



**Tier IV Standards as Specified in the TIA 942 Document**

S No	Architectural	
1	Proximity of visitor parking to data center perimeter building walls	18.3 m / 60 ft minimum separation with physical barriers to prevent vehicles from driving closer
2	<b>Building Construction</b>	
3	Type of construction	Type I or II - FR
4	Fire resistive requirements	
5	Exterior bearing walls	4 Hours minimum
6	Interior bearing walls	2 Hours minimum
7	Exterior nonbearing walls	4 Hours minimum
8	Structural frame	2 Hours minimum
9	Interior non-computer room partition walls	1 Hour minimum
10	Interior computer room partition walls	2 Hours minimum
11	Shaft enclosures	2 Hours minimum
12	Floors and floor-ceilings	2 Hours minimum
13	Roofs and roof-ceilings	2 Hours minimum
14	Meet requirements of NFPA 75	Yes
15	<b>Building Components</b>	
16	Vapor barriers for walls and ceiling of computer room	Yes
17	Multiple building entrances with security checkpoints	Yes
18	Floor panel construction	All steel or concrete filled
19	Understructure	bolted stringer
20	Ceilings within computer room areas	
21	Ceiling Height	3 m (10 ft) 'minimum (not less than 600 mm/24 in above tallest piece of equipment)
22	<b>Roofing</b>	
23	Type of construction	double redundant with concrete dec (no mechanically attached systems)
24	Wind uplift resistance	FM I-120 minmum
25	Roof Slope	1:24 (1/2 in per foot) minimum
26	<b>Doors and windows</b>	
27	F Fire rating	Minimum Code requirements (not less than 1 1/2 hour at computer room)
28	Door size	Minimum Code requirements and not less than 1.2 m (4 ft) wide into computer, electrical, & mechanical rooms) and not less than 2.13 m (7 ft in) high



**Tier IV Standards as Specified in the TIA 942 Document**

29	Single person interlock, portal or other hardware designed to prevent piggybacking or pass back	Minimum Code requirements - preferably solid wood with metal frame
30	No exterior windows on perimeter of computer room	Yes
31	Construction provides protection against electromagnetic radiation	Yes
32	<b>Entry Lobby</b>	Yes
33	Physically separate from other areas of data center	Yes
34	Fire separation from other areas of data center	Minimum code requirements (not less than 2 Hour)
35	Security counter	Yes
36	Single person interlock, portal or other hardware designed to prevent piggybacking or pass back	Yes
37	<b>Administrative offices</b>	
38	Physically separate from other areas of data center	Yes
39	Fire separation from other areas of data center	Minimum code requirements (not less than 2 hours)
40	<b>Security office</b>	Yes
41	Physically separate from other areas of data center	Yes
42	Fire separation from other areas of data center	Minimum code requirements (not less than 2 hours)
43	180-degree peepholes on security equipment and monitoring rooms.	Yes
44	Harden security equipment and monitoring rooms with 16 mm (5/8 in) plywood (Except where bullet resistance is recommended or required)	Recommended
45	Dedicated security room for security equipment and monitoring	Recommended
46	<b>Restrooms and break room areas</b>	Minimum Code requirements
47	Proximity to computer room and support areas	Not immediately adjacent and provided with leak prevention barrier



**Tier IV Standards as Specified in the TIA 942 Document**

48	Fire separation from computer room and support areas	Minimum code requirements (not less than 2 hours)
49	<b>Required Exit Corridors</b>	
50	fire separation from computer room and support areas	Minimum code requirements (not less than 2 hours)
51	Width	Minimum Code requirements and not less than 1.5 m (5 ft) clear
52	<b>Shipping and receiving area</b>	Yes
53	Physically separate from other areas of data center	Yes
54	Fire separation from other areas of data center	2 Hours
55	Physical protection of walls exposed to lifting equipment traffic	Yes (steel bollards or similar protection)
56	Number of loading docks	1 per 2500 sq m / 25,000 sq ft of Computer room (2 minimum)
57	Loading docks separate from parking areas	Yes (physically separated by fence or wall)
58	Security counter	Yes (Physically separated)
59	<b>Generator and fuel storage areas</b>	
60	Proximity to computer room and support areas	Separate building or exterior weatherproof enclosures with Code required building separation
61	Proximity to publicly accessible areas	19 m / 60 ft minimum separation
62	<b>Security Access Control/Monitoring at:</b>	
63	Generators	intrusion detection
64	UPS, Telephone & MEP Rooms	card access
65	Fiber Vaults	card access
66	Emergency Exit Doors	delay egress per code
67	Accessible Exterior Windows/opening	intrusion detection
68	Security Operations Center	card access
69	Network Operations Center	card access
70	Security Equipment Rooms	card access
71	Doors into Computer Rooms	card or biometric access for ingress and egress
72	Perimeter building doors	card access if entrance
73	Door from Lobby to Floor	Single person interlock, protal or other hardware designed to prevent piggybacking or pass back of access credential, preferably with biometrics.
74	<b>Structural</b>	



**Tier IV Standards as Specified in the TIA 942 Document**

75	Sesimic zone - any zone acceptable although it may dictate more costly support mechanisms	no restriction
76	Facility Designed to sesimic zone requirements	in Sesimic Zone 0, 1, 2, to Zone 3 requirements. In Seismic Zone 3 & 4 to Zone 4 requirements
77	Site Specific Response Spectra - Degree of local Sesimic accelerations	with Operation Status after 5% in 100 Year event
78	Importance factor - assists to ensure greater than code design	I=1.5
79	Telecommunications equipment racks/cabinets anchored to base or supported at top and base	Fully braced
80	Deflection limitation on telecommunications equipment within limits acceptable by the electrical attachments	Yes
81	Bracing of electrical conduits runs and cable trays	per code w/ importance
82	Bracing of mechanical system major duct runs	per code w/ importance
83	Floor loading capacity superimposed live load	12 kPa (250 lbf/sq ft)
84	Floor hanging capacity for ancillary loads suspended from below	2.4 kPa (50 lbf/sq ft)
85	<b>Grounding</b>	
86	Lighting protection system	Yes
87	Service entrance grounds and generator grounds fully conform to NEC	Yes
88	Lighting fixtures (277v) neutral isolated from service entrance derived from lighting transformer for ground fault isolation	Yes
89	Data center grounding infrastructure in computer room	Yes
90	<b>MECHANICAL</b>	
91	<b>General</b>	



**Tier IV Standards as Specified in the TIA 942 Document**

92	Routing of water or drain piping not associated with the data center equipment in data center spaces	Not permitted
93	Positive pressure in computer room and associated spaces relative to outdoors and non-data center spaces	Yes
94	Floor drains in computer room for condensate drain water, humidifier flush water, and sprinkler discharge water	Yes
95	Mechanical systems on standby generator	Yes
96	<b>Water-Cooled System</b>	
97	Indoor Terminal Air Conditioning Units	Qty. of AC Units sufficient to maintain critical area during loss of one source of electrical power
98	Humidity Control for Computer Room	Humidification provided
99	Electrical Service to Mechanical Equipment	Multiple paths of electrical power to AC equipment. Connected in checkerboard fashion for cooling redundancy
100	<b>Heat Rejection</b>	
101	Dry-coolers (Where applicable)	Qty. of dry coolers sufficient to maintain critical area during loss of one source of electrical power
102	Closed-Circuit Fluid Coolers (Where applicable)	Qty. of fluid coolers sufficient to maintain critical area during loss of one source of electrical power
103	Circulating Pumps	Qty. of condenser water pumps sufficient to maintain critical area during loss of one source of electrical power
104	Piping System	Dual path condenser water system
105	<b>Chilled Water System</b>	
106	Indoor Terminal Air Conditioning Units	Qty. of AC Units sufficient to maintain critical area during loss of one source of electrical power
107	Humidity Control for Computer Room	Humidification provided
108	Electrical Service to Mechanical Equipment	Multiple paths of electrical power to AC equipment.
109	<b>Heat Rejection</b>	
110	Chilled Water Piping System	Dual path chilled water system
111	Chilled Water Pumps	Qty. of chilled water pumps sufficient to maintain critical area during loss of one source of electrical power



**Tier IV Standards as Specified in the TIA 942 Document**

112	Air-Cooled Chillers	Qty. of chillers sufficient to maintain critical area during loss of one source of electrical power
113	Water-Cooled System	Qty. of chillers sufficient to maintain critical area during loss of one source of electrical power
114	Cooling Towers	Qty. of cooling towers sufficient to maintain critical area during loss of one source of electrical power
115	Condenser Water Pumps	Qty. of condenser water pumps sufficient to maintain critical area during loss of one source of electrical power
116	Condenser Water Piping System	Dual path condenser water system
117	<b>Air-Cooled System</b>	
118	Indoor Terminal Air Conditioning Units/Outdoor Condensers	Qty. of AC Units sufficient to maintain critical area during loss of one source of electrical power
119	Electrical Service to Mechanical Equipment	Multiple paths of electrical power to AC equipment
120	Humidity Control for Computer Room	Humidification provided
121	<b>HVAC Control System</b>	
122	HVAC Control System	Control system failure will not interrupt cooling to critical areas
123	Power Source to HVAC Control System	Redundant, UPS electrical power to AC equipment
124	<b>Plumbing (for water-cooled heat rejection)</b>	
125	Dual Sources of Make-up Water	Dual sources of water, or one source + on-site storage
126	Points of Connection to Condenser Water System	Two points of connection
127	Fuel Oil System	
128	Bulk Storage Tanks	Multiple storage tanks
129	Storage Tank Pumps and Piping	Multiple pumps, multiple supply pipes