

**TECHNICAL SERVICES
GENERAL CONSTRUCTION GUIDELINES
Revised March 2003**

Division 1 – General Requirements

- Generally the G.C. will be required to furnish 100% Performance & Payment bonds in favor of the Owner and MSHA. (See Bonding Guidelines for additional information)
- All multi-family or licensed facilities must be reviewed by and permitted by the State Fire Marshal.
- A copy of the geotechnical report shall be included in the project manual. Foundation design shall be consistent with the findings and recommendations of the geotechnical engineer. Crawl spaces are strongly discouraged. When appropriate, full useable basements are desirable.
- The owner shall retain a qualified testing agency to monitor and test all critical structural fill and concrete.

Division 2 – Site Work

- Provide positive drainage away from all buildings – 6” pitch in first 10 feet is recommended.
- Provide at least one (1) conveniently located parking space per Dwelling Unit.
- For projects serving frail elderly residents, a covered vehicle drop off area or Porte Cochere connected to the building is required.

Division 3 – Concrete

- Cast in place concrete shall achieve the following 28 day compressive strengths:
 - Footings – 3000 PSI
 - Foundation walls – 3500 PSI
 - Interior flatwork – 2500 PSI
 - Exterior flatwork – 3500 PSI with 5-7% air entrainment

Division 4 – Masonry

- All masonry ties and anchors for veneer walls shall be stainless steel.

Division 5 – Metals

Reserved

Division 6 – Wood and Plastics

6100 – Pressure treated lumber shall meet manufactures requirements for installation location, e.g.:
Framing in contact with concrete or masonry – 0.40#/cubic foot
Posts embedded in soil 0.60#/cubic foot.

6210 – Vinyl Siding
Standard of quality is CertainTeed “Main Street”.

- New stairs serving more then one dwelling unit shall provide a minimum clear width of 42”.

Division 7 – Thermal & Moisture Protection

- The building thermal envelope shall meet the requirements of the Maine State Energy code 7311 – Asphalt shingles – The minimum standard of quality is a 25- year warranty organic asphalt (see Roofing Standards for additional requirements) “Architectural” shingles are strongly recommended.
- 7530 – EPDM roofing - Standard of quality is Firestone fully adhered (0.060) system, with 15 year Full System Warranty
- 7600 – Flashing and Sheet Metal – Roof drip edge shall be 0.032” min aluminum (no galvanized).
- Attic ventilation shall be sized based on 1/150 of floor area. (The BOCA exception for ceiling vapor retarder is not recognized by MSHA). Ventilation calculation shall be shown on drawings.
- The use of cellulose insulation is prohibited (Intent: minimize mold).

Division 8 – Doors & Windows

8600 – Windows - Standard of quality is CertainTeed “New Castle” (Paradigm meets this standard)
8710 – Finish Hardware - Hinge pin doorstops are prohibited.

- Main Entrance Door(s) at Multi-Family facilities shall be fitted with electric operators meeting the requirements of ADA.
- Where necessary to provide alternative locations for door stops the use of 6’6” height closet doors should be considered.
- The aluminum windows are strongly discouraged

Division 9 – Finishes

9680 – All carpet must meet UM44d

Division 10 – Specialties

10800 – One inch diameter grab bars are recommended in lieu of standard towel bars

Division 11 – Equipment

Selection of residential kitchen appliances shall be based on number of residents. Generally minimum size of refrigerators shall be as follows:

0 and 1 bedroom units	12.5 cu feet usable
2 and 3 bedroom units	15.5 cu feet usable
4 bedroom units	17.5 cu feet usable

Division 12 – Furnishings

12500 – Window treatment - Pull shades with cardboard rollers are prohibited

Division 13 – Special Construction

Reserved

Division 14 – Conveying Systems

- For multistory projects serving frail elderly, an emergency generator sized to handle electrical requirements of the elevator is strongly recommended.

Division 15 – Mechanical

15300 – Sprinkler systems are recommended for all projects. The use of 13R systems will be considered on a case by case basis.

15400 – All domestic above grade water supply piping shall be type “L” copper.

All domestic below grade interior water supply piping shall be type “K” copper.

15711 – All above grade heat system piping shall be type “L” copper.

All below grade interior heat system piping shall be type “K” copper.

- “Mono flow” heating systems are prohibited.
- 15971 – Generally thermostats in dwelling units should be Honeywell T-87. For projects serving seniors, the Honeywell T-87 with the EZ view option is strongly recommended.
- “PEX” tubing is prohibited (exception: radiant slabs).
- The use of “Power Vents” for combustion exhaust on heating appliances is prohibited.
- Combustion and ventilation air is required in all mechanical rooms housing fuel burning appliances.
- Tankless coils for DHW generation are prohibited.
- Oil fired cast iron boilers are strongly recommended (exception: recommend natural gas if available).
- For larger facilities two boilers each sized to meet 75% of heating load are recommended.
- Electric resistance heat is prohibited.

Division 16 – Electrical

- Smoke detectors shall be powered off a circuit that includes essential lights and/or devices.
- For projects serving frail elderly, an emergency generator sized to handle electrical requirements of the elevator, heat, and life safety systems is strongly recommended.
- Smoke detectors are required in all common areas, on all levels of dwelling units and in all bedrooms.
- All circuits shall be 20 amp minimum (The use of #14 wire is prohibited).
- Incandescent lamps are generally prohibited. Wherever possible, provide compact fluorescent fixtures/lamps.
- Generally, recessed “can” type lighting fixtures in the ceiling of top story are prohibited (Intent: maintain integrity of thermal envelope).

Recommended Dwelling Unit Design Features

1. For projects serving seniors, bathrooms should include the following features:
 - Bath doors should swing out.
 - Water closets should have 17" rim height
 - Water closets should be located in corner with adequate adjacent wall space to facilitate future installation of grab bars
2. Electric panels should be located behind master bedroom door. Electric panels shall not be located in closets.
3. Generally all larger projects must provide a minimum of 10% of dwelling units with the features required by ANSI 117.1 Chapter 10 Type "A". (Intent: 10% of dwelling units shall be accessible to residents using wheelchairs consistent with the MHRA).
4. Generally **all** new housing units must provide the features required by ANSI 117.1 Chapter 10 Type "B". (Intent: 100% of dwelling units shall be adaptable for residents with physical disabilities consistent with the Federal Fair Housing law).
Exception: Multilevel dwelling units commonly known as "town houses" are exempt from FFHAA.