NGC TESTING SERVICES
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TESTING SERVICES UPDATE

VOLUME 4 ISSUE 1 February 2015

Gearing up for a Golden Year

It's still early in the New Year, and we hope we've started it off with a bang—providing you with the service you need and expect from us. Ultimately, it is our goal to surpass your expectations, so we hope we're able to do that from time to time. 2015 is a big year for us here at NGC Testing Services. We are celebrating our 50th golden anniversary of serving clients like you, and we'll talk more about this in a future issue. This quarter, meet Andy Heuer, our senior acoustical test engineer with 42 years of experience. Andy is one of our important human resources here, yet he is not even the most senior member in terms of experience. If you run a quick calculation of our technical staff's testing experience, it totals more than 200 years. Along with younger, up-and-coming engineers and technicians, we think we have a great staff here with the expertise to serve you. Let us know how we can help you today, and we look forward to celebrating a half-century of testing with you over the coming months.

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DIDYOUKNOW?

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Catch a (Sound) Wave!
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Focus On: Extended Tunnel Test: ASTM E 2768

ASTM E 2768 is one of the test methods we use to establish the surface burning characteristics of materials or products. Also known as the "30-minute E 84 tunnel test," this fire-test-response standard evaluates the ability of a product to limit the surface spread of flame when evaluated for 30 minutes. First issued in 2011, it is an extended, modified version of the 10-minute ASTM E 84. This test protocol has been used for many years in code requirements for fire-retardant treated wood, but some building codes now also employ this test for products that are not wood.

For a material or product to be classified as meeting the requirements of this test:

- The flame-spread index shall be 25 or less as determined for the initial 10-minute test period.
- The flame front shall not progress more than 10.5 feet beyond the centerline of the burners at any time during the 30-minute test period.

This test does not provide the measurement of heat transmission through the tested surface. It also does not provide the classification or definition of a material or product as noncombustible, by means of the results from this standard test or flame-spread index by itself.

For more information about ASTM E 2768 or any of the wide range of fire tests we offer, including other flame-spread tests, noncombustibility, or full-scale endurance tests, please call or e-mail us.

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Meet Senior Acoustical Test Engineer, Andy Heuer

How does one develop a keen, finite sense of hearing? One who can detect a pin drop and define it by decibel (dB) level and frequency? One who uses the repetitive click of a pen to estimate a room's sound absorption? Perhaps by working 42 years measuring, analyzing and reporting sound. That describes Andy Heuer, our senior acoustical test engineer, to a "T" or rather dB. Andy has more than 42 years of experience in acoustics, including building acoustics and vibration testing, 22 of which are here at NGC Testing Services. The pin drop and pen click stories may be a bit of an exaggeration, but with this much experience, Andy can guide you and explain the acoustical data generated at our lab during your testing program, and help you analyze your product or system's performance.

Andy is a native of Niagara Falls, New York, where he still resides. Perhaps the constant roar of the falls piqued his interest in sound and acoustics. Or maybe it was when he first heard the crack of a baseball bat; one visit to Andy's office, and you'll quickly discover he is an avid New York Yankees fan. To utilize his well-honed experience, feel free to contact Andy at extension 253, or e-mail him at aeheuer@ngctestingservices.com to discuss your next acoustical testing project. He will be happy to lend you his finely tuned, sensitive ears.

Catch a (Sound) Wave!

Ever wonder why our acoustical test assemblies need to be so large? (For example, our floor-ceiling assemblies are 12 feet by 16 feet.)

As you can see from the information below, some of the frequencies of interest produce large sound waves. Typically, we begin to measure frequencies beginning at 80 or 100 hertz.

What is the wavelength of sound waves?

That depends on the frequency of a sound. At 70 degrees Fahrenheit, here are the wavelengths of various frequencies of a sound:

50 hertz	22.60 feet		
100 hertz	11.28 feet		
500 hertz	2.26 feet	or	27.1 inches
1,000 hertz	1.13 feet	or	13.6 inches
4,000 hertz	0.28 feet	or	3.4 inches
10,000 hertz	0.11 feet	or	1.3 inches

Does the speed of sound change with temperature?

Yes, it increases with temperature.

At 70 degrees Fahrenheit, the speed of sound is 1,128.0 feet per second.
At 90 degrees Fahrenheit, the speed of sound is 1,149.3 feet per second.
At 32 degrees Fahrenheit, the speed of sound is 1,086.9 feet per second.

Does the speed of sound change in different materials?

Yes, it does. At 70 degrees Fahrenheit, speed of sound is approximately:

Air	1,128 feet per second
Water	4,920 feet per second
Concrete	10,200 feet per second
Steel	19,000 feet per second
Wood	12,500 feet per second

DIDYOUKNOW?

We're Close to Canada!

We test for clients worldwide, but with our laboratory in the Buffalo, New York, area and virtually bordering Canada, our business and our day-to-day life is closely tied with our neighbors to the north:

- Close to 20% of tests completed at NGC in 2014 were for Canadian clients.
- 2 million Canadians fly out of Buffalo airports annually, 40% of all cross border flyers between the two countries.
- Buffalo and Canada share TV and radio stations.
- Residents of Buffalo and Canada share currency, and it is common to find Canadian coins in your pocket.
- 15-17% of those regularly attending NHL Buffalo Sabres and NFL Buffalo Bills games are Canadian fans. In turn, MLB Toronto Blue Jays are just around the corner for U.S. fans.
- Four bridges cross the border in the Buffalo-Niagara region. In 2014, more than 6.5 million vehicles and more than 11.8 million people entered the U.S. via these bridges.
- The U.S./Canadian border is the longest international border in the world, and peaceful since the War of 1812. Even the bridge between Buffalo and Fort Erie is named the Peace Bridge.
- The border at Buffalo-Niagara accounts for about 30% of all U.S. trade with Canada and ranks number 12 for all U.S. foreign trade.
- It is common for Buffalo residents to own a summer cottage on the shores of Lake Erie in Canada.
- Many Canadian residents commute daily to Buffalo.
- Located less than 2 hours from Toronto (Canada's largest city), and within 10 minutes of the border, plus due to a price advantage, Buffalo's shopping malls, restaurants and theaters attract a large number of Canadians.
- It is common to travel to Canada from Buffalo for a weekend getaway or just an evening. Many visit the 118-year-old Fort Erie race track, Niagara Falls, casinos, restaurants, theaters or other entertainment venues.
- 7.2 million people live in southern Ontario, within a 2-hour drive to Buffalo, and 1.2 million live just over the border, within a 30-minute drive. When combined with western New York's population, this region is among the top-five markets in North America.

Please stay in touch!

Send any e-mail changes or additions to info@ngctestingservices.com so you can continue to receive *NGC Testing Services Update.*