

# UPTIME VS TIA-942-B



Both Uptime Tier Topology and TIA-942 are widely used in colocation and enterprise data centres. Many people have misconceptions for both standards and could not implement them properly during design-build-operation of their data centre facility. Data centre owners can engage Datwyler to provide design consultancy, validation, audit and certification. This is to ensure your data centre design meets the requirements of your potential tenants and fulfil the classification criteria set by international standards. You will need both standards to complement each other, if one standard alone does not address some aspects in the facility.

Some customers set target to conform to both standards, irrespective they will eventually pursue the certifications or not. Datwyler consultancy team, which consists of the Accredited Tier Designer (ATD) and Certified TIA-942 Design Consultant (CTDC) and Internal Auditor (CTIA), with extensive experiences in design and build of data centres, will be able to help you in designing and constructing your critical infrastructure and to meet your requirements.

Please contact our local representative who will further discuss your requirements.

Below is the table of some comparisons between Uptime and TIA-942-B Standards. This list will be much longer than stated in the table.

No	Description	Uptime Tier Topology	TIA-942-B
1	Classification	Tier-I Basic Capacity, Tier-II Redundant Components, Tier-III Concurrent Maintainable, Tier-IV Fault Tolerant	Rated 1 Basic Rated 2 Redundant Components Rated 3 Concurrent Maintainable Rated 4 Fault Tolerant
2	Methodology	Performance confirmation test and Operational impacts.	Normative & Informative Reference Guides.
3	Coverage	Electrical, Mechanical, and Ancillary (engine generator, fuel system, make-up water system, building automation system)	Telecommunications, Electrical, Architectural, and Mechanical (TEAM)
4	Certification level	Three progressive levels: <ul style="list-style-type: none"><li>• Tier Certification Design Documents (TCDD)</li><li>• Tier Certification Constructed Facility (TCCF)</li><li>• Tier Certification Operational Sustainability (TCOS)</li></ul>	<ul style="list-style-type: none"><li>• Certification Audit for the first year on the constructed facility to verify each T, E, A, M components including operations &amp; maintenance.</li><li>• Surveillance Audit on 2<sup>nd</sup> and 3<sup>rd</sup> years.</li><li>• Re-certification Audit afterwards.</li></ul>
5	Certifier	Uptime Institute	Any 3 <sup>rd</sup> party (e.g. Datwyler) who is capable in TIA-942-B certification. TIA does not issue data centre certificates.
6	Operations & Maintenance	It is not required for Tier Certification (TCDD, TCCF) but is required under Operational Sustainability (TCOS)	It is integral part of the standard

<b>7</b>	Building Characteristics & Site Location	It is not required for Tier. It is part of TCOS.	It is integral part of the standard.
<b>8</b>	Compartmentalization	Required only for Tier-IV	Required for Rated 3 & 4
<b>9</b>	Fuel Storage	Min 12 hours	Min 72 hours for Rated 3, 96 hours for Rated 4
<b>10</b>	Continuous Cooling	Required for Tier-IV Must match the duration of fuel storage	For Rated 4 the loss of power will not cause loss of cooling outside operational range.
<b>11</b>	Utility Entrance	It is not required for Tier. Uptime accepts facility without public utility and relies only on engine generators.	Rated-4 requires 2N redundant feed from different substations or generator plant. Rated-3 requires N+1 redundant feed; can be from the same substation but different feeders.
<b>12</b>	Fault Tolerant	Tier-IV requires autonomous fault detection, isolation of faulty path or component, and ability to maintain the targeted IT load.	Similar concept with Uptime's Fault Tolerant
<b>13</b>	UPS topology	For Tier-III: N+1 For Tier-IV: N after any failure	For Rated 3: N+1 For Rated 4: 2N
<b>14</b>	Surge Suppression	It is not required for Tier.	It is required for Rated 3 & 4
<b>15</b>	Grounding & Bonding	It is not required for Tier.	It is an integral part of the standard.
<b>16</b>	Ambient Temperature Design Point	Mechanical plant equipment capacity is based on the extreme Max Wet Bulb value and the design Dry Bulb with "N=20 years" taken from ASHRAE Handbook.	Not specified based on extreme historical climatological data.
<b>17</b>	Fire resistance rating	It is not required for Tier.	It is an integral part of the standard.
<b>18</b>	Physical security	It is not required for Tier.	It is an integral part of the standard.
<b>19</b>	Number of loading docks	It is not required for Tier.	It is an integral part of the standard.
<b>20</b>	Min Battery Backup time for static UPS	It is not required for Tier.	10 mins
<b>21</b>	Battery cycle life	It is not required for Tier.	5 or 10 years
<b>22</b>	Site Communications Path	Tier-III allow sharing the same manhole Tier-IV must be from two manholes	Rate 2, 3, 4 must have two manholes with min. 20 m separation and with redundant backbone cabling.