

**Hartsfield-Jackson Atlanta International Airport**

**City of Atlanta**

**Department of Aviation**

**Office of Infrastructure Planning & Development**

**Concessions**

**New Construction and  
Modifications**

*Design Standards*

**Structural Engineering**

## Design Standards Structural

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## Design Standards Structural

### 1.0 Purpose

The purpose of this document is to outline the minimum structural engineering requirements for new construction and/or modifications related to Concessions submitted projects at the City of Atlanta's Hartsfield-Jackson Atlanta International Airport (ATL).

### 2.0 General

All design work shall be performed in accordance with generally accepted professional principles and practices for structural engineering and in compliance with all applicable Department of Aviation Design Standards, Federal, State and City of Atlanta Design Codes, Standards and Regulations.

#### A. Modifying Existing Structures

1. The installation or relocation of heavy equipment shall be evaluated and endorsed by a Structural Engineer in the state of Georgia.<sup>2</sup>
2. Proposed improvements that require partial or complete, severing, altering or removal of structural members shall require evaluation and design by a Structural Engineer.
3. Walls proposed for partial or full demolition shall be evaluated by a Structural Engineer to determine whether they are load-bearing. If they are, drawings shall indicate the sequence of operations required to avoid collapse.
4. Modifications to existing structures shall not be made without prior approval by the Department of Aviation.

#### B. Floor, Wall, and Roof Penetrations

1. Proposed penetrations and openings for existing floors, walls and roofs shall be located where there are no impacts to existing concrete reinforcements. Contractor shall be required to locate existing reinforcements prior to commencing coring operations.
2. If reinforcements must be severed due to the size of the opening or its required location, evaluation and design shall be made by a Structural Engineer.
3. Proposed rectangular openings in existing walls, floor slabs and roof shall be detailed with required core holes of sufficient diameter at each corner to prevent over cut upon installation.
4. Concessionaire shall be responsible for reinstating any existing wall, floor and roof penetrations and/or openings in the space, which are to be abandoned (See Architectural Guidelines for penetration repair details)

#### C. Design Calculations

1. Basis-of-design calculations shall be prepared for any project that propose modification to an existing joist, beam, column or foundation, and shall demonstrate (the airport's satisfaction) that designed alterations do not degrade overall structural capacity to resist code prescribed loads.
2. Calculations shall be neatly presented and include sketches proportioned to reflect relative scale, illustrating design intent. Provide linkage in the calculations for all primary structural members proposed. All commercial computer software utilized in the production of the design shall be identified by name and version. All input files and corresponding output files (in native format), shall be recorded to DVD/CD optical media, suitably labeled and included with the submittal.
3. Any in-house proprietary computer software utilized in the design shall have the

solution of verification problems documented in the appendix.

4. All final calculations shall be sealed, signed and dated by the Structural Engineer of Record.
- D. Loads and Loading Combinations
1. Load combinations used for the design/modification of airport structures shall be in strict compliance with the requirements of the applicable provisions of ASCE/SEI 7- 16, Minimum Design Loads for Buildings and Other Structures (current printing) and the structural codes identified in the general requirement section above.<sup>3</sup>
- E. Foundation Systems
1. Where applicable, foundation designs shall be based on the recommendations of a Georgia registered geotechnical engineer unless the structural support demand is deemed to be of minor significance and with the concurrence of the Department of Aviation.
- F. Drawings
1. All structural drawing packages shall include at a minimum, the following sheets in addition to other sheets that are necessary to depict the work of the project.
    - a. General Notes – General notes applicable to the overall design and structural materials proposed, abbreviations used within the structural drawings, symbol legend(s) as appropriate. The general notes shall include all the information required by section 1603 of the IBC 2018.<sup>4</sup>
    - b. Demolition plans shall be prepared for all projects that propose new slab or other structural member penetrations. Proposed and existing slab penetrations shall be identified on the demolition plan indicating sizes and spatial relationships to known points on the floor plan.
    - c. Penetrations for roof-mounted equipment shall be supported by supplementary members designed by a Georgia structural engineer, unless it is demonstrated by calculation, to the airport's satisfaction, that supplemental members are not required.
- G. Specifications
1. Specifications defining the quality of workmanship and materials to be incorporated into the work shall be prepared as a separate document or placed on the structural drawings.