Reference: 2022 Denver Residential Code (DRC) R302.2

Scope:

This policy applies to DRC townhouses and establishes the provisions for exterior wall opening limitations, fire-resistance rating of exterior walls and soffit protection of story/stories extending beyond the exterior wall of the story below. This policy is based on the exterior wall provisions under DRC R302.1, with fire separation distance measured to imaginary lines between townhouse units as required by DRC R302.1.1. See policy number DRC R302.1 for additional exterior wall requirements.

Definitions:

**IMAGINARY LINE.** A line extending from the ends of the walls separating townhouse units to a lot line or to another imaginary line, that is used for the determination of fire separation distance.

**EXTENDING STORY.** A story that extends horizontally beyond the exterior wall of the story below.

**OPENINGS IN EXTERIOR FACING-WALL.** The area beneath the exterior wall of an extending story and openings in the exterior wall of an extending story.

**FIRE SEPARATION DISTANCE.** The distance measured from the extending story facing-wall to the imaginary line, measured at right angles from the face of the wall.

Policy:

The fire-resistance rating of the extending story facing-wall and the openings in exterior facing-wall shall satisfy one of the conditions defined by Case 1, Case 2, or Case 3, below. Where the area under the extending story is used for a drive aisle or parking, the soffit under the extending story and its supporting structure shall be protected as required by DRC Section R302.6 for dwelling-garage separation. Structure supporting an extending story that continues beyond the extending story shall be protected as required by DRC Section R302.6 for dwelling-garage separation; in addition, bearing elements shall be protected per DRC Section R302.1 as required for exterior walls.

**Case 1.** Where fire separation distance is greater than 0 feet and less than 3 feet, a fire-resistance rated one-hour wall assembly tested in accordance with ASTM E 119 or UL 263 for exposure from both sides, in the plane of and below the facing-walls, shall extend down to the foundation for the full length of the extending story. Openings in exterior facing-wall are not allowed.

As an alternative to two exterior facing-walls, walls separating townhouse units may be provided through the extending story provided they extend down to the foundation for the full length of the extending story.
Case 2. At fire separation distance greater than or equal to 3 feet and less than 5 feet:

Where fire sprinklers are not provided, the facing-wall shall be a fire-resistance rated one-hour wall assembly tested in accordance with ASTM E 119 or UL 263 for exposure from both sides. The total area of openings in exterior facing-wall shall be 25% or less of the exterior wall area. The area of walls separating townhouse units required by DRC Section R302.2 may be included in the exterior wall area.

Where fire sprinklers are provided, the facing-wall is not required to be fire-resistance rated construction, and openings in the exterior facing-wall are unlimited.

Case 3. Where fire separation distance is greater than or equal to 5 feet, the facing-wall is not required to be fire-resistance rated construction, and openings in exterior facing-wall are unlimited.

Figures:

Figures 1 through 4 provide a visual guide to the language described in the Cases 1, 2, and 3 in Policy section above.
EXTENDING STORIES IN DRC TOWNHOUSES

EXTENDING STORY
EXTERIOR WALL
EXTERIOR WALL OF STORY BELOW

IMAGINARY LINE
WALL SEPARATING TOWNHOUSE UNITS

FACING-WALL(S) OF EXTENDING STORY, TYPICAL

TOWNHOUSE A
TOWNHOUSE B
TOWNHOUSE C

FIG 1 - UPPER LEVEL PLAN

FSD = FIRE SEPARATION DISTANCE
CITY & COUNTY OF DENVER
COMMUNITY PLANNING & DEVELOPMENT
BUILDING PERMIT POLICY

Subject: EXTENDING STORIES IN DRC TOWNHOUSES

Approved: Eric Browning, P.E., Chief Building Official
Drafted by: Renn

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EXTENDING STORY
WALL SEPARATING TOWNHOUSE UNITS

ROOF

UPPER LEVEL FLOOR

OPENINGS IN EXTERIOR FACING-WALL SHALL BE 25% OR LESS OF EXTERIOR WALL AREA (OR UNLIMITED IF SPRINKLERED)

SHADED AREA IS THE EXTERIOR WALL AREA TO BE USED FOR OPENING LIMITATION

OPENINGS IN EXTERIOR FACING-WALL SHALL BE 25% OR LESS OF EXTERIOR WALL AREA (OR UNLIMITED IF SPRINKLERED)

FIGURE 3 - CASE 2 SECTION AND ISOMETRIC VIEW
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FIGURE 4 - EXTENDING STORY SECTION AND ISOOMETRIC VIEW

FSD = FIRE SEPARATION DISTANCE TO LOT LINE