ENGINEERING REPORT

TOPIC: New UL Test Standards, What They Mean to You

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On July 1, 2002, everything changes. That's because all fire, smoke and combination fire/smoke dampers manufactured after July 1, 2002 must meet the requirements of the "new" UL555 and UL555S Standards (refer to the Ruskin Engineering Report entitled "Changes to UL Standards 555 and 555S" for more information).

You may ask, "Why are the Test Standards changing?" The Standards are changing to make all fire, smoke and combination fire/smoke dampers more reliable in fire, life safety situations. Until now the reliability of the damper depended on the manufacturer. UL testing was the same for everyone but not all manufacturers were dedicated to the development and production of a quality product like Ruskin. Other manufacturers took "shortcuts" in the fabrication process to produce dampers that "just barely" passed the UL tests. The "new" UL Standards are more stringent which means dampers must be better designed and built.

Not only are damper manufacturers going to be affected by the "new" and stricter requirements of the UL Standards but the changes will effect HVAC design engineers too. The purpose for this report is to discuss what the "new" Standards mean to the products and ultimately the design engineer.

The tables below show what to expect July 1, 2002 (sizes shown are approximate and are intended to be used as information for designing purposes. Procure a spec sheet from Ruskin for exact sizes in each model).

UL555 Static "Curtain Blade" Fire Dampers

Before July 1, 2002		After July 1, 2002
• Vertical sizes to 120" x 120"	→	• Vertical sizes to 120" x 120" (same)
• Horizontal sizes to 90" x 90"	→	• Horizontal sizes to 90" x 90" (same)

UL555 Dynamic "Curtain Blade" Fire Dampers

Before July 1, 2002		After July 1, 2002
• Vertical sizes to 120" x 120"	→	• Vertical sizes to 33" x 36"
• Horizontal sizes to 120" x 50"	→	• Horizontal sizes to 48" x 36" or 36" x 48"

UL555 Dynamic "Multiple Blade" Fire Dampers

Before July 1, 2002	After July 1, 2002
• Vertical sizes to 120" x 100"	• Vertical sizes to 72" x 48"
• Horizontal sizes to 144" x 100"	• Horizontal sizes to 72" x 48"

What This Means to You:

1. No changes to static fire dampers.
2. Some manufacturers may not test dynamic "curtain blade" fire dampers and will not market them.
3. Large HVAC penetrations of fire rated wall and floors, requiring fire damper protection, will have to be static "curtain blade" or dynamic "multiple blade" fire dampers.

Benefits:

"Multiple blade" dynamic fire dampers are more "user friendly" than their "curtain blade" counterparts (refer to the Ruskin Engineering Report entitled "Testing and Maintenance of Fire Dampers").

UL555S Smoke Dampers

Before July 1, 2002		After July 1, 2002
• Vertical sizes unlimited	→	• Vertical sizes to 120" x 96" (same)
• Horizontal sizes unlimited	→	• Horizontal sizes to 144" x 96" (same)
• Assembly temperature ratings of 250°F, 350°F and 450°F	→	• Assembly temperature ratings of 250°F and 350°F

What This Means to You:

1. Reduced actuator performance. A higher torque actuator or additional actuators may be required.

Benefits:

Very dependable actuators. Caution: Some manufacturers intend to offer "rotisserie" stall type actuators on small dampers, which have proven to be unreliable in the past.

UL555 & UL555S Combination Fire/Smoke Dampers

Before July 1, 2002		After July 1, 2002
• Vertical sizes to 120" x 120"	→	• Vertical sizes to 120" x 96" (same)
• Horizontal sizes to 144" x 96"	→	• Horizontal sizes to 144" x 96" (same)
• Assembly temperature ratings of 250°F, 350°F and 450°F	→	• Assembly temperature ratings of 250°F and 350°F

What This Means to You:

1. Reduced actuator performance. A higher torque actuator or additional actuators may be required.
2. Actuator performance reduced more at 350°F than 250°F.
3. For economic reasons, 250°F will replace 350°F as the most common assembly temperature rating.

Summary

- Major changes are on the way.
- Dynamic "curtain blade" fire dampers will be affected most by the changes.
- The most significant changes are to damper sizes.
- HVAC design engineers need to know that systems designed today may present application problems after July 1, 2002. They should consider the changes listed above for projects that will be under construction after July 1, 2002.
- Ruskin is prepared for the changes and is committed to have the fire, smoke or combination fire/smoke damper you need.
- Contact the Ruskin Fire/Safety Department or nearest Ruskin representative for more information.