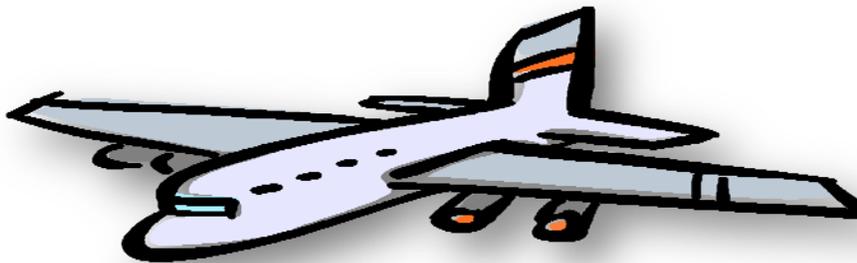




City of Caldwell
Noise Mitigation
Measures
In Airport Overlay Zone



Purpose

The purpose and intent of this document is to provide minimum standards for noise level reduction in projects contained within the Caldwell Industrial Airport Overlay Zones. This document is not intended to replace or modify any code, regulation, ordinance or statute dealing with construction, nor is it intended to exclude alternate forms of compliance with statutory noise mitigation requirements.

Noise sensitive uses are listed in Chapter 10, Article 11, Section 5 of City Code. Noise sensitive uses are prohibited in the APO-1 Zone.

Rezoning applications for residential zones or any noise sensitive development requiring issuance of a building permit, special use permit, change in use permit or variance in the APO-2 zone shall demonstrate that any noise sensitive improvement complies with the guidelines set forth in this document.

CONSTRUCTION METHODS AND MATERIALS TO ACHIEVE COMPLIANCE WITH NOISE MITIGATION CONSTRUCTION STANDARDS OF THE CALDWELL INDUSTRIAL AIRPORT OVERLAY ZONE.

1. Compliance

Compliance with the following standards shall be deemed to meet the requirements of Caldwell City Code 10-11-07(2).

2. General

- a. Brick veneer, masonry blocks or stucco exterior walls shall be constructed airtight. All joints shall be grouted or caulked airtight.
- b. At the penetration of exterior walls by pipes, ducts or conduits, the space between the wall and pipes, ducts, or conduits shall be caulked or filled with mortar.
- c. Window and/or through-the-wall ventilation units shall not be used.
- d. Operational vented fireplaces shall not be used.
- e. All sleeping spaces shall be provided with either a sound-absorbing ceiling or carpeted floor.
- f. Through-the-wall/door mailboxes shall not be used.

3. Exterior Walls

- a. Exterior walls other than as described below shall have a laboratory sound transmission class rating of at least STC-44.
- b. Masonry walls having a surface weight of at least 40 pounds per square foot do not require a fumed (stud) interior wall. At least one surface of concrete block walls shall be plastered or painted with heavy “bridging” paint.
- c. Stud walls shall be at least 4” in normal depth and shall be finished on the outside with siding-on-sheathing, stucco or brick veneer.

- 1) Interior surface of the exterior walls shall be of gypsum board or plaster at least ½" thick, installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior is siding-on-sheathing, the interior gypsum board or plaster must be fastened resiliently to the studs.
- 2) Continuous composition board, plywood or gypsum board sheathing shall cover the exterior side of the wall studs behind wood or metal siding. The sheathing and facing shall weigh at least 4 pounds per square foot.
- 3) Sheathing panels shall be butted tightly and covered on the exterior with overlapping building paper. The top and bottom edges of the sheathing shall be sealed.
- 4) Insulation material at least 2" thick shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

4. Windows

- a. Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33.
- b. Glass of double-glazed windows shall be at least 1/8" thick. Panels of glass shall be separated by a minimum of 3" air space.
- c. Double-glazed windows shall employ fixed sash or efficiently weather stripped operable sash. The sash shall be rigid and weather stripped with material that is compressed airtight when the window is closed so as to conform to an infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM-E-283-65-T.
- d. Glass of fixed-sash windows shall be sealed in an airtight manner with a non-hardening sealant, or a soft elastomer gasket or glazing tape.
- e. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-0027, TT-S-00230, or TT-S-00133.

- f. The total area of glass of both windows and exterior doors in sleeping spaces shall not exceed 20% of the floor area.
5. Doors
- a. Doors, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-33.
 - b. Double door construction is required for all door openings to the exterior. Openings fitted with side-hinged doors shall have one solid-core wood or insulated hollow metal core door at least 1-3/4" thick separated by an airspace of at least 4" from another door, which can be a storm door. Both doors shall be tightly fitted and weather stripped.
 - c. The glass of double-glazed sliding doors shall be separated by a minimum 4" airspace. Each sliding frame shall be provided with an efficiently airtight weather stripping material as specified in Paragraph 2-4c above.
 - d. Glass of all doors shall be at least 3/16" thick. Glass of double sliding doors shall not be equal in thickness.
 - e. The perimeter of door frames shall be sealed airtight to the exterior wall construction as indicated in Section 8-4 E.
 - f. Glass of doors shall be set and sealed in an airtight non-hardening sealant, or a soft elastomer gasket or glazing tape.
6. Roofs
- a. Combined roof and ceiling construction, other than described in this section and Section 2-7, shall have a laboratory sound transmission class rating of at least STC-44.
 - b. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of closely butted 1/2" composition board, plywood or gypsum board sheathing topped by roofing as required.

- c. If the underside of the roof is exposed, or if the attic or rafter spacing is less than 6", the roof construction shall have a surface weight of at least 40 pounds per square foot. Rafters, joints or other framing may not be included in the surface weight calculation.
- d. Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-33.

7. Ceilings

- a. Gypsum board or plaster ceilings at least ½" thick shall be provided where required by Paragraph 2-6b above. Ceilings shall be substantially airtight with a minimum number of penetrations.
- b. Glass fiber or mineral wool insulation at least 2" thick shall be provided above the ceiling between joists.

8. Floors

- a. Opening to any crawl spaces below the floor of the lowest occupied room shall not exceed 2% of the floor space area of the occupied rooms.

9. Ventilation

- a. A mechanical ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors, or other openings to the exterior.
- b. Gravity vent openings in attic shall not exceed code minimum in number and size. The openings shall be fitted with transfer ducts at least 3ft. in length containing internal sound absorbing duct lining. Each duct shall have a lined 90 bend in the duct such that there is no direct line of sight from the exterior through the duct into the attic.
- c. If a fan is used for forced ventilation, the attic inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel which shall be

lined with 1" thick coated glass fiber, and shall be at least 5 ft. long with one 90 bend.

- d. All vent ducts connecting the interior space to the outdoors excepting domestic range exhaust ducts, shall contain at least a 10 ft. length of internal sound absorbing duct lining. Each duct shall be provided with a lined 90 bend in the duct such that there is not direct line of sight through the duct from the venting cross section to the room opening cross section.
- e. Duct lining shall be coated glass fiber duct line at least 1" thick.
- f. Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a baffle plate across the exterior termination which allows proper ventilation. The dimensions of the baffle plate should extend at least one diameter beyond the line of sight into the vent duct. The baffle plate shall be of the same material and thickness as the vent duct material.
- g. Building heating units with flues or combustion air vents shall be located in a closet or room closed off from the occupied space by doors.