

Comparison Between MIL-STD-209J and MIL-STD-209K

MIL-STD-209J Paragraph #	MIL-STD-209K Paragraph #	Explanation of Change
1.1.1 Excluded equipment.	1.1.1 Excluded equipment.	MIL-STD-209K further defines that this standard does not include equipment with ISO corners that meet the requirements for CSC certification; however, clarifying that ISO corners not having CSC certification are not an acceptable alternative for lifting and tiedown provisions that do meet this standard.
1.2.a	1.2.a	MIL-STD-209K states that this standard applies to equipment, or components removed from equipment, that weigh more than 500 lbs. This is aligned with STANAG 4062, <i>Slinging and Tiedown Facilities for Lifting and Tying Down Military Equipment for Movement by Land and Sea</i> .
1.2.b	1.2.b	MIL-STD-209K expands the definition of “modified equipment” such that this standard applies to modified equipment previously not equipped with lifting and tiedown provisions that meet this standard.
Section 4 General Requirements	Section 4 General Requirements	This section has been totally revised in MIL-STD-209K to include only those general requirements that apply to all the different types of provisions covered in this standard. All specific requirements (number, location, strength, provision dimensions, testing and directional capabilities) that apply to each particular type of provision are contained in section 5.
4.1.1 Number	5.1.1 Number 5.2.1 Number 5.3 Multipurpose provisions.	The “number” requirements for lifting, equipment tiedown, and multipurpose provisions have been moved to section 5. See paragraphs 5.1.1, 5.2.1, and 5.3.
4.1.2.1 All provisions.	5.1.2 Location. 5.2.2 Location. 5.3 Multipurpose provisions. 5.4.2 Location. 5.5.2 Location.	The “location” requirements for lifting, equipment tiedown, multipurpose, cargo tiedown, large cargo tiedown, and supplemental air transport tiedown provisions has been moved to section 5. See paragraphs 5.1.2, 5.2.2, 5.3, 5.4.2,

	5.6.2 Location.	5.5.2, 5.6.2.
4.1.2.2 Lifting provisions.	5.1.2. Location.	The “location” requirements for lifting provision have been moved to section 5. See paragraph 5.1.2
4.1.2.3 Equipment tiedown provisions.	5.2.2 Location.	The “location” requirements for equipment tiedown provisions have been moved to section 5. See paragraph 5.2.2.
4.1.3 Option for Type II equipment.	4.1.5 Option for Type II equipment.	The requirement to show the location of hard points on Type II equipment that are supposed to be used for lifting and tiedown on the dataplate has been added to MIL-STD-209K.
4.2 Surface of provisions.	4.2 Surface of provisions. 5.2.4 Provision dimensions.	The portion of this paragraph that applies just to equipment tiedown provisions has been moved to paragraph 5.2.4.
4.3 Shackles.	4.3 Shackles.	A statement has been added to MIL-STD-209K that it is ok to mark a shackle with a higher Working Load Limit (WLL) if it exceeds the WLL required by RR-C-271D.
4.5 Removable provisions.	4.5 Removable provisions.	A statement has been added to MIL-STD-209K that cargo tiedown provisions that have nuts and bolts as its primary parts need to be welded together to prevent disassembly by hand or vibrating loose.
4.6.1.1 Cargo bed and flatbed/flatrack cargo tiedown provisions.	5.4.1 Number.	The “number” requirements for cargo tiedown provisions have been moved to section 5. See paragraph 5.4.1.
4.6.1.2 Large cargo tiedown provisions.	4.16 Large cargo tiedown provisions. 5.5.1 Number.	The requirement for large cargo tiedown provisions has been moved to paragraph 4.16. The number of large cargo tiedown provisions required has moved to paragraph 5.5.1. Instead of requiring two on the front and two on the rear, the standard now allows for either two or four large cargo tiedown provisions on the front and rear of the cargo area. Also, if the cargo area is larger than 40 feet, then it must be equipped with additional large cargo tiedown provisions grouped in two rows laterally across the cargo area on either side of the longitudinal midpoint.
4.6.2 Location.	5.4.2 Location 5.5.2 Location	The location requirements for cargo tiedown provisions and large cargo tiedown provisions have been moved to paragraphs 5.4.2. and 5.5.2.

		A requirement has been added to the standard such that cargo tiedown provisions must not be more than 6 inches from the corners of the cargo area. However, if ISO corner fittings are installed in the cargo area, then the cargo tiedown provisions can be as close as possible to the ISO fittings.
4.7 Freezing and jamming.	4.6 Freezing and jamming.	Moved to paragraph 4.6.
4.8 Stowable lifting provisions.	4.7 Stowable lifting provisions.	A statement has been added that requires the stowable provisions to be inaccessible if they lose some of their strength in the stowed position so that they cannot be misused. Also, if locking pins or tools are used to employ the stowable provisions, a requirement to provide a means to prevent the loss of these items is required.
4.9 Spreader bars.	4.8 Spreader bars.	Moved to paragraph 4.8. The restrictions on spreader bars has been changed such that spreader bars are not allowed unless they are approved by SDDCTEA or the service transportability agent. If spreader bars or cable guides (used in lieu of spreader bars) are required to lift an item, they must be used during testing.
4.10 Computer aided engineering (CAE) structural analysis.	N/A	The requirement for CAE structural analysis has been deleted.
4.11 Deviations.	4.9 Deviations.	Moved to paragraph. 4.9.
5.1 Strength of eyes and provisions.	4.10 Strength of provisions.	Moved to paragraph 4.10.
5.1.1 Lifting provisions.	5.1.3.1 For equipment with a helicopter/tiltrotor sling load requirement and a crane lift requirement. 5.1.3.2 For equipment with only a crane lift requirement.	The requirements of this paragraph have been split up between 5.1.3.1 and 5.1.3.2.
5.1.1.1 For equipment with a helicopter EAT requirement.	5.1.3.1 For equipment with a helicopter/tiltrotor	The strength requirements for lifting provisions with both an HSL and crane lift requirement have been moved to 5.1.3.1.

	sling load requirement and a crane lift requirement.	
5.1.1.2 Crane lifting requirements.	5.1.3.2 For equipment with only a crane lift requirement.	The strength requirements for lifting provisions with only a crane lift requirement have been moved to 5.1.3.2. The requirement to be lifted with a 20-foot ISO container spreader bar has been clarified to be for only those items weighing 67,200 lbs or less.
5.1.2 Equipment tiedown provisions.	5.2.3 Strength.	The strength requirements for equipment tiedown provisions have been moved to 5.2.3. MIL-STD-1366 has been identified as the source for load requirements for items requiring internal transport by helicopters smaller than the CH-47. Also, a statement about truck/trailer combinations, and the requirement for each vehicle to meet the requirements of this standard individually has been added.
Table I – Load requirements for equipment tiedown provisions.	Table I – Load requirements for equipment tiedown provisions (transport by highway, rail, marine, USAF fixed-wing aircraft, and internally by CH-47 helicopter) and Large cargo tiedown provisions.	This table has been re-titled to specify which modes of transport are applicable and to include Large cargo tiedown provisions. A footnote has been added for helicopters reducing the design limit load to 3.0gs since they are not transported by rail. Another footnote requires an item meet these strength requirements for all orientations that it can be transported in, and another footnote states that the design limit load in the forward direction is 9gs for transport in the KC-10 and 8gs on the KC-135.
5.1.2.1 Option for equipment weighing more than 100,800 pounds.	5.2.3.1 Option for equipment weighing 50,000 pounds or more.	The option to have two openings on each equipment tiedown provision has been extended to equipment weighing 50,000 lbs or more. The requirement for the two openings to be 3.5 inches has been added.
5.1.3 Multipurpose provisions.	5.3 Multipurpose provisions.	The requirements for multipurpose provisions have been moved to 5.3.
5.1.4 Cargo tiedown provisions.	5.4.3 Strength. 5.4.4 Provision dimensions. 5.5.3 Strength.	The strength requirements for cargo tiedown provisions have been moved to 5.4.3. Cargo bed and flatbed/flatrack cargo tiedown provisions are all referred to simply as “cargo tiedown provisions.”

		<p>The requirements for all cargo tiedown provisions are in Table II.</p> <p>The 2-inch banding requirement has been moved to paragraph 5.4.4.</p> <p>The strength requirements for large cargo tiedown provisions have been moved to 5.5.3. For cargo areas that are 40 feet or longer it is assumed that the largest single item (other than a container) it would carry would be half the maximum payload capability of the cargo area, the large cargo tiedown provisions must meet the strength requirements for only half the maximum payload of the cargo area.</p>
Table II – Load requirements for cargo bed tiedown provisions.	Table II – Load requirements for cargo tiedown provisions.	This table has been modified to include cargo bed and flatbed/flatrack provisions, simply called cargo tiedown provisions in MIL-STD-209K.
5.2.1 Lifting, equipment tiedown, multipurpose and large cargo tiedown provisions.	5.1.4 Provision dimensions. 5.2.4 Provision dimensions. 5.3. Multipurpose provisions. 5.5.4 Provision dimensions.	The “provision dimension” requirements for lifting provisions have been moved to 5.1.4. The “provision dimension” requirements for equipment tiedown provisions have been moved to 5.2.4. A requirement that the resulting cross-section of the equipment tiedown provision fit into a 2-inch circle has been added to paragraph 5.2.4. The requirements for multipurpose provisions have been moved to 5.3. The “provision dimension” requirements for large cargo tiedown provisions have been moved to paragraph 5.5.4. If there are four large cargo tiedown provisions in each row, then half the maximum payload capability of the cargo area is used as the “gross weight” when using Figure 3 to determine the dimensions of the large cargo tiedown provisions.
5.2.2 Cargo bed tiedown provisions.	5.4.4 Provision dimensions.	The “provision dimension” requirements for cargo bed tiedown provisions have been moved to 5.4.4 and grouped with the “provision dimension” requirements for all cargo tiedown provisions. For cargo areas

		with a payload capacity less than or equal to 15,000 lbs, the provision openings must be such that a 1-inch radius semi-circle can be inscribed in it.
5.2.3 Flatbed/flatrack cargo tiedown provisions.	5.4.4 Provision dimensions.	The “provision dimension” requirements for flatbed/flatrack provisions have been moved to 5.4.4 and grouped with the “provision dimension” requirements for all cargo tiedown provisions. For cargo areas with a payload capacity greater than 15,000 lbs, the provision openings must not be less than 2 inches in diameter and the thickness of the provision shall not be greater than 1 inch.
5.3.1 Cargo bed tiedown provisions.	5.4.6 Directional capabilities.	The “directional capabilities” requirements for cargo bed tiedown provisions have been moved to 5.4.6.
5.3.2. Flatbed/flatrack and large cargo tiedown provisions.	5.4.6 Directional capabilities.	The “directional capabilities” requirements for flatbed/flatrack cargo tiedown provisions have been moved to 5.4.6.
5.5.1 General.	4.13 Testing.	The “general” requirements for testing have been moved to 4.13. The requirement for Computer Aided Engineering (CAE) to be performed prior to testing was deleted, however a requirement to perform Non-destructive testing (NDT) on the provisions prior to painting and testing has been added.
5.5.2 Lifting provisions.	5.1.5 Testing.	The testing requirements for lifting provisions have been moved to 5.1.5. The requirement for CAE testing has been removed.
5.5.3 Equipment and large cargo tiedown provisions.	5.2.5 Testing. 5.5.5 Testing.	The testing requirements for equipment tiedown provisions have been moved to 5.2.5. The testing requirements for large cargo tiedown provisions have been moved to 5.5.5. The requirement for CAE testing has been removed.
5.6 Marking.	5.7 Marking.	The marking requirements have been moved to 5.7. The dataplate requirements have been updated to include the location of all types of provisions covered by this standard, the location of hard points (for Type II equipment), the transport dimensions and weights, and a visual representation of an acceptable CG

		envelope for cargo carrying vehicles.
5.6.2 Identification.	5.7.2 Identification.	The stenciling requirements for provisions have been moved to 5.7.2. The markings on provisions must be visible to a person standing on the ground.
Figure 5 – Lifting, equipment tiedown, multipurpose and large cargo tiedown provision openings and clearance dimensions.	Figure 3 – Lifting, equipment tiedown, multipurpose and large cargo tiedown provision openings and clearance dimensions.	The dimensions for Amax and Bmax have been combined into one column. Also, Dmax has been removed from the table. For the two highest weight categories, Dmin is different for equipment tiedown provisions and multipurpose provisions, and lifting provisions. The weight categories have been changed (up to 82,000 lbs) to coincide with the strength of the chains used for air transport.
Paragraphs added to MIL-STD-209K		
N/A	4.12 Supplemental air transport tiedown provisions.	A new type of provision, the “Supplemental air transport tiedown provision” has been added to MIL-STD-209K. Equipment weighing over 10,000 lbs that has a requirement to be transported on USAF cargo aircraft must be equipped with these provisions. The AF requested that we add this type of provision into the standard to facilitate the most efficient use of floor space for tying down vehicles.
N/A	4.14 Transport on Navy/Marine Corps aircraft.	Internal transport on Navy/Marine Corps aircraft require above that required by other modes of transport. The user is referred to Appendix D for designing for restraint aboard these transportation assets.
N/A	5.2.3.2 Strength of helicopter equipment tiedown provisions.	Since helicopters are not transported by rail, the equipment tiedown provisions on them need to meet the following loads: 3gs in the fore and aft longitudinal directions 1.5gs in the lateral direction 2gs in the vertical direction Also, since helicopters may be oriented at various angles to the longitudinal axis of an aircraft, this should be kept in mind when determining the strength of the equipment tiedown provisions on helicopters.
N/A	5.4.7 Unique cargo	A paragraph has been added to address

	tiedown provisions.	unique cargo tiedown provisions. The suitability of these provisions must be established and verified by testing that demonstrates the ability of the provision to provide adequate restraint for the unique application.
	5.6 Supplemental air transport provisions.	The number, location, strength, dimensional, testing, and directional requirements for supplemental air transport tiedown provisions is in paragraph 5.6.
N/A	6.9 Computer aided engineering (CAE) structural analysis.	Although the requirement to perform CAE testing in lieu of or prior to actual physical testing has been removed from MIL-STD-209K, paragraph 6.9 allows for the option for SDDCTEA or the contractor to perform CAE prior to testing to help reduce test failures.
N/A	6.10 Checklist for Program Managers and Contractors.	A checklist has been added to MIL-STD-209K as a reference to help ensure that requirements of this standard are met. This checklist identifies specific areas of consideration essential to understanding and meeting the requirements of this standard.
N/A	Figure 1 – Approximate Location of the six different types of provisions.	A figure depicting the approximate location of the six different types of provisions covered in this standard has been added.
N/A	Figure 12 – Center cargo tiedown provisions for cargo areas 40 feet or longer	A figure depicting cargo provisions at the longitudinal midpoint of cargo areas that are 40 feet or longer has been added.
N/A	Figure 13 – Range of restraint capabilities of supplemental air transport tiedown provisions.	A figure depicting the required range of restraint for supplemental air transport tiedown provisions has been added.
N/A	Figure 14 - Resultant direction of pull for testing supplemental air transport tiedown provisions.	A figure depicting the resultant direction of pull testing for the supplemental air transport tiedown provisions has been added.

N/A	Figure 15 – Sample dataplate with required information	A figure depicting a sample dataplate with all the required information on it has been added.
N/A	B.5.1.11	A paragraph has been added to Appendix B of MIL-STD-209K that explains what to do when the previous example in the appendix results in interference between the slings and the equipment when the equipment is lifted.
N/A	Appendix D – Transport by Navy/Marine Corps Aircraft	An appendix has been added to the standard to that provides the restraint requirements for transport aboard Navy/Marine Corps helicopters, tilt-rotor, and fixed-wing aircraft.