

Asce 7-10 Chapter 30 Pdf

October 2013

TABLE 13.5-1 COEFFICIENTS FOR ARCHITECTURAL COMPONENTS

2 1/2		
2 %2	2 1/2	2 1/2
2 1/2	1 1/2	1 1/2
1	2 1/2	2.3/2
	1	

The value of $a_0 = 1$ is for rigid components and rigidly attached components. The value of $a_0 = 2.5 \frac{2}{2} \frac{1}{2}$ is for flexible components and flexibly attached components.

Overstrength as required for anchorage to concrete. See Section 12.4.3 for inclusion of overstrength factor in seismic load effect.

13.6 Mechanical and Electrical Components

REVISE TABLE 13.6-1 TO ADD OVERSTRENGTH COEFFICIENTS AND CONVERT ALL EXISTING VALUES FROM DECIMAL TO FRACTIONAL FORM FOR CONSISTENCY WITH TABLE 12.2-1 (NOT SHOWN IN WITH STRIKE-OUT AND UNDERLINE TEXT FOR CLARITY).

MECHANICAL AND ELECTRICAL COMPONENTS	a_p^{a}	Rpb	$\underline{\Omega}_{\ell}^{\varepsilon}$
Air-side HVAC, fans, air handlers, air conditioning units, cabinet heaters, air distribution boxes, and other	2 1/2	6	2 1/2
mechanical components constructed of sheet metal framing.			
Wet-side HVAC, boilers, furnaces, atmospheric tanks and bins, chillers, water heaters, heat exchangers, evaporators, air separators, manufacturing or process equipment, and other mechanical components constructed of high-deformability materials.	1	2 1/2	2.1/2
Engines, turbines, pumps, compressors, and pressure vessels not supported on skirts and not within the scope of Chapter 15.	1	2 1/2	2.1/2
Skirt-supported pressure vessels not within the scope of Chapter 15.	2 1/2	2 1/2	2 1/2
Elevator and escalator components.	1	2 1/2	2.3/2
Generators, batteries, inverters, motors, transformers, and other electrical components constructed of high deformability materials.	1	2 1/2	2.1/2
Motor control centers, panel boards, switch gear, instrumentation cabinets, and other components constructed of sheet metal framing.	2 1/2	6	21/2
Communication equipment, computers, instrumentation, and controls.	1	2 1/2	2 1/2
Roof-mounted stacks, cooling and electrical towers laterally braced below their center of mass.	2 1/2	3	2 1/2
Roof-mounted stacks, cooling and electrical towers laterally braced above their center of mass.	1	2 1/2	2 1/2
Lighting fixtures.	1	1 1/2	1 1/2
Other mechanical or electrical components.	1	1 1/2	1 1/2
VIBRATION ISOLATED COMPONENTS AND SYSTEMS ⁶			
Components and systems isolated using neoprene elements and neoprene isolated floors with built-in or separate elastomeric snubbing devices or resilient perimeter stops.	2 1/2	2 1/2	2.1/2
Spring isolated components and systems and vibration isolated floors closely restrained using built-in or separate elastomeric snubbing devices or resilient perimeter stops.	2 1/2	2	2 1/2
Internally isolated components and systems.	2 1/2	2	2 1/2
Suspended vibration isolated equipment including in-line duct devices and suspended internally isolated components.	2 1/2	2 1/2	2.1/2
DISTRIBUTION SYSTEMS			
Piping in accordance with ASME B31, including in-line components with joints made by welding or brazing.	2 1/2	12	2 1/2
Piping in accordance with ASME B31, including in-line components, constructed of high or limited deformability materials, with joints made by threading, bonding, compression couplings, or grooved couplings.	2 1/2	6	21/2
Piping and tubing not in accordance with ASME B31, including in-line components, constructed of high- deformability materials, with joints made by welding or brazing.	2 1/2	9	2 1/2

TABLE 13.6-1 SEISMIC COEFFICIENTS FOR MECHANICAL AND ELECTRICAL COMPONENTS

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Minimum Design Loads for Buildings and Other Structures

ъ Where flexible diaphragms provide lateral support for concrete or masonry walls and partitions, the design forces for anchorage to the diaphragm shall be as specified in Section 12.11.2.

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It focuses on the requirements for general structural design, as well as providing a means for determining loads (dead, live, soil, flood, snow, rain, ice, earthquake, wind) and their combinations.. However, looking through ASCE 7-10's seismic requirements, it would seem section 15.

- 1. asce chapter
- 2. asce chapter 13
- 3. asce chapter 12

I've been tasked with designing a foundation system for a 60' tall, 50,000 gallon ground-support tank used for liquid storage.. This article will focus on how auto generated load combinations feature meets the load combination equations as specified in ASCE 7-10 LRFD.. My firm has had a older 'rule of thumb' reference on tank seismic design from IBC 2000.. ASCE 7-16 The 2016 edition of is available Learn more about the new digital platform, as well as the new, and sign up for release updates.

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7 6 would be the appropriate method to use in finding the seismic base shear for the tank. 2 3 2 Basic Combinations Design Code Equation Design Code Comment SkyCiv Equation SkyCiv Comment 1. Free Download Snagit 11 Crackle

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TABLE 13.5-1 COEFFICIENTS FOR ARCHITECTURAL COMPONENTS

Architectur al Component	a,"	R _p	Ω_0^{c}
Limited deformability elements and attachments	2 1/2	2 1/2	<u>Q</u> e ^c 2 ½
Low deformability materials and attachments	2 1/2	1 1/2	1 1/2
Egress stairways not part of the building structure	1	2 1/2	2 3/2
^a A lower value for a ₀ shall not be used unless justified by detailed dynamic analysis. The value for a ₀ s	hall not be	e less than	1. 1.00

The value of $a_0 = 1$ is for rigid components and rigidly attached components. The value of $a_0 = 2.5 \frac{2}{2} \frac{1}{2}$ is for flexible components and flexibly attached components.

Overstrength as required for anchorage to concrete. See Section 12.4.3 for inclusion of overstrength factor in seismic load effect.

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MECHANICAL AND ELECTRICAL COMPONENTS	a_p^a	Rp ^b	$\underline{\Omega}_{\underline{\theta}}^{c}$
Air-side HVAC, fans, air handlers, air conditioning units, cabinet heaters, air distribution boxes, and other	2 1/2	6	2 1/2
mechanical components constructed of sheet metal framing. Wet-side HVAC, boilers, furnaces, atmospheric tanks and bins, chillers, water heaters, heat exchangers, evaporators, air separators, manufacturing or process equipment, and other mechanical components constructed of high-deformability materials.	1	2 1/2	2.1/2
Engines, turbines, pumps, compressors, and pressure vessels not supported on skirts and not within the scope of Chapter 15.	1	2 1/2	2.1/2
Skirt-supported pressure vessels not within the scope of Chapter 15.	2 1/2	2 1/2	2 1/2
Elevator and escalator components.	1	2 1/2	2 3/
Generators, batteries, inverters, motors, transformers, and other electrical components constructed of high deformability materials.	1	2 1/2	2.3/2
Motor control centers, panel boards, switch gear, instrumentation cabinets, and other components constructed of sheet metal framing.	2 1/2	6	23/
Communication equipment, computers, instrumentation, and controls.	1	2 1/2	2 1/2
Roof-mounted stacks, cooling and electrical towers laterally braced below their center of mass.	2 1/2	3	2 1/
Roof-mounted stacks, cooling and electrical towers laterally braced above their center of mass.	1	2 1/2	23
Lighting fixtures.	1	1 1/2	1 1
Other mechanical or electrical components.	1	1 1/2	1 1
VIBRATION ISOLATED COMPONENTS AND SYSTEMS ⁶			
Components and systems isolated using neoprene elements and neoprene isolated floors with built-in or separate elastomeric snubbing devices or resilient perimeter stops.	2 1/2	2 1/2	2 %
Spring isolated components and systems and vibration isolated floors closely restrained using built-in or separate elastomeric snubbing devices or resilient perimeter stops.	2 1/2	2	2 %
Internally isolated components and systems.	2 1/2	2	2 1/
Suspended vibration isolated equipment including in-line duct devices and suspended internally isolated components.	2 1/2	2 1/2	2.1
DISTRIBUTION SYSTEMS			
Piping in accordance with ASME B31, including in-line components with joints made by welding or brazing.	2 1/2	12	21/
Piping in accordance with ASME B31, including in-line components, constructed of high or limited deformability materials, with joints made by threading, bonding, compression couplings, or grooved couplings.	2 1/2	6	2.1/
Piping and tubing not in accordance with ASME B31, including in-line components, constructed of high- deformability materials, with joints made by welding or brazing.	2 1/2	9	2.9/

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