Sound Reduction

SEALEZE® Brush for Sound Reduction

Purpose

To identify the sound reduction qualities of **SEALEZE®** nylon strip brush of various filament types (level and crimped) and filament lengths and diameters in a controlled laboratory environment.

The testing laboratory is accredited by the US Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Accreditation Program (NVLAP) for this procedure.

Test Results (summary)

SEALEZE® Brush	Filament Type	Size of Opening Closed	Sound Reduction (dB)*			STC without Brush	STC with Brush
			100Hz	2500Hz	5000Hz		
SFC106BL	Nylon, level	48” x 0.61”	18	12	12	-3	11
SFD112BL	Nylon, level	48” x 1.19”	16	8	9	-3	8
SFD112BC	Nylon, crimped	48” x 1.19”	10	4	5	-3	2
SFD120BL	Nylon, level	48” x 2.00”	10	4	6	-3	3
SFG125BL	Nylon, level	48” x 2.56”	12	8	8	-3	6
SFG112BLFS	Nylon, level with XtraSeal	48” x 2.56”	14	12	13	-3	9

* Sound reduction compared to same opening without brush sound seal at lowest, middle and highest frequency tested.

Test Method

The independent laboratory conducted sound testing on six (6) different **SEALEZE®** strip brushes with appropriate metal holders. Procedures and facilities were in conformity with the ASTM Designations E90-02 and E413-87. Copies of the each test are available upon request.

Each brush and holder was tested in the laboratory’s test fixture consisting of a 4 ft. (1.2 m by 8 ft (2.44 m) test opening. This opening was sealed with substantial filler wall leaving a 48” wide test opening with a specific height for each brush tested. Both the filler wall and test specimen (brush) were sealed on the periphery (both sides) with dense mastic. The sound transmission loss (from one side of the opening to the other) was tabulated at the eighteen standard frequencies. The precision of the Transmission Loss test data is within the limits set by the ASTM Standard E90-02.

The Sound Reduction for each installed brush, as compared to the same opening without brush installed, is shown for the lowest frequency (100Hz), middle frequency (2500 Hz) and highest frequency (5000 Hz) tested as well as the calculated Standard Transmission Class (STC) rating for the test opening with and without brush installed. A copy of the complete report for each brush is available upon request. ***Continued on page 2***

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Brushes Tested

SEALEZE® Brush	Filament Description	Dimensions (wide x high x thick)
SFC106BL	Nylon level, 0.006” dia., 0.62” exposed	36” x 1.000” x 0.312”
SFD112BL	Nylon level, 0.008” dia., 1.18” exposed	36” x 1.625” x 0.375”
SFD112BC	Nylon crimped, 0.008” dia., 1.18” exposed	36” x 1.625” x 0.375”
SFD120BL	Nylon level, 0.012” dia., 1.99” exposed	36” x 2.375” x 0.375”
SFG125BL	Nylon level, 0.012” dia., 2.57” exposed	36” x 3.000” x 0.500”
SFG125BLFS	Nylon level, 0.012” dia., 2.57” exposed (with XtraSeal)	36” x 3.000” x 0.500”

Summary of Results

All **SEALEZE®** brush seals provided a significant increase in the Sound Transmission Class (STC) as compared to the same door without the brush seal (from an STC of -3 to 11). The diameter of the filament as well as the size of the brush had an affect on the amount of sound reduction achieved. The smaller the filament diameter (the more densely the brush is constructed), the greater the sound reduction qualities of the brush. Likewise, level filament (straight) provides for a more densely constructed brush as compared to crimped filament. Thus, brushes constructed of straight filament provides more sound reduction than a brush the same size constructed of crimped filament.

The **SEALEZE®** XtraSeal brush with the solid membrane incorporated within the brush, provided an increase in STC from 6 to 9 as compared to the same brush without the XtraSeal.

Test Reports

These tests were conducted by an independent laboratory. For a copy of the sound reduction test reports for these brushes, call 1-800-787-7325 or e-mail sealezeorders@sealeze.com.