



BUILDING FOR SUCCESS

As always, I want to thank you for taking the time to read our newsletter, and for the helpful feedback you have provided over the years. We at the Lab are always looking for ways to serve you better, so please don't hesitate to let us know how we can assist in any of your test projects, or if there are any additional tests you would like to see us offer.

In fact as we get farther into 2017, our 52nd year of providing quality testing, we continue to grow and expand our testing abilities. For instance we recently added Fenestration testing as well as and NFPA 285 capabilities, the how and why of which are detailed in this issue.

We also do quantitative analysis of how effective building systems and products are at keeping unwanted noise away from end users' ears. This issue includes a technical piece on the various types of sound measurements we perform, and how those measurements correspond to real life acoustical qualities. It should give you something to think about while in your home or office listening to traffic noise or a loud neighbor.

In "Focus On," we feature the test capabilities we put in place to provide the Ceiling Panel and Ceiling System Industry with a one-stop test source. As always, we would like the opportunity to show you what we can do.

We have listed little known facts about the Buffalo-Niagara region, including some tidbits from the region's rich history. You may find them interesting when visiting our lab, and can also use them as trivia.

Finally, 2017 marks the fifth year of this newsletter's publication. That's hard to believe, as it seems like just yesterday that we drafted our first edition.

Bob Menchetti

Director of Laboratory Facilities & Testing Services

FOCUS ON: ONE-STOP FIRE AND ACOUSTICAL TESTING FOR THE CEILING PANEL AND CEILING SYSTEM INDUSTRY

NGC Testing Services can provide a full menu of comprehensive, accredited tests for the Ceiling Panel and Ceiling System Industry and other acoustical interior finishes. By design, we brought together a wide array of tests under one roof for these types of products. Some of these tests are unique and are only commercially available at NGC Testing Services. This makes our facility your one-stop testing resource - saving you time and money. As you may have seen in our special July issue, the NGC Testing Services acoustical laboratory is now a participant in UL's Third Party Test Data Program (TPTDP). If your company is interested in UL Listing and UL follow-up services for acoustical products, you can complete new or UL follow-up acoustical product testing at NGC Testing Services without a UL witness being present. Under other arrangements, NGC Testing Services also provides UL-sponsored fire tests.

The following is a selection of tests we provide that are typically used to evaluate products for the Ceiling Panel and Ceiling System Industry and acoustical finish manufacturers:

| | |
|-------------------------|--|
| ASTM E 1414 | Sound Attenuation between rooms sharing a common ceiling plenum (CAC) |
| ASTM E 1111 | Interzone Attenuation of Open Office Components (AC) |
| ASTM C 423 | Sound absorption by the reverberation room method (NRC) (ISO 354) |
| Fire Testing | |
| ASTM E 84 | Surface burning of building materials (NFPA 255, UL 723, UBC 8-1) |
| ASTM E 119 | Full-scale floor-ceiling fire tests of building construction and materials (UL 263, UBC 7-1, NFPA 251, CAN -S101) |
| ASTM E 119 | Pilot scale ceiling fire tests |
| Physical Testing | |
| Seismic Testing | While not under our roof, SEESL/MCEER (University at Buffalo), whose seismic testing laboratory is one of the largest in North America, is within 15 minutes of the NGC Testing Services facility. For more details, contact Mark C. Pitman at the University at Buffalo: mpitman@buffalo.edu . |

NFPA 285: THE TWO-STORY FIRE TEST

The growing use of exterior insulation systems in commercial buildings has raised demand for fire testing. The International Building Code requires that non-load-bearing curtain wall assemblies with rigid foam insulation or other combustible materials pass the National Fire Protection Agency (NFPA) 285 test, which measures the ability of these assemblies to resist fire spread.

NGC Testing Services recently added NFPA 285 to its wide range of fire-testing services.

The test simulates an interior fire that grows to flashover, then breaks through a window to impinge on the exterior facade. To perform this test, we build a 14 ft. x 18 ft. specimen assembly with a 30 in. x 78 in. window near its base. We place the assembly in front of a two-story structure that has a controlled, gas-fired burner located in its first story chamber. The assembly's window opens to that first floor chamber.

The burner in that first-story chamber is ignited for an initial period of five minutes. Then, a movable, gas-fired "window" burner is positioned on the external side of the specimen assembly, with the ignition source located near the top of the window opening. The test is terminated at 30 minutes.

The specimen assembly's performance is determined by recorded temperature data as well as by visual observation. The results show whether an assembly exposed to this type of flashover will spread vertically to the second story and laterally to adjacent compartments.

Let us know if you would like more information or to schedule this test.



HOW WE TEST FOR SOUND

Unwanted noise is annoying, which is why building designers and product manufacturers put great effort into minimizing it. Acoustical tests measure how successful those efforts have been by quantifying how effectively a building system, or a product, blocks or absorbs various types of sound. The test results certify conformance to specific ASTM standards.

A simple illustration below shows some of the acoustical tests we offer, relevant to real life building evaluations, as well as the ASTM standards that they're based on. They are as follows:

Impact Noise Transmission Tests

E492 (IIC) and E2179 (Delta IIC) are impact or "footfall" noise tests performed in a two-story test chamber. A fancy tapping machine (Mr. Noisy) makes calibrated taps on the floor above, while instruments measure the sound heard in the space below.

Airborne Transmission Tests

E90 (STC) determines a floor/ceiling assembly's STC rating - a measure of its effectiveness at blocking airborne noise, which includes normal human speech as well as noise from television or stereo speakers. In this test, we generate those sounds by replacing Mr. Noisy with a speaker.

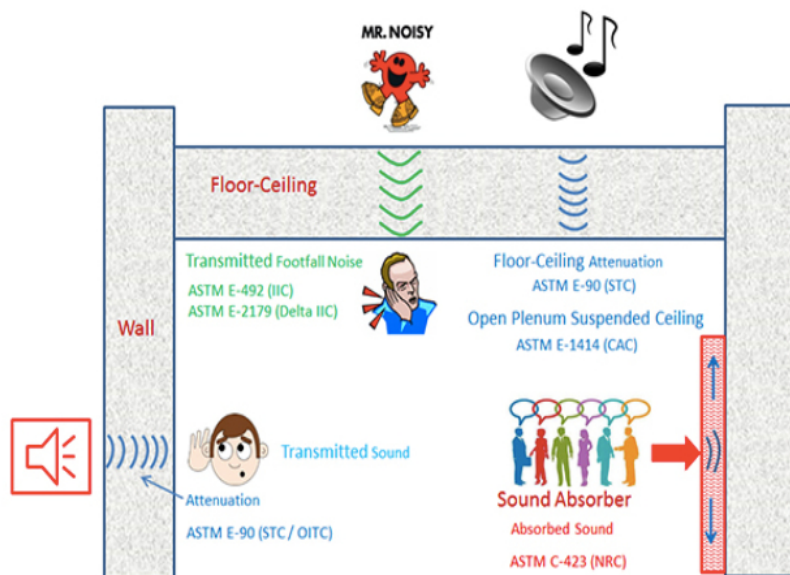
E90 (OITC) is an additional rating that measures the effectiveness of exterior wall assemblies, windows or doors at blocking noise generated by vehicle traffic.

E1414 (CAC) measures airborne sound transmission between adjacent spaces connected by an open plenum suspended ceiling. It's used to gauge the sound-blocking qualities of ceiling tiles or grid systems. NGC Testing Services is unique in that we offer both E1414 (CAC) and E1111 (AC) tests for ceiling manufacturers. We are the only commercially available lab to offer these tests.

Sound Absorption Tests

C423 (NRC) tests the ability of a material to absorb sound. Sound absorbing materials can help prevent echoes in large spaces, and include acoustic ceiling tiles used in offices as well as absorptive wall panels for auditoriums.

These are just a few of the wide range of acoustical tests we can conduct here at NGC Testing Services. Our nine test chambers make us one of the largest building acoustics laboratories in North America. Let us help you develop the acoustical test data you need.



LITTLE KNOWN FACTS ABOUT THE BUFFALO / NIAGARA REGION



1. Niagara River isn't actually a river. It's a Strait connecting Lake Erie and Lake Ontario.
2. In 1913 the Curtiss Aeroplane and Motor Company (which later merged with Wright Aeronautical to become Curtiss-Wright) built a 120,000 square foot plant in just 60 days. Then in 1917 it built a plant 72 acres in size built in only 90 days - the world's largest at the time, an incredible feat in response to critical aviation needs in the WWI war effort.
3. The Pan American Expedition was held here in 1901. It's where President William McKinley was assassinated
4. Niagara Falls drops 75,750 Gallons, or 3,160 tons of water every second.
5. Approximately 90% of the fish that go over the Falls survive.
6. The steam-powered grain elevator was invented here in 1841.
7. Buffalo (along with every other town on the US side of the Niagara Strait) was totally burned by the British during the war of 1812.
8. The Buffalo Zoo is the third oldest in the nation.
9. The American Express Company was started here in 1850 by John Wells and William Fargo as an express mail operation. Two years later, the pair went on to found Wells Fargo & Company to provide banking services to California, which was in the midst of the Gold Rush.
10. Jack London's "The Road" includes his experiences in Buffalo's canal district.
11. More immigrants passed through Buffalo's canal district during the mid 1800's than through Ellis Island.
12. Larkin Soap company, a turn of the century Buffalo company, developed the first mail order business model, preceding Sears Roebuck, Montgomery Ward and Amazon.
13. Mark Twain lived in Buffalo from 1869 to 1871, where he served as editor of a local newspaper and was married. His original Huckleberry Finn manuscript is in the main Buffalo library.
14. Robert de La Salle, the Frenchman who explored the Great Lakes region and the Mississippi River in the late 1600's, began his

expedition - and built his famous barque Le Griffon - in what is now the city of Niagara Falls.

15. F. Scott Fitzgerald lived in Buffalo for about 10 years during his childhood and teen years, primarily on Irving Terrace in the Allentown section of the city.
16. Four of the five Great Lakes drain past Buffalo into the Niagara Strait before going over Niagara Falls and emptying into Lake Ontario.
17. The five Great Lakes make up one-fifth of the world's fresh water supply and are the largest surface freshwater systems on the Earth.
18. In 1821 the first commercial gas well was drilled in Fredonia, about an hour south of Buffalo.
19. The first theater designed from scratch solely to show motion pictures, in the basement of the Ellicott Square Building, opened to the general public on October 19, 1896. At the time, the Ellicott Square Building was the world's largest office building.
20. In 1896, electrical power was transmitted from Niagara Falls to Buffalo by Nikola Tesla. This was the first time in the world that alternating current was transmitted over a long distance. In 1901, the Pan-American Exhibition was lighted with this power.
21. 12,000 years ago Niagara Falls was seven miles downriver from its current location. The brink had been eroding at a pace that sometimes reached six feet per year. Erosion is now just one foot per year but still moving towards Buffalo, thanks to hard underlying rock and diversion of 60 to 75% of the flow for hydropower generation.

TAKE A CLOSER LOOK!

Check out our new [brochure](#) and watch our [video](#) for the latest updates about NGC Testing Services' capabilities. We're ready to put your products to the test, and this is a great way to see all that we can do for you. Take a look and give us a call — let us know how we can help.



**DOWNLOAD
OUR BROCHURE**



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OUR VIDEO**



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