



Date: December 1, 2023
To: City of Houston HPW-HPC
Attention: CCM
From: Jensen Hughes
Subject: IBC Mezzanines and Equipment Platforms

This technical memo is provided to describe the significant changes to the Houston Construction Codes with regard to requirements for Mezzanines and Equipment Platforms.

In summary, this change deals with scenarios where mezzanines and equipment platforms are constructed in the same room, and the general limitations that cannot be exceeded when using the two thirds allowance, as mentioned in **Section 505** of the IBC

When the floor area of an above level is significantly smaller than the area below, the upper level may be considered a mezzanine rather than a story. Mezzanines are given many specific allowances in the code, which includes the possibility that it does not contribute to the allowable floor area or number of stories. Generally, the total area of Mezzanines cannot exceed one-third the area of the room in which it is located. If the elevated area is an equipment platform and not a mezzanine, a greater allowance of two-thirds the area is permitted. This provision helps clarify rooms where both mezzanine and equipment platforms appear.

Exception 3 was added to Section 505.2.1 which allows the Mezzanine to reach one half of the floor area if specific automatic sprinkler system requirements are met.

In the past, when both are located in the same room, the total floor area of the two combined is permitted to be up to two-thirds the floor area of the room. If the equipment platform is smaller, the mezzanine could be much larger than permitted by the base requirement in the code, of one-third the floor area, and still meet the two-thirds limitation. For example, the equipment platform could be 5% the floor area of the room below, and this would allow the mezzanine to be up to 62% the floor area below. The total area that the two combined falls within the two-thirds (67%) rule, but the individual area of the mezzanine well exceeds the one-third (33%) rule. This potential result is not the intended application of the two-thirds allowance, and the newly revised code provides much needed context of the original intent. The new format and added language clearly now state that the general limitation for mezzanines of one-third cannot be exceeded when applying two-thirds allowance for the combo of mezzanine and equipment platforms.

memo.

2021 Building Code Changes –**SECTION 505
MEZZANINES AND EQUIPMENT PLATFORMS.**

Section 505.1 General. Mezzanines shall comply with **Section 505.2**. Equipment platforms shall comply with **Section 505.3**.

Section 505.2 Mezzanines. A mezzanine or mezzanines in compliance with **Section 505.2** shall be considered a portion of the story below. Such mezzanines shall not contribute to either the building area or number of stories as regulated by **Section 503.1**. The area of the mezzanine shall be included in determining the fire area. The clear height above and below the mezzanine floor construction shall be not less than 7 feet (2134mm).

Section 505.2.1 Area Limitation. The aggregate area of a mezzanine or mezzanines within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the mezzanine is located. In determining the allowable mezzanine area, the area of the mezzanine shall not be included in the floor area of the room.

~~Where a room contains both mezzanine and an equipment platform, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.~~

Exceptions:

1. The aggregate area of mezzanines in buildings and structures of Type I or II construction for special industrial occupancies in accordance with **Section 503.1.1** shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of mezzanines in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an approved automatic sprinkler system in accordance with **Section 903.3.1.1** and an approved emergency voice/alarm communication system in accordance with **Section 907.5.2.2**.
3. The aggregate area of a mezzanine within a dwelling unit that is located in a building equipped throughout with an approved automatic sprinkler system in accordance with **Section 903.3.1.1 or 903.3.1.2** shall not be greater than one-half of the floor area of the room, provided that:
 - 3.1. Except for enclosed closets and bathrooms, the mezzanine shall be open to the room in which such mezzanine is located.
 - 3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts; and
 - 3.3. Exceptions to **Section 505.2.3** shall not be permitted.

Section 505.2.1.1 Aggregate Area of Mezzanines and Equipment Platforms Where a room contains both a mezzanine and an equipment platform, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with **Section 505.2.1**.



Section 505.2.2 Means of Egress. The means of egress for mezzanines shall comply with the applicable provision of Chapter 10

Section 505.2.3 Openness. A mezzanine shall be open and unobstructed to the room in which such mezzanine is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

1. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the occupant load of the aggregate area of the enclosed space is not greater than 10.
2. A mezzanine having two or more exits or access to exits is not required to be open to the room in which the mezzanine is located.
3. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the mezzanine area.
4. In industrial facilities, mezzanines used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, ~~that~~ **which** are no more than two stories above grade plane and equipped throughout with an automatic sprinkler system in accordance with **Section 903.3.1.1**, a mezzanine having two or more ~~means of egress~~ **exits or access to exits** shall not be required to be open to the room in which the mezzanine is located.

Section 505.3 Equipment Platforms. Equipment platforms in buildings shall not be considered as a portion of the floor below. Such equipment platforms shall not contribute to either the building area or the number of stories as regulated by **Section 503.1**. The area of the equipment platform shall not be included in determining the fire area in accordance with **Section 903**. Equipment platforms shall not be a part of any mezzanine and such platforms and the walkways, stairways, alternating tread devices and ladders providing access to an equipment platform shall not serve as a part of the means of egress from the building.

Section 505.3.1 Area Limitation. The aggregate area of all equipment platforms within a room shall be not greater than two-thirds of the area of the room in which they are located. Where an equipment platform is located in the same room as a mezzanine, the area of the mezzanine shall be determined by **Section 505.2.1** and the combined aggregate area of the equipment platforms and mezzanines shall be not greater than two-thirds of the room in which they are located. **The area of the mezzanine shall not exceed the area determined in accordance with Section 505.2.1.**

Section 505.3.2 Automatic Sprinkler System. Where located in a building that is required to be protected by an automatic sprinkler system, equipment platforms shall be fully protected by sprinklers above and below the platform, where required by the standards referenced in Section 903.3.

Section 505.3.3 Guards. Equipment platforms shall have guards where required by Section 1015.2.