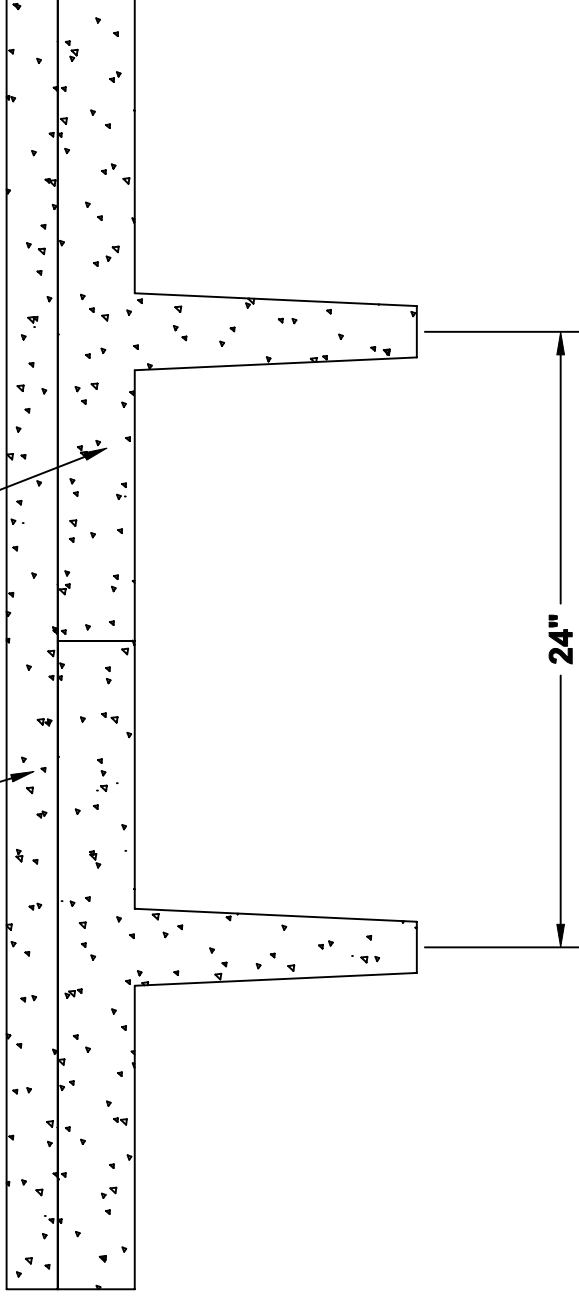


STC 54
IIC 24

PRECAST CONCRETE 14" TEE

2" TOPPING SLAB



**AVERAGE
CONCRETE WT
75 PSF**

TITLE

TEST A2-a

DRAWING NO.

A2-a

REVISED BY

JAE

LAST DATE
REVISED

12-21-04

KINETICS
Noise Control

FLANKING TEST

REPORT

FOR: Prestressed Concrete Institute
 ON: Floor Assembly: "T" Sections,
 14 Inches Deep With 2 Inches of
 Concrete Topping.

Sound Transmission Loss
 Test TL 71-90

Page 1 of 3

CONDUCTED: 4 January 1971

INTRODUCTION

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the American Society for Testing and Materials Designations E 90-70 and E 413-70T, as well as other pertinent standards.

DESCRIPTION OF THE SPECIMEN

The test specimen was "T" sections 48 inches wide (cut to 24 inches wide for ease of handling), 238 inches long, placed edge to edge to form a floor 168 inches by 240 inches. The "T" sections contained joists spaced 24 inches o.c.. A 2 inch topping of 3000 pound density concrete was poured over the entire assembly and after setting it was finished to a semi-smooth surface. The entire specimen weighed an average of 75 pounds per sq ft. The transmission area, S, used in the computations was 280.0 sq ft. The concrete topping cured for approximately 14 days before testing and the "T" sections cured for approximately 28 days before testing.

RESULTS OF MEASUREMENTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. An explanation of the sound transmission class rating, a graphic presentation of the data, and additional information appear on the following pages.

FREQUENCY, Hertz (cps)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TRANSMISSION LOSS, dB	39	39	40	42	45	49	47	50	52	51	52	55	58	60	62	65	68	70
DEFICIENCIES			1	2	2	1	0	4	3	5	5	3						

SOUND TRANSMISSION CLASS 54

Approved William S. Starnes
 William S. Starnes
 Manager

Submitted by D. A. Zedonis
 D. A. Zedonis
 Assistant Research Engineer

REPORT

Page 2 of 3

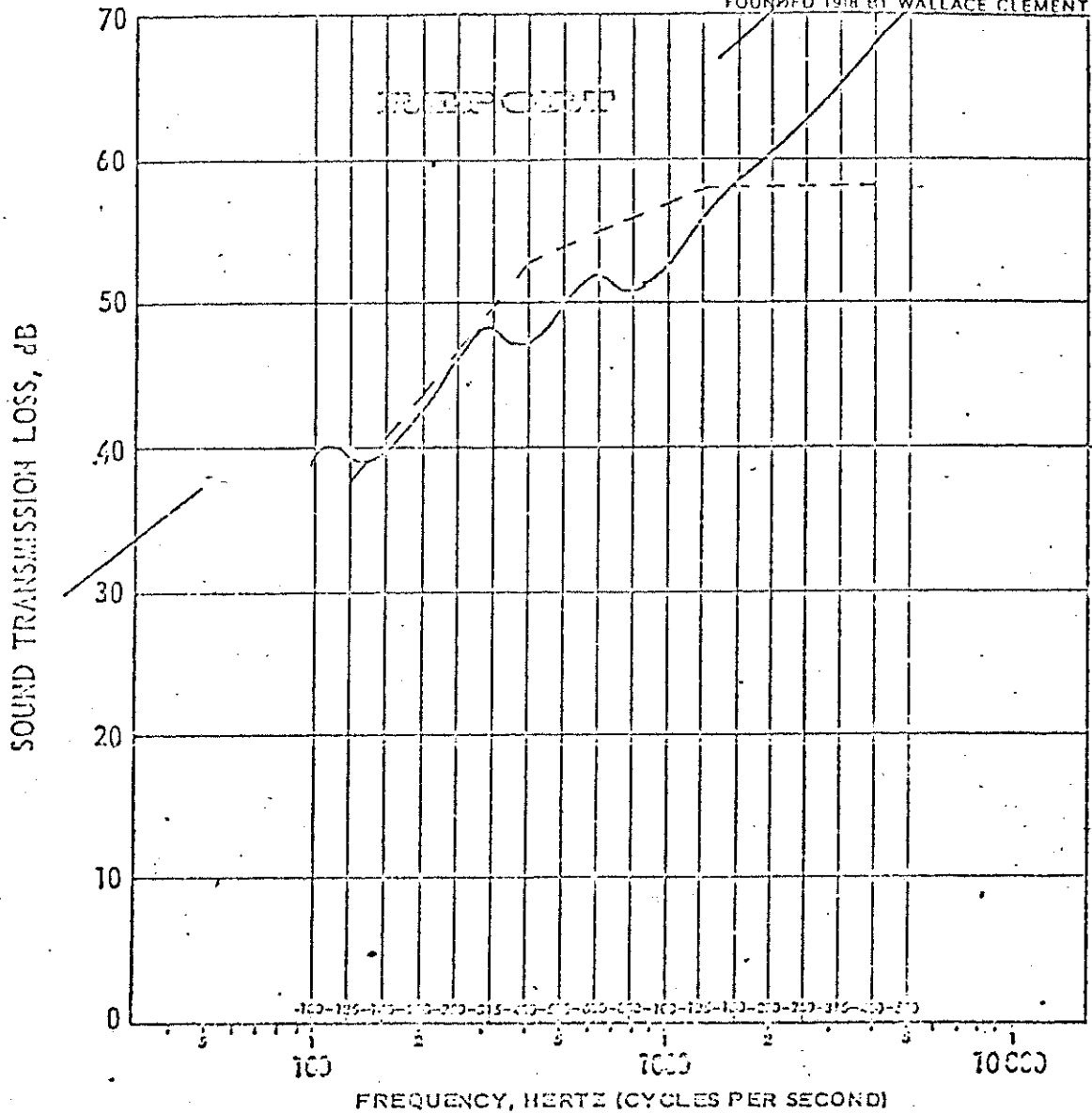
The airborne sound transmission loss (TL) of a specimen is the ratio, expressed in decibels, (dB) of the sound power incident upon the specimen to the sound power transmitted through and radiated by the specimen when the sound fields on both sides are diffuse.

These measurements were made using a one-third octave band of pink noise, swept in fifteen minutes from 100 to 5000 Hertz (cycles per second). Two such runs were made, with a system interchange between. During each run the ratio of sound pressure levels in the two rooms is automatically and directly recorded graphically. The final results are obtained with a resultant precision better than a 90% confidence limits of ± 1 decibel.

The Sound Transmission Class (STC) is computed in accordance with ASTM E90-70 and E413-70T. This number is intended to be used as a preliminary estimate of the acoustical properties of the specimen. Ultimate decisions should always be based upon the entire TL curve or values at all test frequencies.

Whenever a filler wall is used in mounting a specimen, the sound power transmitted through that wall is calculated and, incorporated into the measured results before reporting.

FOUNDED 1918 BY WALLACE CLEMENT SABINE



PAGE 3 OF 3 , TL 71-90 THIS PAGE ALONE IS NOT A COMPLETE REPORT

THE SOUND TRANSMISSION LOSS OF THE TESTED SPECIMEN IS SHOWN BY THE CURVED LINE IN THE ABOVE GRAPH. THE BROKEN LINE IS THE LIMITING SOUND TRANSMISSION CLASS CONTOUR. THE GRAPH WAS PREPARED ON CODEX PAPER NO. 31, 462.

THE THEORETICAL TRANSMISSION LOSS OF THAT LIMP MASS HAVING THE SAME WEIGHT PER SQUARE FOOT AS THE SPECIMEN CAN BE LOCATED BY DRAWING A STRAIGHT LINE BETWEEN THE TWO SLASH MARKS ON THE EDGES OF THE GRID. THIS WAS DERIVED FROM THE EQUATION: $TL = 20 \log W + 20 \log F - 33$, WHERE W IS WEIGHT IN POUNDS PER SQUARE FOOT, AND F IS FREQUENCY IN HERTZ (CYCLES PER SECOND).

REPORT

FOR: Prestressed Concrete Institute

Impact Sound Transmission
Test IN 71-5ON: Floor Assembly: "T" Sections, 14
Inches Deep With 2 Inches of Con-
crete Topping. Impact on Concrete.Page 1 of 2

CONDUCTED: 4 January 1971

INTRODUCTION

This floor-ceiling assembly was tested for impact sound transmission in accordance with ISO Recommendation: R140-1960(E). A description of the test procedure is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was "T" sections, 48 inches wide (cut to 24 inches wide for ease of handling), 238 inches long, placed edge to edge to form a floor 168 inches by 240 inches. The "T" sections contained joists spaced 24 inches o.c.. A 2 inch topping of 3000 pound density concrete was poured over the entire assembly and after setting it was finished to a semi-smooth surface. The concrete weighed an average of 75 pounds per sq ft. The impact was measured directly on the concrete. The concrete topping cured for approximately 14 days before testing and the "T" sections cured for approximately 28 days before testing.

RESULTS OF MEASUREMENTS

Sound pressure levels at 1/3 octave intervals, normalized to 10 square meters, are given below in tabular and graphic form. The impact noise rating, INR, is computed in accordance with the technique given in FHA No. 750. The IIC is computed per HUD FT/TS-24.

FREQUENCY, Hertz (cps)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
IMPACT SOUND TRANSMISSION Ln, dB	69	65	66	67	64	65	71	70	73	76	77	76	75	77	77	76	74	72
IMPACT NOISE RATING	-27																	
IMPACT INSULATION CLASS	24																	

Approved William Siekman
William Siekman
Manager

Submitted by D. A. Zedonis
D. A. Zedonis
Assistant Research Engineer

4