



Field Modifications of Fire, Smoke, and Combination Fire/Smoke Dampers

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Session Moderator

- Joined AMCA in February 2019
- Responsible for development of AMCA's education programs; staff liaison for the Education & Training Subcommittee
- Projects include webinars, online education modules, presentations at trade shows, AMCA Speakers Network and other duties as assigned.



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James Carlin

Product Manager- Dampers, AMCA
Member Company

- BA in Mechanical Engineering from Stevens Institute of Technology
- Experience with air control dampers since 2007
- Background in the aerospace industry and with Underwriters Laboratories
- Active member of several AMCA committees, including Damper Engineering Committee, Fire & Smoke Damper Subcommittee, and Chair of the North America Air Control Advocacy Committee (ACCARC)



Field Modifications of Fire, Smoke, and Combination Fire/Smoke Dampers

Purpose and Learning Objectives

The purpose of this presentation is to provide information related to required field modifications of fire, smoke, and combination fire/smoke dampers to ensure proper installation.

At the end of this presentation you will be able to:

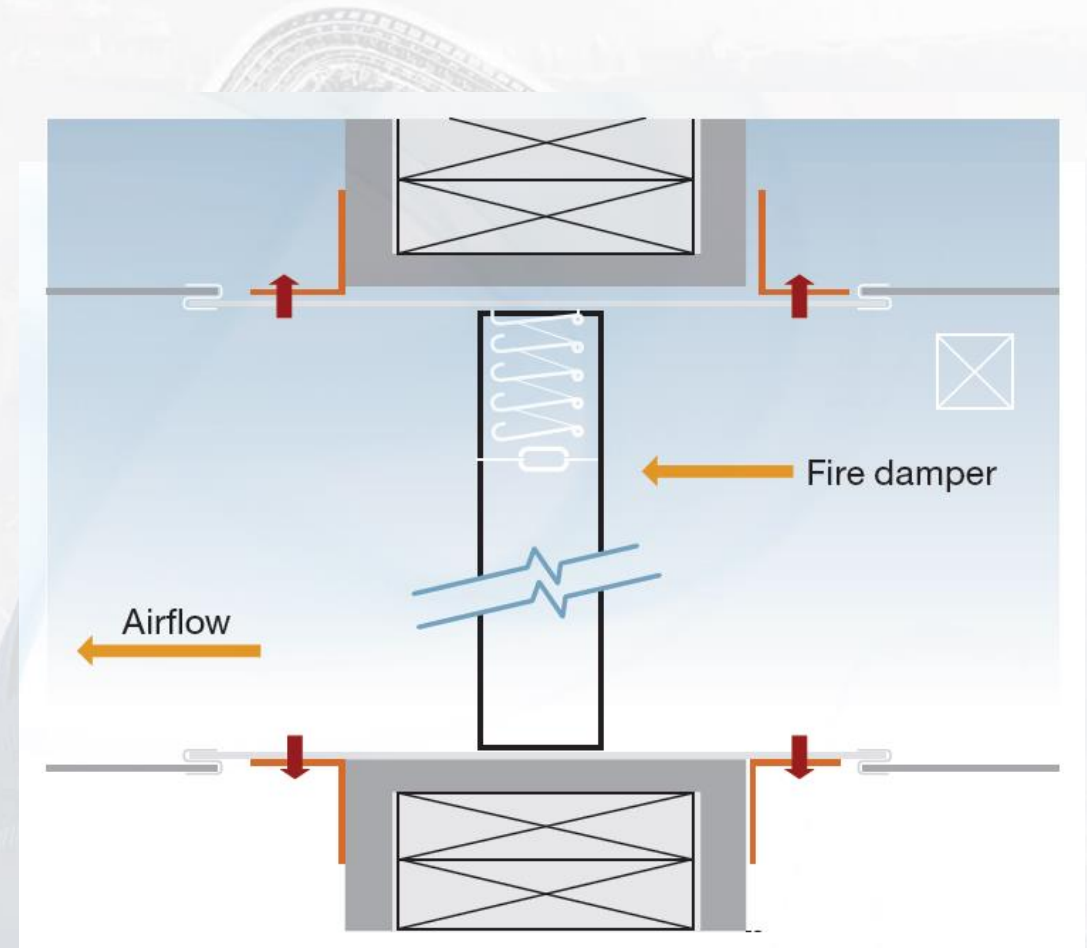
1. Identify commonly supplied installation instructions for UL rated life safety dampers, and their purpose.
2. Explain the difference between UL approved installation instructions and supplemental instructions.
3. Outline the various types of modifications that may be required to be made to installed life safety dampers.
4. Identify when the local Authority Having Jurisdiction (AHJ) needs to approve modifications.

Introduction

- All UL Fire, Smoke, and Combination Fire and Smoke rated dampers must be installed per the manufacturers' installation instructions.
 - Instructions can be UL approved or supplemental instructions outside of the UL certification.
- Modifications covered apply to new construction, specifically buildings not yet commissioned.
- The local Authority Having Jurisdiction (AHJ) has the final say in all matters regarding life-safety damper installation.

Installation Instructions

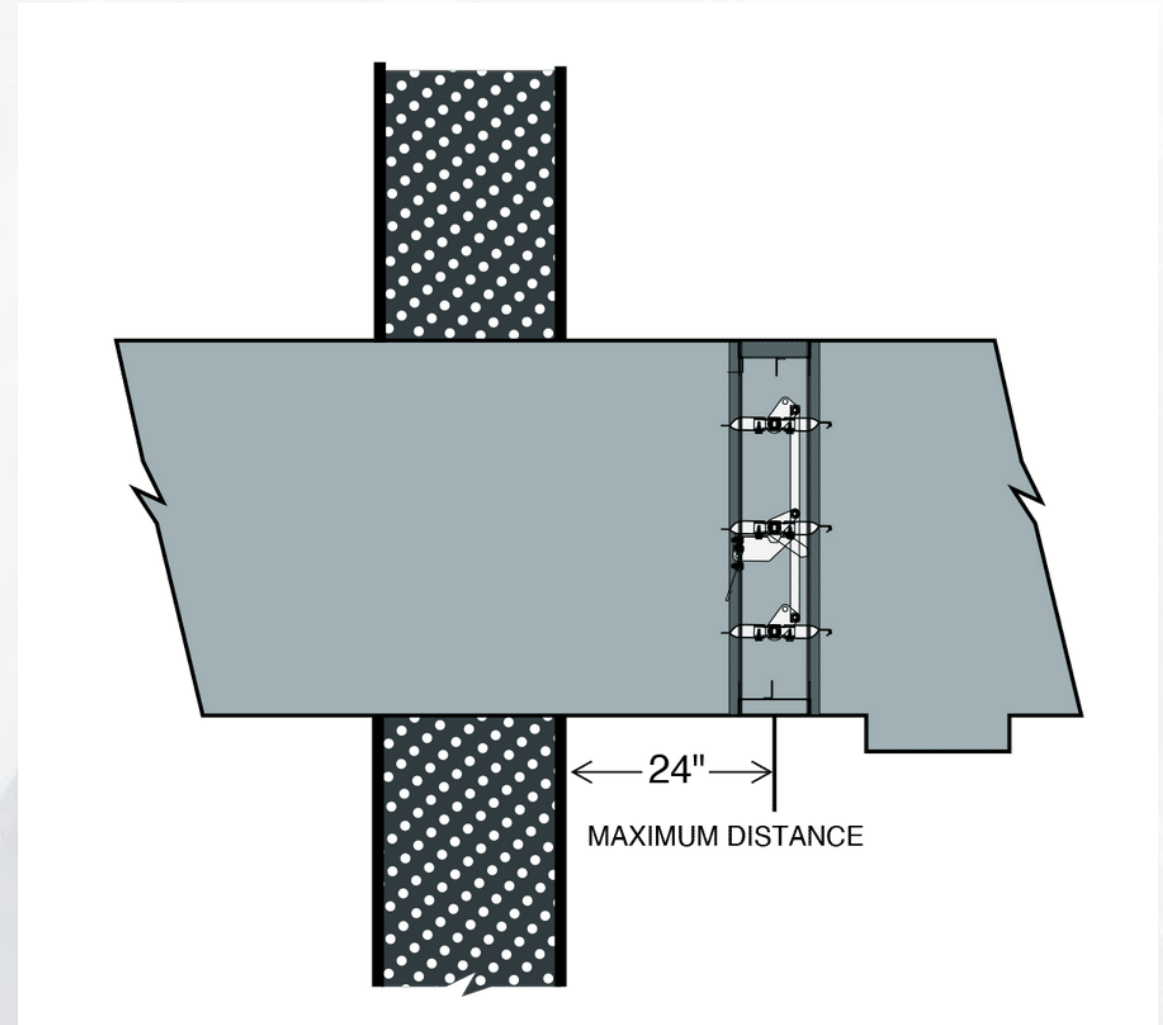
- All UL Life Safety Dampers need to be installed per Manufacturers' installation instructions.
 - Model Specific Fire Damper Installation Instructions
 - Position in wall
 - Sleeve requirements
 - Required thickness, fasteners, length
 - Mounting Angle Requirements
 - Required size, fasteners, location
 - Sealants allowed or required



Fire Damper Installation

Installation Instructions

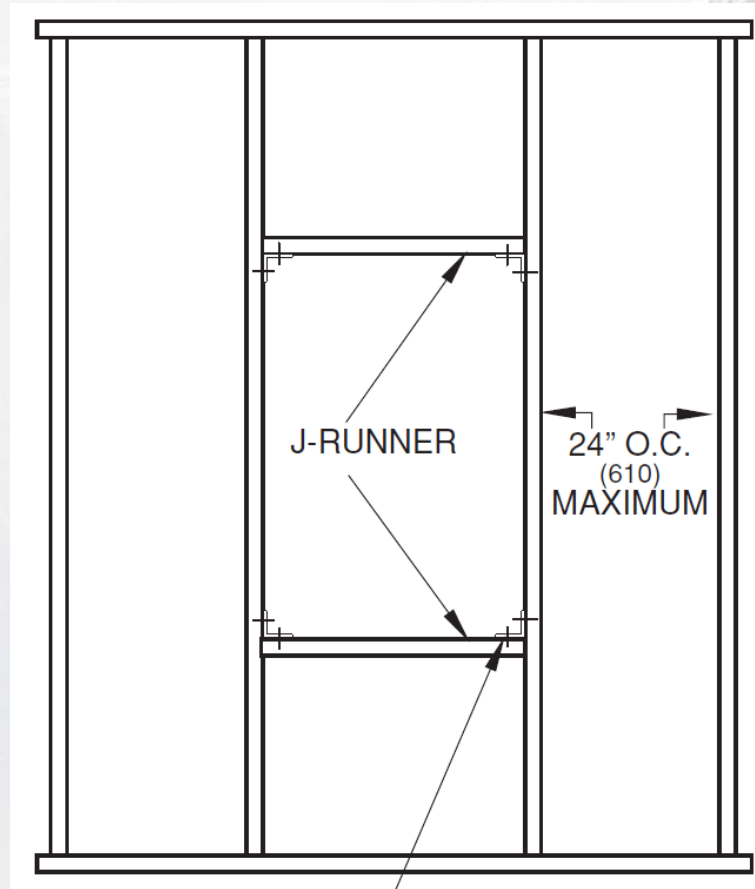
- All UL Life Safety Dampers need to be installed per Manufacturers' approved installation instructions.
 - Model Specific Smoke Damper Installation Instructions
 - Duct or sleeve attachment
 - Position from wall
 - Sealants allowed or required



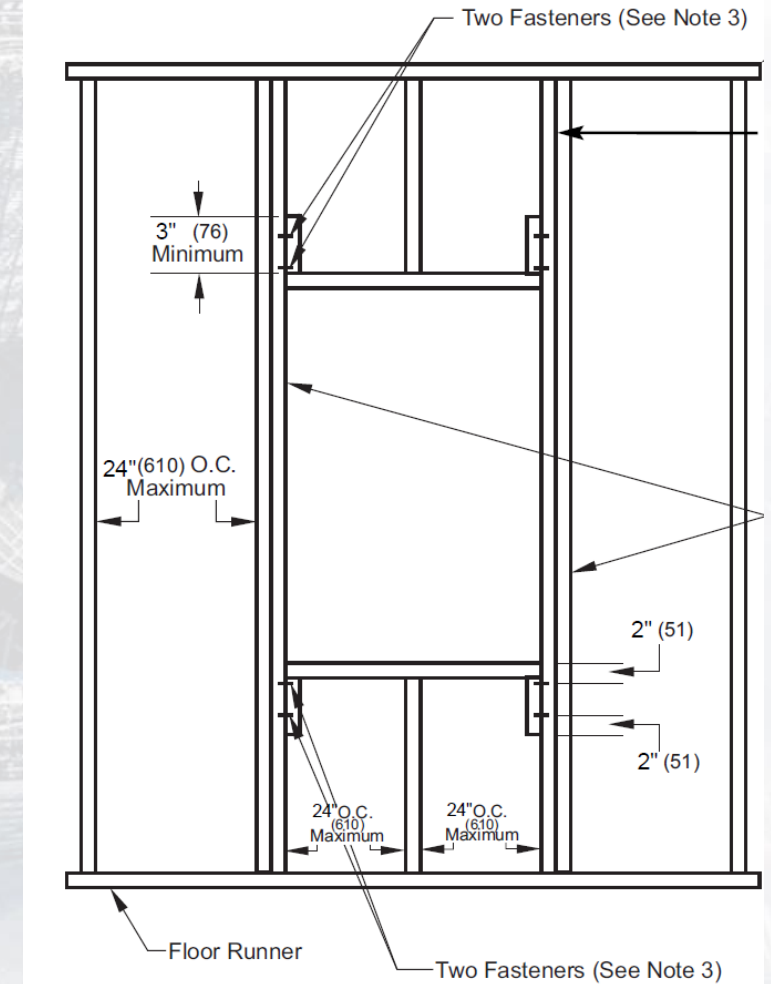
Smoke Damper Installation

Installation Instructions

- Stud Wall Framing Instructions
 - Specific to wood or steel stud walls



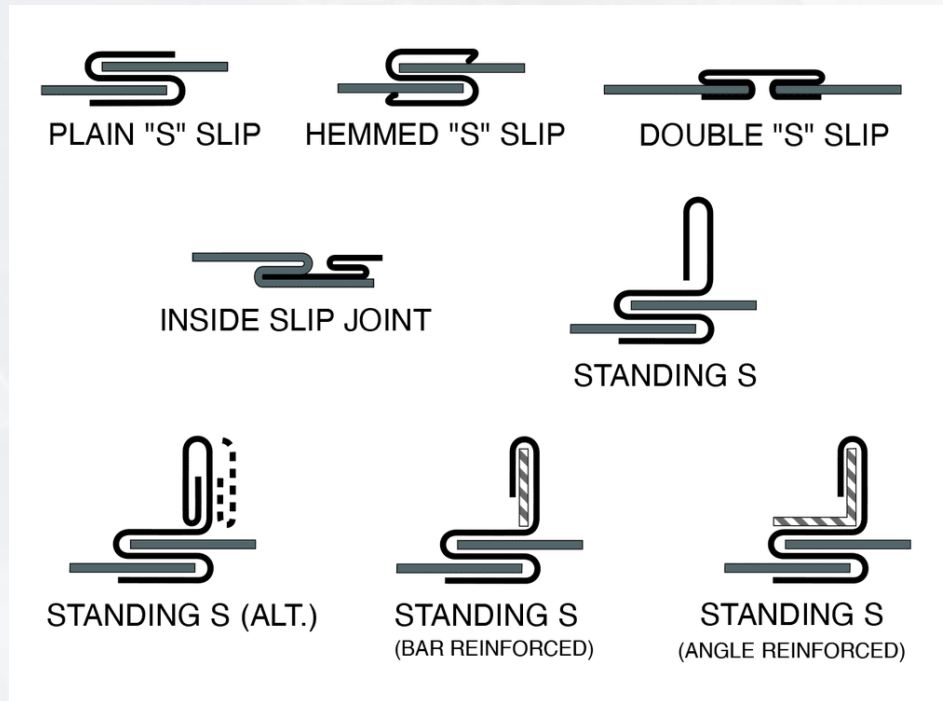
Metal Stud Shaft Wall Framing



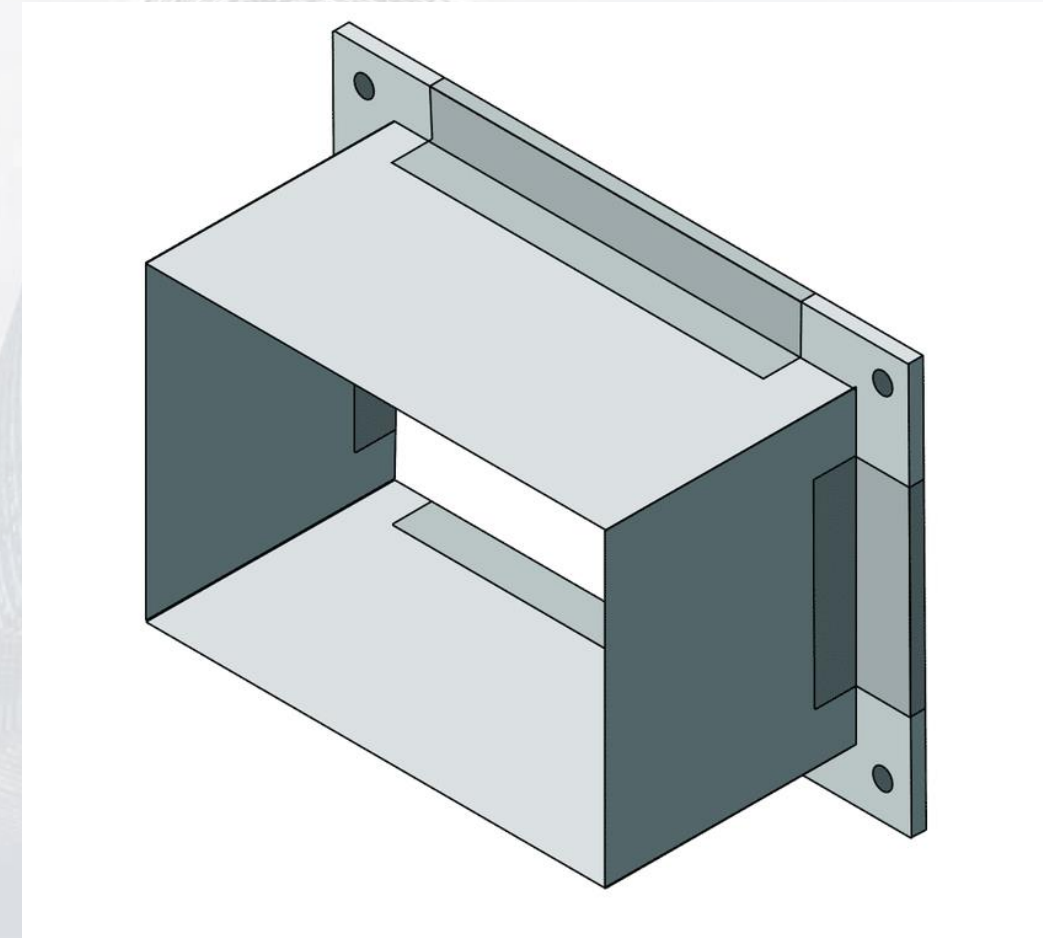
Wood Stud Framing

Installation Instructions

- Sleeve Termination Instructions



Slip Connections

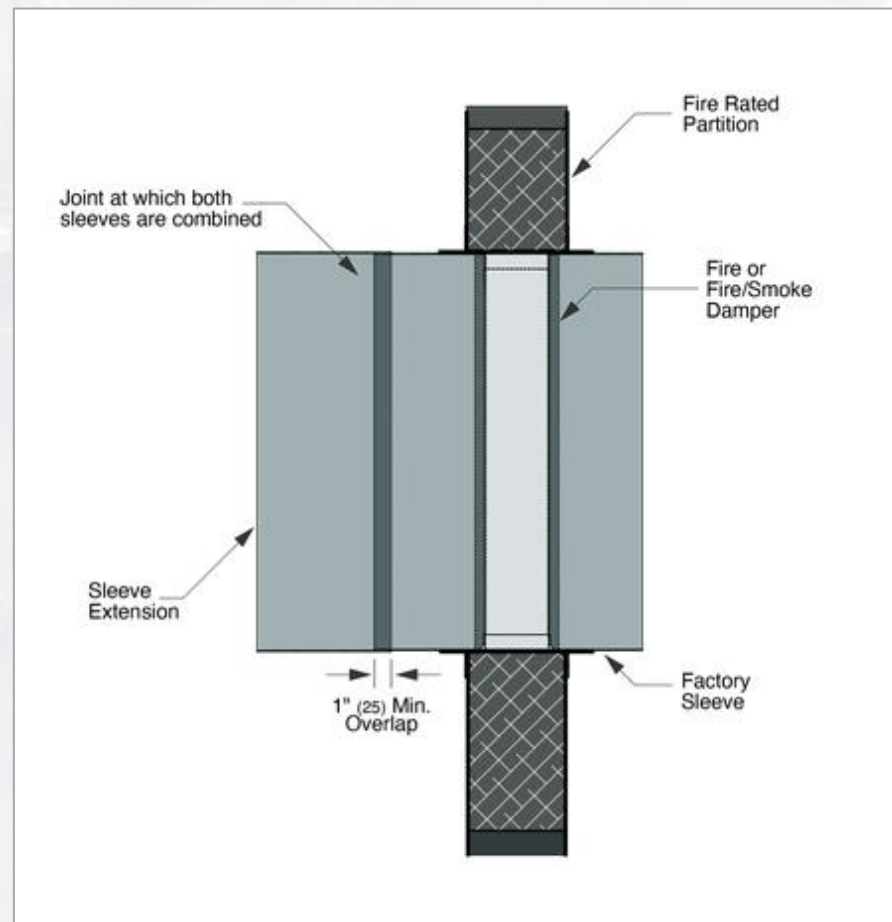


4 Bolt Flange Connections

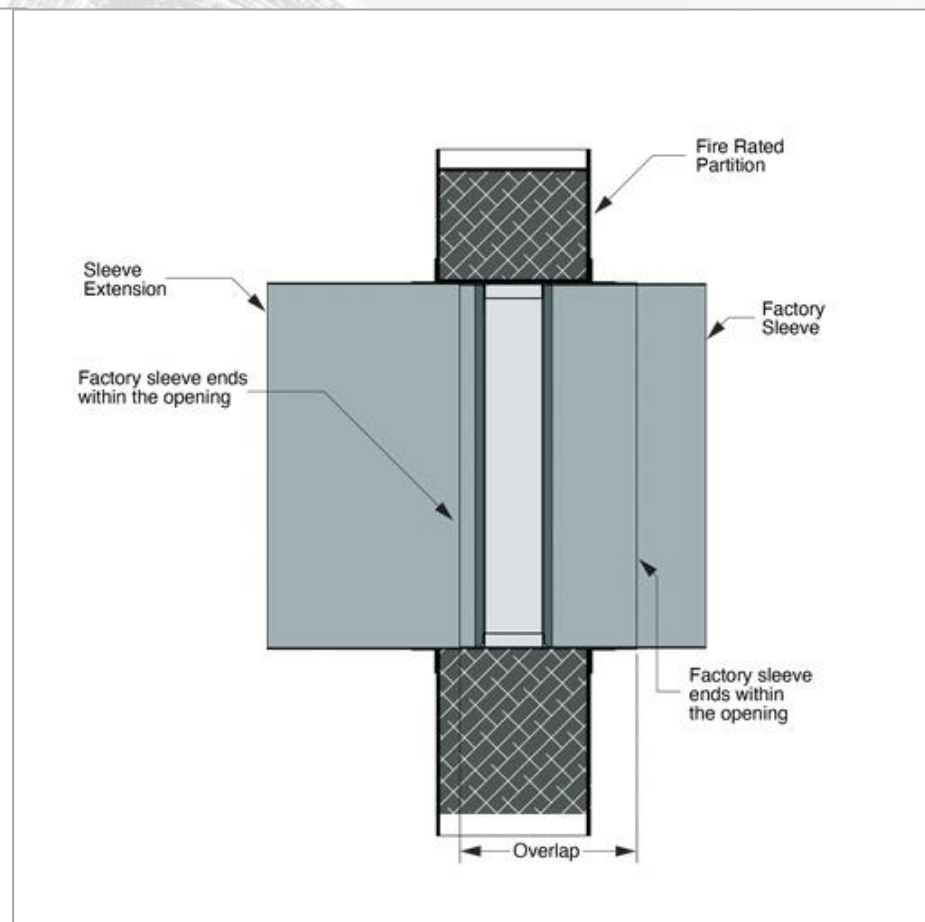
Installation Instructions

- Sleeve Modifications

- Sleeve extensions
- Sleeve trimming
- Running power to damper



Sleeve Extension 1



Sleeve Extension 2

Installation Instructions

- Mounting Angle Requirements
 - Standard dual side
 - Optional single side
 - Mounting angle alternatives
 - Allowable sealants or firestop options



Annular Space Between Damper and Opening

Actuators

- Required to be factory installed
 - Cycle tested prior to shipment
 - Field mounting or substitutions not covered under UL certification
 - Replacement of actuators falls outside of UL certification program
 - Replacement to be done in accordance with damper manufacturer's field service program



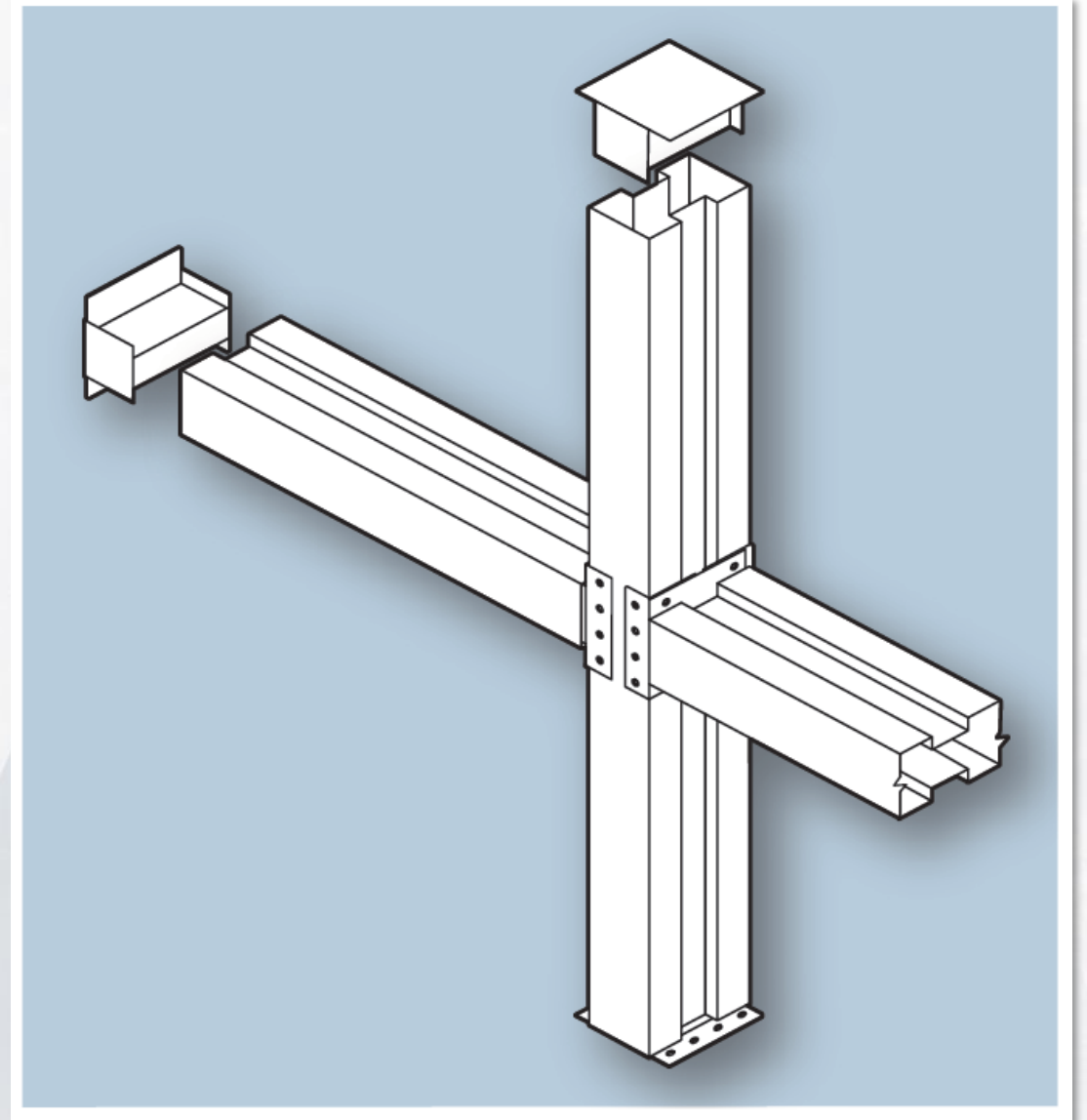
Actuators

- Common Modifications
 - Switch actuator w/out indications switches to model with switches
 - Typically same model – “Like for Like”
 - Change in actuator power
 - Typically same model – “Like for Like”
 - External mount to internal mount
 - May need local AHJ approval



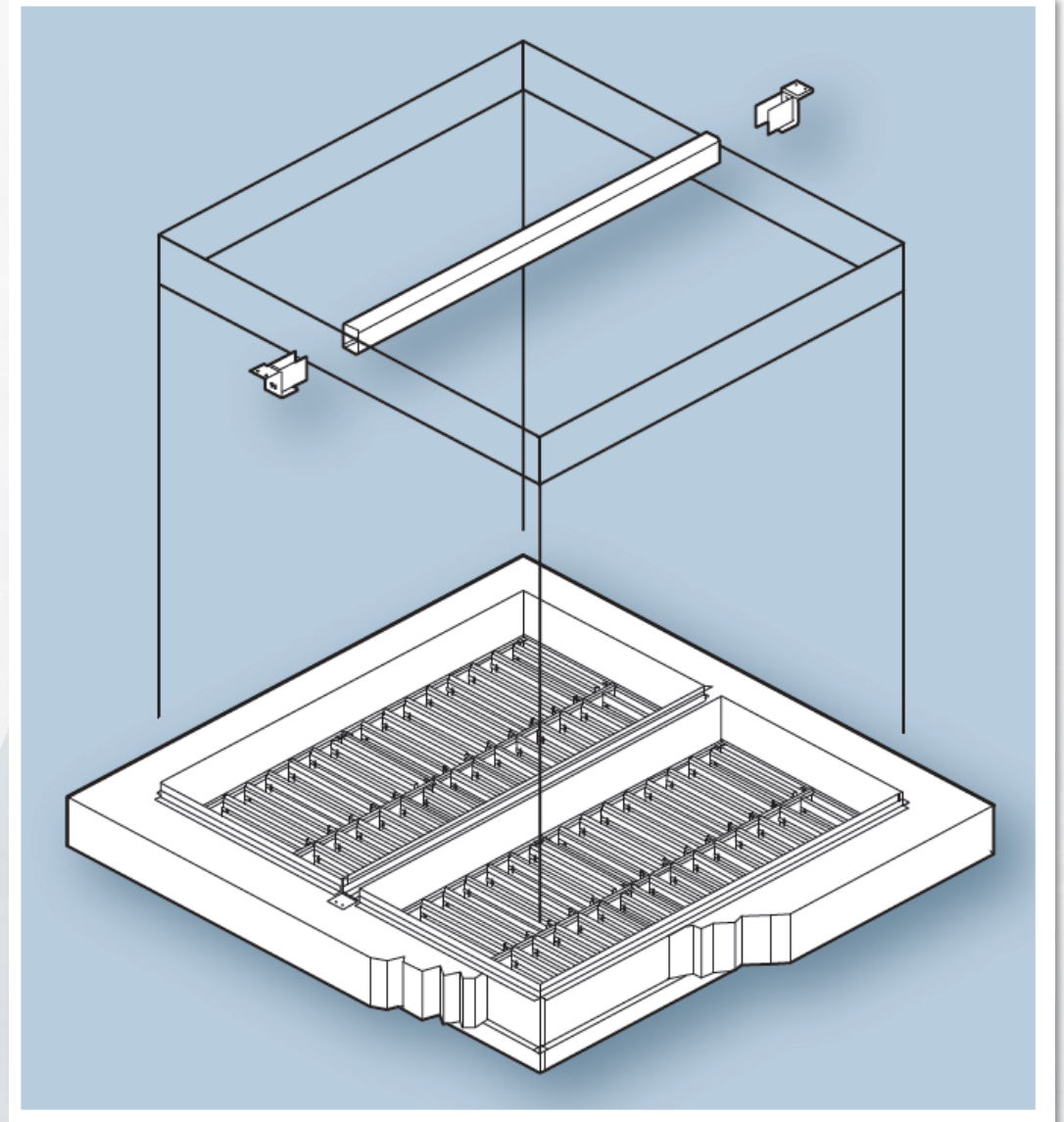
Vertical Mullions

- Vertical openings
 - For walls
 - Static Only
 - Split ductwork may be option with approval from AHJ
 - Reference manufacturer installation instructions and UL “Damper Marking and Application Guide”



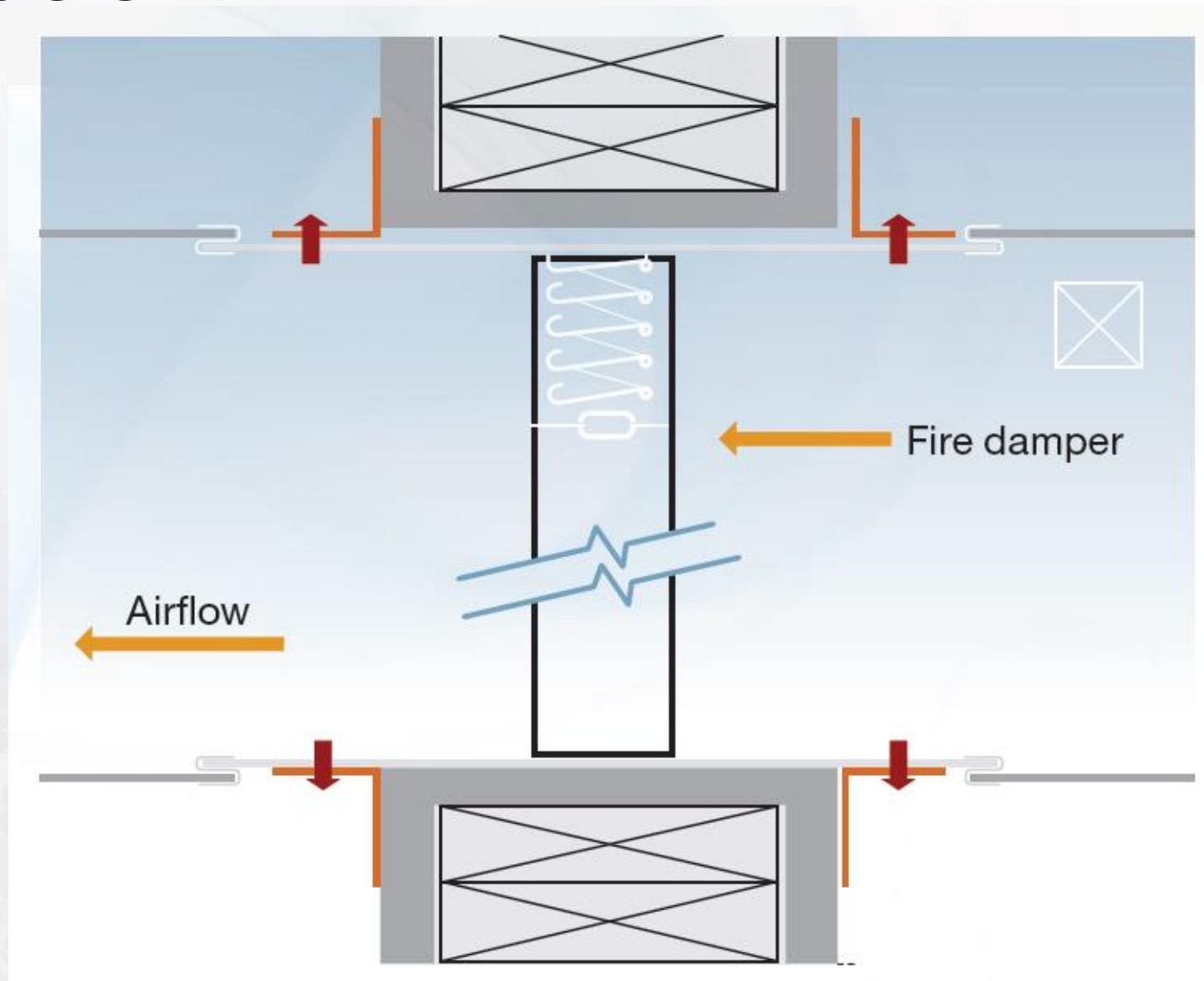
Horizontal Mullions

- Horizontal openings
 - For floors
- Reference instructions for applications
 - May be static or dynamic per instructions
 - Used with dampers rated up to 3 hours



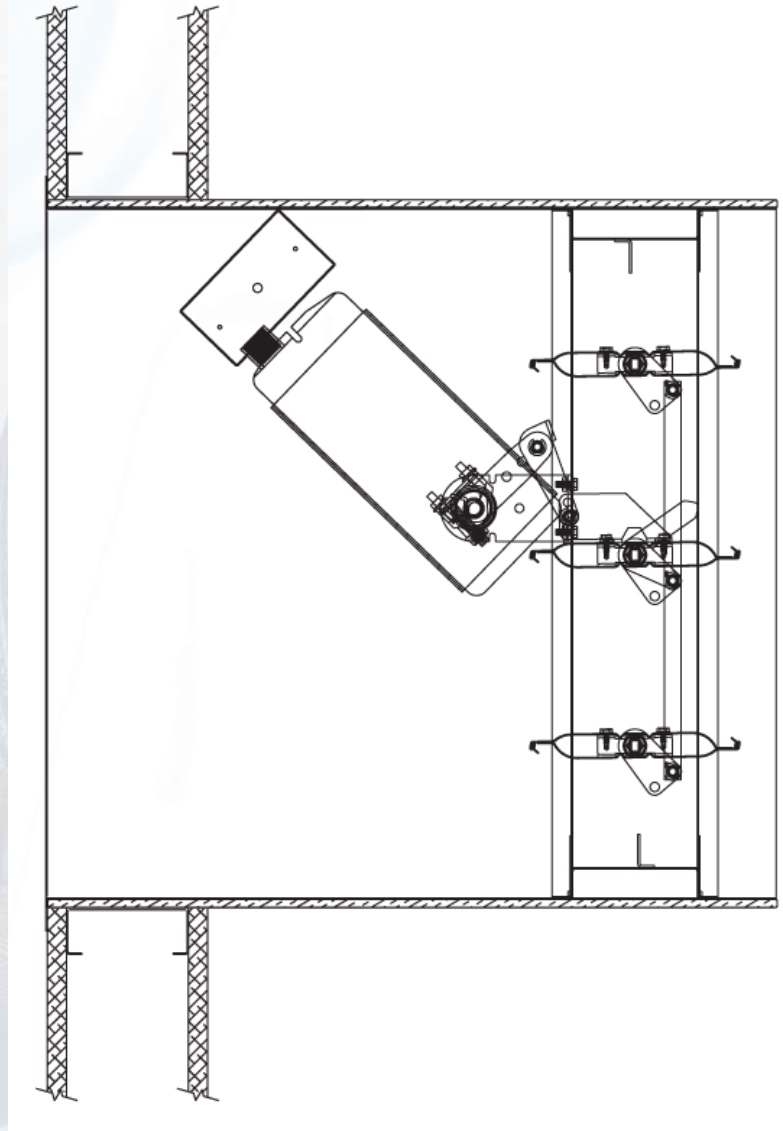
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Damper Installation

- Out of partition damper installation
 - Dampers blades allowed to close outside of the rated barrier
 - Typically restricted in size compared to traditional dampers
 - Field conversion of traditional damper to out of partition damper may require local AHJ approval



Summary

- All dampers must be installed per manufacturers' installation instructions.
 - These can be UL approved or supplemental.
- Modifications must be made per manufacturers' installation instructions.
 - Some modifications fall under UL approval, some need local AHJ approval.
- Contact the manufacturer for guidance on modifications.
 - The manufacturer will point out approved modifications and modifications needing local AHJ approval. Manufacturers can help explain the impact of modifications to the AHJ.
- All dampers are recommended to be cycled after any modifications.

Resources

- **AMCA International:** www.amca.org
- **AMCA *inmotion*™ Magazine:** www.amca.org/inmotion
 - **2020 Edition:** *Field Modifications of Fire, Smoke, and Combination Fire/Smoke Dampers* (Free download available)
- **Underwriters Laboratories**
 - *Marketing and Application Guide- Dampers:* www.ul.com/resources (Free download available)
 - *Fire Resistance Directory C:* www.iq.ulprospector.com/en (Login creation required)
- **International Code Council (ICC) 2021 International Building Code:** www.codes.iccsafe.org (Free online view available)

Q & A

Survey QR Code:



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If you have any questions, please contact Lisa Cherney, Education Manager, at AMCA International (lcherney@amca.org).