



TIME FLIES

As we approach the holiday season and the end of the year, I think about how time flies — and appears to be flying faster and faster. 2016 was a great year for NGC Testing Services. We added more testing capabilities, including wind load, air and water infiltration testing for evaluating fenestration, and other exterior barrier products and systems. We added a major fire test capability in NFPA 285, which we will discuss in this newsletter.

The main reason we are expanding our testing services in a new testing arena is to serve you better, and become more of a one-stop testing facility. We completed improvements to our acoustical laboratory complex and renovations to the facility in conference areas to better accommodate you. And we are not slowing down.

2017 looks like it will shape up to be another exciting year for NGC Testing Services. In addition to having new testing areas to offer, we will continue improving our facility. In this issue, along with an article about NFPA 285 testing, we have a technical piece highlighting how to calculate NRC ratings, as well as a gastronomical focus on Buffalo's famous Beef on Weck sandwich. Is your mouth watering yet? Many of you have mentioned that you enjoy our local food offerings while visiting.

A side note: We appreciate you reading this newsletter, including past editions. We try to provide insightful technical information along with some light, fun stories. I hope you pay close attention while reading; who knows, there may be a quiz.

I want to take a moment during this busy time to thank you again for being our client, or considering using our services. Have a great upcoming holiday season, and a productive beginning to 2017.

Bob Menchetti
Director of Laboratory Facilities & Testing Services



NGC Testing Services Is Featured On The Cover and In the November Issue of Sound & Vibration. [Read the article](#) co-authored by our own Andy Heuer, Senior Acoustical Test Engineer, on Optimizing Ceiling Systems and Lightweight Plenum Barriers.

BUFFALO'S FAMOUS SAVORY SANDWICH: BEEF ON WECK

Beef on Weck, another popular food for clients visiting NGC Testing Services, has conflicting stories of its origin. One story has Beef on Weck dating back to the 1800s, to a tavern on Buffalo's waterfront. Here, a German tavern owner concocted the sandwich to feed famished sailors pouring off their ships into harbor. This tasty sandwich combines thinly sliced beef on a kimmelweck roll, which is generously sprinkled with large, course salt and caraway seeds. According to legend, the tavern owner fondly recalled this roll from his homeland of Germany, duplicating it locally to create this sandwich.



Another story has Beef on Weck originating at a tavern across the street from the 1901 Pan American Exhibition, satisfying hungry tourists. Both stories have the sandwich first created in a tavern, which makes sense. The tavern owners relied on the extra salt, topping the weck,

to encourage their patrons to drink more beer.

The delicious Beef on Weck is typically served with horseradish sauce and a dill pickle spear. It has remained an almost exclusive Buffalo delicacy. The reason: our special kimmelweck rolls, baked at local German bakeries, do not ship well. When you visit our testing facility, along with an order of Buffalo chicken wings, you will definitely want to try our fabulous and famous Beef on Weck sandwich.

NEW FIRE TEST: NFPA 285

NGC Testing Services is expanding its operations to include NFPA 285. This test method simulates the performance of exterior non-load-bearing wall panel assemblies used as components of curtain walls that contain combustible materials.

A specimen assembly, approximately 14 ft. x 18 ft., is constructed and placed in front of a two-story structure. The two-story structure contains a controlled, gas-fired burner located within its first floor chamber. The specimen assembly contains a 30 in. x 78 in. window opening exposed to the first floor chamber. The first floor room burner is ignited for an initial period of five minutes. At this point, a movable, gas-fired "window" burner is positioned on the external side, with the ignition source located at the top of the window opening. The resulting inside and outside fire exposure is designed to simulate flashover from fires with internal origins. This shows its effect on assemblies containing combustible materials used in curtain wall construction.



The test is terminated at 30 minutes. Recorded temperature data and visual observations of flame propagation determine the performance of the specimen assembly. NGC Testing Services is pleased to now add NFPA 285 to its wide range of fire-testing services. Let us know if you would like more information or to schedule this test.

LEARN MORE

EXAMINING HOW MATERIAL ABSORBS SOUND: NOISE REDUCTION COEFFICIENT

When sound interacts with any material, it can be either:

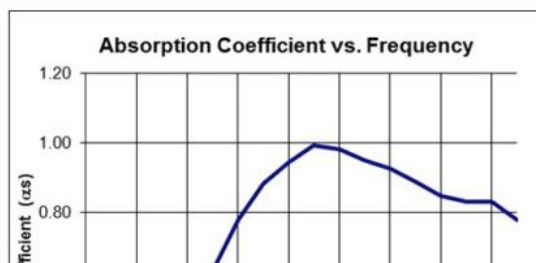
1. Reflected;
2. Transmitted; or
3. Absorbed.

The measure of how well a material absorbs sound is called "Noise Reduction Coefficient" or NRC. ASTM (American Society for Testing and Materials) defines NRC as a single-number rating, the average, rounded to the nearest 0.05, of the sound absorption coefficients of a material for the four 1/3-octave test frequency bands at 250, 500, 100 and 2000 Hz. The absorption coefficients are measured according to ASTM Test Method C423. This entails measuring the time required for the sound field to decay 60 dB (decibels) in a Reverberation Room. Using the Sabine Equation, the absorption of the Room — both with and without a 72-square-foot test sample — can be calculated. The difference in the absorptions between the Sample Phase and Empty Room Phase is the absorption of the sample per square foot. This is called the Absorption Coefficient.

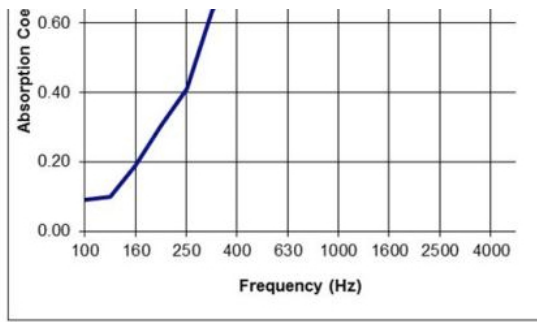
The Sabine Equation proves there is a relationship between the quality of acoustics, the size of the chamber, and the amount of absorption surface present. Reverberation time is the most important characteristic to gauge the acoustical quality of a room.

The unit of measured absorption is the Sabin, named in honor of Wallace Sabine (1868-1919). He developed the Sabine Equation, and is considered "the father of architectural acoustics." An American physicist, Sabine graduated from Ohio State University at age 18, completing his graduate studies at Harvard University and then continuing his tenure there as a faculty member.

Frequency [Hz]	Absorption Coefficients α_s
100	0.09
125	0.1
160	0.19
200	0.3
250	0.41
315	0.63



400	0.78
500	0.88
630	0.95
800	0.99
1000	0.98
1250	0.95
1600	0.93
2000	0.89
2500	0.85
3150	0.83
4000	0.83
5000	0.78



$$NRC = (\alpha_{.250} + \alpha_{.500} + \alpha_{.1000} + \alpha_{.2000}) / 4$$

$$NRC = (0.41 + 0.88 + 0.98 + 0.89) / 4 \text{ Rounded to Nearest 0.05}$$

$$NRC = 0.80$$

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.




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