RIVERBANK ACOUSTICAL LABORATORIES
OF
1512 BATAVIA AVENUE
GENEVA, ILLINOIS 60134
IIT RESEARCH INSTITUTE
708/232-0104
FOUNDED 1916 BY
WALLACE CLEMENT SABINE

REPORT

FOR: The Noble Company

Sound Transmission Loss
Test RAL™-TL94-117

ON: NobleSeal Sound Isolation System On A
Flexicore® Precast Concrete Slab Floor
With Suspended 5/8" Gypsum Ceiling

CONDUCTED: 2 May 1994

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-90 and E413-87, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately. The microphone used was a Bruel & Kjaer serial number 1330658.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated as a NobleSeal Sound Isolation System on a Flexicore® precast concrete slab floor with suspended 5/8" gypsum ceiling. The overall dimensions of the specimen were nominally 4.27 m (168 in.) wide by 6.10 m (240 in.) long and 465 mm (18.31 in.) thick. The specimen was constructed directly in the laboratory's 4.27 m (14 ft) by 6.10 m (20 ft) test opening and was sealed on the periphery (both sides) with a dense mastic. The description of the specimen was as follows: From the top down, the floor consisted of Summitville 6" x 6" Old Town quarry tile grouted with Summitville Polychrome sanded joint filler. The NobleSeal Sound Isolation System consisted of dry latex mortar thin set on a layer of NobleSeal Sound Isolation Sheet (SIS) which was adhered to a layer of 15 lb. asphalt saturated felt with dry latex mortar. The felt paper was laid directly on the concrete slab sub-floor. The sub-floor consisted of ten nominally 610 mm (24 in.) wide by 4.24 m (167 in.) long by 203 mm (8 in) thick Flexicore® Model #824A-D-22 precast concrete slabs. The gaps between the slabs were filled with sand and sealed with caulk. Split drive pins were inserted into the bottom of the slabs on 1.22 m (48 in.) centers and used to tie 12 gauge hanger wire for the suspended

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DESCRIPTION OF THE SPECIMEN (con't)

ceiling. The hanger wires were tied to allow for a nominal 229 mm (9 in.) plenum depth from the bottom of the slabs to the top of the ceiling. Cold rolled steel carrying channels were tied to the hanger wires and twelve 24 gauge MSG galvanized steel DWC channels (hat channels) were saddle tied perpendicular to the cold rolled channels with double strands of 18 gauge tie wire. A layer of 16 mm (0.625 in.) thick Type X wallboard was attached to the DWC channels with 25 mm (1 in.) long Type S bugle head wallboard screws spaced on 305 mm (12 in.) centers. The joints between the wallboard sheets were taped and covered with joint compound. The plenum between the sub-floor and the ceiling contained a single layer of 89 mm (3.5 in.) thick, R-11 unfaced fiberglass insulation. A visual inspection verified the description of the specimen. The weight of the entire specimen as determined was 8,195 kg (18,066 lbs) an average of 315 kg/m^2 (64.5 lbs/ft^2). The transmission area used in the calculations was 26 m^2 (280 ft^2). The source and receiving room temperatures at the time of the test were 20°C (68±2°F) and 59±2% relative humidity.

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TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data are within the limits set by the ASTM Standard E90-90.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	32	0.25	0	800	65	0.24	0
125	40	0.14	3	1000	70	0.22	0
160	44	0.21	2	1250	73	0.22	0
200	43	0.17	6	1600	76	0.21	0
250	47	0.13	5	2000	78	0.17	0
315	49	0.22	6	2500	80	0.13	0
400	54	0.28	4	3150	85	0.12	0
500	57	0.25	2	4000	87	0.13	0
630	62	0.27	0	5000	87	0.11	0

STC = 59

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR
STC = SOUND TRANSMISSION CLASS

Submitted by _____ Reviewed by _____
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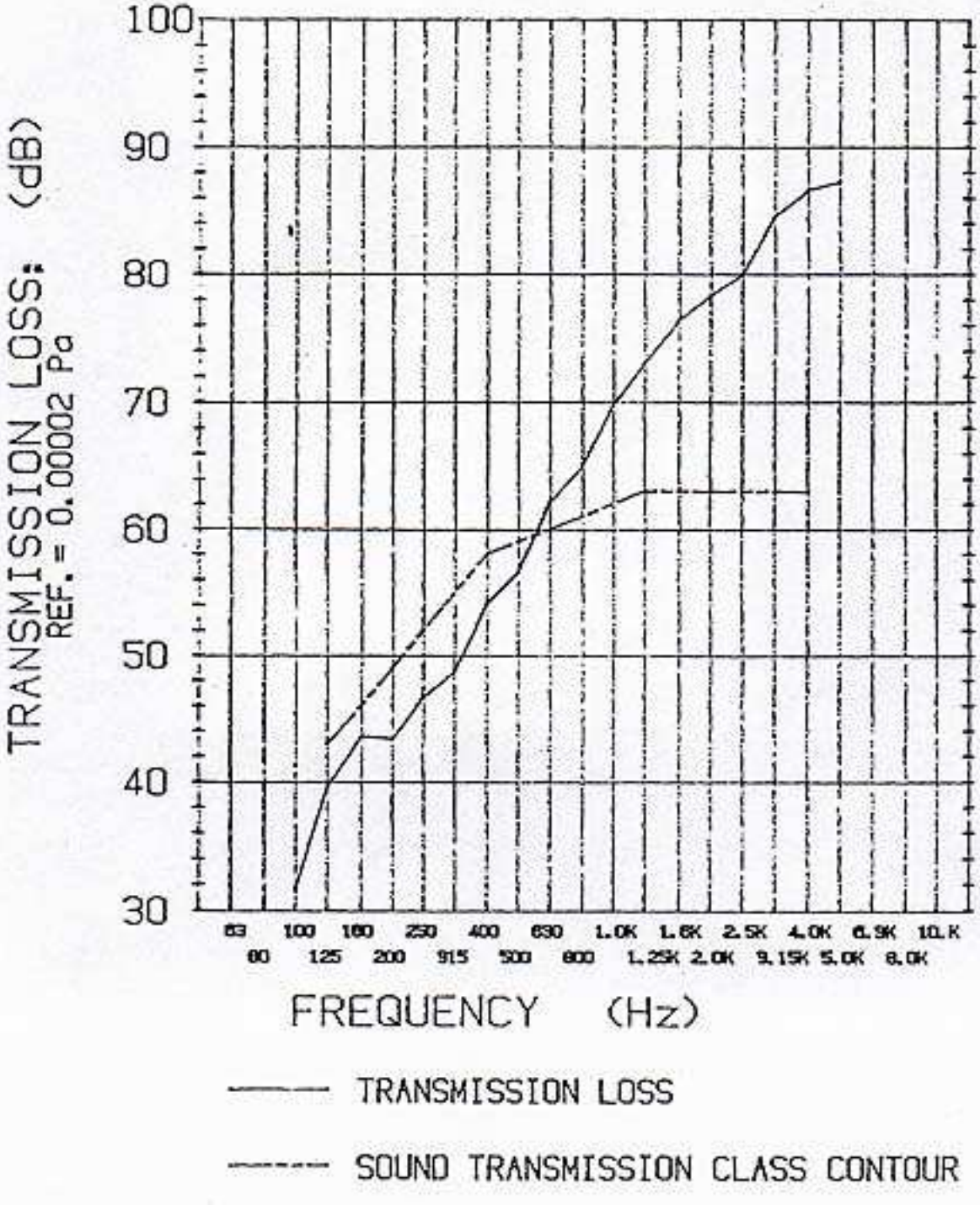

STC = 59