



Division 11 Equipment

11 05 00 Common Work Results for Equipment

11 05 10 General Requirements for Equipment

1. Equipment design for all UW Madison facilities shall comply with all of the provisions of the latest version of the Division of Facilities Development & Management (DFDM) *Equipment Design Standards*, which is available from the DFDM website.
2. References within the DFDM Guidelines regarding the DFDM Project Manager shall apply to the UW-MADISON Project Manager on UW Managed Projects.
3. Project Specifications shall use as their basis all appropriate sections of the latest edition of the DFDM Master Specifications.
4. Deviations from DFDM's Minimum Design Guidelines or the DFDM Master Specification sections shall be made only upon approval from the UW-Madison Project Manager.
5. The Guidelines for Planning and Design of UW-Madison Facilities take precedence over DFDM Guidelines, but the A/E shall discuss all conflicts within the guidelines and specifications with the UW-Madison Project Manager.

11 10 00 Vehicle and Pedestrian Equipment

11 13 00 Loading Dock Equipment

1. All loading docks shall be provided with scissors lifts and/or dock levelers to accommodate a variety of campus and other non-standard bed height delivery vehicles.
2. Scissors lifts shall be flush with ground when lowered and raised to a height of approx. 4 feet at the dock to accommodate trucks. The campus standard for Scissor lifts is Autoquip model # PLT-6080 S. Provide a small curb in the recess in the pavement base to reduce debris accumulation under the lift.
3. Buildings with greater delivery demands, as determined by the campus, shall be provided with 2 bays, as well as a person-door, which includes a laminated glass vision panel and is secured with an access control device. Single bay designs should also provide a person-door.
4. A large and open interior area shall be required for staging delivered materials with support rooms around the perimeter for other needs.
5. Adequate turnaround area shall be provided for appropriate standard delivery vehicles. Refer to *Section 11 82 26 Waste Compactors* for required clearance for waste removal vehicles.
6. A minimum of one appropriately signed service vehicle parking stall shall be provided adjacent to dock area. Coordinate through the UW-Madison Project Manager as to the needs of campus.



7. Communication between the delivery person and the building's receiving staff shall be provided. This can be accomplished via telephone or intercom.
8. A hose bib shall be provided on the dock to facilitate wash down of the dock and adjacent exterior areas, such as where compactors and waste containers are located. A trench drain shall provide a means to keep this area free of ponding water. Hose bib and trench locations shall be reviewed with the UW-Madison Project Manager.
9. Secured storage shall be provided when biological and radioactive wastes need to be picked up.
10. Secure space shall be provided for cylinder storage as needed with required tie backs.
11. Any bollards used in the loading dock areas shall be the color red with two or three horizontal reflective white stripes at the top.
 - 11.1. Identify all bollard locations on the 35% plans and include a detail drawing.
 - 11.2. See *Section 32 90 00 Planting* for more information.

11 15 00 Security, Detention, and Banking Equipment

11 18 00 Security Equipment

1. All exterior doors of new buildings shall have electric locks for the purpose of remote locking and unlocking. In addition, a maximum of two doors shall be provided with access control devices for programmed after-hours access by the building occupants and other authorized persons.
2. Access control devices shall be provided on interior doors as noted in *Division 28 11 00 Electronic Access Control for New Construction* or as determined by the building occupants, the UW-Madison Project Manager, and approved by UW-Madison Police. These are OFCI with the FF&E budget.
3. Access control systems for all UW-Madison buildings shall be by Andover, the campus standard.
4. Refer to *Section 27 05 05 General Requirements for Communications* for supportive electrical requirements regarding the above and the campus "Code Blue" emergency phone system. Code Blue phone locations shall be determined by UW-Madison Police Department (UWPD) during the design phase. These will be primarily within parking ramps.
5. Install OFCI security cameras purchased from UWPD with the FF&E budget, or at a minimum, the infrastructure to support them, at all exterior doors of new buildings and point of sale locations, as well as all loading docks.

11 20 00 Commercial Equipment

11 24 00 Maintenance Equipment

11 24 13 Floor and Wall Cleaning Equipment

All floor and wall equipment shall be coordinated with UW-Madison Custodial Staff and the UW-Madison Project Manager.



11 24 23 Window Washing Equipment

1. All interior and exterior glass shall be made accessible for window washing either by a lift or through the use of commercial window washing equipment.
2. If lifts are required, doorways and halls shall be sized to accommodate the movement of the lift and a storage space shall be determined during the design phase.
3. If windows cannot be reached from the ground, davits shall be provided on the roof to secure whatever equipment will be used.
4. A Bosun's chair is the campus preferred method of equipment used for window washing, although, at times, this work will be bid out to commercial firms. Tie downs shall be designed to accommodate this range of apparatus. Spacing of davits shall be determined during the design phase and coordinated with the UW-Madison Project Manager and Campus Services.
5. Any mechanized scaffold system (swing stage) required, shall be provided by the project and stored within the building.
6. In addition to lifts or scaffolds, all other equipment required for the cleaning of glass shall be provided as part of the project and stored within the building.
7. Access to power and domestic cold water shall be provided at the rooftop for window washing. In addition, exterior grade convenience outlets shall be provided at rooftop for auxiliary uses.
8. The first operation of the window washing equipment shall be completed by the installing contractor with the owner's selected representatives present for training.
9. All interior and exterior windows shall be cleaned by the contractor prior to the turn-over of the building.

11 50 00 Educational and Scientific Equipment

11 51 00 Library Equipment

The existing UW-Madison standard for stack areas in libraries shall be 92 inch high shelving units with 36 inch wide aisles. For greater accessibility the standard for reference and current periodical areas/reading rooms shall be 42 inch wide aisles. Overall height for these areas shall be determined by occupant needs. All size and spacing for new facilities shall be reviewed with UW-Madison Library staff.

11 52 00 Audio-Visual Equipment

Refer to *Section 13 05 02 Auditoriums and Lecture Halls* and *Section 27 05 05 General Requirements for Communications* for additional information regarding design of these spaces. Specification of audio visual equipment shall be written in such a way as to allow for upgrades/changes in selection during the construction period. In this way, the most current equipment is installed at the time of move in. Such equipment may include: digital audio, video cameras, video projectors, projection screens, video source and signal processing equipment, among others. The selection of all equipment shall be thoroughly reviewed and approved prior to specification and shall be reviewed again at the shop drawing stage to determine that the specified equipment is still required and if an upgrade is available within the budget. A/V equipment requires for full installation, training, and debugging to occur prior to the turnover of the building.



11 52 13 Projection Screens

1. Mechanized projection screens are preferred as a projection surface.
2. The room size and use patterns shall determine whether they are manual or motorized. The AE team shall prepare a sight-line drawing in plan and elevation to show projector locations to the screen(s) and cone(s) of sight from areas within the room, ensuring room obstacles, such as columns, are avoided.

11 53 00 Laboratory Equipment

11 53 13 Laboratory Fume Hoods

This is a DFDM Standard Specification. Use this specification section for all applicable laboratory fume hoods. It can be obtained from the DOA website or from UW-Madison Facilities Planning & Management.

11 53 33 Emergency Safety Appliances

1. All projects shall include a minimum of one Automated External Defibrillator (AED) to be located such that it is easily seen and accessed. Coordinate location with UW-Madison Project Manager and UW-Madison Environment, Health and Safety (EH&S). The preferred design standard is a Zoll AED plus.
2. When applicable, locate emergency equipment in a consistent area from lab to lab and floor to floor.
3. A swing-arm and deck-mounted eyewash will preferably be located within reach of a sink to facilitate weekly flushing. Alternatively, an ADA compliant pull-down eyewash may be used, but shall capture full water flow in a plumbed drain. This is required for weekly flushing specified by ANSI Z358.1. Eye wash push pedals shall be metal, not plastic.
4. Where chemicals may be used, eyewashes shall be provided in all mechanical spaces as requested by UW-Madison EH&S.
5. Height and placement of all eyewashes shall meet ADAAG standards.
6. If a vacuum breaker is required in an eyewash or shower line, it shall be located after the shutoff valve (normally not pressurized). Refer to *Division 22 Plumbing*.
7. Emergency showers shall be provided with a floor drain in the vicinity.

11 53 53 Biological Safety Cabinets (BSC)

Use standard UW-Madison specifications for biological safety cabinets and animal transfer stations. Always check with UW-Madison FP&M to be sure the specs are in their most-current form.

See *Division 11 Details 1, 2, & 3* at end of division.



11 80 00 Facility Maintenance and Operation Equipment

11 81 00 Facility Maintenance Equipment

11 81 29 Facility Fall Protection

The contractor shall provide an OSHA compliant horizontal cable lifeline system on steel posts complying with all applicable regulatory requirements. This shall be required on all flat roofs that do not have a parapet of at least 42 inches high..

11 82 00 Solid Waste Handling Equipment

11 82 13 Solid Waste Bins

The following are specifications for campus building dumpsters.

Dumpster Bid Specifications:

Quantity	Description
1 EACH	Sloped rear loading rubbish container with poly lids Capacity (Cubic yards): 2 Lids: 2 Sidewall Steel Gauge: 12 Bottom Steel Gauge: 12 Dimensions (inches) Height: 52 ½ Length: 43 ½ Width: 77 ½ Weight (pounds) with poly lids: 390 Color: Dunes Tan
1 EACH	Sloped rear loading rubbish container with poly lids Capacity (Cubic yards): 4 Lids: 4 Sidewall Steel Gauge: 12 Bottom Steel Gauge: 12 Dimensions (inches) Height: 52 ½ Length: 90 ½ Width: 77 ½ Weight (pounds) with poly lids: 695 Color:
1 EACH	Sloped rear loading rubbish container with poly lids Capacity (Cubic yards): 6 Lids: 6 Sidewall Steel Gauge: 12 Bottom Steel Gauge: 12 Dimensions (inches) Height: 52 ½ Length: 126 ½ Width: 77 ½ Weight (pounds) with poly lids: 955



Color:

11 82 26 Waste Compactors

1. Provide adequate clearance for compactors to be raised and emptied by UW-Madison Waste and Recycling trucks. Typical clearance required is between 17 feet and 18 feet. Caution shall be taken to include low hanging beams in the overall clearance.
2. Consider ease of access to compactors for all custodial staff. Staff collects recyclables inside the buildings and needs clear access to compactors from the loading dock area.
3. Provide a hard hydraulic line from pump exit through the wall with a quick disconnect (Minimum two feet clearance) on the outside of the building. Hydraulic pump and controls shall be inside the loading dock area.
4. Provide dedicated power for the compactor and an appropriate location for the control panel.
5. Compactor Units: Current standards are rear-loading 6-yard compactors with detached power units as specified in the Compactor Unit Specifications below.

Compactor Unit Specifications:

New compactor units shall be interchangeable with the existing units on campus. Existing units are Galbreath PM 6R and Parker WM-6R. Interchangeability in this context means that any of the existing compactors can be used with any of the new power units and that any of the new compactors can be used with any of the existing power units.

Provide rear loading 6-yard compactors with the following specifications:

- 5.1. Detached power units.
- 5.2. Thermostat control heater for the power unit.
- 5.3. Hopper loading height of 36 inch.
- 5.4. Compactor hopper:
 - 5.4.1. Mfg. Rating: 1.0 cubic yards.
 - 5.4.2. NSWMA rating: .90 cubic yards.
- 5.5. Loading chamber opening:
 - 5.5.1. Width: 53 ½ inch.
 - 5.5.2. Length: 28 inch.
- 5.6. Ram penetration: 0 inch to 12 inch.
- 5.7. Packing force:
 - 5.7.1. Normal: 20,600 lbs.
 - 5.7.2. Maximum: 24,100 lbs.
- 5.8. Ram face:



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- 5.8.1. Width: 53 inch.
 - 5.8.2. Height: 45 inch.

 - 5.9. Motor: 3hp, 1750 rpm, TEFC, 3phase 60 hertz, 208 volts with UL listed control panel.
 - 5.10. Pump: 2.8 gpm.
 - 5.11. Cycle time: 36 seconds.
 - 5.12. Packing cylinder: two–three inch.
 - 5.13. Oil reservoir: 5 gallon.
 - 5.14. The opening handle shall be located on the opening lid.
 - 5.15. Overall size:
 - 5.15.1. Length: 153 $\frac{3}{4}$ inch.
 - 5.15.2. Height: 54 inch.
 - 5.15.3. Width: 85 $\frac{3}{4}$ inch.