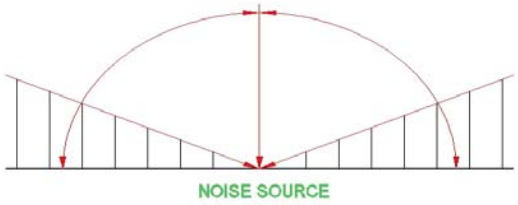
T 12 TECHNICAL BULLETIN

Comparing Tectum™ to Acoustical Steel Deck
(Types N.B. and S. with Perforated Ribs)

Rev. January 2014

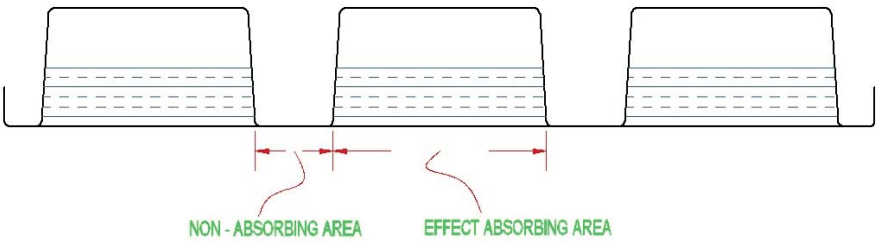
TECTUM Inc. • P.O. Box 3002 • Newark, OH 43058 • www.tectum.com • 1-888-977-9691

Tectum Roof Deck has an exceptional record for performance as an acoustical sound absorber. Tectum Roof Decks have been used for over fifty (50) years in gymnasiums, coliseums, civic centers, auditoriums, and multi-purpose arenas. Tests by independent testing agencies have verified Tectum's performance as an excellent absorbing material. Owners and people using the building constructed with Tectum testify to their satisfaction with Tectum in reducing noise. Tectum's flat surface, with its complex texture of inter-connected openings absorbs sound energy effectively and efficiently. For a flat absorptive surface, such as Tectum, all of the area is absorptive; whatever the angle of impingement; but it is particularly effective at normal or near normal impingement, as true of high ceilings or roof decks in the above buildings. Sound energy striking against (or impinging) the Tectum is absorbed. The following drawing illustrates that in a truly random field, all impinging energy lies within an 1800 semi-circle.



The most common acoustical steel decks the perforations are punched openings in the ribs. In a typical ribbed metal deck, even in a random field, only about one-half of the surface presented to the sound is absorptive. In a high building, the field is not random, but more or less "normal" or at right angles to the flat surface. The impinging sound energy tends to balloon and glance off the ribbed style acoustical deck. Thus, only one-half or less of the roof deck area is absorptive. Giving the perforated area an NRC of 0.75, the effective NRC of the roof is only 0.38 - just about what field tests show.

The type H and NF flat plate acoustical steel deck is as effective as Tectum. However, the price is considerably higher and as a result not used as often.



The attached letter of Coffeen, Anderson & Associates, Inc. dated 2/8/77 and St. Louis Public Schools dated 11/19/91 reports their findings on field tests conducted on the Olathe High School in Olathe, Kansas and Laclede School and Hemsted School gyms in St. Louis, Missouri, which substantiates the above information.

TECTUM INC.
The Noise Control Solution

Coffeen, Anderson & Associates, Inc. CONSULTANTS IN ACOUSTICS

5400 WEST 61ST PLACE MISSION, KANSAS 66205 (913) 236-6800

February 8, 1977

Mr. Bob Rudd
1915 Prior Avenue North
St. Paul, Minnesota 55113

RE: Acoustical Metal Deck

Dear Bob:

Per our telephone conversation and per your request, I am sending you data we have obtained from field tests on acoustical metal deck with the openings on the sides of the flutes:

Olathe High School, Olathe, Kansas

Coefficient of absorption	Frequency
0.36	250 Hz
0.25	500 Hz
0.25	1000 Hz

On other tests made in gymnasiums and similar large spaces, this deck has generally provided coefficients of absorption up to 0.30 at the mid-frequencies of 500 and 1000 hertz based on our calculations and assumption of coefficients for other surfaces in the rooms tested like block walls, concrete floors, wood floors, bleachers, etc. We have therefore used 0.30 as as an acceptable coefficient of absorption for an average of 500 and 1000 hertz.

Very truly yours,

COFFEEN, ANDERSON & ASSOCIATES, INC.

Wendell

Wendell D. Anderson

WDA:ct