FireCode Amendment Proposal Form
For public amendments proposed to the 2018 editions of the International Codes

Instructions: Upload this form and all accompanying documentation at www.denvergov.org/BuildingCode. If you are submitting your proposal on a separate sheet, make sure it includes all information requested below.

All proposals must be received by April 26, 2019.

CONTACT INFORMATION
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Organization: City and County of Denver – Development Services

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Signature: Street Schellhase

AMENDMENT PROPOSAL

Please use a separate form for each proposal.

1) Code(s) associated with this proposal. Please use acronym: DBC-IBC
If you submitted a separate coordination change to another code, please indicate which code: ___________________________

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
<th>Acronym</th>
<th>Code Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBC-xxxx</td>
<td>Denver Building Code–xxxx (code) amendments (e.g., DBC-IBC, DBC-IEBC)</td>
<td>IFGC</td>
<td>International Fuel Gas Code</td>
</tr>
<tr>
<td>IEBC</td>
<td>International Existing Building Code</td>
<td>IMC</td>
<td>International Mechanical Code</td>
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<td>IECC</td>
<td>International Energy Conservation Code</td>
<td>IPC</td>
<td>International Plumbing Code</td>
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<td></td>
<td></td>
<td>IRE</td>
<td>International Residential Code</td>
</tr>
</tbody>
</table>

2) Please check here if a separate graphic file is provided: □
Graphics may also be embedded within your proposal below.

3) Use this template to submit your proposal or attach a separate file, but please include all items requested below in your proposal. The only formatting needed is BOLDING, STRIKEOUT AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc., as this will be done by CPD.

<table>
<thead>
<tr>
<th>Code Sections/Tables/ Figures Proposed for Revision:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBC 1607.7.2 and DBC 1607.15</td>
</tr>
<tr>
<td>Note: If the proposal is for a new section, indicate (new).</td>
</tr>
</tbody>
</table>

Proposal:

Revise IBC 1607.7.2 as follows:
1607.7.2 Fire truck and emergency vehicles. Where a structure or portions of a structure are accessed and loaded by fire
department access vehicles and other similar emergency vehicles, the structure shall be designed for whichever the greater
of the following loads: produces the greater load effects. The Fire Prevention Division shall determine the area around any
building or structure for which fire access and, therefore, the provisions of this section are required. All structural decks with
loading per this section shall have permanent all-weather load posting signs indicating gross maximum vehicle load,
maximum tandem axles load and maximum single axle load. Signs shall be posted in a conspicuous location at each deck
entrance and shall be maintained by the owner at all times.

1. The actual operational loads, including outrigger reactions and contact areas of the vehicles as stipulated and approved
   by the building official live loading specified in Table 1607.1 Item 29, Sidewalks, vehicular driveways and yards,
   subject to trucking.
2. The live loading specified in Section 1607.7.1.
3. The three live load cases for each of the two fire department vehicle types indicated below. The fire vehicle service live
   loads and geometries are shown in Figures 1607.7.2 (1) and 1607.7.2 (2).

Platform Truck – Figure 1607.7.2 (1)

Basic Load Case:
The front axle load shall be 22,800 pounds (11,400 pounds per tire) with a tire contact area of 12 in. x 13 in. The load on each
rear axle shall be 27,000 pounds (13,500 pounds per tire) with a tire contact area of 14 in. x 16 in. Impact and longitudinal
forces imparted by the vehicle loads shall be in accordance with the latest edition of AASHTO LRFD Bridge Design
Specifications.

Static Load Case A:
A load of 52,000 pounds on one outrigger. The contact area of each outrigger is 26 in. x 31 in. The load is to be located so as
to produce the maximum stress in the member(s) being analyzed when applied according to the geometry of Figure 1607.7.2
(1).

Static Load Case B:
A load of 30,000 pounds on each of two adjacent outriggers (total load is 60,000 pounds). The contact area of each outrigger
is 26 in. x 31 in. The load is to be located so as to produce the maximum stress in the member(s) being analyzed when
applied according to the geometry of Figure 1607.7.2 (1).

Ladder Truck – Figure 1607.7.2 (2)

Basic Load Case:
The front axle load shall be 22,800 pounds (11,400 pounds per tire) with a tire contact area of 12 in. x 13 in. The load on the
rear axle shall be 31,000 pounds (15,500 pounds per tire) with a tire contact area of 14 in. x 16 in. Impact and longitudinal
forces imparted by the vehicle loads shall be in accordance with the latest edition of AASHTO LRFD Bridge Design
Specifications.

Static Load Case A:
A load of 29,000 pounds on one outrigger. The contact area of each outrigger is 24 in. x 24 in. The load is to be located so as
to produce the maximum stress in the member(s) being analyzed when applied according to the geometry of Figure 1607.7.2
(2).

Static Load Case B:
A load of 20,000 pounds on each of two adjacent outriggers (total load is 40,000 pounds). The contact area of each outrigger
is 24 in. x 24 in. The load is to be located so as to produce the maximum stress in the member(s) being analyzed when
applied according to the geometry of Figure 1607.7.2 (2)
FIGURE 1607.7.2 (1) – PLATFORM TRUCK
DENVER FIRE DEPARTMENT – FIRE TRUCK GEOMETRY

Tire contact area, front
12” x 13” (TYP. of 2)

Tire contact area, rear
14” X 16” (TYP of 2)

Each outrigger has a 24” x 24”
pad (TYP. of 4).

Load Case:
29 kips – Case A
20 kips – Case B
Typical Each Side

Load Case:
0 kips – Case A
20 kips – Case B
Typical Each Side

FIGURE 1607.7.2 (2) – LADDER TRUCK
Revise the following two paragraphs from DBC 1607.15 as follows and relocate to the first paragraph of DBC 1607.7.2:

The Fire Prevention Division shall determine the area around any building or structure for which fire access and, therefore, the provisions of this section are required.

All structural decks with loading per this section shall have permanent all-weather load posting signs indicating gross maximum vehicle load, maximum tandem axles load and maximum single axle load. Signs shall be posted in a conspicuous location at each deck entrance and shall be maintained by the owner at all times.

Revise DBC 1607.15 as follows and relocate to DBC 1607.7.2 (3):

Section 1607.15 Fire truck loading is added:

1607.15 Fire truck loading. Where fire department access requires travel over or loading of a structure by fire department vehicles, the structure shall be analyzed for 3. The three live load cases for each of the two vehicle types indicated below. These load cases are in addition to the 250 psf uniform load case required by Table 1607.1 for sidewalks, vehicular driveways and yards, subject to trucking and fire truck access. Structural members shall be designed for the most severe case. The fire vehicle service live loads and geometries are shown in Figures 1607.7.2 (1) and 1607.7.2 (2).

Platform Truck – Figure 1607.7.2 (1)

Basic Load Case:
The front axle load shall be 22,800 pounds (11,400 pounds per tire) with a tire contact area of 12 in. x 13 in. The load on each rear axle shall be 27,000 pounds (13,500 pounds per tire) with a tire contact area of 14 in. x 16 in. Impact and longitudinal forces imparted by the vehicle loads shall be in accordance with the latest edition of AASHTO LRFD Bridge Design Specifications.

Static Load Case A:
A load of 52,000 pounds on one outrigger. The contact area of each outrigger is 26 in. x 31 in. The load is to be located so as to produce the maximum stress in the member(s) being analyzed when applied according to the geometry of Figure 1607.7.2 (1).

Static Load Case B:
A load of 30,000 pounds on each of two adjacent outriggers (total load is 60,000 pounds). The contact area of each outrigger is 26 in. x 31 in. The load is to be located so as to produce the maximum stress in the member(s) being analyzed when applied according to the geometry of Figure 1607.7.2 (1).

Ladder Truck – Figure 1607.7.2 (2)

Basic Load Case:
The front axle load shall be 22,800 pounds (11,400 pounds per tire) with a tire contact area of 12 in. x 13 in. The load on the rear axle shall be 31,000 pounds (15,500 pounds per tire) with a tire contact area of 14 in. x 16 in. Impact and longitudinal forces imparted by the vehicle loads shall be in accordance with the latest edition of AASHTO LRFD Bridge Design Specifications.

Static Load Case A:
A load of 29,000 pounds on one outrigger. The contact area of each outrigger is 24 in. x 24 in. The load is to be located so as to produce the maximum stress in the member(s) being analyzed when applied according to the geometry of Figure 1607.7.2 (2).

Static Load Case B:
A load of 20,000 pounds on each of two adjacent outriggers (total load is 40,000 pounds). The contact area of each outrigger is 24 in. x 24 in. The load is to be located so as to produce the maximum stress in the member(s) being analyzed when applied according to the geometry of Figure 1607.7.2 (2).

The Fire Prevention Division shall determine the area around any building or structure for which fire access and, therefore, the provisions of this section are required.

All structural decks shall have permanent all-weather load posting sign indicating gross maximum vehicle load, maximum tandem axles load and maximum single axle load. Signs shall be posted in a conspicuous location at each deck entrance and shall be maintained by the owner at all times.
FIGURE 1607.157.2 (1) – PLATFORM TRUCK

DENVER FIRE DEPARTMENT – FIRE TRUCK GEOMETRY

Tire contact area, front 12” x 13” (TYP. of 2)

Tire contact area, rear 14” X 16” (TYP of 2)

Load Case:

Load Case:
FIGURE 1607.457.2 (2) – LADDER TRUCK

Note: Show the proposal using strikeout, underline format. At the start of each section, give one of the following instructions:
- Revise as follows:
- Add new text as follows:
- Delete and substitute as follows:
- Delete without substitution:

Supporting Information:

Purpose: Coordinate and consolidate Denver specific Fire Department vehicle design criteria with the 2018 IBC live loading provisions of Section 1607.7 regarding heavy vehicle loads and the live loading requirements of IBC Table 1607.1.

Reasons: Consolidate heavy vehicle load cases in one section of the code and clarify that the structure should be designed for the greater of the three load cases specified and that the load cases should not be combined with each other.

Substantiation: The previous Denver specific fire truck loading amendment was added as a separate section (1607.15) that was isolated from and in conflict with the heavy vehicle provisions of the 2015 IBC that were first added in the 2012 IBC. The previous amendment language led to confusion in the design community, resulting in the amended fire vehicle loadings being used in combination with other Section 1607 live loads rather than as a separate load case. The 2016 amendment language has been revised to clarify that the vehicle loadings are service loads and the specific applicable AASHTO design standard has been referenced.

Note: This section MUST include these items:
- **Purpose:** State the purpose of the proposed amendment to physical, environmental and customary characteristics that are specific to the City and County of Denver (e.g., clarify the code; revise outdated material; substitute new or revised material for physical, environmental and customary characteristics; add new requirements to the code; delete current requirements, etc. to reflect physical, environmental and customary characteristics that are specific to the City and County of Denver)
- **Reasons:** Clearly justify the change to current code provisions, stating why the proposal is necessary to reflect physical, environmental and customary characteristics that are specific to the City and County of Denver. Proposals that add or delete requirements shall be supported by a logical explanation that clearly shows why the current code does not reflect physical, environmental and customary characteristics that are specific to the City and County of Denver and explains how such proposal will improve the code.
- **Substantiation:** Substantiate the proposed amendment based on technical information and substantiation. Substantiation provided which is reviewed and determined as not germane to the technical issues addressed in the proposed amendment shall be identified as such.
- **Bibliography:** Include a bibliography when substantiating material is associated with the amendment proposal. The proponent shall make the substantiating materials available for review.

Referenced Standards:

AASHTO LRFD Bridge Design Specifications, latest edition
**Impact:**

No changes to the intent of the amended code, but Denver specific fire truck loadings may be more restrictive than I-code provisions.

**Note:** Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:
- The effect of the proposal on the cost of construction:  □ Increase  □ Reduce  ☒ No Effect
- The effect of the proposal on the cost of design:  □ Increase  □ Reduce  ☒ No Effect
- Is the proposal more or less restrictive than the I-codes:  ☒ More  □ Less  □ Same

**Departmental Impact:** (To be filled out by CPD staff)

Review time should be reduced since Denver specific design loads are now coordinated with IBC heavy vehicle load provisions.

**Note:** CITY STAFF ONLY. Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:
- The effect of the proposal on the cost of review:  □ Increase  ☒ Reduce  □ No Effect
- The effect of the proposal on the cost of enforcement/inspection:  □ Increase  □ Reduce  ☒ No Effect