ASTM Standard C1802

Guidelines for specifying access hatch loading



Jensen Infrastructure follows standards set by the American Society for Testing and Materials (ASTM) in product designs. We periodically publish guidelines about our products in relation to these standards.

Determining Correct Load Levels for Metal Access Hatches

ASTM issued Standard C1802 to promote the safe and proper selection, design, manufacture, identification, and installation of fabricated steel and aluminum access hatches to underground utilities. Jensen adheres to this standard for determining load levels of hatches to ensure the highest level of safety and product longevity.

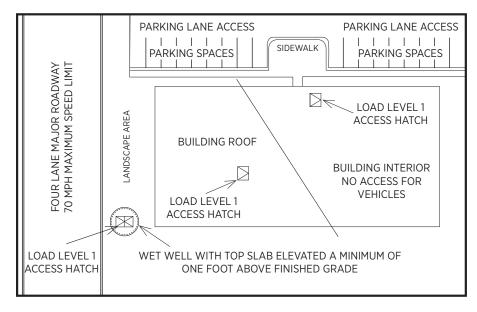
H20 NOTE: Engineers commonly specify H20 load ratings for utility access hatches, yet manufacturers typically need application details before supplying appropriate products. Many H20 Incidental and H20 Off Street products are not designed consistently from manufacturer to manufacturer. By specifying an H20 access hatch along with the appropriate ASTM load level (Levels 4-7 are H20 rated), a specifier can be assured getting the right hatch for the right application.

C1802 provides a clarifying overview of proper and safe access hatch loading. A summary follows.

	Load Levels		Uniform	Dynamic	0	E. C.	
	Class	Designation	or Wheel Load	(Impact) Factor	Speed Limit	Fatigue Per Day	Area of Use
ķ	1	Light Pedestrian	150 psf or 300 lbs / 5.5" x 5.5"	N/A	N/A	N/A	Restricted to walkways and other areas fully inaccessible to all vehicle traffic.
	2	Pedestrian	300 psf or 600 lbs / 5.5"x5.5"	N/A	N/A	N/A	Restricted to pedestrian and light maintenance vehicle use. Inaccessible to all other vehicle traffic.
	3	Light Vehicular Traffic	8000 # / 10"x10"	1.00	N/A	N/A	Restricted to parking spaces accessible only to passenger vehicles and areas in close proximity of roadways.
	4	Occasional Truck Traffic	16,000 # / 10"x20"	1.00	N/A	N/A	Restricted to parking spaces and areas in close proximity of roadways.
	5	Off Street + D24 Truck Traffic	16,000 # / 10"x20"	1.30	15 MPH	N/A	Restricted to unrestricted parking lanes and alleyways where traffic is limited to 15 miles per hour.
	6	Two Lane Vehicular/ Truck Traffic	16,000 # / 10"x20"	1.33	35 MPH	225 trucks/ 75yrs	Restricted to two-lane streets with a maximum posted speed limit of 35 miles per hour.
	7	Full Traffic	16,000 # / 10"x20"	1.33	70 MPH	525 trucks/ 75yrs	For use in multi-lane roadways with a maximum posted speed limit of 70 miles per hour.
7	8	Occasional Aircraft	Determined by airport design aircraft.			250 wheels/ 75yrs	For use in unpaved runway safety zones only.
	9	Aircraft Loads	Determined by airport design aircraft.			250 wheels/ 75yrs	For use in taxiways and aprons. Not for use in runways.
<u>()</u>	10	Special Equipment Loads	Determined based on equipment used.			250 wheels/ 75yrs	Mining, port, crane, earth, and other such equipment.



Light Pedestrian \$



Area of use

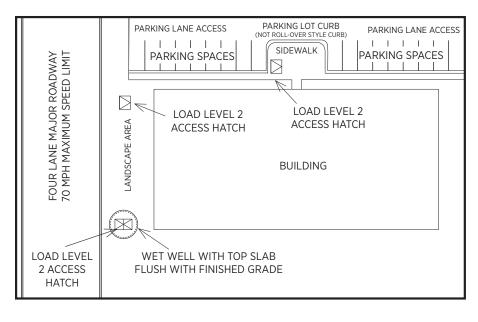
Restricted to walkways and other areas fully inaccessible to all vehicle traffic.

Uniform or wheel load

150 psf or 300 lbs / 5.5" X 5.5"

Load level

Pedestrian \$



Area of use

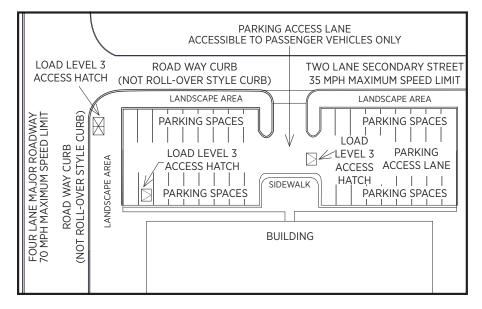
Restricted to pedestrian and light maintenance vehicle use. Inaccessible to all other vehicle traffic.

Uniform or wheel load

300 psf or 600 lbs / 5.5" X 5.5"



Light Vehicular Traffic



Area of use

Restricted to parking spaces accessible only to passenger vehicles and protected areas in close proximity of roadways.

Wheel load

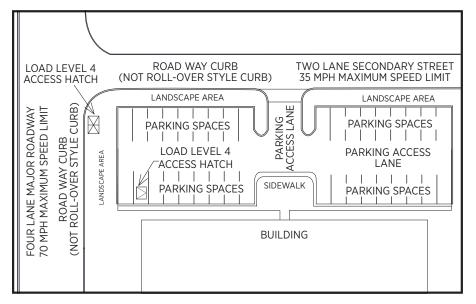
8000 # / 10"x10"

Dynamic (impact) factor

1.00



Occasional Truck Traffic



Area of use

Restricted to parking spaces and areas in close proximity of roadways.

Wheel load

16,000 # / 10"x20"

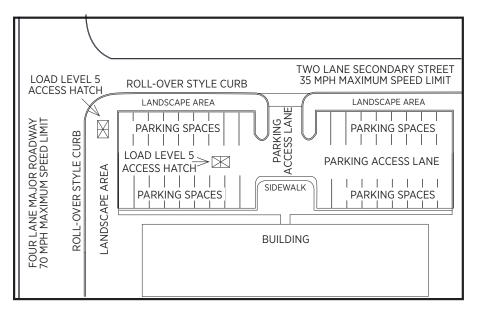
Dynamic (impact) factor

1.00





Off Street + D24 Truck Traffic



Area of use

Restricted to unrestricted parking lanes and alleyways where traffic is limited to 15 miles per hour.

Wheel load

16,000 # / 10"x20"

Dynamic (impact) factor

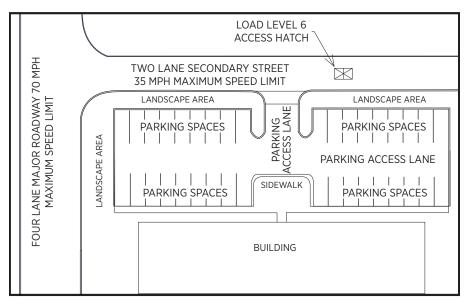
1.30

Speed limitation

15 MPH



Two Lane Vehicular / Truck Traffic



Area of use

Restricted to two lane streets with a maximum posted speed limit of 35 miles per hour.

Wheel load

16,000 # / 10"x20"

Dynamic (impact) factor

1.33

Speed limitation

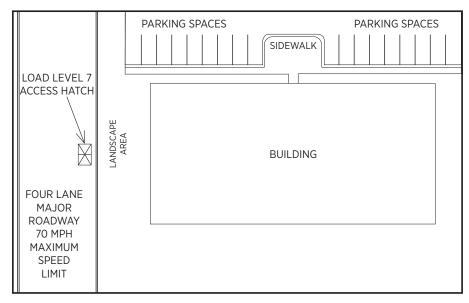
35 MPH

Fatigue

225 trucks per day/75 years



Full Traffic



Area of use

For use in multi-lane roadways with a maximum posted speed limit of 70 miles per hour.

Wheel load

16,000 # / 10"x20"

Dynamic (impact) factor

1.33

Speed limitation

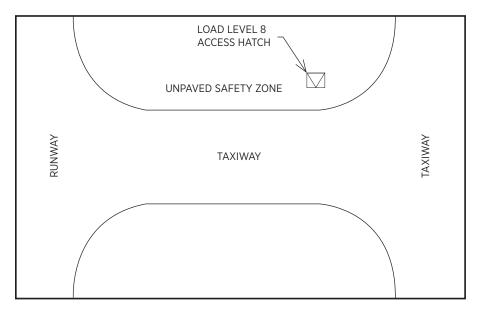
70 MPH

Fatigue

535 trucks per day/75 years



Occasional Aircraft >



Area of use

For use in unpaved runway safety zones only.

Wheel load

Determined by airport design aircraft.

Dynamic (impact) factor

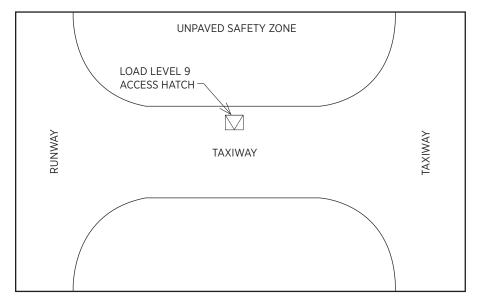
Determined by airport design aircraft.

Fatigue

250 wheels per day/75 years



Aircraft Loads >



Area of use

For use in taxiways and aprons. Not for use in runways.

Wheel load

Determined by airport design aircraft.

Dynamic (impact) factor

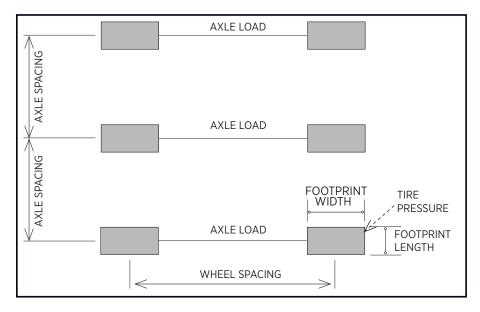
Determined by airport design aircraft.

Fatigue

250 wheels per day/75 years

Load level

Special Equipment Loads ①



For a complete overview of C1802, visit www.astm.org.

Area of use

Such as mining equipment, port equipment, cranes, and earth moving equipment.

Wheel load

Determined by airport design aircraft.

Dynamic (impact) factor

Determined by airport design aircraft.

Fatigue

250 wheels per day/75 years





Jensen Infrastructure designs, engineers, and manufactures steel and aluminum access hatches, doors, covers, and grates for utility applications. We provide our customers with industry leading engineering designs and load testing to insure maximum service life and minimize maintenance. Whether your next project calls for a standard size or specified design or requirement, you can count on Jensen to provide the knowledge.

Utility products

- Electric Distribution and Transmission Pull Boxes, Manholes, Trenches, and Vault Covers
- Telecom and Fiber Optic Pull Boxes, Manholes, and Vault Covers
- Water Meter Vault Access Covers
- Pressure Reducing Station Access Hatches
- Backflow Preventer Vault Covers
- Fire Service Vault Access Hatches
- Natural Gas Distribution Vault Hatch Covers
- Steam Trench Covers

Special design features

- Unique latch and hinge designs to provide safety and functionality
- Easily serviced assemblies make installation and repairs simple
- Optional delivery with companion products (vaults, pull boxes, etc.) for reduced installation costs

Inventory, customization, and delivery

- Many standard designs in stock for immediate delivery
- Custom hatch cover design and manufacturing
- In-house engineering calculations and/or proof load testing for load requirements
- Manufactured in steel or aluminum to accommodate a wide variety of load requirements from pedestrian to airport ratings
- All of our products can be shipped anywhere in the United States

Additional options

- TraxPlate proprietary slip-resistant safety floor plating for applications requiring slip and fall protection
- Spring assist doors for easier opening
- Variety of locking and security features
- Marking and identification



Take the next step.

Talk to a Jensen metal access hatches expert to find the best solution for your project.

Contact Us

Connect with our team to discuss your project needs and get expert guidance.

Request a Lunch & Learn

Schedule an educational session for your team on detention, treatment, and biofiltration solutions.

Contact Information



Phone: (775) 352-2700

Email: info@jenseninfrastructure.com

Web: jenseninfrastructure.com

About Jensen Infrastructure

Jensen Infrastructure is a second-generation, family-run business that's been helping build America's infrastructure since 1968. We bring deep engineering expertise, multi-material capabilities, and personal support to every project – so you get the right solution delivered by a team that stands behind it.

