A CLEAR PICTURE & AN OPEN DOOR – AN INTRODUCTION TO OTHER IMPORTANT OPENING PROTECTIVES

November 8, 2017
Omni Rancho Las Palmas Hotel & Spa Matthew Schumann
AGENDA

Fire Doors
  Types
  Test Standards
  Installation & Maintenance
Glazing Products
  Types
  Test Standards
  Care & Maintenance
Dampers
  Types
  Standards
  Installation & Maintenance
Resources
A Minute on the QFCP?
FIRE DOORS
SWINGING DOORS

- Assembly consisting of Listed/Certified/Classified components
- Hourly rating limited by lowest rated component
- Wood, Steel, Fiberglass Options
- Components – frames, hinges, latching, closers, gaskets, seals & more
- Subject to annual inspections
OTHER FIRE DOOR TYPES

Chute Door

Rolling Steel Door or Shutter

Elevator

Access Panel
TEST STANDARDS

- **UL10B** – “Fire Tests of Door Assemblies”
  - Neutral pressure plane for furnace is at top of door assembly
- **UL10C** – “Positive Pressure Fire Tests of Door Assemblies”
  - Neutral pressure plane for furnace is 40 in. above sill
- **UL Subject 63 / CAN/ULC-S105** – Outline of Investigation for Steel Frames
- **CAN/ULC-S104** – “Standard Method for Fire Tests of Door Assemblies”
  - Neutral pressure fire test
INSTALLATION CONCERNS - DOORS

• Door Clearances
• Loose anchors
• Improperly installed hardware
• Inability to operate or function as designed
• Drywall insertion / Substrates
• Improperly labeled glazing or non-rated glazing

CARE AND MAINTENANCE - DOORS

• Broken Hardware
• Removal of seals and gaskets
• Rust, Rot and Corrosion
• Clearances, Wear of Door Assembly
• Modifications
GLAZING PRODUCTS
$\frac{1}{4}$ in. Wired Glass, Ceramics, Strengthened Tempered Type Products for Doors, Windows, Transoms and Sidelights -- Rated as components
FIRE-RESISTANCE RATED GLAZING MATERIALS

Pilkington Pyrostop, Saftifirst Superlite II, Vetrotech Contraflam, AGC Pyrobel which are rated as part of a system or design
TEST STANDARDS

- UL10B, UL10C, ULC/CAN-S104 if glazing installed into door assembly
  - includes vision light kits, sidelights, & transoms
- UL9 or CAN/ULC-S106 if glazing installed into window assembly
  - Neutral or positive pressure
- ASTM E119 / UL 263 / CAN/ULC-S101 for fire-resistive assemblies (WALLS)
DAMPERS
A damper is used in an air duct, which allows for air movement throughout a building.
COMMON DAMPER APPLICATIONS
WHAT IS A DAMPER?

NFPA 80 offers widely accepted definitions for dampers.

Fire Damper - “A device Installed in an air distribution system, designed to close automatically upon detection of heat, to interrupt migratory airflow and to restrict the passage of flame. Fire dampers are classified for use in either static systems or for dynamic systems, where the dampers are rated for closure under airflow.”

Smoke Damper - “A device within an air distribution system to control the movement of smoke.”
### PRODUCT STANDARDS

There are three UL / ULC product safety standards used for evaluating the three main types of dampers.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
<th>First Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSI/UL 555 CAN/ULC-S112</td>
<td>Static and Dynamic Fire Dampers: Addresses fire rating of damper.</td>
<td>1968</td>
</tr>
<tr>
<td>ANSI/UL 555S CAN/ULC-S112.1</td>
<td>Smoke Dampers and Fire/Smoke Dampers: Determines leakage ratings for damper intended to control the movement of smoke.</td>
<td>1983</td>
</tr>
<tr>
<td>ANSI/UL 555C CAN/ULC-S112.2</td>
<td>Ceiling Radiation Dampers: Control of heat going through the membrane into the plenum between the ceiling and the floor above</td>
<td>1992</td>
</tr>
</tbody>
</table>
INSTALLATION CONCERNS

Here are some common installation concerns which can impact product performance -

Avoid racking or bending of the sleeve

Field installation of sleeves, where permitted, follow fastener types, spacings and attachment methods as detailed in instructions

Installation of fusible link or heat responsive device must be done correctly if field installed

Actuators/Operators – properly wired or plumbed to avoid shorts and leaks (Must be factory installed)

Do not obstruct installation clearances between wall openings and sleeve

Maintain expansion clearances and proper overlap of angles

Do not seal or fill voids with insulation or other materials unless explicitly permitted
DAMPER MAINTENANCE

• Full and unobstructed access required
• Remove link to test for full closure and locking of blade linkage
• No interference due to corrosion or damaged parts such as frames, blades, hinges
• Link is undamaged
• No penetrations or modifications that would alter damper operation
• Investigate change in noise or airflow from the ducts
• Lubricate and repair as instructed by manufacturer
• Combination dampers must comply with NFPA 80 and 105
DAMPER LISTINGS

Here are the various ratings that can be included on a UL Product Listing / Label for a damper. The ratings are performance characteristics which indicate how the product will perform when installed.

Fire:
- For use in dynamic or static systems
- Airflow Ratings (in increments of 1000 cfm/sq. ft.)
- Pressure Ratings – Pressure in duct during testing (min. 4 in H₂O/1000 pa)
- Fire Rating – 1.5 or 3 hr (can test to 2 hr)
DAMPER LISTING INFORMATION

Smoke:
- Smoke or Fire and Smoke
- Leakage Class I, II or III
- Temperature Rating – 121 C (250 F) or 176 C (350 F)
- Airflow (in increments of 1000 cfm/sq. ft.)
- Pressure Ratings – Minimum 1000 Pa or 4 in H₂O in the duct
- For combination, Fire Rating – 1.5 or 3 hr (can test to 2 hr)

Either Product Type:
- Damper orientation
- Max width and height
- Max Dimensions for Single Section and Multiple Section Dampers
RESOURCES
UL ONLINE DIRECTORY / PRODUCT SPEC

ONLINE CERTIFICATIONS DIRECTORY

BEGIN A BASIC SEARCH
To begin a search, please enter one or more search criteria in the parameters below.

- Company Name (optional)
- City
- US State
- US Zip Code
- Country
- Region
- Canadian Province
- Postal Code (non-US)
- UL Category Code
- UL File Number
- Keyword

SEARCH CLEAR

ABOUT THE ONLINE CERTIFICATIONS DIRECTORY

UL PRODUCT SPEC™
Quickly find, specify, or verify UL Certified products for your projects.

1. HOW DO YOU WANT TO SEARCH?

UL PRODUCT CATEGORY

Gypsum Board, CKNX
Guide Information for Fire-resistance Ratings

GENERAL

This category covers gypsum board investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings - ANSI/UL 263 (EXUV).

Show additional information...

VIEW UL CERTIFIED PRODUCTS

View list

UL STANDARDS

UL 263 Scope

Print New Search
REFERENCE DOCUMENTS

- IBC, IFC, NBC Sections on Fire Doors and Dampers
- NFPA 80
- NFPA 101
- NFPA 90A
- SMACNA 1819
- UL Guide Cards for GSNV, GSYX/7, GSZN/7
- UL Guide Cards for EMME/7
- UL Directories can help determine suitability for use
- AMCA 500D
- UL 555, 555S, 555C
- CAN/ULC 112, 112.1, 112.2
- UL 10B, UL 10C
- UL 1784
- UL 9
- CAN/ULC-S104 and CAN/ULC-S106
- SDI and HMMA Specifications and Technical Documents
Reference Materials

UL Marking and Application Guides – Regulatory Page at www.ul.com

Listed under Marking guides

Available for Fire Doors and Dampers

UL standards also at www.comm-2000.com
QUALIFIED FIRESTOP CONTRACTOR PROGRAM UPDATE
PROGRAM UPDATE

• At end of 2017 – No. of Program Participants is………. 
• 21 Exams Administered prior to this week in 2017; Approx. 200 Exams to date
• Online option is working as intended
• Continue to offer courtesy meetings for quality manual development
• In middle of exam update with FCIA Leadership with additional installation related questions
• Auditor Training – Approximately 12 Auditors including 1 in Europe and 1 in Middle East
• Opportunities for promotion?
THANKS – ANY QUESTIONS?

Matt Schumann
Matthew.Schumann@ul.com | 847-664-1289