

TC 5.2 Codes & Standards Interaction Report (26 January 2026)

1. UL LLC

- UL181 Standards
 - UL181, UL181A, & UL181B
 - UL181 TC members and standard subscribers have been invited to submit fully developed proposals and rationales to UL181A and UL181B through the Collaborative Standards Development System (CSDS). Those believing existing requirements in the standards should be updated or emerging technologies or applications need addressed through changes to the standards should submit proposals by Friday, February 27, 2026.
- UL Canada Standard
 - S110, S102, S102.2
 - Nothing new to report at this time related to these standards.
- No other UL-US or UL-C standards activity to report.

2. NFPA 90A & 90B Standards (2027 Edition)

- NFPA 2027 cycle is in process with “*First Draft*” revisions posted
 - The Technical Committee’s First Draft was posted on February 21, 2025
 - First Draft Public Input closing date was June 3, 2025.
 - The TC met on October 1, 2025 to consider Public Input to the First Draft.
 - The TC’s Second Draft posting will be on March 3, 2026.
 - NITMAM closing date of March 31, 2026.
 - NITMAM posting date of May 12, 2026.
- Public Inputs previously reported as of potential interest to this TC that “moved forward” to *first revisions* to the standard -

- **90A First Revision No. 10:**

6.4.1

Pipe and duct insulation and coverings, duct linings, vapor retarder facings, adhesives, fasteners, tapes, and supplementary materials added to air ducts, plenums, panels, and duct silencers used in duct systems, unless otherwise provided for in 6.4.1.2 ~~6.4.1.3~~ or ~~6.4.1.3 6.4.1.4~~, shall have, in the form in which they are used, a maximum flame spread index of 25 without evidence of continued progressive combustion and a maximum smoke developed index of 50 when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or with UL 723, *Test for Surface Burning Characteristics of Building Materials*. Pipe and duct insulation and coverings, duct linings and their adhesives, and tapes shall use the specimen preparation and mounting procedures of ASTM E2231, *Standard Practice for Specimen Preparation and Mounting of Pipe and Duct Insulation Materials to Assess Surface Burning Characteristics* meet both of the following:

1. ~~in~~ In the form in which they are used, a maximum flame spread index of 25 without evidence of continued progressive combustion
2. ~~and a~~ A maximum smoke developed index of 50 when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ~~with~~ UL 723, *Test for Surface Burning Characteristics of Building Materials*.

6.4.1.1

Pipe and duct insulation and coverings, duct linings and their adhesives, and tapes shall use the specimen preparation and mounting procedures of ASTM E2231, *Standard Practice for Specimen Preparation and Mounting of Pipe and Duct Insulation Materials to Assess Surface Burning Characteristics*.

6.4.1.2

Pipe and duct insulation shall be listed and labeled.

6.4.1.3

The flame spread index and smoke developed index requirements of 6.4.1 shall not apply to air duct weatherproof coverings where they are located entirely outside a building, do not penetrate a wall or roof, and do not create an exposure hazard.

6.4.1.4

Smoke detectors, as required by 11.4.4, shall not be required to meet flame spread index or smoke developed index requirements.

- 90A First Revision No. 13:

4.3.1.2

Materials composed of the following and containing no combustible components, shall not be required to be tested to be acceptable as noncombustible materials.

- i. Glass
- ii. Steel
- iii. 5xxx and 6xxx series aluminum alloys
- iv. Concrete containing no organic ingredients
- v. Masonry containing no organic ingredients

- 90B First Revision No. 2:

4.2 Testing.

Materials composed of the following and containing no combustible components, shall not be required to be tested to be acceptable as noncombustible materials.

- (1) Glass
- (2) Steel
- (3) 5xxx and 6xxx series aluminum alloys
- (4) Concrete containing no organic ingredients
- (5) Masonry containing no organic ingredients

- Public Comments and *Second Revisions* considered during the 10/01/25 meeting of potential interest to this TC -

- 90A PC No. 6:

6.1.1.2

Class 0 or Class 1 rigid or flexible air ducts tested in accordance with UL 181, *Factory-Made Air Ducts and Air Connectors*, and installed in conformance with the conditions of listing shall be permitted to be used for ducts where air temperature in the ducts does not exceed 121°C (250°F) or where used as vertical ducts serving not more than two adjacent stories in height.

6.1.1.2.1

Except where a part of listed equipment, nonmetallic collars and sleeves used to join or attach flexible air ducts shall be listed and labeled in accordance with UL 181C Outline of Investigation for Non-Metal Joining Accessories for Flexible Air Ducts and Air Connectors or approved.

Add to Section 2.3.4

181C Outline of Investigation for Non-Metal Joining Accessories for Flexible Air Ducts and Air Connectors, 2020.

The TC voted to accept this proposal with modification that better explained the intention of “or approved” in 6.1.1.2.1.

- 90A SR No. 3:

The TC voted to accept a motion to further revise 4.3.1.2 (see 90A First Revision No. 13) by adding “3XXX series aluminum alloy” to Item (3).

- 90B PC No. 3:

New 5.3.9

5.3.9 Non-metallic Collars and Sleeves

Except where a part of listed equipment, nonmetallic collars and sleeves used to join or attach flexible air ducts shall be listed and labeled in accordance with UL 181C Outline of Investigation for Non-Metal Joining Accessories for Flexible Air Ducts and Air Connectors or approved.

Add to Section 2.3.4

181C Outline of Investigation for Non-Metal Joining Accessories for Flexible Air Ducts and Air Connectors, 2020.

The TC voted to accept this proposal with modification that better explained the intention of “or approved” in 5.3.9.

- **90B SR No. 2:**

The TC voted to accept a motion to further revise 4.2 (see 90B First Revision No. 2) by adding “3XXX series aluminum alloy” to Item (3).

3. International Code Council (2027 Edition)

- IMC & IRC-M Development Timeline for 2027
 - ICC called for code change submittals on 10/16/23.
 - Deadline to receive code change proposals was 1/8/24.
 - Monograph of proposals was posted on 2/26/24.
 - Committee Action Hearings #1 (CAH #1) was 4/7/24 - 4/16/24.
 - CAH #1 actions were posted, and the comment period was opened on 5/16/24.
 - Deadline for comments to CAH #1 actions was 7/8/24.
 - Comments to CAH #1 actions were posted on 9/5/24.
 - Committee Action Hearings #2 (CAH #2) were held 10/23/24 - 10/31/24.
 - CAH #2 actions were posted on 12/2/24.
 - Comment phase to CAH #2 actions was opened 1/17/25.
 - Deadline for comments to Public Comment Hearings (PCH) for IMC & IRC-M was 3/14/25.
 - PCH Agenda will be posted on 3/4/26.
 - PCH will take place 4/19/26 - 4/28/26.
 - Governmental Consensus Voting Period will start two to three weeks after PCH.
 - Posting of final actions shall be after Validation Committee certification of the voting result and confirmation of ICC Board.
- IMC & IRC-M Proposals and *CAH #1 (April 2024)*

These proposals were discussed at previous meetings (*duplicated here to assist with continuity throughout the long revision cycle*).

➤ M47-24 Part I

- [603.9.1] - Adds UL181C approved fittings for flex collars
- ***Approved with modification*** (exception for collars that are a component of a listed appliance).

➤ M47-24 Part II

- [M1601.1.1] - Same as above to residential code
- ***Approved with modification*** (typographical changes)

➤ M48-24

- [603.17] - Allows Air Dispersion systems for negative pressure
- ***Disapproved***

➤ M50-24

- [608.1] - Balancing of systems per SMACNA Standard
- ***Disapproved***

➤ RM7-24

- [M1601.1.1] - Building framing not allowed for ducts or plenums
- ***Disapproved***

➤ RM8-24

- [M1601.1.1] - Allow plastic ducts with no approval (non-UL) for residential air ventilation systems.
- ***Disapproved***

➤ RM9-24

- [M1601.1.1] - Require zoning designs per ACCA Manual Zr.

- *Approved with modification* (added “serving heating or cooling equipment”)
- IMC & IRC-M Comments to *CAH #1 (September 2024)*

Review of published comments to CAH #1 actions:

➤ M47-24 Part II

- Comment 1 to include same exception in IRC M1601.1.1 (item 3) as was modified for IMC 603.9.1 (*exception for collars that are a component of a listed appliance*).

Further modify as follows:

3. Where nonmetallic collars and sleeves are used to join or attach flexible air ducts, they shall be *listed and labeled* in accordance with UL 181C. **Exception:** Collars that are a component of a listed appliance.

➤ M50-24

- Comment 1 for balancing HVAC systems using SMACNA or equivalent.

Revise as follows:

608.1 Balancing. Air distribution, ventilation and exhaust systems shall be provided with means to adjust the system to achieve the design airflow rates and shall be balanced by an *approved method* in accordance with the SMACNA HVAC Systems Testing, Adjusting, and Balancing Manual, ANSI/RESNET/ICC 380 or equivalent. ~~Ventilation air distribution shall be balanced by an approved method in accordance with SMACNA HVAC Systems Testing, Adjusting, and Balancing Manual, or equivalent, and such balancing~~ Balancing shall verify that the air distribution system is capable of supplying and exhausting the airflow rates required by Chapter 4.

➤ RM7-24

- Comment 1 regarding proposal to exclude building framing used for ducts or plenums.

The committee was urged to reconsider the proposal and exclude building framing for ducts and plenums. The commentor referred the committee to conflict between IRC M1601.1.1 and N1103.3.7, however I did not see where the two sections conflict.

There did not appear to be any other relevant comments made to CAH #1 regarding the above proposals during the May to July 2024 comment period.

- IMC & IRC-M Action to Comments **CAH #2 (October 2024)**

Review of CAH #2 minutes indicated the following actions were taken on the above reported comments:

- M47-24 Part II

- The Committee voted to **approve** Comment 1 and revise as indicated.

- M50-24

- The Committee voted to **approve** Comment 1 with further modification as follows:

Modify Comment as follows:

608.1 Balancing. Air distribution, ventilation and exhaust systems shall be provided with means to adjust the system to achieve the design airflow rates and shall be balanced by an *approved* method in accordance with the SMACNA HVAC Systems Testing, Adjusting, and Balancing Manual, ANSI/RESNET/ICC 380 or ~~equivalent~~ another approved standard. Balancing shall verify that the air distribution system is capable of supplying and exhausting the airflow rates required by Chapter 4.

- RM7-24

- The Committee discussed Comment 1, but no new action was taken (*reference committee reason statement from CAH #1*).

- IMC & IRC-M Comment Period for **CAH #2** actions (**Jan to Mar 2025**)

Comments received during this comment period (1/17/25 - 3/14/25) will be heard during the Public Comment Hearings scheduled for 4/19/26 to 4/28/26.

- **IECC & IECC-R Development Timeline for 2027**

Using the 2024 IECC and IRC-E and the “scope of intent” as the initial public input draft:

- Public comments were opened for submittal from 10/7/24 to 12/9/24.

- The Code Council Board of Directors appointed the 2027 IECC Commercial and Residential Consensus Committee members on 12/10/24.
 - First public meetings of the Consensus Committees were held in mid-December 2024.
 - Monograph for IECC-Commercial, IECC-Residential, and IRC-Energy *proposals* was posted on 1/6/25.
 - Committee sub-groups were formed in February 2025.
 - Continuous committee and sub-group meetings took place between January and June 2025.
 - The Committee Action Report (CAR) for the Commercial Consensus Committee was posted on 6/27/25.
 - The Committee Action Report (CAR) for the Residential Consensus Committee was posted on 7/15/25.
- IECC - Commercial Proposals

Review of the 1/6/25 monograph did not indicate any proposals associated with air ducts that were of concern.

- IECC - Residential Proposals

Review of the 1/6/25 monograph indicated the following proposal that has potential impact on duct systems:

➤ RE70-24

- [R403.3, R403.3.5.1, Table R405.4.2, Table R408.2, R408.2.4] - This code proposal seeks to require all ductwork and air handlers to be located within conditioned space for buildings that follow the prescriptive pathway. The proposal still considers buried ducts and ducts in certain wall/floor assemblies adjacent to exterior to be considered within conditioned space, where certain criteria are met.
- IRC - Energy Proposals

Review of the 1/6/25 monograph indicated the following proposal that has potential impact on duct systems:

➤ IRCE3-24

- [N1103, R403, various sections] - proposal has several confusing requirements related to prevention of condensation, R-13 insulation, and vapor retarder requirements of ducts. *Needs reviewed and followed for better understanding.*

- Commercial and Residential Consensus Committee Actions

Review of the 6/27/25 Report of Committee Actions (CAR) indicated the following actions related to the ICC-CE, ICC-RE, and IRC-E proposals listed above:

➤ RE70-24

- ***Withdrawn***

➤ IRCE3-24

- ***Disapproved***

- The 2027 ICC Energy Conservation Code Public Comment *Draft* was published in October 2025 showing the substantive technical changes from the 2024 edition.
- ICC's Residential & Commercial Energy Code committees and sub-committee meetings are continuously ongoing and quite involved and thus a thorough review of proposals, committee actions, and further comments for both commercial and residential is warranted as the 2027 cycle continues.

4. IAPMO - UMC Revision Cycle

- 2027 Technical Committee Cycle is basically complete.

Proposals of concern that were previously reported from the 5/8 & 5/9 TC meeting in Los Angeles -

- Item #107 [602.1, 602.2] - removes allowance of concealed spaces for use as ducts and plenums.

Seven (7) comments for this item were received and acted on by the TC with “final balloted voting results” recorded on 6/16/25 as follows -

Comment 1 - Accepted as submitted

Comment 2 - Rejected

Comment 3 - Rejected

Comment 4 - Rejected

Comment 5 - Rejected

Comment 6 - Accepted as submitted

Comment 7 - Accepted as submitted

Basic premise is that building cavities cannot be used as ducts or plenums unless they are constructed of material meeting requirements within the UMC chapter (i.e. - no gypsum materials or wood cavities allowed).

- Item #135 [605.1.1, Table 1801.1] - excludes PU foam from current 25/50 FS/SD requirements and allows 450 for the smoke index.

One (1) comment for this item was received and acted on by the TC with “final balloted voting results” recorded on 6/16/25 as follows -

Comment 1 - Rejected

Comment asked TC to reconsider approval but the technical committee continued to reject allowance of materials with 450 smoke index in plenums.

- Distribution of Report on Comments (ROC) occurred on 8/1/25.

- IAPMO Association Technical Meeting Convention was held in Palm Springs, CA on 9/16. The Association confirmed the TC actions for the 2027 UMC.
- Several appeals were made to the Standards Council requesting that the Council overturn the UMC TC actions taken on Items #107.
 - The Standards Council met on 11/13/25 and agreed with the proponents. The Council made the decision that the 2027 UMC should contain provisions to allow concealed building spaces or independent construction to be used as ducts or plenums. The Council directed the UMC TC Chair to form a new task group to research specifically this topic and make recommendations for the 2030 code development cycle.
 - The effect of this decision is that the 2027 UMC for sections 205.0, 206.0, 218.0, 601.2, 602.2 (exceptions 1 through 9)1, 603.2, 608.1, and 608.4 will contain the language as shown in the 2024 edition.
- Several petitions were subsequently filed with the IAPMO Board of Directors by the 1/5/26 deadline requesting that the Standards Council's approval of the above appeals be overturned and the UMC TC actions during the consensus process be reinstated and the Council be further instructed to defer actions to the Technical Correlating Committee for remaining concerns.
 - The BOD's decisions are pending and not known at this time.

5. ACCA Manual D - Residential Duct System Sizing

- Manual D - new edition
 - Final draft is undergoing "special audit" at ANSI prior to final approval.
 - ACCA is hopeful for completion of the audit and publication of the revised Manual D in early to mid-2026.

Follow-up to previous Codes & Standards Sub-Committee discussions about R-12 insulation requirements in Zones 5 through 8 in the IECC (Commercial Provisions) -

C403.13.1 Duct and plenum insulation and sealing.

Supply and return air *ducts* and plenums shall be insulated with not less than R-6 insulation where located in unconditioned spaces and where located outside the *building* with not less than R-8 insulation in Climate Zones 0 through 4 and not less than R-12 insulation in Climate Zones 5 through 8. *Ducts* located underground beneath buildings shall be insulated as required in this section or have an equivalent *thermal distribution efficiency*. Underground *ducts* utilizing the *thermal distribution efficiency* method shall be *listed and labeled* to indicate the *R-value* equivalency. Where located within a *building thermal envelope* assembly, the *duct* or plenum shall be separated from the *building* exterior or unconditioned or exempt spaces by not less than R-8 insulation in Climate Zones 0 through 4 and not less than R-12 insulation in Climate Zones 5 through 8.

Exceptions:

1. Where located within equipment.
2. Where the design temperature difference between the interior and exterior of the *duct* or plenum is not greater than 15°F (8°C).

Ducts, air handlers and filter boxes shall be sealed. Joints and seams shall comply with [Section 603.9](#) of the *International Mechanical Code*.

Review of Code & Standard definitions:

Building Envelop Assembly - anything that separates the conditioned space from the unconditioned space. *Examples - ceiling trusses with insulation materials, exterior walls inclusive of insulation materials. etc.*

Building Envelop - structure of the building that separates the contents from the outside. *Examples - outer sheathed walls, concrete floors, roof trusses and decking, windows, etc.*

From 2024 IECC Commentary for this section:

The following discussion is provided for the benefit of the user in identifying specific duct insulation applications. Commentary [Figure C403.13.1](#) identifies the primary duct configurations that have requirements from this section. The insulation requirements for each duct location identified in Commentary [Figure C403.13.1](#) are described in the following and numbered as shown in the figure. In each section, the default insulation requirement is identified.

1. Unit Casings and plenums—not required (N/R). Factory-installed insulation that is part of the HVAC equipment is covered through the minimum equipment efficiencies of [Section C403.3.2](#) and does not have requirements in this section (see Exception 1). This includes equipment casings and plenums. This exception does not apply to built-up systems with field-fabricated plenums. These systems must be insulated in accordance with the requirements for ductwork in this section. Perimeter mechanical rooms that are used as mixing plenums may be insulated as if they are on the exterior of the building, provided that the building thermal envelope requirements are met between the plenum and the rest of the building. If the requirements of the building thermal envelope are not satisfied between the plenum and the exterior of the building, the building thermal envelope requirements apply at the exterior walls of the plenum.
2. Exhaust ductwork N/R. Except to prevent condensation, exhaust ductwork also does not need to meet the requirements of this section because it applies only to supply and return ductwork.
3. Supply and return ducts in vented attic - R-6. These ducts are in an attic, which is vented to the outside. Crawl spaces and attics, vented or otherwise open to the outdoors, are considered unconditioned spaces for the purpose of determining duct insulation requirements. A vented attic generally will run 5°F to 20°F (2.8°C to 11.1°C) warmer than the outdoor air temperature during peak cooling and be close to the outdoor air temperature during peak heating.
4. Supply and return on exterior of the building - R-8 or R-12. Exposed ductwork must have minimum insulation installed. The minimum in Climate Zones 1 through 4 is R-8; the minimum in Climate Zones 5 through 8 is R-12.

5. Supply and return ducts in exposed shaft - R-6. These ducts are in unconditioned space similar to Item 3. However, this wall cavity should not experience the extreme temperatures of the attic because the space is not vented to the outdoors and has minimal roof exposure. Where design temperatures for the shaft space are not available from load calculations, assume that at design conditions the shaft temperature is near outdoor conditions at both cooling and heating peaks.
6. Supply (and return) ducts in unvented attic N/R. This is not required to be insulated since the [IBC](#) requires unvented attics to be completely within the building thermal envelope, making them conditioned spaces.
7. Return ducts in indirectly conditioned ceiling spaces N/R. This requirement is similar to Item 6. By definition, an indirectly conditioned space is within the building thermal envelope and insulation is not required per the IECC, although the [IMC](#) condensation requirement must still be evaluated.
8. Exterior wall of return plenum. In this case, the ceiling space is being used as a return plenum. It is within the building thermal envelope; therefore, the exterior wall that is part of the plenum must comply with the insulation required for exterior walls in the climate zone or the insulation required by this section, whichever is greater. In most cases, the building thermal envelope requirements will be higher.
9. Supply outlet in return plenum N/R. The sheet metal plenum surrounding the air outlet is part of the supply duct system and, therefore, must be insulated the same as the supply ducts (see Item 11).
10. Supply runout in return plenum—N/R. Typically, runouts of up to 10 feet (3048 mm) to a terminal device (supply outlet or VAV box) are constructed using flexible duct having up to 1 inch (25 mm) of insulation to address sound attenuation and air-sealing issues. However, the duct remains part of the supply duct system and, therefore, must be insulated the same as supply ducts (see Item 11).
11. Supply ducts in return plenum N/R. For supply ducts located within a return plenum, Items 9, 10 and 11 are all within an indirectly heated space. In that regard they each can be uninsulated as discussed in Item 7.

12. Supply and return ducts in conditioned space N/R. In accordance with Exception 2, supply and return ducts, or plenums, located in the conditioned space they serve do not require insulation. From a practical standpoint, insulation may be desirable for cooling ducts to prevent condensation if the duct passes near local areas of high humidity, as might occur in a kitchen or natatorium. For typical spaces, condensation generally will not occur, even at very low supply temperatures, because the space's relative humidity will be lowered correspondingly by the dry air being supplied.
13. Supply and return ducts in vented crawl space - R-6. This is similar to the case of ducts in a vented attic (see Item 3). Because the space is vented and unlikely to experience strong solar loads, crawl space temperatures will be very close to the outdoor temperature.
14. Supply and return ducts below grade - R-8 or R-12, based on climate zone or thermal distribution effectiveness with an equivalent R-value, unless Exception 2 applies. Although the ground temperature does not track the temperature extremes of an unconditioned space and is technically located outside the building envelope, the ductwork is not exposed to the same solar and temperature loads as exposed ductwork. Practically speaking, this situation is much closer to ductwork in an unconditioned space than ductwork on the roof.

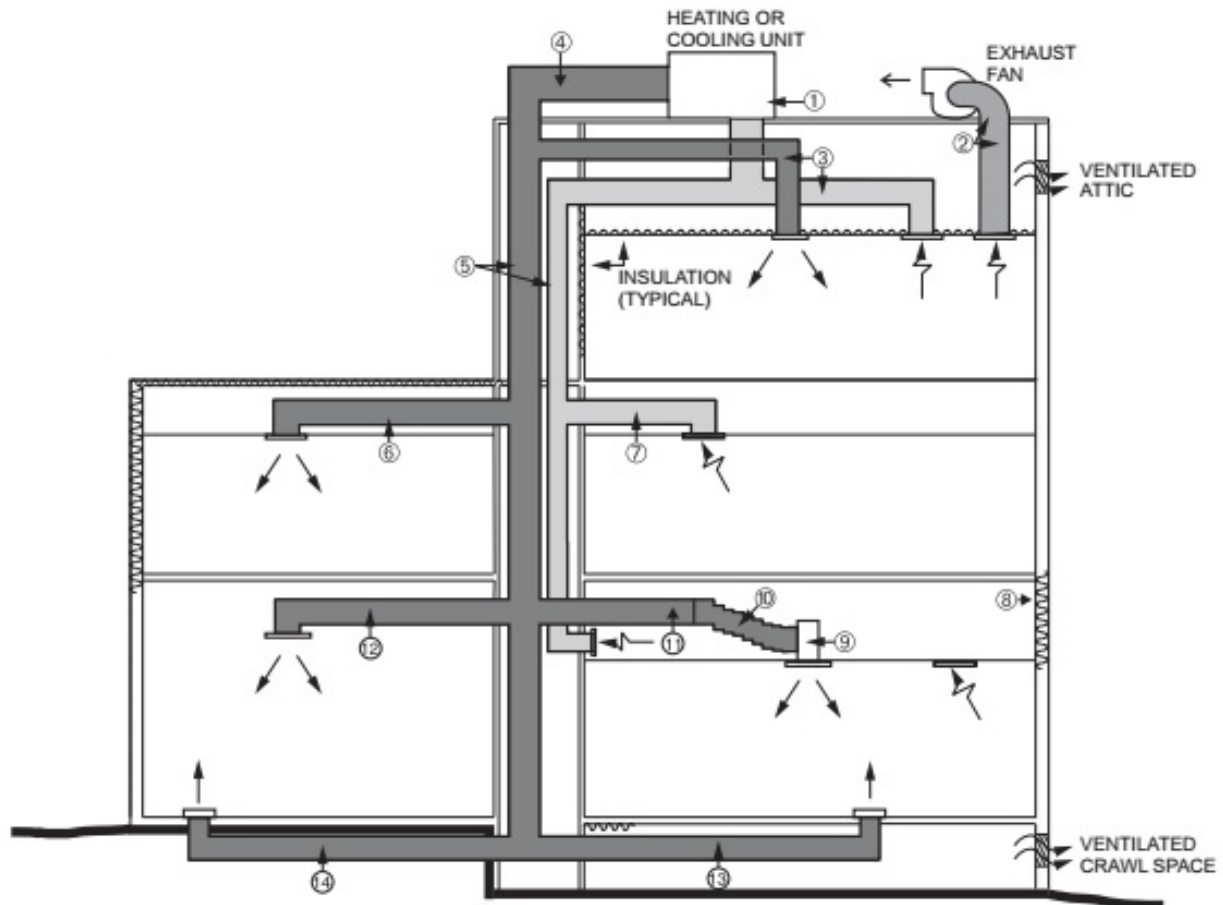
All ducts, air handlers and filter boxes must be sealed. Although ducts in conditioned spaces do not need to be insulated, they must be sealed. Sealing helps control the infiltration of unconditioned air into the ducts and the exfiltration of conditioned air from the ducts.

Longitudinal seams are those parallel to the direction of airflow; spiral joints do not require sealing in any seal class. All other duct connections are considered transverse joints.

The code accepts a variety of methods and materials that may be used for sealing. The code does prohibit the use of unlisted pressure-sensitive tapes, which generally tend to peel with time and are, therefore, not a reliable sealant in the long run. The type of sealing material used must be appropriate for the ductwork materials and the anticipated operating pressures and not simply be a short-term solution that does not remain capable of sealing the joints.

It should be noted that the code's requirements for sealing apply to "ductwork" and not to the insulation that surrounds the ductwork. The purpose for this sealing is to limit the amount of air leakage from the duct. Although it is not a code requirement, the sealing of the insulation materials would be a good item to consider. Depending on the location and environment of the duct, it would be possible for joints in the insulation to permit the movement of air and moisture into the insulation and, therefore, permit condensation to form and possibly reduce the effectiveness of the insulation. The insulation manufacturer's instructions should be reviewed to determine its recommendations and appropriate materials for effectively sealing the insulation.

Commentary Figure C403.13.1—Duct Insulation



KEY

- | | |
|---|---|
| 1. INSULATION OF UNIT CASING | 8. EXTERIOR WALL OF RETURN PLENUM |
| 2. EXHAUST | 9. SUPPLY OUTLET IN PLENUM |
| 3. SUPPLY & RETURN IN VENTED ATTIC | 10. SUPPLY RUNOUT IN RETURN PLENUM |
| 4. SUPPLY & RETURN IN EXTERIOR OF BUILDING | 11. SUPPLY IN RETURN PLENUM |
| 5. SUPPLY & RETURN IN SHAFT | 12. SUPPLY & RETURN IN CONDITIONED SPACE |
| 6. SUPPLY & RETURN IN UNVENTED ATTIC | 13. SUPPLY & RETURN IN VENTED CRAWL SPACE |
| 7. RETURN IN INDIRECTLY CONDITIONED CEILING SPACE | 14. BURIED SUPPLY |

Courtesy of U.S. Department of Energy, Office of Building Technology State and Community Programs, www.energycodes.gov

Interpretation and discussion taken from the Code Commentary and Figure -

“Where located outside the building” means exactly that - ducts located outside. The R-8 and R-12 requirements would be enforced.

See Item 4.

“Where located within a building thermal envelope assembly” - means that the ducts are located *inside* the exterior walls or *inside* the “assembly” above the ceiling that separates the conditioned space from the attic. These are “thermal envelope assemblies”. When this is the case, the normal insulation would be excluded or displaced and thus the duct itself must have the extra insulation on it.

See Item 8.

Where located in vented attics, shafts, or vented crawl spaces - only R-6 is required, regardless of Climate Zone.

See Items 3, 5, and 13.

In summary -

IECC section C403.13.1 requires R-6 duct insulation in unconditioned space (i.e. - vented attics, vented crawl spaces, and exposed shafts) in Climate Zones 0 to 8.

IECC section C403.13.1 requires R-8 duct insulation where ducts are located outside the building or within the building thermal envelope in Climate Zones 0 to 4.

IECC section C403.13.1 requires R-12 duct insulation where ducts are located outside of the building or located within the building thermal envelope in Climate Zones 5 to 8.

Interpretation - the requirement for R-12 insulation for ducts located outside or within the thermal envelope is being confused to infer “inside attics and crawl spaces”. The intent is for R-12 on exterior ducts or ducts placed inside the outer walls or within other building thermal envelop assemblies.

Note: This interpretation is based solely on my research and understanding of the information I found available and is not an official interpretation from ICC. My request for official interpretation has not been acknowledged by ICC.