

MobileTrak5 Grout System Specifications

Rail System:

1. Rails shall be designed and manufactured to carry a maximum load of 1000 pounds per linear foot of carriages.
2. Rails shall exhibit no movement or deflection during normal operation of mobile ranges.
3. Rails shall be level with and not project above or below the walking surface.
4. Rails shall be designed to be attached on top of structural concrete floor and to allow for adjustment so rails can be leveled over and uneven floor prior to being grouted. Rails requiring the use of shims are not acceptable.
5. Rails shall be steel and compatible with wheel design and carriage loads. Rails shall distribute the concentrated wheel load to a minimum surface area of 4 square inches where the base of the rail contacts the grout.
6. The rail design shall incorporate smooth contact surfaces for the wheels and wheel guidance system.
7. Maximum profile of recess adjacent to rail to accommodate carriage guidance system and or anti-tip system is not to exceed 5/8" wide x 5/8" deep.
8. Rail shall be located and positioned properly, leveled and grouted, allowing at least 1/4" for grout under high point. Grout shall be worked under rail, any voids completely filled and trimmed up sides flush with rails. This will allow proper weight distribution from rail to sub floor. Leveling screw adjustability for leveling rails at time of installation are included. Shim leveling is not acceptable.
9. Levelness of rails: 3/32" maximum variation from true level within and module; 1/16" maximum variation between adjacent rails, perpendicular to rail direction; 1/32" maximum variation in 10' of rail length, along any rail.
10. Rails sections shall be a maximum of 72" length.
11. All rail connections to be pinned to provide horizontal and vertical continuity between rail sections and gradually transfer wheel loads.
12. Rail shall provide for a minimum of 1" surface width, and have a maximum profile of 1 1/2" high.
13. Rails shall extend under stationary platforms, stationary platforms shall be anchored to the decking.

Grout Specifications:

1. The grout compound shall be a non metallic non shrink type cement which when mixed with water, will harden rapidly to produce a permanent foundation for the rails. The compound shall meet the following specifications ASTM C-1107-91, and CRD C-621 specifications.
 - a.) Under normal conditions and use components shall not rust or exhibit any type of corrosion.
 - b.) It shall not shrink on setting, but exhibit a slight expansion of not more than 0.002 inches per linear foot.

- c.) It shall have the minimum average compression strengths of 4,500 psi at 1 hour, 6,000 psi at 7 days, and 9,000 psi at 28 days.

Floor/Ramp:

1. Entire area that is operator accessible shall be provided with a laminated flooring system (between the rails). Laminated flooring system to be comprised of a 5/8" thick high density particle board core with a wear resistant laminated top covering and moisture resistant bottom lamination. The top covering is to have the following specifications: It should consist of high pressure .062" thick (maximum) laminated floor tile (minimum tile size to 24" x 24") tiles to have special extra wear surface for durability, tile must comply with NFPA number 56A, dated 1973, Section 4628 modified, and ANSI/NEMA publication LD3-1991. Floor shall have an integrated leveling screws.
2. Floor shall be capable of supporting a point load of 400 pounds without a deflection in excess of 1/8".
3. Seams between flooring sections to be mechanically spliced together to prevent deflection between the sections
4. Ramps shall consists a formed 14 gauge steel profile with integral slip resistant powder coated surface. Optional ADA compliant ramps are available.

Carriage construction:

1. All carriages shall be capable of supporting a minimum load of 1,000 pounds per carriage foot.
2. Fixed carriages shall be of the same construction and height as the movable carriages and be anchored to the decking.
3. Necessary carriage splices shall consist of a welded connector bolted to the carriage frames. Design should maintain proper unit alignment and weight load distribution.
4. Carriage straightness shall have no more than 1/4" maximum deviation from a true straight line. There shall be no permanent set or slippage in any spliced or welded joint when exposed to forces encountered in normal operation conditions.
5. Each carriage to have a minimum of 2 wheels per rail.
6. Carriage design shall be modular to allow future expansion with out the need to disassemble the entire carriage.
7. Drive guidance system shall prevent carriage whipping, binding and wheel or rail wear. Systems requiring drive shafts shall be driven with a common straight line drive shaft. Drive shaft between drive wheels axles to be steel and be pinned to each axle. Drive shaft and wheel assemblies shall exhibit no play or looseness over the entire length of that assembly. All rotating load bearing members shall ride in precision ball bearings. All drive line bearings to be of the pillow block or self aligning type.
8. On mechanical assist units all wheels along one side of carriage should be driven, with one driven wheel per rail. Systems that require floor mounted chains for drive purposes are not acceptable.

9. All mechanical carriages to have at least 1 drive wheel and 1 load wheel per rail per carriage.
10. Drive wheels shall be a minimum of 5" in diameter and constructed of solid steel for smooth operation. Minimum load capacity for all wheels including drive, guide, and load wheels to be 3,500 lb. Per wheel. All wheels to have a minimum of 2 bearings per wheel. Wheels with single center bearing are not acceptable.
11. All wheels and rails to be manufactured from the same grades of steel to prevent uneven wear of any system components.
12. All carriages are to have the ability of having anti-tip mechanism field installed.
13. Wheel channel to be formed from single piece of steel with a minimum thickness of 1/8" (.125")
14. Carriages construction shall be designed to allow any type of shelving to be securely anchored to the carriage.

Safety:

1. Each carriage shall be supplied with a safety locking system. Safety system is engaged prior to entry into open aisle. Safety system shall be manually disengaged prior to making another aisle selection.

Drive Mechanism:

1. Mechanical assist systems shall consist of a chain and sprocket reduction system, operated by hand. Each movable carriage shall be equipped with single handle disk style crank handle approximately 13" diameter. Drive system shall have a gear ratio of 1 LB of force to 3000 lb. Of load. All bearings used in the drive mechanism shall be permanently sealed and lubricated. Drive mechanism will transfer power to the wheels at a point near the center of the carriage to prevent whipping.
2. The crank shall connect to the drive through a heavy duty chain. Chain shall be No. 35. All gears shall ride on permanently lubricated bearings.

Decorative Steel Panels:

1. Steel end panels to be constructed from heavy gauge steel with all exposed corner welded for a smooth seam free finish.
2. Steel end panels must be able to be removed without the use of any tools.
3. Steel end panels must be able to be installed without the need to drill or screw into the face of the shelving.
4. End panels to be available in a minimum of 12 powder coat paint finishes.

Decorative Laminated End Panels:

1. Laminated end panels must be constructed with a minimum thickness laminate (0.050") thick, bonded to a minimum 5/8" thick particle board core, and backed with a moisture resistant backer sheet. Systems with melamine finish will not be acceptable.

2. All end panels must be self edged in matching laminate for a finished appearance. Systems with t-molded or painted edges are not acceptable.
3. Laminated end panel are to cover the entire width and height of the exposed shelving, while leaving the drive box mechanism open should the need for maintenance be required.
4. Laminated end panels to available in a minimum of 8 standard laminated finishes.

Decorative Fully Enclosed Laminated End Panels:

1. Fully enclosed laminated end panels must be constructed with a minimum thickness laminate (0.050") thick, bonded to a minimum 5/8" thick particle board core, and backed with a moisture resistant backer sheet. Systems with melamine finish will not be acceptable. Frame to be constructed from 16ga cold rolled steel and finished with a powder coating.
2. All end panels must be self-edged in matching laminate for a finished appearance. Systems with t-molded or painted edges are not acceptable.
3. Laminated end panels are to be covered the entire width and height of the exposed shelving, while enclosing the drive box mechanism.
4. Laminated end panels are available in a minimum of 8 standard laminated finishes.

Finish - Powder Coat Paint

1. All exposed metal parts to be finished with a powder coat paint. Powder coating provides a durable hard finish with superior performance qualities. It has excellent abrasion, impact, corrosion, stain, and chemical resistance. Powder coating is environmentally safe, producing no volatile emissions or hazardous waste during the application process.

System Operation:

1. The system shall be of the mechanical assist type. A drive system is required to provide uniform movement along the total length of the carriages with unbalanced loads on the carriage. The system shall have a positive drive to ensure that there is no play in the drive handle and that the carriage will stop without drifting. All components of the system shall be compatible for smooth, non jerking, even movement along the total length of carriage. Drive system shall have a gear ratio of 1 LB of force to 3000 lb. Of load. All bearings used in the drive mechanism shall be permanently sealed and lubricated.