



Report of Materials and Equipment Acceptance Division

NYC Department of Buildings
280 Broadway, New York, NY 10007
Patricia Lancaster, FAIA, Commissioner
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Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

MEA 581-06-E

Manufacturer: Harding Steel, Inc., 730 17th Street, #650, Denver, CO 80202

Trade Name(s): Harding Steel, Inc.

Product: Two-level automobile parking car lift

Pertinent Code Section(s): 27-990. 27-991, RS 18-3

Prescribed Test(s): Load Test & Computations signed and sealed by Seymour Warren Gage, New York State P.E., License #31662

Laboratory: Seymour Gage. P.E., #31662 (NY)

Test Report(s): Dated October 5, 2006, the product has two support platforms, each intended to support one passenger automobile. The lower platform was loaded with 13,060 lbs. of steel, and the upper platform was loaded simultaneously with 12,540 lbs. of steel. No discernable deflection of platforms or support structural elements.

General Description: The Carparx[®] ST-2 and ST-2C inground parking system by Harding Steel utilizes a dual scissors lifting system with four (4) heavy duty, high-capacity hydraulic cylinders per machine. The system is sized so as to provide parking or storage of two full size vehicles in a vertically-stacked configuration. The system will lower one vehicle into a below ground pit or vault area for safe parking or long-term storage. Another vehicle may then be driven onto and parked on the upper platform of the parking system at grade level.

In order to retrieve the lower car from the pit area, the upper car must be removed from the upper platform if ceiling heights in the garage do not permit the upper car to be raised safely without being removed. The lift is raised by the operator from a was-mounted control unit, and the lower car is brought up to grade level. The car from the

lower platform can then be driven off the lift. In applications where there is adequate ceiling clearances to allow the upper car to remain parked, the machine will be configured for two-car operation.

The Carparx[®] inground parking system is designed to be compatible with the needs of single-family residences and multi-family dwellings. The design features include flat, oversized vehicle platforms that are easy to park on and that can accommodate passenger vehicles and light trucks. There are no trip hazards and the systems are perfectly flush to the garage floor surface. All lifting devices, structural members, and hydraulic components are completely below ground and out of the way of the operator. There are no gaps between the edges of the pit and the vehicle platforms when the lift is in its down position or in its raised position.

Hydraulic Power and Controls: Each parking system is powered by an integrated commercial grade hydraulic power-pack system that is sized to each installation. Larger capacity hydraulic pumps are provided that are capable of operating multiple lifts or lifts that are configured for simultaneously lifting two cars. The power units require a 220V, single phase, 40 amp power feed terminated to a standard commercial grade shut-off box (provided by others).

Individual key-activated control switches are provided for each Carparx[®] unit. Key switches provide a “dead-man” feature which stops the lift whenever the up or down button is released, regardless of the position of the lift at the time the button is released. For safety, operator switches are always placed within full line-of-sight of the lift system, but not so close as to put the operator in a location where he can place feet or hands on or under the lift during operation. Switch locations are job specific.

Safety Design: The Carparx[®] system is designed and installed with the utmost of safety considerations. These systems should never be operated by children or by people who have not been taught “safe” operation. The Carparx[®] lift will stop and hold at any level when either the operator control is released, or if the machine is electrically stopped by a limit switch, safety interlock, or photo beam. An electric upper limit switch (standard) will stop the lift at the set upper limit where the lower platform meets the grade level of the garage floor.

The dual scissors design and the 4-hydraulic cylinders provide stability and safety for both people and vehicles. The system cannot inadvertently drop due to power failure, hydraulic failure, operator error, or minor seismic event. Each hydraulic cylinder is equipped with a mechanical velocity-fuse that prevents rapid loss of hydraulic pressure. The lifts cannot release inadvertently, nor will they drift down if left in the raised position for extended periods.

Four (4) steel maintenance locks are fitted to each system. When moved into place by a service technician, the lift is supported by the locks and cannot be lowered below a fixed level that is safe for the technician to work under the lift. Hydraulic components can be removed or serviced safely without the risk of system collapse or failure.

Lower Platform: The lower platform is configured so as to mate to the upper level concrete floor for drive-on and drive-off when fully raised. The surface is an integrated flat steel platform with a diamond plate, non-skid surface. The platform is designed to accommodate a vehicle parked on the platform weighing up to 6,000 pounds. The

platforms will accommodate full-size and extended length SUVs and light trucks (see dimensions). A safety railing is built into the front of the lower platform parking cavity. The railing protects the garage walls from a drive-through incident. The gap between the platform edges and the floor of the finished garage floor at grade will be determined by the contractor/installer of the concrete floor surface. A gap of at least one inch is recommended (see pit specifications).

Upper Platform: The upper platform or “roof” level is configured as an integrated flat steel platform with a diamond plate, non-skid surface. The platform is designed to completely cover/conceal the lower pit area and provide a flush or near-flush edge where the platform meets the concrete floor of the garage. The platform will be designed to accommodate a vehicle parked on the platform weighing up to 6,000 pounds. For configurations where the upper car will be left in place when the lift is raised, there are optional wheel stop units that can be welded or bolted to the upper platform to protect against a roll-off incident.

Interplatform Structure: The roof level is held in place by four vertical posts extending from the lower platform to the upper platform. The railing at the front of the lift is attached to the front two posts. The rear posts are positioned 4 feet forward of the rear edge of lower platform so as to enable safe drive-on and drive-off to/from the lower platform. The posts are cut to one of three standard heights that create one of three standard clearance measurements between the platforms (66”, 72” or 78”). Custom lengths can be accommodated at time of order. The length of the posts will determine the amount of ceiling clearance that is required for the lift in its raised position. The length of the vertical posts will also determine the minimum depth of the pit required for the lift.

Optional Drainage Slope: The upper platform maybe sloped up to 2” from front to back for the purpose of providing drainage. This is a configured dimension and must be specified when the lift is ordered. Metal spacers in either 1” or 2” thickness are provided that bolt between the front vertical posts and the upper platform. Lower platforms are not sloped.

Dimensions: The sizes and capacity of this version of the parking system will be as follows:

Lower platform outside dimension:	94” wide x 226” long (large SUV)
Roof level outside dimension:	102” wide x 234” long
Platform-to-platform clearance:	66” minimum to 78” maximum (may be custom-configured)
Roof level parked vehicle capacity (lifting):	6,000 lbs. (large SUV)
Lower level stored vehicle capacity (lifting):	6,000 lbs. (large SUV)
Pit dimensions (minimum as measured at the garage floor level):	98” wide x 228” long
Minimum pit depths – 78” interplatform spacing:	96” minimum pit depth
– 72” interplatform spacing:	90” minimum pit depth
– 66” interplatform spacing:	84” minimum pit depth

Painting Coating: The entire Carparx[®] system is coated with industrial grade enamel paint (light gray color) before leaving the factory.

Lowering Stops: Each lift is supplied with a set of four (4) steel “stop posts” that allow the lowered lift to come to rest at exactly the correct level that allows the upper platform to mate with the finished garage floor surface. These posts are installed and custom-cut or adjusted to the specific lift.

Optional Base Plate Extensions: For installations where basements or pit areas exceed the recommended minimum pit depth by more than 3”, a base plate extension will be required. These steel weldments are custom-configured in the factory and are fabricated so as to raise the entire lift assembly to the proper level thereby allowing the lift to meet the garage floor properly in both the raised and lowered positions. Base plate extensions allow the Carparx[®] System to be installed to basement areas up to 13 feet in depth. Base plate extensions are an extra charge option.

Lifting Speed: Time to raise the lift through a 6ft. 6inches vertical stroke takes approximately 60-90 seconds. This rate can be adjusted within prescribed safety limits at time of installation, but may vary due to system configuration, temperature or other factors.

Lifting Weight Limits: The hydraulic pump system for each lift installation is set by the installers so as to prevent the machines from lifting a weight that will exceed the design limits of the machines or the specific installation.

Terms and Conditions: The Carparx[®], Models ST-2 and ST-2C, are accepted for indoor and outdoor use subject to the following conditions:

Indoor Use

1. Installation of the lifts shall be in sprinklered garages, which also have sidewall sprinklers to protect the lower vehicle parked on the lift. The sidewall sprinklers shall be protected from mechanical injury. The sprinkler pipe sizes shall be adequate to supply the additional sidewall sprinklers.
2. Plans shall be filed and approved by New York City Department of Buildings for the alteration of the existing sprinkler system and tie-in of the additional sprinklers. Hydrostatic tests of the sprinkler system components shall be witnessed and approved by the Fire Department and the Department of Buildings.
3. The floor loads shall be recalculated for adequacy for the additional weight of the lift and the cars, and filed with the Department of Buildings by a structural Professional Engineer.
4. In garages that do not have pre-existing sprinklers, the sprinkler system shall be designed for “High-piled Storage”.

Outdoor Use

1. The requirements of Section 27-4080 of the Administrative Code shall be complied with.
2. Each proposed use of the car lift shall be submitted to the Department of Buildings to determine whether it complies with Zoning Resolution and whether the soil conditions are adequate. Each unit shall have suitable anchorage of the structural members and integral base plates into concrete footings, the strength, size and depth of which shall be based on an assumed weight of 6,000 lbs. for each car.
3. Where the property is located in or about residentially-zoned districts, this device shall not be located at the first row of cars or within 20 feet of the property line, whichever distance is greater.

For Both Indoor and Outdoor Use

1. All regulations of Department of Consumer Affairs shall be complied with.
2. Each proposed use of the car lifts shall be submitted to the Department of Buildings to determine whether it complies with the Zoning Resolution.
3. The lifts shall not be used to park or store any vans, trucks, recreational vehicles or any other type of vehicle other than passenger cars capable of seating up to 6 persons and weighing a maximum of 6,000 lbs. each car.
4. Drawings and specifications for each site shall be filed with the Department of Buildings Elevator Division.

Final Acceptance December 19, 2006
Examined By Donald [Signature]

