



Designation: F3610 – 23

Standard Classification for Descriptions of Spaceport Capabilities¹

This standard is issued under the fixed designation F3610; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This classification lists elements recommended for describing a spaceport's facilities and capabilities to potential launch customers, users, third-parties, or other members of the public. Using standardize elements simplifies comparisons and makes it easier to understand the suitability of a spaceport for a given purpose. Spaceports have the discretion to communicate all, some, or none of these elements.

1.2 Measurement data in this standard shall use the ASTM guidance on International System of Units (SI) for all data. In addition to the SI units for data, spaceports addressing U.S. customers should also consider including U.S. customary units for the ease of much of their customer base.

1.3 *This standard does not purport to address the legal requirements associated with licensing or permitting a spaceport. It is the responsibility of the user of this standard to establish appropriate legal and licensing practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

F3377 Terminology Relating to Commercial Spaceflight

2.2 Other Standards:

Range Commanders Council Document 501-12, Universal Documentation System³

Code of Federal Regulations, Title 14, Chapter III, Aeronautics and Space—Commercial Space Transportation, Federal Aviation Administration, Department of Transportation⁴

FAA Commercial Space, Spaceports by State⁵

The Space Industry Regulations 2021, UK Statutory Instruments, 2021 no. 792⁶

3. Terminology

3.1 See individual sections in this classification and Terminology **F3377**.

4. Significance and Use

4.1 This classification provides voluntary guidance for spaceports to provide information about their spaceport, capabilities, systems, restrictions, and other information for use by customers and potential customers.

4.2 Information provided by the spaceport is intended to be for public use and only encompass non-proprietary information.

5. Elements of Spaceport Descriptions

5.1 Spaceport Contact Information:

5.1.1 *Spaceport Physical Address*—The postal address of the actual spaceport. This should not be a post office box, but it should be the actual location of the spaceport.

5.1.1.1 If there is no physical address assigned by the postal system, use an appropriate geographic descriptor. Example: Milepost 15 on RR1, Anytown, Anystate, USA.

5.1.2 *Mail Address*—The preferred mailing address as specified by the spaceport licensee. This can be for a business office location or a post office box, as appropriate.

¹ This classification is under the jurisdiction of ASTM Committee **F47** on Commercial Spaceflight and is the direct responsibility of Subcommittee **F47.04** on Spaceports.

Current edition approved April 1, 2023. Published April 2023. DOI: 10.1520/F3610-23.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Secretariat of the Range Commanders Council, White Sands Missile Range, New Mexico 88002-5110, July 2012, <https://www.trmc.osd.mil/wiki/display/publicRCC/Public+RCC+Home>.

⁴ Available from <https://www.ecfr.gov/current/title-14/chapter-III>, accessed 16 March 2021.

⁵ Available from http://www.faa.gov.space/spaceports_by_state, accessed 23 February 2022.

⁶ Available from <https://www.legislation.gov.uk>, accessed 31 March 2022.

5.1.3 Phone Number—The preferred general access phone number as specified by the spaceport licensee. The international phone number should be listed, with appropriate prefixes, is the preferred format. Alternately, the country of the phone number should be clearly identified. Additional phone numbers may be added at the spaceport’s discretion. The phone number should be an actively monitored number.

5.1.4 Email—The preferred general access email address as specified by the spaceport licensee. Additional emails may be added at the spaceport’s discretion. The email should be an actively monitored address.

5.1.4.1 If available, include a domain-specific email.

5.1.5 Senior Personnel—A list of senior spaceport personnel with name and title. Recommended minimum personnel to list are the Chief Executive Officer, President, Chief Operations Officer, and Chief Financial Officer. Additional personnel may be added at the spaceport’s discretion. Contact information for named personnel may be added at the spaceport’s discretion.

5.1.6 Website—The primary website/URL-address for the spaceport. Additional websites may be added at the spaceport’s discretion.

5.2 Capabilities—The purpose of this section is to provide launch operators a plain-English sense of the missions that each spaceport can support. It is not intended to be a limit on any spaceport’s capabilities, but as a place to start discussions. This section is intended to be a brief and overarching description of each spaceport for the convenience of potential users. Specific details on each element of launch are in other sections of the document.

5.2.1 Include the number and description of launch, landing, and recovery allowed by the licensing agency as part of the spaceport license (see following sections).

5.2.2 Launch Vehicles Supported—This section focuses on the sizes and capabilities for launch that are associated with each launch site. These capabilities can be license related, environmentally related, infrastructure related, or simply by preference of the spaceport.

5.2.2.1 USA FAA-definition Based Launch Vehicle Categories—The category(ies) of launch vehicle that can be launched from the spaceport as defined by its license per Code of Federal Regulations (CFR) Title 14, Chapter III, Subchapter C, Part 420, Subpart B, 420.19. Note that the FAA defines vehicles based on the U.S. customary units rather than the International System of Units (SI). Types of launch vehicles include orbital expendable launch vehicles, guided sub-orbital expendable launch vehicles, unguided sub-orbital expendable launch vehicles, and reusable launch vehicles. Orbital expendable launch vehicles are further classified by weight class, based on the weight of payload the launch vehicle can place in a 100 nm orbit, as defined in **Table 1** (FAA Part 420.19(a)(2)).

(1) Other Launch Vehicle Categories—Other appropriate definitions that may include definitions from other national and local governments, agencies or other vehicle category definitions if other than the U.S. FAA definition.

TABLE 1 Orbital Expendable Launch Vehicle Classes by Payload Weight (lbs)

100 nm orbit	Weight Class			
	Small	Medium	Medium Large	Large
28 degrees inclination ^A	≤4400	>4400 to ≤11 100	>11 100 to ≤18 500	>18 500
90 degrees inclination	≤3300	>3300 to ≤8400	>8400 to ≤15 000	>15 000

^A 28 degrees inclination orbit from a launch point at 28 degrees latitude.

(2) Light Lift Vehicle Category—Though not a distinct classification used by the FAA, the emergence of launch vehicles designed for ≤1000 kg (2200 lb) to LEO may be termed as “light lift vehicles” in local documentation. Site licensing requirements will always take precedence in official documentation.

5.2.2.2 Sizes, Dimensions, Thrust—This is a spaceport-defined field that provides a description of overall vehicle-specific limits for the site. Capabilities in this category are usually limits to the vehicle(s) capable of being launched from the spaceport. Limits can be low limits, high limits, or both. The source of the capability limits are usually from physical constraints of the spaceport (such as height, thrust, or weight capabilities limited by facilities), legal/licensing requirements (such as licensing authority limits to the type of vehicle), or simply by spaceport self-defined desires.

5.2.2.3 Types of Launch Systems—Defined by spaceport operator based on existing capabilities and relevant licenses. Launches of spacecraft have predominantly been classified as vertical or horizontal launch vehicles. Spaceports are often capable of supporting multiple types of launches and recovery, and each should be listed by the spaceport.

(1) Vertical Launch—Describe the spaceport’s capabilities for supporting vertical launches.

(2) Horizontal Launch—Describe the spaceport’s capabilities for supporting horizontal launches.

(3) Other Vehicles—There are many other types of vehicles in development or use. Any capability that a launch site wants to support, and is licensed/permitted to launch, should be added by the spaceport in this section. Some examples are listed below.

(a) Lighter-Than-Air—High-performance balloons capable of reaching “near space” altitudes.

(b) Kinetic Launch—Non-propulsive staging using kinetic systems to reach orbit, including dynamic launch systems and propulsive “guns.”

(c) Hybrid Launch Vehicles—Balloon-lifted rocket launches (Balrocs); modified or unique high-performance “aircraft,” etc.

5.2.2.4 Landing Types—Defined by spaceport operator based on existing capabilities and relevant licenses. Reentry and landing is typically vertical or horizontal, based on the type of vehicle, and landings may occur with or without propulsion