



Dream On

Looks like another year is coming to a close. I don't know about you, but these years appear to be slipping by faster and faster. 2015 was a big year for NGC Testing Services. As we continue to grow, we celebrated our 50-year anniversary, and we are still recovering from all our anniversary festivities. The dinners, the dancing, the gifts were overwhelming. The full parade and the fireworks display the town put on were unexpected. The congratulatory letter from President Obama was a big surprise. So was the visit from all the surviving members of the 1965 champion Buffalo Bills, who ran some plays for us in our back parking lot. Wow, that Elbert "Golden Wheels" Dubenion can still run. Our own Mike Rizzo (Fire Test Engineer/Quality Manager), with coaching from Butch Byrd, had trouble covering him. Mike Stratton wanted to demonstrate his famous hit on San Diego Chargers' Keith Lincoln on Andy Heuer (our Senior Acoustical Engineer), but Tom Richards (NGC Safety/Testing Services Coordinator) stopped him. Okay, time to wake up! I hope you enjoyed my daydream. Still, at NGC Testing Services we have to pinch ourselves for being able to do what we do here every day. Employees are proud to provide the services we provide and work in a facility that has been going strong for 50-plus years now. We are living the dream. 2016 has some exciting events on the horizon also. Besides being a year older, we will be expanding our testing services to serve you better, becoming more of a one-stop testing center. I'll be revealing more details soon. But for now, I would like to thank you for being our client, or considering using our services. All of us at NGC Testing Services wish you a wonderful upcoming holiday season and a productive start to 2016.

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TECHTALK

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Focus On: Testing For Reduced Clearance Heat Shield



As you have probably experienced, the closer you stand to a fire, the more intense the heat. "Clearance" is the minimum distance you can safely install an appliance – that could overheat and potentially burn – from a wall or other combustible surface.

For the "Reduced Clearance Heat Shield Test," we check heat shields to use in conjunction with wood-burning stoves. With an effective heat shield, you can position a wood-burning stove closer to a wall. Without a heat shield/wall protector, 36 inches is the acceptable clearance for a wood-burning stove to a wall.

When you picture a cozy 8-foot by 8-foot room, imagine having to move the wood-burning stove 3 feet farther from the wall for safety. This drastically diminishes the room's real estate, which explains why heat shields are so popular. It also explains why testing heat shields to confirm their validity is so important to their manufacturers.

Heat shields vary, depending on the

manufacturer. We recently tested the heat shield for a major cement board manufacturer. In this case, the heat shield is partially "built into" a cement board product, making the wall assembly installation more seamless than some other options in the marketplace. But would this heat shield meet the required criteria? The criteria are two test standards, ULC S632 ("Standard for Heat Shields") and UL1618 ("Standard for Wall Protectors, Floor Protectors, and Hearth Extensions"). To meet the criteria for these two standards, we constructed a room with matte-finished black walls and fabricated a special test stove. We collected data for two days, which included a calibration period and the actual test. The natural gas fed stove reached temperatures of 800-900°F. We collected the temperature data through 187 thermocouples installed throughout the room walls.

The test was a success and met the required standards. As our client says, "We can now add this to our label and marketing literature. We are a proven solution to the wood-burning stove dilemma. We have demonstrated that our product performs in that application."

If we can assist you by putting your product to the test, call or email me with questions or to schedule your test.



Testing a wood-burning stove heat shield.



TECHTALK

Calculating Flame Spread And Smoke Developed

ASTM E84 Standard Test Method For Surface Burning Characteristics Of Building Materials

How is “flame spread” measured and calculated?

Through the windows of the 25-foot-long Steiner Tunnel test furnace, we observe the traveling flame front and plot it in feet versus time. We determine the total area under the flame spread distance-time curve, ignoring any flame front recession.



An associate looks into the Steiner Tunnel test furnace.

If this total area is less than or equal to 97.5 feet per minute, the flame spread is 0.515 times the total area. If the total area is greater than 97.5 feet per minute, the flame spread is 4,900, divided by the difference of 195 minus the total area. For reporting, the calculated flame spread is rounded to the nearest 5.

How is “smoke developed” measured and calculated? Throughout the 10 minute test, percent light absorption data is collected by a photocell in the vent pipe of the test furnace. We plot this data versus time and the area under the resulting light absorption percent-time curve is determined. We then divide this area by the area under the curve for red oak (determined from test furnace calibration) and multiply it by 100. For reporting, the calculated smoke developed is rounded to the nearest 5, unless it is greater than 200, then it is rounded to the nearest 50.

For reference, cement board has a nominal flame spread of 0, smoke developed of 0. Red oak has a nominal flame spread of 100, smoke developed of 100. As materials with established values, they are utilized periodically to calibrate the test furnace.

Opening Up

The Latin word *Fenestra* means “window.” Our facility will soon be “opening up” the window of testing services we offer. In addition to the acoustical and fire testing we currently provide for these types of products, we will be adding testing capabilities that offer more to those of you who manufacture building envelope products. Soon we can offer you more of a “one-stop” shop to evaluate your products.



Stay tuned for more information in our next issue!

DIDYOUKNOW?

What ASTM International Letters Signify

ASTM International: You see these letters as descriptive of tests and in specifications. The acronym stands for American Society for Testing and Materials and dates back to 1898. ASTM International is a society formed to write standards, and it includes more than 30,000 members from industry, users of the standards, and members with general interest — all of whom are volunteers. It is also an internationally noted Standards Development Organization (SDO). ASTM International committees meet twice per year in various locations to write, revise and propose new standards on a consensus-voting basis. Here at NGC Testing Services, we have representatives participating in four ASTM International committees:

- Committee E33 on Building and Environmental Acoustics
- Committee E05 on Fire Standards
- Committee E06 on Performance of Buildings
- Committee C16 on Thermal Insulation

Test standards typically outline requirements for equipment and instrumentation, calibration, procedures and measurements, and laboratory qualification. In addition to developing and revising standards, the meetings give members an opportunity to discuss technical issues between laboratories, end users and others. ASTM International committees additionally sponsor round robins and proficiency test programs between laboratories to utilize like specimens to ensure test standards are accurate and data is as consistent as possible between laboratories.

For a complete list of ASTM International and other standards NGC Testing Services tests to, click on our [website](#).

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