



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

AMCA *insite*™ Webinar Series | AMCA International | www.amca.org

AMCA International has met the standards and requirements of the Registered Continuing Education Program. Credit earned on completion of this program will be reported to RCEP at RCEP.net. A certificate of completion will be issued to each participant. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the RCEP.

*Attendance for the entire presentation
AND a completed evaluation are required
for PDH credit to be issued.*



DISCLAIMER

The information contained in this webinar is provided by AMCA International as an educational service and is not intended to serve as professional engineering and/or manufacturing advice. The views and/or opinions expressed in this educational activity are those of the speaker(s) and do not necessarily represent the views of AMCA International. In making this educational activity available to its members and others, AMCA International is not endorsing, sponsoring or recommending a particular company, product or application. Under no circumstances, including negligence, shall AMCA International be liable for any damages arising out of a party's reliance upon or use of the content contained in this webinar.

COPYRIGHT MATERIALS

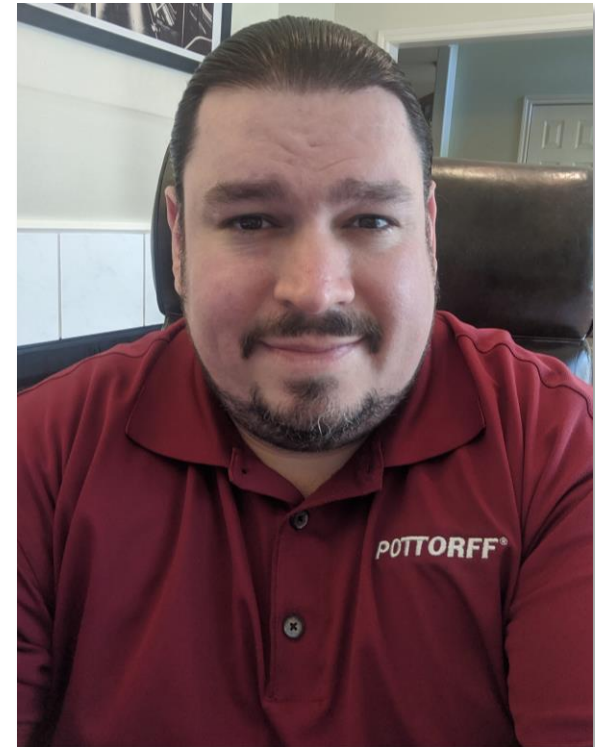
This educational activity is protected by U.S. and International copyright laws. Reproduction, distribution, display and use of the educational activity without written permission of the presenter is prohibited.

© AMCA International 2021

James Carlin

Product Manager- Dampers, AMCA Member Company

- BA in Mechanical Engineering, Stevens Institute of Technology
- Experience with air control dampers since 2007
- Background in aerospace industry and with UL



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:

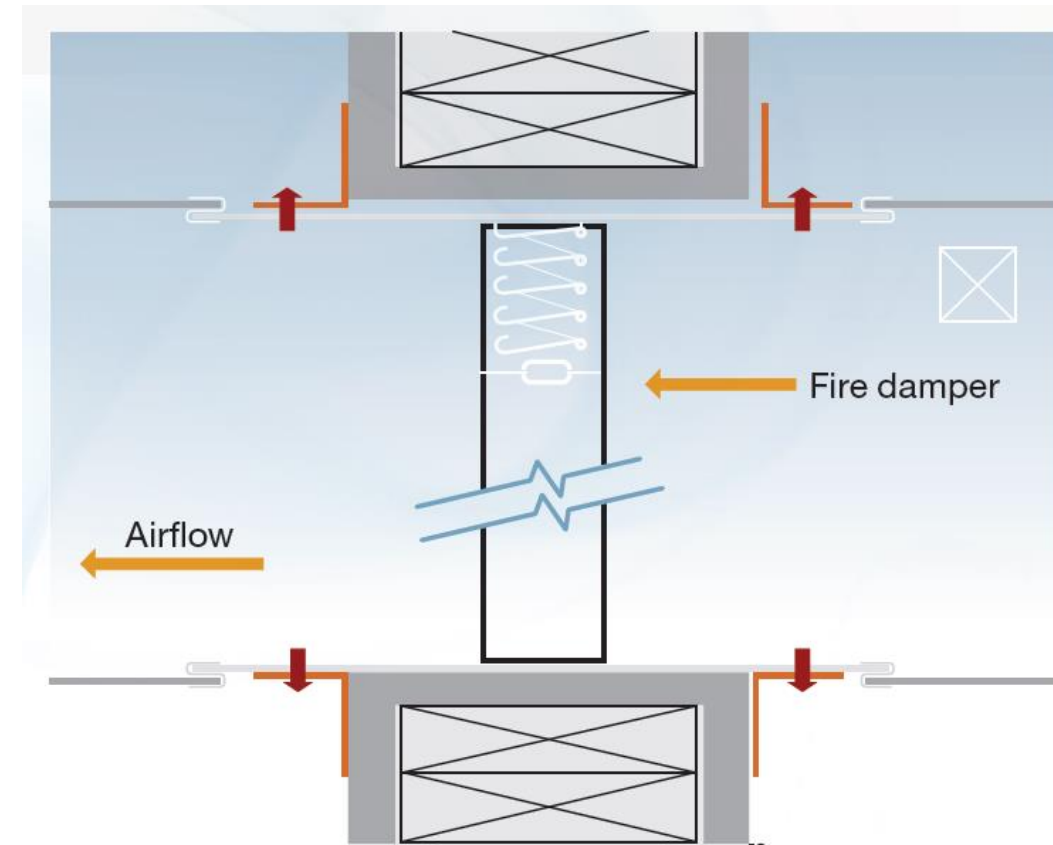
1. Identify commonly supplied installation instructions for UL rated life safety dampers, and their purpose.
2. Explain the difference between UL approved installation instructions and supplemental instructions.
3. Understand the various types of modifications that may be required to be made to installed 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

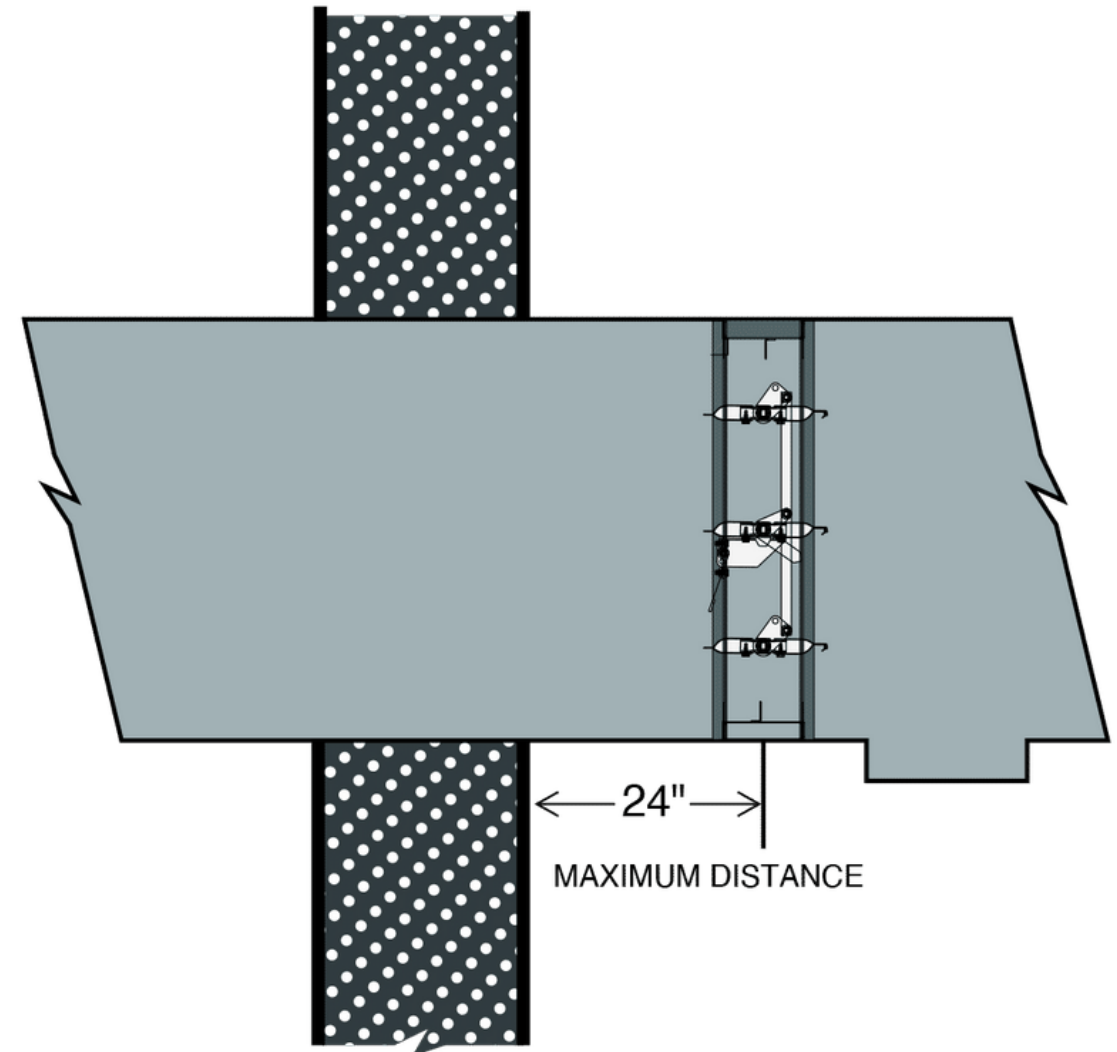
- All UL Life Safety Dampers need to be installed per Manufacturers' installation instructions.
 - Model Specific Fire Damper Installation Instructions
 - Position in wall
 - Sleeve requirements
 - Required thickness, fasteners, length
 - Mounting Angle Requirements
 - Required size, fasteners, location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



Fire Damper Installation

Installation Instructions

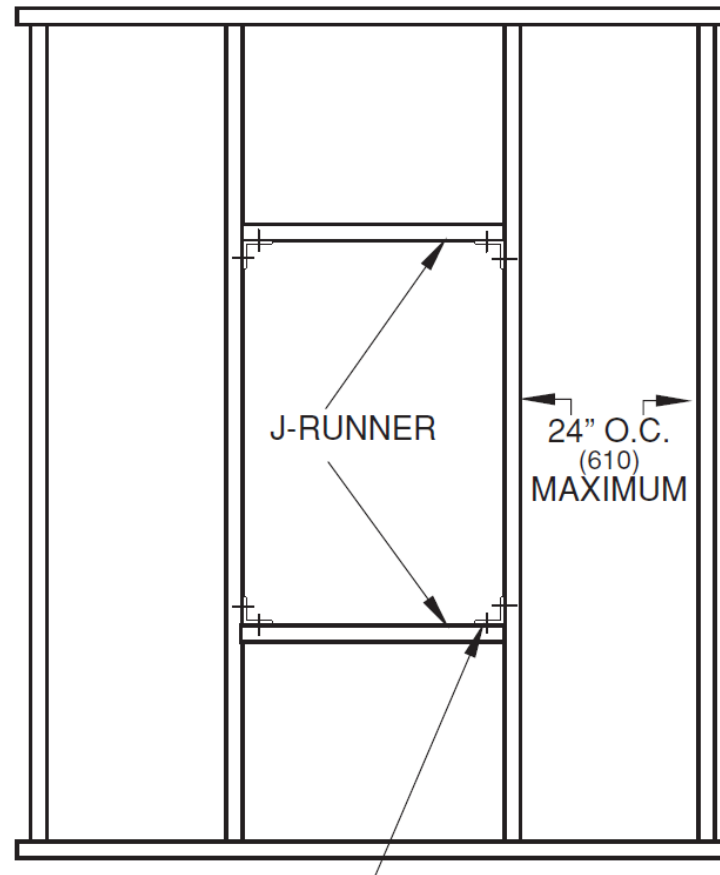
- All UL Life Safety Dampers need to be installed per Manufacturers' approved installation instructions.
 - Model Specific Smoke Damper Installation Instructions
 - Duct or sleeve attachment
 - Position from wall
 - Sealants allowed or required



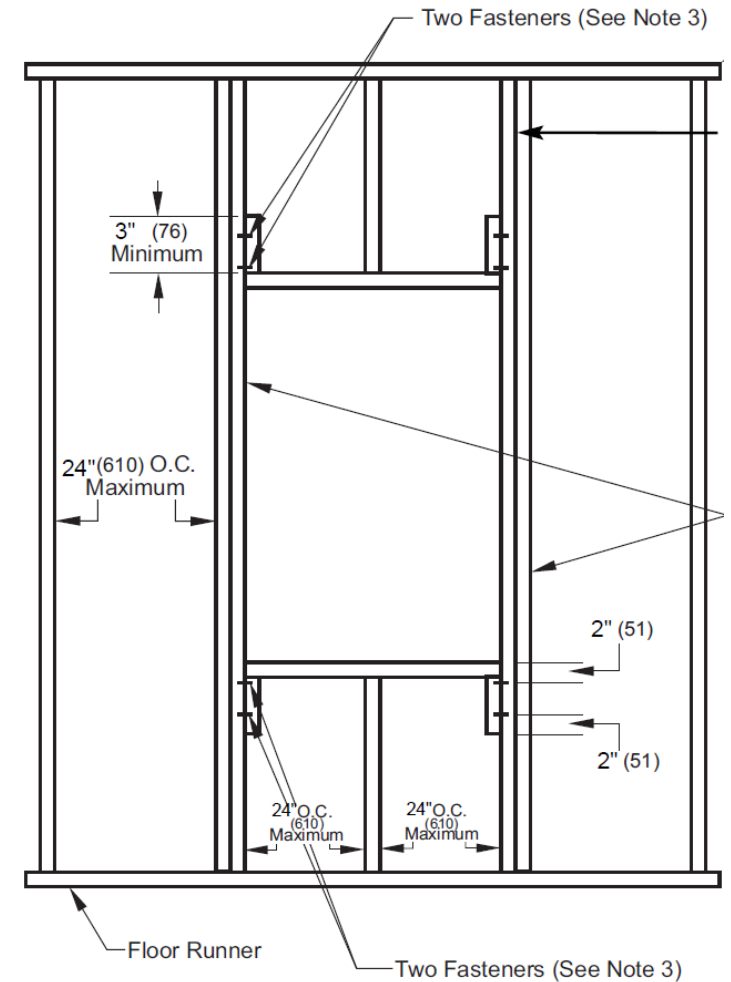
Smoke Damper Installation

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



PLAIN "S" SLIP



HEMMED "S" SLIP



DOUBLE "S" SLIP



INSIDE SLIP JOINT



STANDING S



STANDING S (ALT.)

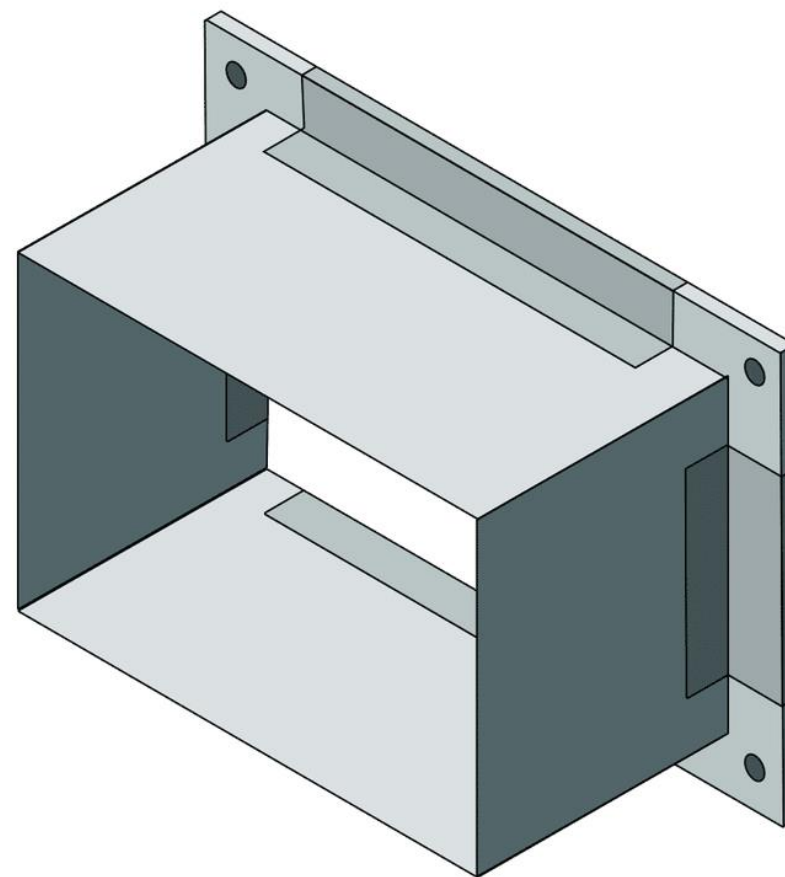


STANDING S
(BAR REINFORCED)



STANDING S
(ANGLE REINFORCED)

Slip Connections

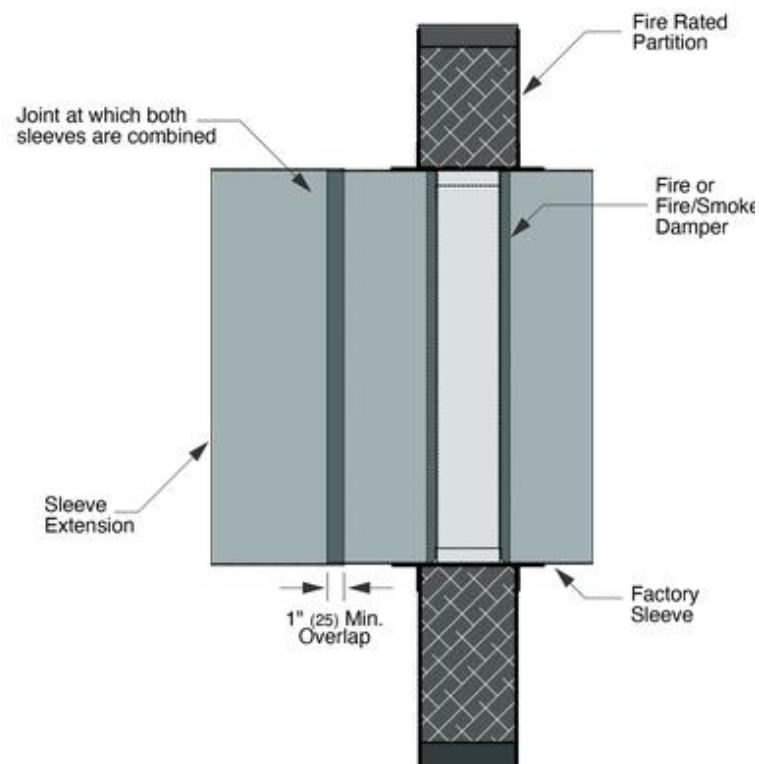


4 Bolt Flange Connections

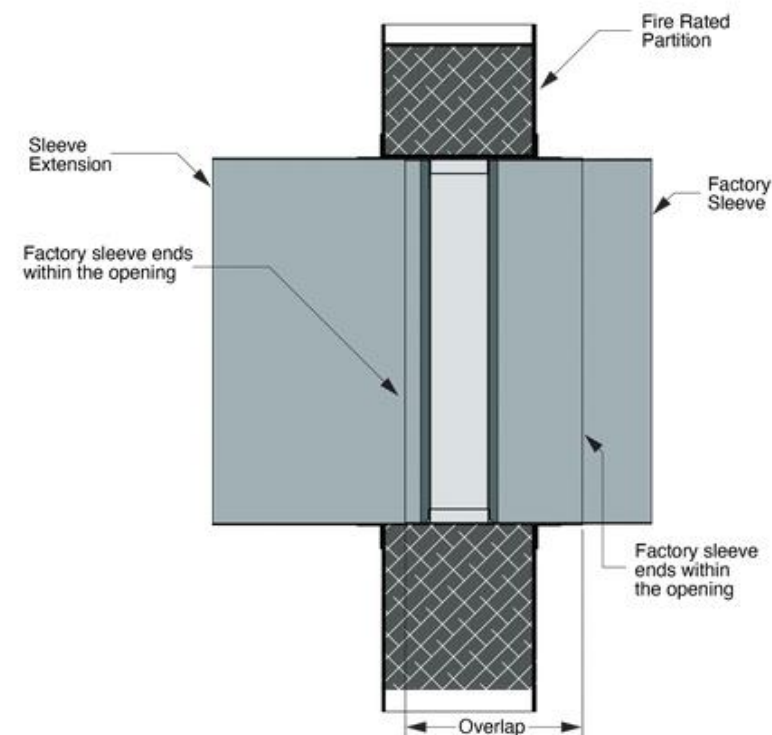
Installation Instructions

- 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

Poll Question

Q: Smoke dampers can be installed a maximum of how far from a rated partition?

- A. Smoke dampers must be installed within the rated partition
- B. 12"
- C. 24"
- D. Smoke dampers can be installed any distance from the rated partition

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



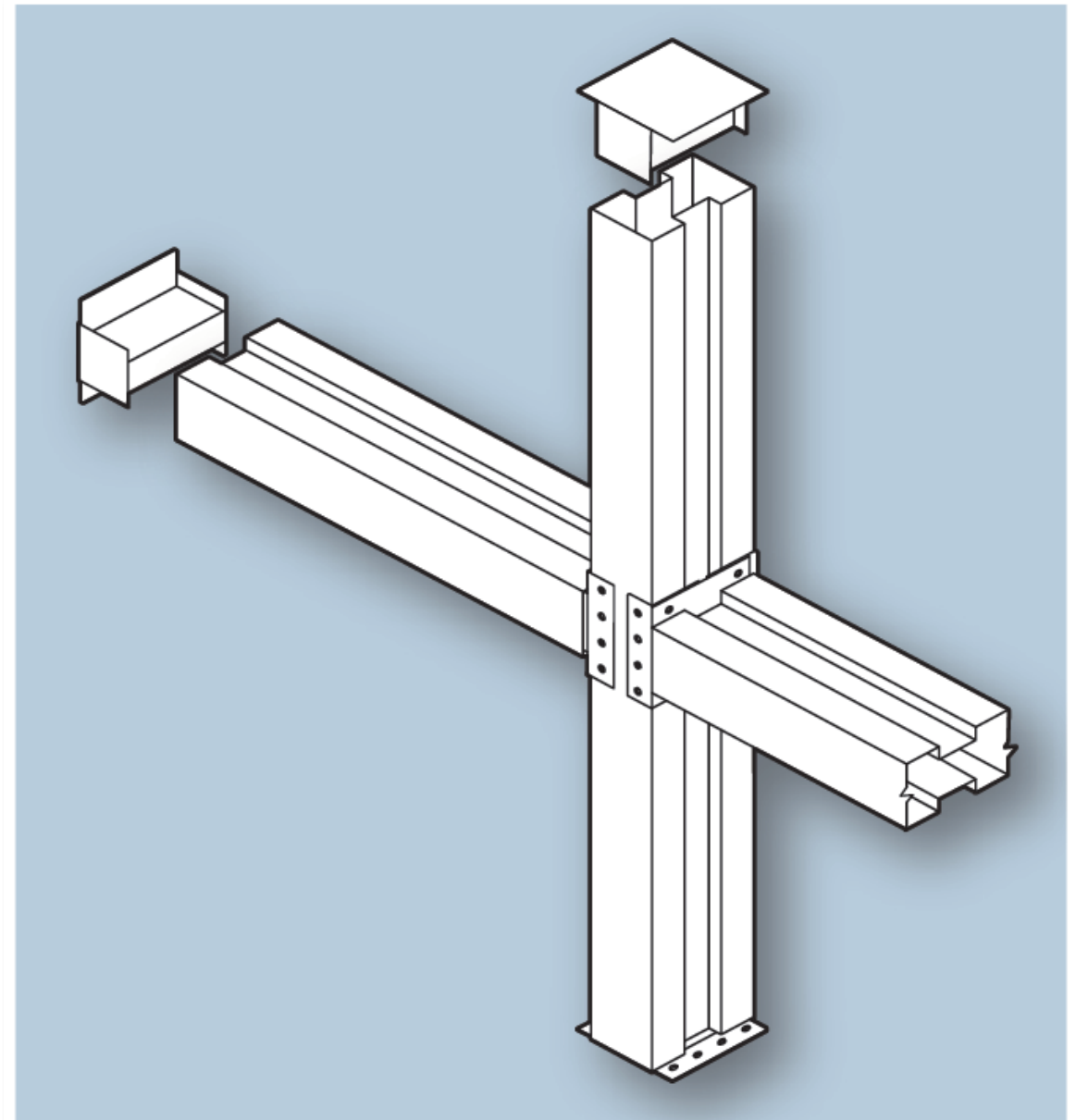
Actuators

- 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



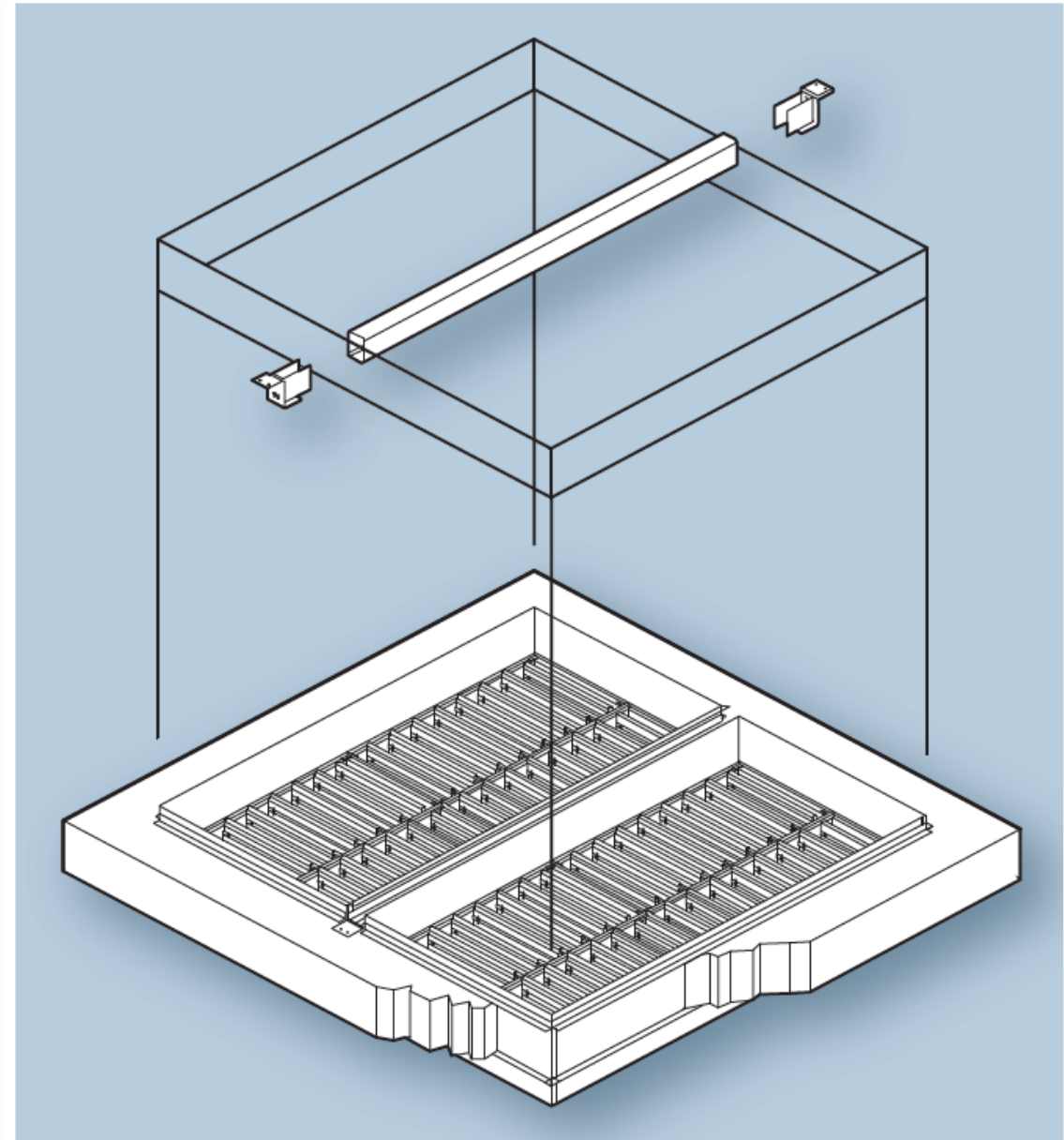
Vertical Mullions

- 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”



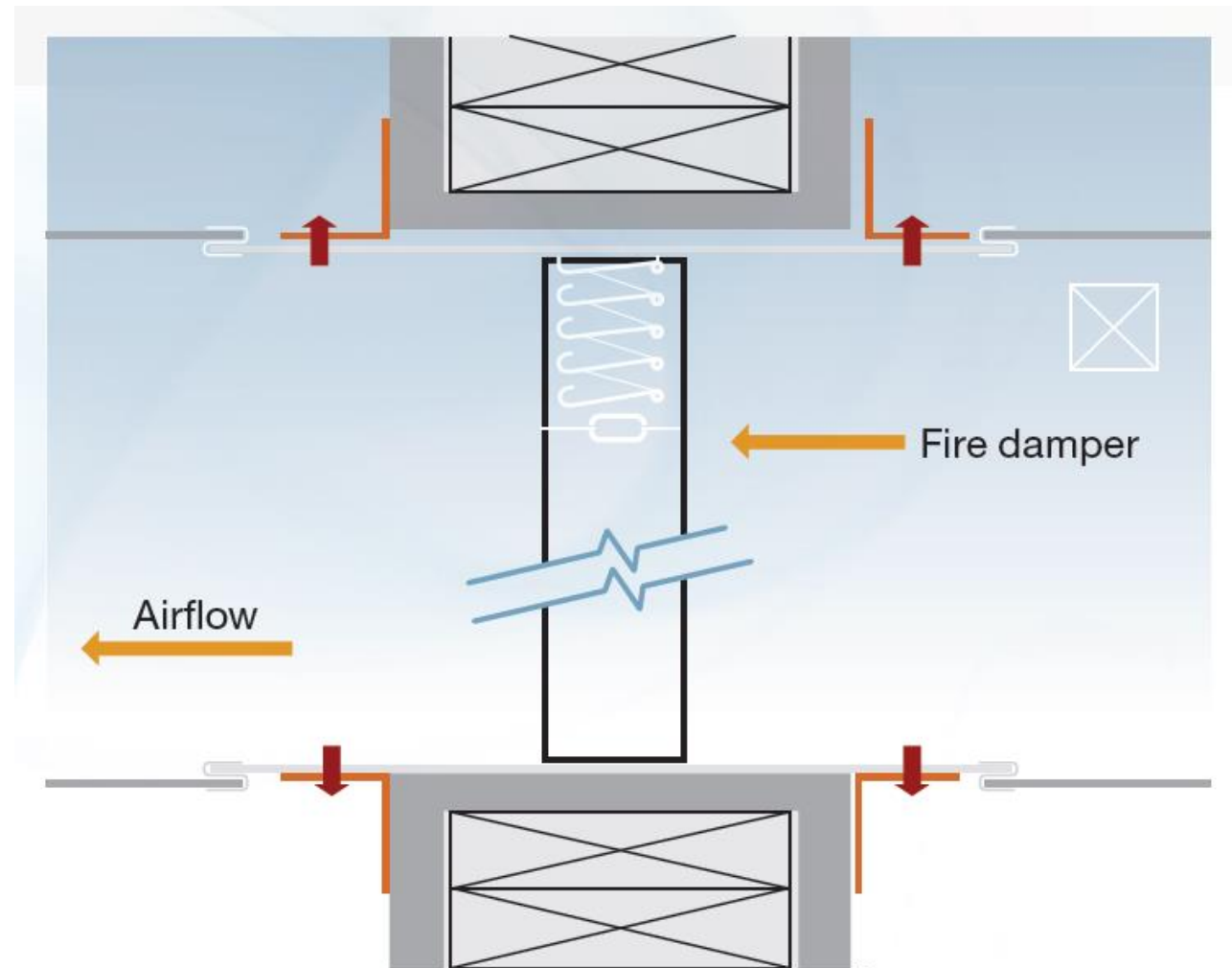
Horizontal Mullions

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



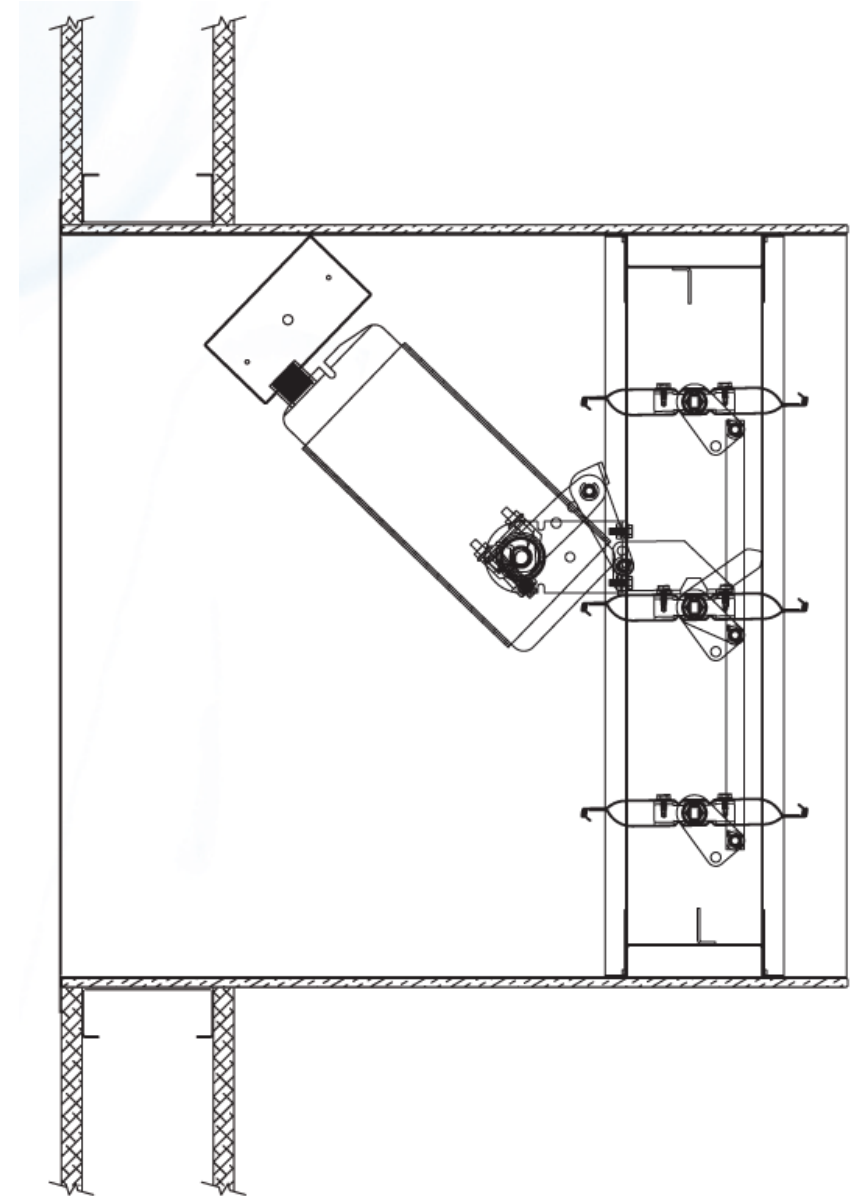
Damper Installation

- In partition damper installation
 - Dampers blades required to close within the rated barrier
 - Dampers do not need to be centered



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) 2018 International Building Code:** www.codes.iccsafe.org (Free online view available)

Thank you for your time!

*To receive PDH credit for today's program, you **must** complete the online evaluation, which will be sent via email following this webinar.*

PDH credits and participation certificates will be issued electronically within 30 days, once all attendance records are checked and online evaluations are received.

Attendees will receive an email at the address provided on your registration, listing the credit hours awarded and a link to a printable certificate of completion.

Questions?