

Gateway Arch Fact Sheet

General Facts

Outer Width - Outside North Leg to Outer South Leg
630' (192m)

Maximum Height
630' (192m)

Shape of Arch Section
Equilateral Triangle

Dimension of Arch at Base
54 ft. (16.46m)

Dimension of Arch at Top
17 ft. (5.18m)

Size of Windows
Approx. 7" x 27" (180 mm x 690 mm)

Construction of Windows
3/4 in. (19mm) Plate Glass; Hinged and Locked

Size of Observation Room
7' 2" x 65' x 6' 9" high (2.18m x 19.8m x 2.06m)

Capacity of Observation Platform
100 - 140 persons

Deflection of Arch
18" in 150 MPH wind (0.46 m in 240 km/h wind)

Method of Determining Deflection of Arch
Calculations and Wind Tunnel Tests (240 km/h)

Number of Sections in Arch
142

Thickness of Plates for Outer Skin
1/4" (6.3mm)

Type of Material Used in Arch Exterior
Stainless Steel; #3 Finish Type 304

Structural Capacity of Observation Area
100 lb/sq. ft (488 kg/m)

Weight of Steel in Arch

Stainless Steel Plate Exterior Skin	886 Tons (804 metric tons)
Carbon Steel Plate Interior Skin 3/8" (9.5mm)	2,157 Tons (1,957 metric tons)
Steel Stiffeners	1,408 Tons (1,277 metric tons)
Interior Steel Members, Stairs, Trains, etc.	300 Tons (272 metric tons)
Total Steel Weight	5,199 tons (4,644 metric tons)

Weight of Concrete

Between Skins to 300' (91 m)	12,127 Tons (11,011 metric tons)
In Foundation Below Ground	25,980 Tons (23,569 metric tons)
Total Concrete Weight	38,107 Tons (34,570 metric tons)
External Protection	Six 1/2" x 20" (13 x 510 mm) L Aircraft Obstruction Light

"Capsule Trains" or "Trams" operated by Bi-State Development Agency

Number of Transporters	2
Number of Capsules per Transporter	8
Capacity per Capsule	5 persons
Designed Capacity of Transporter	6,000 lb total (2,700 kg)
Total Transporter Weight	10,000 lb (4,500 kg)
Weight of Counter Weights	13,000 lb (5,900 kg)
Transporter's Speed	340 ft/min or approx. 3.9MPH
Travel of Transporter	748' (228m)
Interior Capsule Diameter	5' (1.5m)
Thickness of Capsule Skin	0.090" (2.3 mm)
Size of Capsule Doors (2)	2' 0" x 4' 6" (0.61 m x 1.37 m)
Strength of Capsule Couplings	Minimum of 25,000 lb each (11,340 kg) mounted motors, chain, and sp
Size of Drive Motor	125 hp (93 kW)
Number of Hoisting Cables	9
Size of Hoisting Cables	5/8" diameter (16mm)
Type of Drive Motor	D.C. Variable Speed
Operating of Capsule & Landing Doors	Automatic; controlled by Dispat
Size of Motor Generator Sets	100 hp (75kW)
Size of Transporter Track	12" (305 mm) Channel - 32.9 lb
Method of Maintaining Horizontal Position	Front Ring-type frame with 5" (127 mm) on each ring - and Rear Trunnio
Method of Communication	Intercom system between each

Transporter safeties are maintained on 4 wheel chassis that are connected to the last capsule. A safety system is activated when the transporter exceeds the rated speed by 15% in the downward direction. This system consists of an eccentric dog that locks on the track to stop and hold the transporter. The safety is released by means of a hydraulic buffer 24" (0.6 m) long that provides constant deceleration until the transporter is stopped. A similar system is installed on the counter weights, with a hydraulic buffer 1

Elevators (for stand-by emergency and maintenance service)

Number of Elevators	2
Capacity of Elevators	12 persons
Service Elevators' Speed	400 ft/min (2.0m/s)
Type of Motor	D.C. Worm Gear
Service Elevator's Rise Angle	78 degrees (1.36 radians)