimize the likelihood of clothing entanglement on slides, projections that (1) fit within any one of the three gauges shown in Figure B1 and (2) have a major axis that projects away from the slide bed should not have projections greater than 1/8 inch perpendicular to the plane of the surrounding surface (Figure B12).

B.2.3.1 Test procedure

Step 1: Identify all projections within the shaded area shown in Figure B13.

Step 2: Determine which, if any, fit inside the projection test gauges (Figure B1).

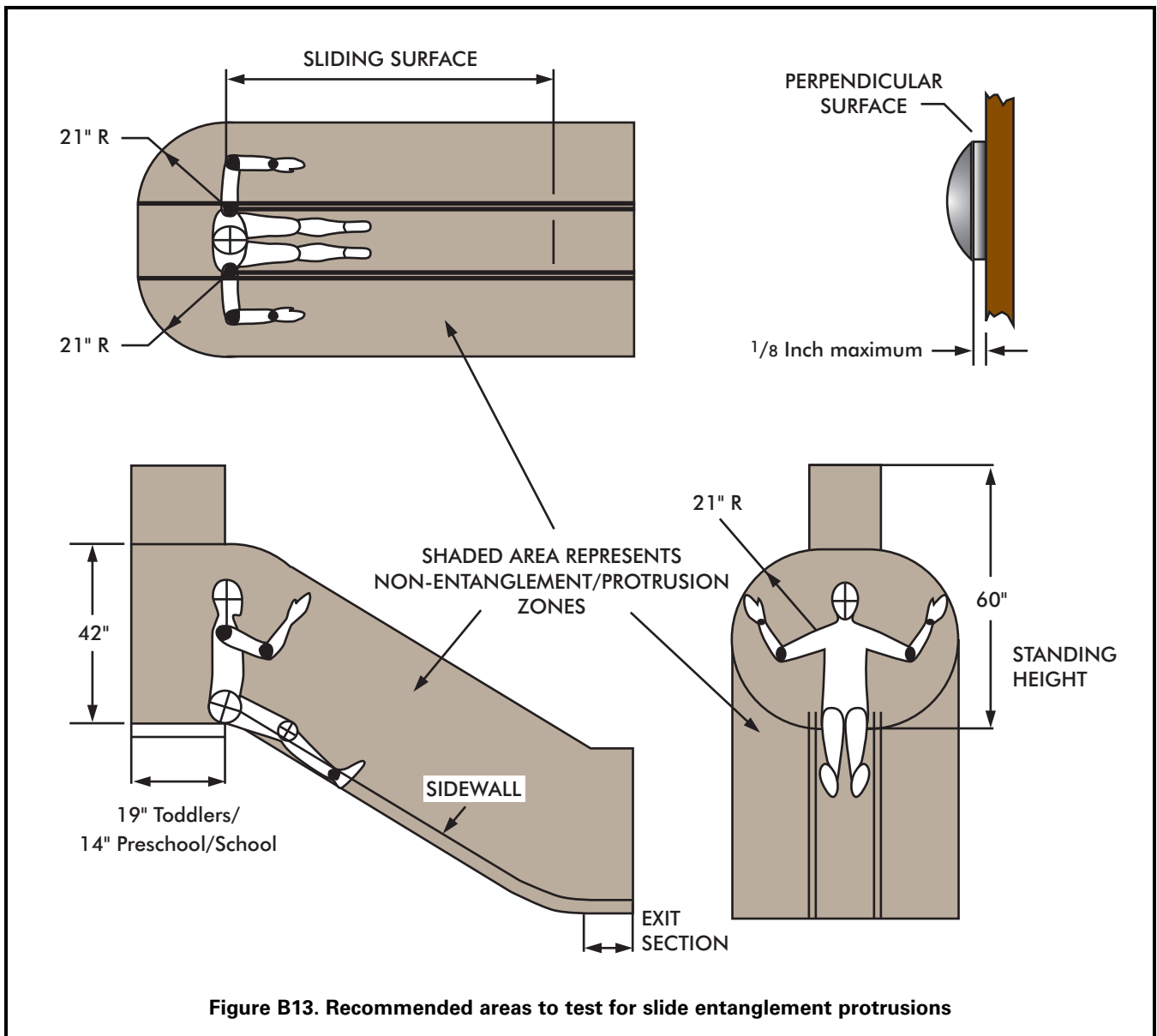
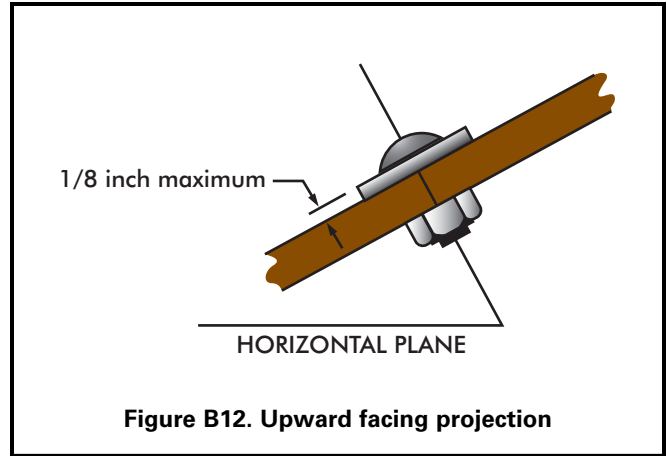
Step 3: Place the swing and slide projection gauge (Figure B2) next to the projection to check the height of the projection.

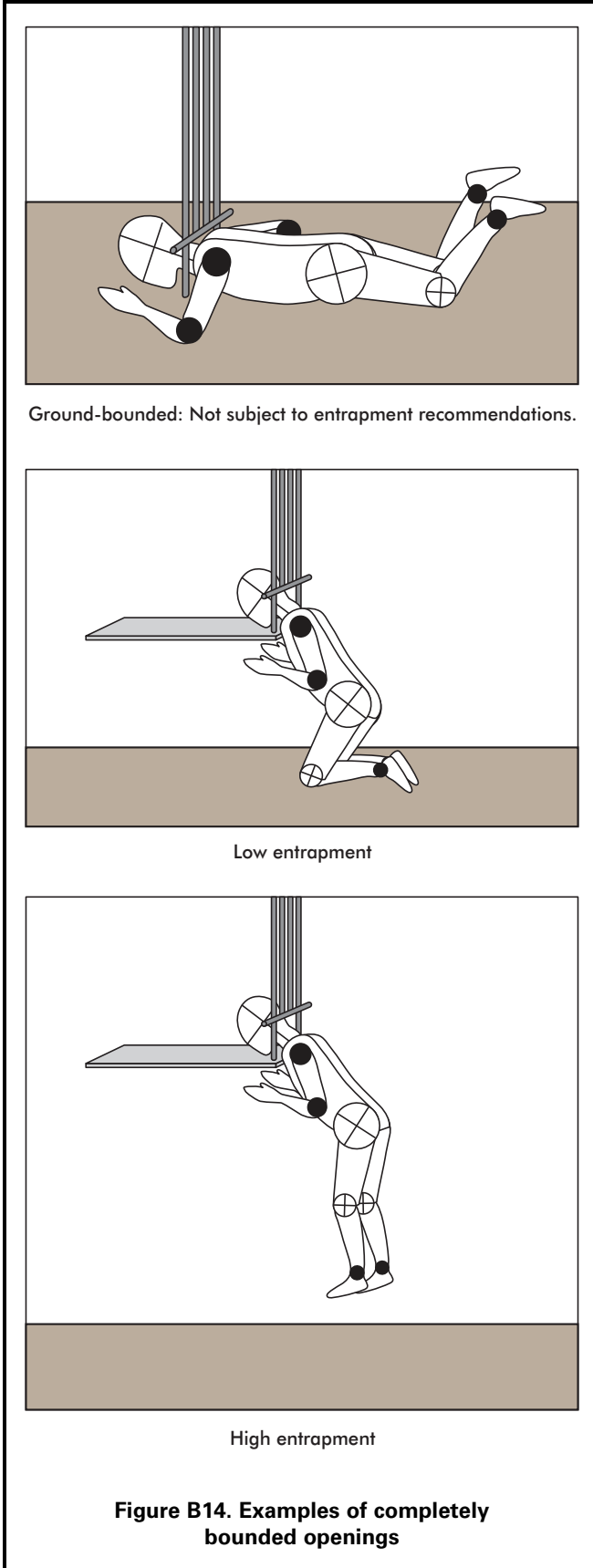
Step 4: Visually determine if the projection extends beyond the face of the slide projection gauge.

Pass: A projection that does not extend beyond the face of the gauge passes.

Fail: A projection that extends beyond the face of the gauge is considered a hazardous protrusion and should be eliminated.

NOTE: This test procedure is not applicable to the underside of a slide chute. For a slide chute with a circular cross section, the portion of the underside not subject to this projection recommendation is shown in Figure 18. The general recommendations for projections in §B.2.1 are applicable to the underside of the slide.



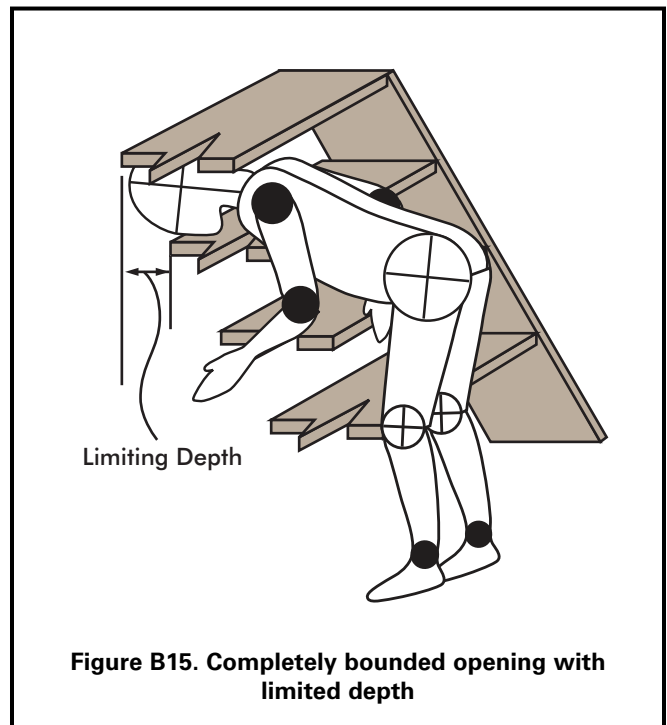


B.2.4 Entrapment

B.2.4.1 General

Any completely-bounded opening (Figure B14) that is not bounded by the ground may be a potential head entrapment hazard. Even those openings which are low enough to permit a child's feet to touch the ground present a risk of strangulation to an entrapped child, because younger children may not have the necessary intellectual ability and motor skills to withdraw their heads, especially if scared or panicked. An opening may present an entrapment hazard if the distance between any interior opposing surfaces is greater than 3.5 inches and less than 9 inches. If one dimension of an opening is within this potentially hazardous range, all dimensions of the opening should be considered together to fully evaluate the possibility of entrapment. The most appropriate method to determine whether an opening is hazardous is to test it using the following fixtures, methods, and performance criteria.

These recommendations apply to all playground equipment, i.e., toddler, preschool-age, and school-age children. Fixed equipment as well as moving equipment (in its stationary position) should be tested for entrapment hazards. There are two special cases for which separate procedures are given: (1) completely-bounded openings where depth of penetration is a critical issue (see Figure B15) and (2) openings formed by flexible climbing components.



B.2.5 Test fixtures

Two templates are required to determine if completely bounded openings in rigid structures present an entrapment hazard. These templates can easily be fabricated from cardboard, plywood, or sheet metal.

B.2.5.1 Small torso template

The dimensions (see Figure B3 and Figure B4) of this template are based on the size of the torso of the smallest user at risk (5th percentile 6-month-old child for Figure B3 and 2-year-old child for Figure B4). If an opening is too small to admit the template, it is also too small to permit feet first entry by a child. Because children’s heads are larger than their torsos, an opening that does not admit the small torso template will also prevent head first entry into an opening by a child.

B.2.5.2 Large head template

The dimensions (see Figure B5) of this template are based on the largest dimension on the head of the largest child at risk (95th percentile 5-year-old child). If an opening is large enough to permit free passage of the template, it is large enough to permit free passage of the head of the largest child at risk in any orientation. Openings large enough to permit free passage of the large head template will not entrap the chest of the largest child at risk.

B.2.5.3 Completely bounded openings with unlimited depth

B.2.5.3.1 Test procedure

- Step 1: Select the appropriate small torso template based on the intended users of the playground (Figure B3 for toddler playgrounds, Figure B4 for preschool- and school-age playgrounds).
- Step 2: Identify all completely bounded openings.
- Step 3: Attempt to place the small torso template in the opening with the plane of the template parallel to the plane of the opening. While keeping it parallel to the plane of the opening, the template should be rotated to its most adverse orientation (i.e., major axis of template oriented parallel to the major axis of the opening.)

Step 4: Determine if the small torso template can freely pass through the opening.

No: **Pass.** Stop

Yes: Continue



Step 5: Place the large head template in the opening, again with the plane of the template parallel to the plane of the opening, and try to insert it through the opening.

Pass: The large head template can be freely inserted through the opening

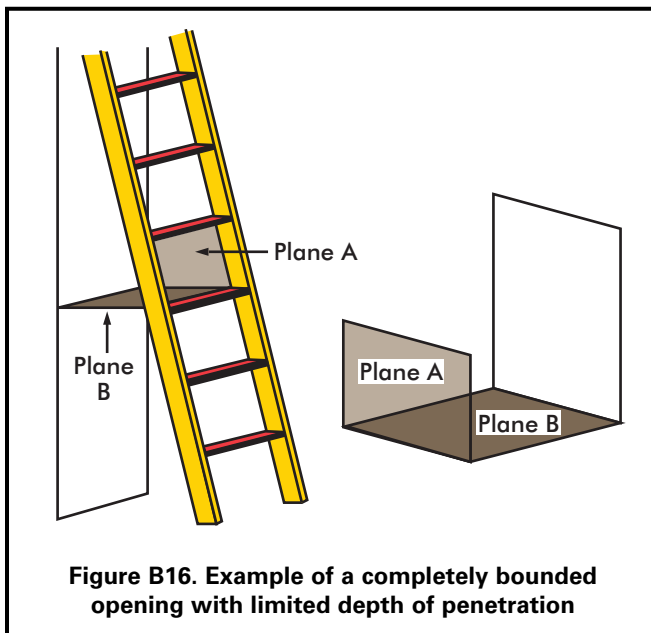
Fail: The opening admits the small torso template but does not admit the large head template.



B.2.5.4 Completely bounded openings with limited depth of penetration

The configuration of some openings may be such that the depth of penetration is a critical issue for determining the entrapment potential. For example, consider a vertical wall or some other barrier behind a step ladder. The entrapment potential depends not only on the dimensions of the opening between adjacent steps but also on the horizontal space between the lower boundary of the opening and the barrier. A child may enter the opening between adjacent steps feet first and may proceed to pass through the space between the rear of the lower step and the barrier and become entrapped when the child's head is unable to pass through either of these two openings. In effect, there are openings in two different planes, and each has the potential for head entrapment and should be tested.

Figure B16 illustrates these two planes for a step ladder as well as for a generic opening. Plane A is the plane of the completely bounded opening in question, and Plane B is the plane of the opening encompassing the horizontal space between the lower boundary of the opening in Plane A and the barrier that should also be tested for entrapment hazards.



B.2.5.4.1 Test procedure

Step 1: Select the appropriate small torso template based on the intended users of the playground (Figure B3 for toddler playgrounds, Figure B4 for preschool-age and school-age playgrounds).

Step 2: Identify all completely bounded openings with limited depth of penetration.

Step 3: Place the small torso template in the opening in Plane A with its plane parallel to Plane A; rotate the template to its most adverse orientation with respect to the opening while keeping it parallel to Plane A.

Step 4: Determine if the opening in Plane A admits the small torso template in any orientation when rotated about its own axis.

No: Pass. The opening is small enough to prevent either head first or feet first entry by the smallest user at risk and is not an entrapment hazard.

Yes: Continue.

Step 5: Place the small torso template in the opening in Plane B with its plane parallel to Plane B; rotate the template to its most adverse orientation with respect to the opening while keeping it parallel to Plane B.

Step 6: Determine if the opening in Plane B admits the small torso template.

No: Pass. The depth of penetration into the opening in Plane A is insufficient to result in entrapment of the smallest user at risk.

Yes: Continue.

Step 7: Place the large head template (Figure B5) in the opening in Plane A with its plane parallel to Plane A. Determine if the opening in Plane A admits the large head template.

No: Fail. A child, whose torso can enter the opening in Plane A as well as the opening in Plane B, may become entrapped by the head in the opening in Plane A.

Yes: Continue.

Step 8: With the plane of the large head template parallel to the opening in Plane B, determine if the opening in Plane B admits the large head template.

No: Fail. The largest user at risk cannot exit the opening in Plane B.

Yes: Pass. The openings in Plane A and Plane B do not pose an entrapment risk.

B.2.5.5 Flexible openings

Climbing components such as flexible nets are also a special case for the entrapment tests because the size and shape of openings on this equipment can be altered when force is applied, either intentionally or simply when a child climbs on or falls through the openings. Children are then potentially at risk of entrapment in these distorted openings.

The procedure for determining conformance to the entrapment recommendations for flexible openings requires two three-dimensional test probes which are illustrated in Figure B6, Figure B7, and Figure B8 are applied to an opening in a flexible component with a force of up to 50 pounds.

B.2.5.5.1 Test procedure

- Step 1: Select the appropriate small torso template based on the intended users of the playground (Figure B3 for toddler playgrounds, Figure B4 for preschool-age and school-age playgrounds).
- Step 2: Identify all completely bounded openings with flexible sides.
- Step 3: Place the small torso probes (Figures B6 and B7) in the opening, tapered end first, with the plane of its base parallel to the plane of the opening.
- Step 4: Rotate the probe to its most adverse orientation (major axis of probe parallel to major axis of opening) while keeping the base parallel to the plane of the opening.
- Step 5: Determine if the probe can be pushed or pulled completely through the opening by a force no greater than 30 pounds on toddler playgrounds or 50 pounds on preschool-age and school-age playgrounds.

No: Pass. Stop

Yes: Continue.



- Step 6: Place the large head probe (Figure B8) in the opening with the plane of its base parallel to the plane of the opening.
- Step 7: Determine if the large head probe can be pushed or pulled completely through the opening by a force no greater than 30 pounds on toddler playgrounds or 50 pounds on preschool-age and school-age playgrounds.

Yes: Pass. Stop.



No: Fail.



B.2.5.6 Partially bound openings

A partially bound opening is any opening which has at least one side or portion open, such as a U- or V-shaped opening. These openings can still pose an entrapment hazard by allowing the neck to enter but not allowing the head to slip out. A partially bound opening can be any part of the playground equipment where a child could get his or her neck caught, so it includes not only two- or three-sided openings, but also areas of large openings (large enough for the head template to enter) that have the characteristics that can entrap a child's neck. Several examples outlines of this situation are shown in the figures below. Openings that have an outline similar to these figures are often found when two parts of a playground meet, for example, the top of a slide and the side of a guardrail.

Identifying partially bound openings varies depending on the age range of the playground. Openings that should be tested include any opening where:

For toddlers:

- The perimeter of the opening is not closed
- The lowest leg of the opening is tilted upward (i.e. above horizontal) or 45 degrees below horizontal.

For preschool- and school-age:

- The perimeter of the opening is not closed
- The lowest leg of the opening is tilted upward (i.e. above horizontal)



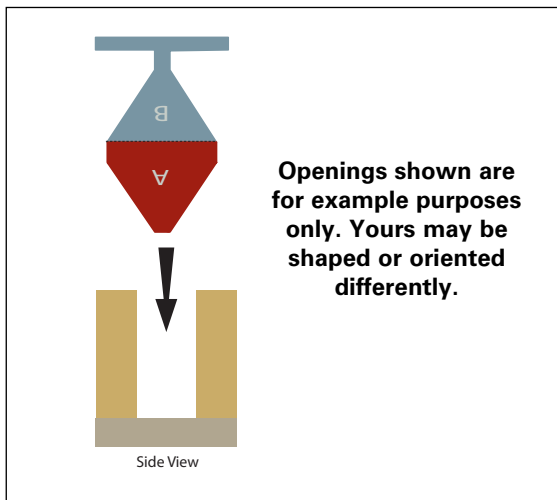
Examples of partially bound openings. Note, these examples are intended to illustrate the principle of partially bound openings and may or may not require testing.

B.2.5.6.1 Test procedure

Step 1: Select the appropriate Partially Bound Template based on the intended users of the playground (Figure B10 for toddler playgrounds, Figure B9 for preschool and school-age playground).

Step 2: Identify partially bound openings.

Step 3: Align the template so that the face of the template is parallel to the plane of the opening and the narrow tip of the A section is pointing toward the opening.

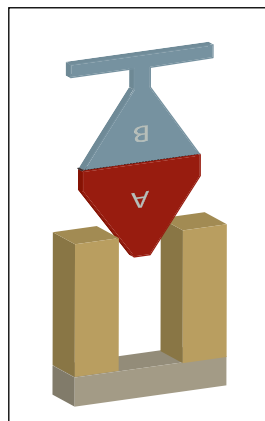
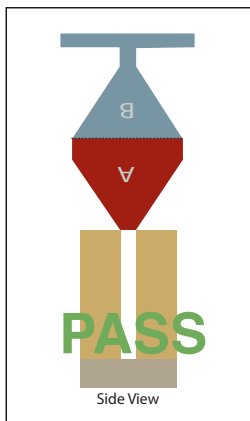


Step 4: Insert the A portion of the template into the opening following the centerline of the opening.

Step 5: Once inserted as far as possible, determine if there is simultaneous contact between the sides of the opening and both of the top corners at the narrow tip of section A.

Yes: Pass. Stop

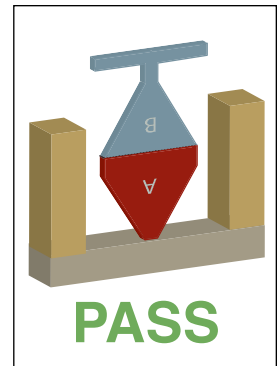
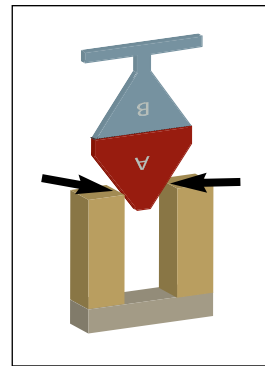
No: continue



Step 6: While still inserted as far as possible, determine if there is simultaneous contact between both of the angled sides of section A and the sides of the opening.

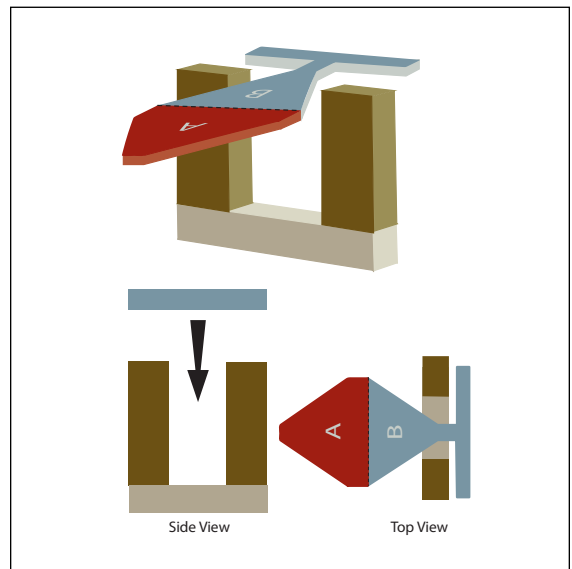
Yes: Note the points on the sides of opening where contact was made and continue

No: Pass. The narrow tip should be resting on the lower boundary of the opening with no contact with the sides of the opening. Stop



Step 7: Remove the template and turn the template so that the face of the template is perpendicular to the opening.

Step 8: Following the plane of the opening, insert the B portion of the template into the opening so that the narrow part of the B portion is between the sides of the opening.

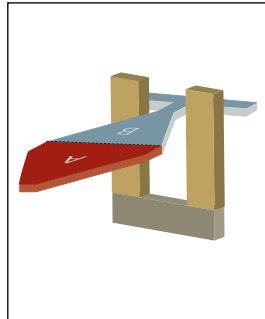
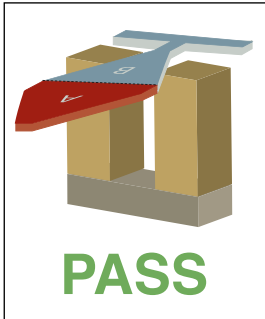


Step 9: Once inserted as far as possible, determine if the B portion is completely past the points where contact was made on the sides of the opening with the A portion.

No: Pass. Stop

Yes: Toddlers:
Fail. Stop

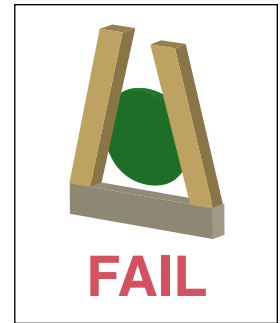
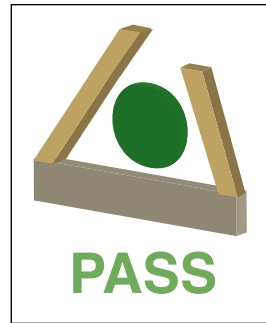
Preschool and
School-age:
Continue



Step 11: Determine if the Large Head Template passes freely through the larger opening.

Yes: Pass

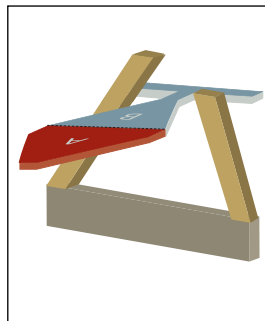
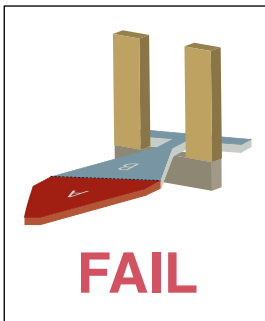
No: Fail



Step 10: Determine if the B portion can reach a point where the opening increases in size.

No: Fail. Stop

Yes: continue



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Page: 1 of 1

Quote To:

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Date: 7/8/2022

Expires: 8/7/2022

Reference:

Sales Person: CODY LOUGHRIN

Fax:

**PROPOSED EXCAVATION AND PLAYGROUND WORK AT MANAWA ELEMENTARY SCHOOL,
800 BEECH STREET, MANAWA, WI 54949**

AREA # 1

- EXCAVATE AND REMOVE EXISTING PLAYGROUND EQUIPMENT IN AS NEEDED. INCLUDES LOADING AND HAULING EQUIPMENT OFFSITE. INCLUDES DUMP FEES.
- EXCAVATE AND REMOVE EXISTING PLAYGROUND MATERIAL IN AREA (APPROXIMATELY 57' X 73') AT AN AVERAGE DEPTH OF 24 INCHES. ALL EXCAVATED MATERIAL WILL BE LOADED AND HAULED OFFSITE. INCLUDES DUMP FEES.

AREA #1 TOTAL COST = \$5,760.00

AREA # 2

- EXCAVATE AND REMOVE EXISTING PLAYGROUND EQUIPMENT IN AS NEEDED. INCLUDES LOADING AND HAULING EQUIPMENT OFFSITE. INCLUDES DUMP FEES.
- EXCAVATE AND REMOVE EXISTING PLAYGROUND MATERIAL IN AREA (APPROXIMATELY 30' X 42") AT AN AVERAGE DEPTH OF 24 INCHES. ALL EXCAVATED MATERIAL WILL BE LOADED AND HAULED OFFSITE. INCLUDES DUMP FEES.

AREA #2 TOTAL COST = \$2,805.00

NOTES:

- DOES NOT INCLUDE ANY UTILITY RELOCATES (PHONE, FIBER, GAS, ELEC, ECT) IF NEEDED.
- DOES NOT INCLUDE ANY LOCAL OR DNR PERMITS IF NEEDED.
- DOES NOT INCLUDE INSTALL OF ANY FABRIC UNDER NEW WOOD CHIPS IF NEEDED.
- DOES NOT INCLUDE INSTALL OF ANY NEW WOOD CHIP MATERIALS IF NEEDED.
- DOES NOT INCLUDE OF ANY NEW PLAYGROUND EQUIPMENT IF NEEDED.



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WAUPACA WI 54981
USA

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PAYMENT TERMS All invoices are due and payable upon completion. A service charge of 1.5% per month will be added to all past due amounts. All prices subject to applicable sales taxes.

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All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs must be approved by owner, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance. Note: This proposal may be withdrawn by us if not accepted within 30 days.

Signature *Carl Hoff* FAULK'S BROS. CONSTRUCTION, INC.

ACCEPTANCE OF PROPOSAL - The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Date of Acceptance: _____ Signature: _____

S & S Excavating
Job Estimate

N6256 County Road O
Manawa, WI 54949
920-596-3215

Job _____ - School District of Manawa
800 Beech Street
Manawa, WI 54949

Description – Removing playground equipment

Removal of playground equipment

Removing small piece of playground equipment before school begins **\$ 650.00**

Questions or concerns call me at 920-538-4000

Mark Schuelke

Owner



Melanie Oppor <moppor@manawaschools.org>

Fwd: form submit

1 message

Danni Brauer <dbrauer@manawaschools.org>
To: Melanie Oppor <moppor@manawaschools.org>

Mon, Sep 12, 2022 at 4:27 PM

Danielle J Brauer
MES Principal
Director of Special Education
School District of Manawa
dbrauer@manawaschools.org

----- Forwarded message -----

From: **Erica Ort** <ericaort@hotmail.com>
Date: Tue, Apr 13, 2021 at 7:50 AM
Subject: Re: form submit
To: Danni Brauer <dbrauer@manawaschools.org>

DTAK, LLC is pleased to quote \$20/yard for wood fiber delivered to Manawa, WI.

Delivered price for 763 cu. yards=\$15,260.

125 yards=\$2500.00

We do NOT do installation.

Please feel free to email me with any additional questions.

Thank You,

Erica

Sent from my U.S.Cellular© Smartphone
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From: Danni Brauer <dbrauer@manawaschools.org>
Sent: Monday, April 12, 2021 4:54:03 PM
To: Erica Ort <ericaort@hotmail.com>
Subject: Re: form submit

Can you get me quotes one for 763 yds and the other for 125 yds. Also, do you do installation? If so, please add that cost.

Danielle J Brauer



Melanie Oppor <moppor@manawaschools.org>

Fwd: Sale extended through 7/29

2 messages

Danni Brauer <dbrauer@manawaschools.org>
To: Melanie Oppor <moppor@manawaschools.org>

Mon, Sep 12, 2022 at 4:29 PM

Woodchips from Lee Recreation.

Danielle J Brauer
MES Principal
Director of Special Education
School District of Manawa
dbrauer@manawaschools.org

125 yards x \$25 = \$3,125
763 yards x \$25 = \$19,075

----- Forwarded message -----

From: **Jeff Thompson** <jeff@leerecreation.com>
Date: Wed, Jul 6, 2022 at 7:03 AM
Subject: Re: Sale extended through 7/29
To: Danni Brauer <dbrauer@manawaschools.org>

\$25 per yard delivered.
What do they charge?

On Wed, Jul 6, 2022 at 6:58 AM Danni Brauer <dbrauer@manawaschools.org> wrote:

Thanks for the update. What are you charging for woodchips? I already have heard from DTAK but am looking for a 2nd quote.

Thanks,
Danni

Danielle J Brauer
MES Principal
Director of Special Education
School District of Manawa
dbrauer@manawaschools.org

On Tue, Jul 5, 2022 at 9:03 AM Jeff Thompson <jeff@leerecreation.com> wrote:

Hi Danni,

Just letting you know that the sale structures that are in your latest proposal are still on sale through 7/29 so if you were able to get approval from the board this month, you could still lock into these prices.

--

Jeff Thompson
Sales & CPSI
Burke, 100 Years of Play
260 W. Main Street | Cambridge, WI 53523
1-800-775-8937 | www.leerecreation.com





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H-6575GR	ADA Hex Recycled Plastic Picnic Table - 46", Gray	<input type="text" value="2"/>	\$1285.00/EA	\$2,570.00	

SUBTOTAL = \$12,530.00

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\$13,493.55 Total

Shipping | Sale Code:

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Model #	Description
H-2560GR	Hex Recycled Plastic Picnic Table
H-6575GR	ADA Hex Recycled Plastic Picnic

Shipping | Sale Code: |

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 * Drop ship item(s)
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Zip Code

This is a residential address.

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Drop Ship - Freight	2 days	\$963.55 ▼

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 <p>ACPT16-1 Hexagon Recycled Plastic Picnic Table CONFIGURATION: ADA VERSION MOUNTING KIT: NO OPTIONAL MOUNTING KIT COLOR: GRAY SLATS FRAME COLOR: BLACK FRAME</p>	\$1,114.00	- 2 +	\$2,228.00
 <p>ACPT16-3 Hexagon Recycled Plastic Picnic Table CONFIGURATION: STANDARD MOUNTING KIT: NO OPTIONAL MOUNTING KIT COLOR: GRAY SLATS FRAME COLOR: BLACK FRAME</p>	\$1,143.00 \$1,129.86	- 8 +	\$9,038.84

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Shipping	Freight: \$1,274.86 Shipping to Manawa, WI 54949. Change address
Tax	\$0.00
Total	\$12,541.70



\$12,541.70

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School District of Manawa Attn: Melanie Oppor 800 Beech Street Manawa, WI 54949 920-596-5300

QUOTE #	DATE	EXPIRATION DATE
20229	09/13/2022	10/12/2022

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 Freight Carrier

ATTENTION
 Melanie Oppor

QUANTITY	PRODUCT	EACH	TOTAL
8	6' Hexagonal Recycled Plastic Picnic Table with Three Attached Seats - Portable. 250 lbs. Dimensions: 72" Overall Width x 41"D Top. Made with 100% recycled plastic slats and recycled plastic base. Stainless steel hardware included. With umbrella hole. Some assembly required. Base: Black Top/Seats: Gray NOF #: JP PB6HEX	1,040.00	8,320.00
2	6' Hexagonal Recycled Plastic ADA Picnic Table with Three Attached Seats - Portable. 210 lbs. Dimensions: 72" Seat to seat width. 41 1/2" Top from edge to edge. Made with 100% recycled plastic slats and black recycled plastic base. Stainless steel hardware included. With umbrella hole. Some assembly required. Base: Black Top/Seats: Gray NOF #: JP PB6HEXADA	1,013.00	2,026.00
Lead Time: 1-2 weeks to ship. Allow 4-6 days for transit time.			
Freight quote reflects delivery to a school address with liftgate service.			

By signing and dating this estimate you are acknowledging the quantities, products, prices, colors and all misc. charges are correct. Any discrepancies should be corrected and faxed or emailed to your account representative.

SUBTOTAL	10,346.00
SHIPPING	580.00
TOTAL	\$10,926.00

Accepted By

Accepted Date



Melanie Oppor <moppor@manawaschools.org>

Manawa - Misc. Project Update

Matt McGregor <mamcgregor@hoffman.net>
To: Melanie Oppor <moppor@manawaschools.org>

Wed, Sep 14, 2022 at 11:15 AM

Melanie

Please find update below regarding the misc. projects we are working on.

Let me know if you have any questions

Lighting leadtime is still being confirmed, but last conversation I had with Northland the lights were approx.. 20 weeks out. I would like to target installing the rough in work interior of the building over winter break and install lights when they arrive. Northland is also confirming that the pricing from back in March will still be held by their vendor.

Auto Operator is now in stock, we just need to work on a day/time to get Tri City on site to install, most likely preferred when no students are present.

Animal Room Exhaust Quote is attached for review and approval by the B&G Committee and board.

Matt McGregor
Senior Project Manager

Hoffman Planning, Design & Construction, Inc.

[122 E. College Avenue, Suite 1G | Appleton, WI 54911](#)

920.380.2104 phone | 920.380.9104 fax | 920.540.5540 mobile
matt.mcgregor@hoffman.net | www.hoffman.net

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Manawa High School - RTU-23 Exhaust Controls quote 08-24-2022.pdf
198K



Trane U.S. Inc.
234 W Florida St., 6th Floor
Milwaukee, WI 53204
Phone: (414) 266-5200

August 24, 2022

Matt McGregor
Senior Project Manager
Hoffman Planning, Design & Construction, Inc.
122 E. College Avenue, Suite 1G
Appleton, WI 54911

Site Address:
Manawa High School
515 East Fourth Street
Manawa, WI 54949

ATTENTION: Matt McGregor

PROJECT NAME: Manawa High School - RTU-23 Exhaust

We are pleased to propose the following Trane services for the equipment listed. Services will be performed using Trane's exclusive service procedures provided by factory trained and experienced technicians. You receive the full benefit of our expertise derived from being Trane equipment's original manufacturer. Our procedures are environmentally and safety conscious while providing for the efficient delivery of these services.

SCOPE OF SERVICE

- Trane BAS Tech to create point available to be mapped on graphic initiate the exhaust sequence:
 - Lower EF fan start setpoint (from 40% to 15%) and increased minimum outdoor air to a level that just keeps the space slightly negative (20% or slightly higher)
- Trane will provide and install a differential pressure sensor
- Integration to User interface by others, point mapping on graphic by others

PRICING AND ACCEPTANCE

TOTAL PRICE:..... **\$6,815.00 USD**

CLARIFICATIONS

- 1. Applicable taxes are not included and will be added to the invoice.
- 2. Any service not listed is not included.
- 3. Work will be performed during normal Trane business hours.
- 4. This proposal is valid for 30 days from August 24, 2022.

I appreciate the opportunity to earn your business and look forward to helping you with all of your service needs. Please contact me if you have any questions or concerns.

Sincerely,

Ashley Henderson
Trane Inc. US

COVID-19 NATIONAL EMERGENCY CLAUSE

The parties agree that they are entering into this Agreement while the nation is in the midst of a national emergency due to the Covid-19 pandemic ("Covid-19 Pandemic"). With the continued existence of Covid-19 Pandemic and the evolving guidelines and executive orders, it is difficult to determine the impact of the Covid-19 Pandemic on Trane’s performance under this Agreement. Consequently, the parties agree as follows:

- 1. Each party shall use commercially reasonable efforts to perform its obligations under the Agreement and to meet the schedule and completion dates, subject to provisions below;
- 2. Each party will abide by any federal, state (US), provincial (Canada) or local orders, directives, or advisories regarding the Covid-19 Pandemic with respect to its performance of its obligations under this Agreement and each shall have the sole discretion in determining the appropriate and responsible actions such party shall undertake to so abide or to safeguard its employees, subcontractors, agents and suppliers;
- 3. Each party shall use commercially reasonable efforts to keep the other party informed of pertinent updates or developments regarding its obligations as the Covid-19 Pandemic situation evolves; and
- 4. If Trane’s performance is delayed or suspended as a result of the Covid-19 Pandemic, Trane shall be entitled to an equitable adjustment to the project schedule and/or the contract price.

This agreement is subject to Customer’s acceptance of the attached Trane Terms and Conditions – Quoted Service.

CUSTOMER ACCEPTANCE	
_____	Authorized Representative
_____	Printed Name
_____	Title
_____	Purchase Order
_____	Acceptance Date

TERMS AND CONDITIONS – QUOTED SERVICE

“Company” shall mean Trane U.S. Inc..

To obtain repair service within the scope of Services as defined, contact your local Trane District office identified on the first page of the Agreement by calling the telephone number stated on that page. That Trane District office is responsible for Company's performance of this Agreement. Only Trane authorized personnel may perform service under this Agreement. For Service covered under this Agreement, Company will be responsible for the cost of transporting a part requiring service.

1. Agreement. These terms and conditions are an integral part of Company's offer and form the basis of any agreement (the “Agreement”) resulting from Company's proposal (the “Proposal”) for the services (the “Services”) on equipment listed in the Proposal (the “Covered Equipment”). **COMPANY'S TERMS AND CONDITIONS ARE SUBJECT TO PERIODIC CHANGE OR AMENDMENT.**

2. Connected Services. In addition to these terms and conditions, the Connected Services Terms of Service (“Connected Services Terms”), available at <https://www.trane.com/TraneConnectedServicesTerms>, as updated from time to time, are incorporated herein by reference and shall apply to the extent that Company provides Customer with Connected Services, as defined in the Connected Services Terms.

3. Acceptance. The Proposal is subject to acceptance in writing by the party to whom this offer is made or an authorized agent (“Customer”) delivered to Company within 30 days from the date of the Proposal. If Customer accepts the Proposal by placing an order, without the addition of any other terms and conditions of sale or any other modification, Customer's order shall be deemed acceptance of the Proposal subject to Company's terms and conditions. If Customer's order is expressly conditioned upon the Company's acceptance or assent to terms and/or conditions other than those expressed herein, return of such order by Company with Company's terms and conditions attached or referenced serves as Company's notice of objection to Customer's terms and as Company's counteroffer to provide Services in accordance with the Proposal. If Customer does not reject or object in writing to Company within 10 days, the Company's counteroffer will be deemed accepted. Customer's acceptance of the Services by Company will in any event constitute an acceptance by Customer of Company's terms and conditions. In the case of a dispute, the applicable terms and conditions will be those in effect at the time of delivery or acceptance of the Services. This Agreement is subject to credit approval by Company. Upon disapproval of credit, Company may delay or suspend performance or, at its option, renegotiate prices and/or terms and conditions with Customer. If Company and Customer are unable to agree on such revisions, this Agreement shall be cancelled without any liability, other than Customer's obligation to pay for Services rendered by Company to the date of cancellation.

4. Cancellation by Customer Prior to Services; Refund. If Customer cancels this Agreement within (a) thirty (30) days of the date this Agreement was mailed to Customer or (b) twenty (20) days of the date this Agreement was delivered to Customer, if it was delivered at the time of sale, and no Services have been provided by Company under this Agreement, the Agreement will be void and Company will refund to Customer, or credit Customer's account, the full Service Fee of this Agreement that Customer paid to Company, if any. A ten percent (10%) penalty per month will be added to a refund that is due but is not paid or credited within forty-five (45) days after return of this Agreement to Company. Customer's right to cancel this Agreement only applies to the original owner of this Agreement and only if no Services have been provided by Company under this Agreement prior to its return to Company.

5. Cancellation by Company. This Agreement may be cancelled by Company for any reason or no reason, upon written notice from Company to Customer no later than 30 days prior to performance of any Services hereunder and Company will refund to Customer, or credit Customer's account, that part of the Service Fee attributable to Services not performed by Company. Customer shall remain liable for and shall pay to Company all amounts due for Services provided by Company and not yet paid.

6. Services Fees and Taxes. Fees for the Services (the “Service Fee(s)”) shall be as set forth in the Proposal and are based on performance during regular business hours. Fees for outside Company's regular business hours and any after-hours services shall be billed separately according to the then prevailing overtime or emergency labor/labour rates. In addition to the stated Service Fee, Customer shall pay all taxes not legally required to be paid by Company or, alternatively, shall provide Company with acceptable tax exemption certificates. Customer shall pay all costs (including attorneys' fees) incurred by Company in attempting to collect amounts due.

7. Payment. Payment is due upon receipt of Company's invoice. Company reserves the right to add to any account outstanding for more than 30 days a service charge equal to the lesser of the maximum allowable legal interest rate or 1.5% of the principal amount due at the end of each month. Customer shall pay all costs (including attorneys' fees) incurred by Company in attempting to collect amounts due or otherwise enforcing these terms and conditions.

8. Customer Breach. Each of the following events or conditions shall constitute a breach by Customer and shall give Company the right, without an election of remedies, to terminate this Agreement or suspend performance by delivery of written notice: (1) Any failure by Customer to pay amounts when due; or (2) any general assignment by Customer for the benefit of its creditors, or if Customer becomes bankrupt or insolvent or takes the benefit of any statute for bankrupt or insolvent debtors, or makes or proposes to make any proposal or arrangement with creditors, or if any steps are taken for the winding up or other termination of Customer or the liquidation of its assets, or if a trustee, receiver, or similar person is appointed over any of the assets or interests of Customer; (3) Any representation or warranty furnished by Customer in connection with this Agreement is false or misleading in any material respect when made; or (4) Any failure by Customer to perform or comply with any material provision of this Agreement. Customer shall be liable to the Company for all Services furnished to date and all damages sustained by Company (including lost profit and overhead)

9. Performance. Company shall perform the Services in accordance with industry standards generally applicable in the state or province where the Services are performed under similar circumstances as of the time Company performs the Services. Company is not liable for any claims, damages, losses, or expenses, arising from or related to work done by or services provided by individuals or entities that are not employed by or hired by Company. Company may refuse to perform any Services or work where working conditions could endanger property or put at risk the safety of people. Parts used for any repairs made will be those selected by Company as suitable for the repair and may be parts not manufactured by Company. Customer must reimburse Company for services, repairs, and/or replacements performed by Company at Customer's request beyond the scope of Services or otherwise excluded under this Agreement. The reimbursement shall be at the then prevailing applicable regular, overtime, or holiday rates for labor/labour and prices for materials. Prior to Company performing the additional services, repairs, and/or replacements, Customer may request a separate written quote stating the work to be performed and the price to be paid by Customer for the work.

10. Customer Obligations. Customer shall: (a) provide Company reasonable and safe access to the Covered Equipment and areas where Company is to work; and (b) unless otherwise agreed by Customer and Company, at Customer's expense and before the Services begin, Customer will provide any necessary access platforms, catwalks to safely perform the Services in compliance with OSHA, state, or provincial industrial safety regulations or any other applicable industrial safety standards or guidelines.

11. Exclusions. Unless expressly included in the Proposal, the Services do not include, and Company shall not be responsible for or liable to the Customer for, any claims, losses, damages or expenses suffered by the Customer in any way connected with, relating to or arising from any of the following:

- (a) Any guarantee of room conditions or system performance;
- (b) Inspection, operation, maintenance, repair, replacement or performance of work or services outside the Services;
- (c) Damage, repairs or replacement of parts made necessary as a result of the acts or omission of Customer or any Event of Force Majeure;

(d) Any claims, damages, losses, or expenses, arising from or related to conditions that existed in, on, or upon the premises before the effective date of this Agreement ("Pre-Existing Conditions") including, without limitation, damages, losses, or expenses involving a Pre-Existing Condition of building envelope issues, mechanical issues, plumbing issues, and/or indoor air quality issues involving mold/mould, bacteria, microbial growth, fungi or other contaminants or airborne biological agents; and
(e) Replacement of refrigerant is excluded, unless replacement of refrigerant is expressly stated as included with the Proposal.

12. Limited Warranty. Company warrants that: (a) the material manufactured by Company and provided to the Customer in performance of the Services is free from defects in material and manufacture for a period of 12 months from the earlier of the date of equipment start-up or replacement and (b) the labor/labour portion of the Services is warranted to have been properly performed for a period of 90 days from date of completion (the "Limited Warranty"). Company obligations of equipment start-up, if any are stated in the Proposal, are coterminous with the Limited Warranty period. Defects must be reported to Company within the Limited Warranty period. Company's obligation under the Limited Warranty is limited to repairing or replacing the defective part at its option and to correcting any improperly performed labor/labour. No liability whatsoever shall attach to Company until the Services have been paid for in full. Exclusions from this Limited Warranty include claims, losses, damages, and expenses in any way connected with, related to, or arising from failure or malfunction of equipment due to the following: wear and tear; end of life failure; corrosion; erosion; deterioration; Customer's failure to follow the Company-provided maintenance plan; unauthorized or improper maintenance; unauthorized or improper parts or material; refrigerant not supplied by Company; and modifications made by others to Company's equipment. Company shall not be obligated to pay for the cost of lost refrigerant or lost product. Some components of Company equipment may be warranted directly from the component supplier, in which case this Limited Warranty shall not apply to those components and any warranty of such components shall be the warranty given by the component supplier. Notwithstanding the foregoing, all warranties provided herein terminate upon termination or cancellation of this Agreement. Equipment, material and/or parts that are not manufactured by Company ("Third-Party Product(s)") are not warranted by Company and have such warranties as may be extended by the respective manufacturer. **CUSTOMER UNDERSTANDS THAT COMPANY IS NOT THE MANUFACTURER OF ANY THIRD-PARTY PRODUCT(S) AND ANY WARRANTIES, CLAIMS, STATEMENTS, REPRESENTATIONS, OR SPECIFICATIONS ARE THOSE OF THE THIRD-PARTY MANUFACTURER, NOT COMPANY AND CUSTOMER IS NOT RELYING ON ANY WARRANTIES, CLAIMS, STATEMENTS, REPRESENTATIONS, OR SPECIFICATIONS REGARDING THE THIRD-PARTY PRODUCT THAT MAY BE PROVIDED BY COMPANY OR ITS AFFILIATES, WHETHER ORAL OR WRITTEN.**

THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY ARE THE SOLE AND EXCLUSIVE REMEDIES FOR WARRANTY CLAIMS PROVIDED BY COMPANY TO CUSTOMER UNDER THIS AGREEMENT AND ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, LIABILITIES, CONDITIONS AND REMEDIES, WHETHER IN CONTRACT, WARRANTY, STATUTE, OR TORT (INCLUDING NEGLIGENCE), EXPRESS OR IMPLIED, IN LAW OR IN FACT, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHERS ARISING FROM COURSE OF DEALING OR TRADE. COMPANY EXPRESSLY DISCLAIMS ANY REPRESENTATIONS OR WARRANTIES, ENDORSEMENTS OR CONDITIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF QUALITY, FITNESS, MERCHANTABILITY, DURABILITY AND/OR OTHERS ARISING FROM COURSE OF DEALING OR TRADE OR REGARDING PREVENTION BY THE SCOPE OF SERVICES, OR ANY COMPONENT THEREOF. COMPANY MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. ADDITIONALLY, COMPANY MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING PREVENTING, ELIMINATING, REDUCING OR INHIBITING ANY MOLD, FUNGUS, BACTERIA, VIRUS, MICROBIAL GROWTH, OR ANY OTHER CONTAMINANTS (INCLUDING COVID-19 OR ANY SIMILAR VIRUS) (COLLECTIVELY, "CONTAMINANTS"), WHETHER INVOLVING OR IN CONNECTION WITH EQUIPMENT, ANY COMPONENT THEREOF, SERVICES OR OTHERWISE. IN NO EVENT SHALL COMPANY HAVE ANY LIABILITY FOR THE PREVENTION, ELIMINATION, REDUCTION OR INHIBITION OF THE GROWTH OR SPREAD OF SUCH CONTAMINANTS INVOLVING OR IN CONNECTION WITH ANY EQUIPMENT, THIRD-PARTY PRODUCT, OR ANY COMPONENT THEREOF, SERVICES OR OTHERWISE AND CUSTOMER HEREBY SPECIFICALLY ACKNOWLEDGES AND AGREES THERETO

13. Indemnity. To the maximum extent permitted by law, Company and Customer shall indemnify and hold harmless each other from any and all claims, actions, costs, expenses, damages and liabilities, including reasonable attorneys' fees, resulting from death or bodily injury or damage to real or personal property, to the extent caused by the negligence or misconduct of the indemnifying party, and/or its respective employees or authorized agents in connection with their activities within the scope of this Agreement. Neither party shall indemnify the other against claims, damages, expenses, or liabilities to the extent attributable to the acts or omissions of the other party or third parties. If the parties are both at fault, the obligation to indemnify shall be proportional to their relative fault. The duty to indemnify and hold harmless will continue in full force and effect, notwithstanding the expiration or early termination of this Agreement, with respect to any claims based on facts or conditions that occurred prior to expiration or termination of this Agreement.

14. Limitation of Liability. **NOTWITHSTANDING ANYTHING TO THE CONTRARY, NEITHER PARTY SHALL BE LIABLE FOR SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL LOSSES OR DAMAGES OF ANY KIND (INCLUDING WITHOUT LIMITATION REFRIGERANT LOSS, PRODUCT LOSS, LOST REVENUE OR PROFITS, OR LIABILITY TO THIRD PARTIES), INCLUDING CONTAMINANTS LIABILITIES, OR PUNITIVE DAMAGES WHETHER BASED IN CONTRACT, WARRANTY, STATUTE, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, INDEMNITY OR ANY OTHER LEGAL THEORY OR FACTS. NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, THE TOTAL AND AGGREGATE LIABILITY OF THE COMPANY TO THE CUSTOMER WITH RESPECT TO ANY AND ALL CLAIMS CONNECTED WITH, RELATED TO OR ARISING FROM THE PERFORMANCE OR NON-PERFORMANCE OF THIS AGREEMENT, WHETHER BASED IN CONTRACT, WARRANTY, STATUTE, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, INDEMNITY OR ANY OTHER LEGAL THEORY OR FACTS, SHALL NOT EXCEED THE COMPENSATION RECEIVED BY COMPANY UNDER THIS AGREEMENT. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DAMAGES (WHETHER DIRECT OR INDIRECT) RESULTING FROM MOLD, FUNGUS, BACTERIA, MICROBIAL GROWTH, OR OTHER CONTAMINATES OR AIRBORNE BIOLOGICAL AGENTS. TO THE MAXIMUM EXTENT ALLOWED BY LAW, COMPANY SHALL NOT BE LIABLE FOR ANY OF THE FOLLOWING IN CONNECTION WITH PROVIDING THE ENERGY AND BUILDING PERFORMANCE SERVICES: INTERRUPTION, DELETION, DEFECT, DELAY IN OPERATION OR TRANSMISSION; CUSTOMER'S NETWORK SECURITY; COMPUTER VIRUS; COMMUNICATION FAILURE; THEFT OR DESTRUCTION OF DATA; GAPS IN DATA COLLECTED; AND UNAUTHORIZED ACCESS TO CUSTOMER'S DATA OR COMMUNICATIONS NETWORK.**

15. CONTAMINANTS LIABILITY

The transmission of COVID-19 may occur in a variety of ways and circumstances, many of the aspects of which are currently not known. HVAC systems, products, services and other offerings have not been tested for their effectiveness in reducing the spread of COVID-19, including through the air in closed environments. **IN NO EVENT WILL COMPANY BE LIABLE UNDER THIS AGREEMENT OR OTHERWISE FOR ANY INDEMNIFICATION, ACTION OR CLAIM, WHETHER BASED ON WARRANTY, CONTRACT, TORT OR OTHERWISE, FOR ANY BODILY INJURY (INCLUDING DEATH), DAMAGED TO PROPERTY, OR ANY OTHER LIABILITIES, DAMAGES OR COSTS RELATED TO CONTAMINANTS (INCLUDING THE SPREAD, TRANSMISSION MITIGATION, ELIMINATION, OR CONTAMINATION THEREOF) (COLLECTIVELY, "CONTAMINANTS LIABILITIES") AND CUSTOMER HEREBY EXPRESSLY RELEASES COMPANY FROM ANY SUCH CONTAMINANT LIABILITIES.**

16. Asbestos and Hazardous Materials. The Services expressly exclude any identification, abatement, cleanup, control, disposal, removal or other work connected with asbestos or other hazardous materials (collectively, "Hazardous Materials"). Should Company become aware of or suspect the presence of Hazardous Materials, Company may immediately stop work in the affected area and shall notify Customer. Customer will be responsible for taking any and all action necessary to correct the condition in accordance with all applicable laws and regulations. Customer shall be exclusively responsible for any claims, liability, fees and penalties, and the payment thereof, arising out of or relating to any Hazardous Materials on or about the premises, not brought onto the premises by Company. Company shall be required to resume performance of the Services only when the affected area has been rendered harmless.

17. Insurance. Company agrees to maintain the following insurance during the term of the contract with limits not less than shown below and will, upon request from Customer, provide a Certificate of evidencing the following coverage:

Commercial General Liability	\$2,000,000 per occurrence
Automobile Liability	\$2,000,000 CSL
Workers Compensation	Statutory Limits

If Customer has requested to be named as an additional insured under Company's insurance policy, Company will do so but only subject to Company's manuscript additional insured endorsement under its primary Commercial General Liability policies. In no event does Company or its insurer waive its right of subrogation

18. Force Majeure. Company's duty to perform under this Agreement is contingent upon the non-occurrence of an Event of Force Majeure. If Company shall be unable to carry out any material obligation under this Agreement due to an Event of Force Majeure, this Agreement shall at Company's election (i) remain in effect but Company's obligations shall be suspended until the uncontrollable event terminates or (ii) be terminated upon ten (10) days' notice to Customer, in which event Customer shall pay Company for all parts of the Services furnished to the date of termination. An "Event of Force Majeure" shall mean any cause or event beyond the control of Company. Without limiting the foregoing, "Event of Force Majeure" includes: acts of God; acts of terrorism, war or the public enemy; flood; earthquake; lightning; tornado; storm; fire; civil disobedience; pandemic insurrections; riots; labor disputes; labor or material shortages; sabotage; restraint by court order or public authority (whether valid or invalid), and action or non-action by or inability to obtain or keep in force the necessary governmental authorizations, permits, licenses, certificates or approvals if not caused by Company and the requirements of any applicable government in any manner that diverts either the material or the finished product to the direct or indirect benefit of the government.

19. General. Except as provided below, to the maximum extent provided by law, this Agreement is made and shall be interpreted and enforced in accordance with the laws of the state or province in which the Services are performed without regard to choice of law principles which might otherwise call for the application of a different state's or province's law. Any dispute arising under or relating to this Agreement that is not disposed of by agreement shall be decided by litigation in a court of competent jurisdiction located in the state or province in which the Services are performed. Any action or suit arising out of or related to this Agreement must be commenced within one year after the cause of action has accrued. To the extent the premises are owned and/or operated by any agency of the United States Federal Government, determination of any substantive issue of law shall be according to the United States Federal common law of Government contracts as enunciated and applied by Federal judicial bodies and boards of contract appeals of the Federal Government. This Agreement contains all of the agreements, representations and understandings of the parties and supersedes all previous understandings, commitments or agreements, oral or written, related to the Services. No documents shall be incorporated herein by reference except to the extent Company is a signatory thereon. If any term or condition of this Agreement is invalid, illegal or incapable of being enforced by any rule of law, all other terms and conditions of this Agreement will nevertheless remain in full force and effect as long as the economic or legal substance of the transaction contemplated hereby is not affected in a manner adverse to any party hereto. Customer may not assign, transfer, or convey this Agreement, or any part hereof, without the written consent of Company. Subject to the foregoing, this Agreement shall bind and inure to the benefit of the parties hereto and their permitted successors and assigns. This Agreement may be executed in several counterparts, each of which when executed shall be deemed to be an original, but all together shall constitute but one and the same Agreement. A fully executed facsimile copy hereof or the several counterparts shall suffice as an original. No modifications, additions or changes may be made to this Agreement except in a writing signed by Company. No failure or delay by the Company in enforcing any right or exercising any remedy under this Agreement shall be deemed to be a waiver by the Company of any right or remedy.

20. Equal Employment Opportunity/Affirmative Action Clause. Company is a United States federal contractor that complies fully with Executive Order 11246, as amended, and the applicable regulations contained in 41 C.F.R. Parts 60-1 through 60-60, 29 U.S.C. Section 793 and the applicable regulations contained in 41 C.F.R. Part 60-741; and 38 U.S.C. Section 4212 and the applicable regulations contained in 41 C.F.R. Part 60-250; and Executive Order 13496 and Section 29 CFR 471, appendix A to subpart A, regarding the notice of employee rights in the United States and with Canadian Charter of Rights and Freedoms Schedule B to the Canada Act 1982 (U.K.) 1982, c. 11 and applicable Provincial Human Rights Codes and employment law in Canada.

21. U.S. Government Contracts.

The following provision applies only to direct sales by Company to the US Government. The Parties acknowledge that all items or services ordered and delivered under this Agreement / Purchase Order are Commercial Items as defined under Part 12 of the Federal Acquisition Regulation (FAR). In particular, Company agrees to be bound only by those Federal contracting clauses that apply to "commercial" suppliers and that are contained in FAR 52.212-5(e)(1). Company complies with 52.219-8 or 52.219-9 in its service and installation contracting business. **The following provision applies only to indirect sales by Company to the US Government.** As a Commercial Item Subcontractor, Company accepts only the following mandatory flow down provisions: 52.219-8; 52.222-26; 52.222-35; 52.222-36; 52.222-39; 52.247-64. If the Services are in connection with a U.S. government contract, Customer agrees and hereby certifies that it has provided and will provide current, accurate, and complete information, representations and certifications to all government officials, including but not limited to the contracting officer and officials of the Small Business Administration, on all matters related to the prime contract, including but not limited to all aspects of its ownership, eligibility, and performance. Anything herein notwithstanding, Company will have no obligations to Customer unless and until Customer provides Company with a true, correct and complete executed copy of the prime contract. Upon request, Customer will provide copies to Company of all requested written communications with any government official related to the prime contract prior to or concurrent with the execution thereof, including but not limited to any communications related to contractor's Customer's ownership, eligibility or performance of the prime contract. Customer will obtain written authorization and approval from Company prior to providing any government official any information about Company's performance of the Services that are the subject of this offer or agreement, other than the Proposal or this Agreement.

22. Limited Waiver of Sovereign Immunity. If Customer is an Indian tribe (in the U.S.) or a First Nation or Band Council (in Canada), Customer, whether acting in its capacity as a government, governmental entity, a duly organized corporate entity or otherwise, for itself and for its agents, successors, and assigns: (1) hereby provides this limited waiver of its sovereign immunity as to any damages, claims, lawsuit, or cause of action (herein "Action") brought against Customer by Company and arising or alleged to arise out of the furnishing by Company of any product or service under this Agreement, whether such Action is based in contract, tort, strict liability, civil liability or any other legal theory; (2) agrees that jurisdiction and venue for any such Action shall be proper and valid (a) if Customer is in the U.S., in any state or United States court located in the state in which Company is performing this Agreement or (b) if Customer is in Canada, in the superior court of the province or territory in which the work was performed; (3) expressly consents to such Action, and waives any objection to jurisdiction or venue; (4) waives any requirement of exhaustion of tribal court or administrative remedies for any Action arising out of or related to this Agreement; and

(5) expressly acknowledges and agrees that Company is not subject to the jurisdiction of Customer's tribal court or any similar tribal forum, that Customer will not bring any action against Company in tribal court, and that Customer will not avail itself of any ruling or direction of the tribal court permitting or directing it to suspend its payment or other obligations under this Agreement. The individual signing on behalf of Customer warrants and represents that such individual is duly authorized to provide this waiver and enter into this Agreement and that this Agreement constitutes the valid and legally binding obligation of Customer, enforceable in accordance with its terms.

1-10.48 (0821)

Supersedes 1-10.48 (0720)



Students choosing to excel; realizing their strengths.

To: Board of Education
 From: Dr. Melanie J. Oppor
 Date: September 14, 2022
 Re: SDM Safety Overview

Over the past several years a number of projects have been undertaken to increase safety and security across the School District of Manawa.

Project	Purpose
Secure entrances constructed at both buildings	Through the Energy Efficiency and Referendum processes, both buildings have secure main entrances.
DOJ approved safety film on main vestibule windows	The 3M film was installed to prevent glass in doors or windows from shattering.
ALICE Training	All personnel participate in annual e-learning. All personnel take an initial in-person active intruder training. Drills are conducted at least twice a year with all students and staff.
Wooden plenum removed throughout the MS/HS structure	All wood used in the original HS construction above the suspended ceilings in corridors was removed to prevent fire from spreading rapidly along the roof line.
Won door installed	The new accordion style fire door was installed during the referendum as a fire stop for the new front office addition at the MS/HS.
Martin System fire alarm system	Installed new fire horns in the MS/HS and installed new fire alarm monitoring systems in both buildings to enhance emergency response time and ensure students/staff can hear the horns in noisier locations like the gym and technology education labs.
Monthly fire drills	Monthly fire drills are required by state statute.
2-3 tornado/shelter in place drills	These drills are strategically done in preparation for the peak storm seasons.
Added surveillance cameras installed for better coverage of buildings and sites along	It is easier to identify people or details and to observe potential safety issues at a glance.

with large multi-view screens in both school offices	
Surveillance camera access by Waupaca County Sheriff Department Call Center	Waupaca County’s enhanced call center allows the dispatcher and the responding officers to size up a situation in order to provide the most advantageous response.
Surveillance camera access by Manawa Police Department	Allows the Chief of Police and/or responding officers to size up a situation in order to provide the most advantageous response.
Constructed new parking and bus areas at MES; updated parent/guest and staff parking	The new design separates bus and car traffic as well as minimizing the risk of students or guest crossing the parking lot in high traffic areas.
Convened District-wide Safety Committee	The Board of Education appointed a diverse committee of stakeholders to assist the SDM in updating emergency response protocols. The committee’s part of this process is anticipated be completed by the end of November and shared with the Board of Education.
Conducted an MES playground safety inspection (September 2022)	Jodi Traas, Aegis Corporation – Senior Risk Management Consultant completed this inspection to guide priorities and decisions regarding MES playground enhancements.
StopIt app real time reporting system	Purchased at a reduced rate through the District’s liability insurance carrier to provide an anonymous “tip” line directly to administrators, Dean of Students, and counselors regarding situations that require immediate attention from students, parents, and staff. It is also intended to address bullying concerns.
Student conduct programs at both schools	Appropriate behavior is recognized through the Honor Pass program at the HS. MES incentives positive behavior. Restorative justice practices are often used so the student is expected to correct the situation where a mistake was made so that students learn the appropriate behavior expectations.
Walkie-talkie systems in both buildings	Each staff member has a walkie-talkie. Each building has its own channel. This is an effective way of communicating information quickly to colleagues.
Keys and fobs with Manawa Police Department, Waupaca County Sheriff’s Department, and Manawa Rural Fire Department	First responders and law enforcement have access to both buildings 24/7 in order to provide a quick and efficient response.

Fob installed on MES playground door	The playground door can remain locked but staff have easy fob access to assist students re-entering the building.
Windows and doors are lettered/numbered	This identification system helps first responders locate the “trouble” area as they plan entry to the building.
Family Engagement Specialist	The SDM partners with 3 area districts and the Waupaca County Department of Health and Human Services to have a Family Engagement Specialist. This person assists students and families in accessing resources in the community to support their needs.
GoGuardian	Staff can monitor students’ use of their Chromebooks in real time and can take control of the students’ Chromebooks if they get off task. Filters also limit students’ access to internet sites that are not developmentally appropriate.
Know Be For	Ransomware
Google Classroom	Google Classroom provides filter protections for student users of all ages.
iBoss	Email and content filter
Furinet Firewall	A firewall is a network security device that monitors and filters incoming and outgoing network traffic based on an organization's previously established security policies. At its most basic, a firewall is essentially the barrier that sits between a private internal network and the public Internet.
Collaborating with the state of Wisconsin Cybersecurity Team	The IT Director gleans information to stay ahead of developing issues and trends in cybersecurity.
Virtual machineware	This provides data backups to the cloud.
Skyward	The student information system, Skyward, is cloud-based.
Network security includes VLANs, redundancy, and backups	All of these measures are in place to ensure that essential data remains confidential and secure even in the event of a catastrophic loss.
Uninterrupted power supplies	This power supply bridges the gap between a power outage the startup of the generator.

Manawa School District Site survey 12-2-2021

Elementary School and District Office

- Provide fire extinguisher training to staff.
- Locate fire extinguisher signs higher and/or perpendicular to the wall
- Provide red reflective squares on lower portion of mechanical room doors.
- Remove door stops from exterior doors.
- Name main hallways (include on floor plans)
- Several store rooms had missing ceiling tiles.
- All staff should have fob access to both buildings.
- Provide safety vests for staff
- Number gym doors on the inside.
- There are no cameras inside the gym.
- Fence on north side electrical/generator needs to be locked.
- Consider radio battery replacement program
- Fire alarm pull station in gym is not protected.
- Install fence between parking lot and playground area.
- Identify storm shelter locations closer to classroom areas.
- Take "GO KITS" to shelter locations.

Middle School/High School

- Verify room numbers are clearly visible from hallway.
- Teachers names should not be posted on classrooms.
- All staff should have fob access to both buildings.
- Provide safety vests for staff
- Items should not be stored in vestibules.
- Hall at west end of gym should not be used as a store room.
- Art room store room has heavy boxes stacked too high.
- Art room store room has a wooden ladder.
- Darkroom is not secured.
- Missing door on server room by library.
- Mouse trap exposed in server room by library.
- Unprotected light switches in the gym.
- Custodial room double doors were open and not occupied.
- Curtains on stage should be open.
- Switchable motion sensor lights could be installed in hall by stage.
- Provide fire extinguisher training to staff.
- Locate fire extinguisher signs higher and/or perpendicular to the wall
- Provide red reflective squares on lower portion of mechanical room doors.
- Remove door stops from exterior doors.
- Name main hallways (include on floor plans)
- Fire door by main entrance does not seem to function properly.
- Take “GO KITS” to shelter locations.

Paving the Way

- Place address sign on rear of building.
- Install security camera(s).