

# REGUPOL AMERICA

# ACOUSTICAL

# PERFORMANCE

# TEST REPORT

## SCOPE OF WORK

ASTM E90 AND ASTM E492 TESTING ON  
3 MM LUXURY VINYL PLANK OVER 2 MM SONUS™ LV 200 UNDERLAYMENT

## SPECIMEN TYPE

203 mm Concrete Slab with Drop Ceiling

## REPORT NUMBER

J3418.05-113-11-R0

## TEST DATE

02/06/19

## ISSUE DATE

02/11/19

## RECORD RETENTION END

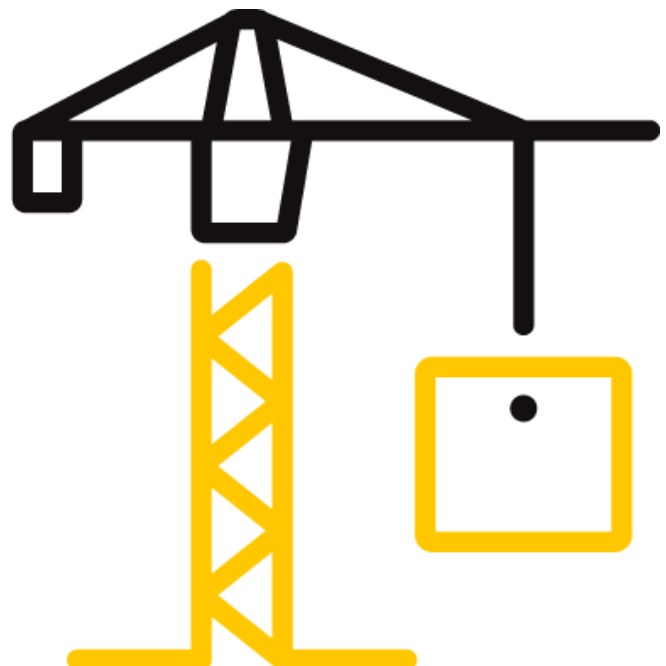
02/06/23

## PAGES

12

## DOCUMENT CONTROL

ATI 00629 (03/21/18)  
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## TEST REPORT FOR REGUPOL AMERICA

Report No.: J3418.05-113-11-R0

Date: 02/11/19

### REPORT ISSUED TO

#### REGUPOL AMERICA

11 Ritter Way

Lebanon, Pennsylvania 17042

### SECTION 1

#### SCOPE

Intertek Building & Construction (B&C) was contracted by Regupol America to perform testing in accordance with ASTM E90 AND ASTM E492 on 3 mm Luxury Vinyl Plank over 2 mm Sonus™ LV 200 Underlayment. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted in the VT test chambers at Intertek B&C located in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

### SECTION 2

#### SUMMARY OF TEST RESULTS

|                      |  |
|----------------------|--|
| <b>DATA FILE NO.</b> | J3418.05   |
| <b>SERIES/MODEL:</b> | 3 mm Luxury Vinyl Plank over 2 mm Sonus™ LV 200 Underlayment |
| <b>STC</b>           | 61   |
| <b>IIC</b>           | 62   |

**COMPLETED BY:** Jason P. Taylor  
Technician II - Acoustical  
**TITLE:** Testing  
**SIGNATURE:**  
**DATE:** 02/11/19

**COMPLETED BY:** Jordan Strybos  
Engineer, Team Lead -  
**TITLE:** Acoustical Testing  
**SIGNATURE:**  
**DATE:** 02/11/19

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**SECTION 3****TEST METHODS**

The specimen was evaluated in accordance with the following:

**ASTM E90-09 (2016)**, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*

**ASTM E413-16**, *Classification for Rating Sound Insulation*

**ASTM E492-09(2016)e1**, *Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine*

**ASTM E989-18**, *Classification for Determination of Impact Insulation Class (IIC)*

**ASTM E2235-04 (2012)**, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

**SECTION 4****MATERIAL SOURCE/INSTALLATION**

The full test specimen was assembled on the day of testing by B&C. All materials provided by the client were installed on an existing B&C assembly (203 mm Concrete Slab with Drop Ceiling) utilizing B&C-supplied materials. The assembly was installed in a steel test frame which was installed into the opening between the source and receive rooms in the test chamber. The test frame was isolated from the structure with dense neoprene gasket.

The total weight of the floor/ceiling assembly was 5971.6 kg. B&C will store samples of the test specimen for four years. Photographs of the test specimen are included in the report. The client did not supply drawings of the test specimen.

B&C will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by B&C for the entire test record retention period.

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**SECTION 5  
EQUIPMENT**

| INSTRUMENT                           | MANUFACTURER         | MODEL    | DESCRIPTION                          | ASSET #  | CAL DATE |
|--------------------------------------|----------------------|----------|--------------------------------------|----------|----------|
| Data Acquisition Unit                | National Instruments | PXI-4462 | Data Acquisition Card                | INT00977 | 08/18 *  |
| Data Acquisition Unit                | National Instruments | PXI-4462 | Data Acquisition Card                | 65124    | 05/18 *  |
| Data Acquisition Unit                | National Instruments | PXI-4462 | Data Acquisition Card                | 63763-1  | 06/18 *  |
| Microphone Calibrator                | Norsonic             | Nor1251  | Acoustical Calibrator                | 65105    | 06/18    |
| Receive Room Microphone              | PCB Piezotronics     | 378C20   | Microphone and Preamplifier          | 65617    | 06/18    |
| Receive Room Microphone              | PCB Piezotronics     | 378B20   | Microphone and Preamplifier          | 64340    | 09/18    |
| Receive Room Microphone              | PCB Piezotronics     | 378B20   | Microphone and Preamplifier          | 63745    | 06/18    |
| Receive Room Microphone              | PCB Piezotronics     | 378B20   | Microphone and Preamplifier          | 63746    | 09/18    |
| Receive Room Microphone              | PCB Piezotronics     | 378B20   | Microphone and Preamplifier          | 63747    | 07/18    |
| Receive Room Environmental Indicator | Comet                | T7510    | Temperature and Humidity Transmitter | 63810    | 10/18    |
|                                      |                      |          |                                      | 63811    | 10/18    |
| Source Room Microphone               | PCB Piezotronics     | 378C20   | Microphone and Preamplifier          | 63744    | 04/18    |
| Source Room Microphone               | PCB Piezotronics     | 378C20   | Microphone and Preamplifier          | 63739    | 04/18    |
| Source Room Microphone               | PCB Piezotronics     | 378C20   | Microphone and Preamplifier          | 63740    | 04/18    |
| Source Room Microphone               | PCB Piezotronics     | 378C20   | Microphone and Preamplifier          | 63742    | 03/18    |
| Source Room Microphone               | PCB Electronics      | 378C20   | Microphone and Preamplifier          | 63741    | 04/18    |
| Source Room Environmental Indicator  | Comet                | T7510    | Temperature and Humidity Transmitter | 63812    | 10/18    |
| Tapping Machine                      | Norsonic             | Nor277   | Tapping Machine                      | INT00936 | 12/18    |

\* The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

|                               |                      |
|-------------------------------|----------------------|
| <b>VT RECEIVE ROOM VOLUME</b> | 157.7 m <sup>3</sup> |
| <b>VT SOURCE ROOM VOLUME</b>  | 190 m <sup>3</sup>   |

**SECTION 6  
LIST OF OFFICIAL OBSERVERS**

| NAME           | COMPANY      |
|----------------|--------------|
| Cody R. Snyder | Intertek B&C |
| Jordan Strybos | Intertek B&C |

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**SECTION 7****TEST PROCEDURE**

The microphones were calibrated before conducting the tests. The air temperature and relative humidity conditions were monitored and recorded during all measurements. The average temperature and humidity of both the source and received rooms are listed in Sections 10 and 11. The maximum and minimum temperatures and humidities of the receive room from the duration of the test are listed in Sections 12 and 13.

The airborne transmission loss test was conducted in accordance with the ASTM E90 test method using the single direction method. Two background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms, at each of five microphone positions.

The impact sound transmission test was conducted in accordance with the ASTM E492 test method. Two background noise sound pressure level, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E492, and five sound absorption measurements were conducted at each of five microphone positions.

Detailed test procedures, data for flanking limit tests, repeatability measurements, and reference specimen tests are available upon request.

**SECTION 8****TEST CALCULATIONS**

The STC (Sound Transmission Class) and IIC (Impact Insulation Class) ratings were calculated in accordance with ASTM E413 and ASTM E989, respectively.

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**SECTION 9**

**TEST SPECIMEN DESCRIPTION**

| MATERIAL                       | DIMENSIONS (mm)   | THICKNESS (mm) | MANUFACTURER AND SERIES                        | QUANTITY             | AVERAGE WEIGHT           |
|--------------------------------|---|----------------|--|----------------------|--------------------------|
| Luxury Vinyl Plank             | 1219 by 127   | 3.0            | Primo Florz Wilmington                         | 10.98 m <sup>2</sup> | 5.22 kg/m <sup>2</sup>   |
|                                | Note: Adhered to the underlayment with Regupol® TRUESET adhesive using a 1.59 mm by 1.59 mm by 1.59 mm trowel. Adhesive was allowed to cure per manufacturer's specifications.  |                |  |                      |                          |
| Rubber Underlayment            | 3632 by 3023  | 2.0            | Regupol® Sonus™ LV 200                         | 10.98 m <sup>2</sup> | 1.17 kg/m <sup>2</sup>   |
|                                | Note: Loose laid  |                |  |                      |                          |
| Concrete Slab                  | 3023 by 3632  | 203.2          | 5000 PSI                                       | 10.98 m <sup>2</sup> | 524.71 kg/m <sup>2</sup> |
|                                | Note: Installed in a test frame flush to the source room. Mats of #5 reinforcing bars were placed 25.4 mm from both the top and bottom of the slab, with bars spaced on 305 mm centers in both directions. No noticeable shrinkage or cracking was visible on the specimen. |                |  |                      |                          |
| Fiberglass Insulation          | 609.6 by 2438   | 63.5           | Knauf EcoBatt® R-08                            | 10.98 m <sup>2</sup> | 0.59 kg/m <sup>2</sup>   |
|                                | Note: Installed into cavity between furring channels.   |                |  |                      |                          |
| Resilient Sound Isolation Clip | 76.2 by 36.5  | 31.8           | Regupol® SonusClip™                            | 24 clips             | 0.06 kg/clip             |
|                                | Note: Anchored to the concrete slab in a 610 mm by 1219 mm grid pattern.  |                |  |                      |                          |
| Furring/Hat Channel            | 3658 by 76.2  | 22.3           | ClarkDietrich 087F125-18                       | 29.1 lin m           | 0.48 kg/m                |
|                                | Note: Attached to isolation clips spaced 610 mm on center.  |                |  |                      |                          |
| Gypsum Panel                   | 3023 by 1219  | 15.9           | National Gypsum Gold Bond® Fire-Shield® Type X | 10.56 m <sup>2</sup> | 11.23 kg/m <sup>2</sup>  |
|                                | Note: Fastened with 25.4 mm fine thread drywall screws on 305 mm centers. Seams and perimeter sealed with Pecora AC-20® Acoustical Sealant and covered with pressure-sensitive tape.  |                |  |                      |                          |

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### SECTION 10

#### TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS



|                      |   |                         |        |                        |        |
|----------------------|---|-------------------------|--------|------------------------|--------|
| <b>TEST DATE</b>     | 2/6/2019  |                         |        |                        |        |
| <b>DATA FILE NO.</b> | J3418.05  |                         |        |                        |        |
| <b>CLIENT</b>        | Regupol America   |                         |        |                        |        |
| <b>DESCRIPTION</b>   | 3 mm Primo Florz Wilmington Luxury Vinyl Plank, 2 mm Regupol® Sonus™ LV 200 Rubber Underlayment, 203.2 mm 5000 PSI Concrete Slab, 63.5 mm Knauf EcoBatt® R-08 Fiberglass Insulation, 31.75 mm Regupol® SonusClip™ Resilient Sound Isolation Clip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel |                         |        |                        |        |
| <b>SPECIMEN AREA</b> | 10.98 m <sup>2</sup>  | <b>Receive Temp.</b>    | 18.3°C | <b>Source Temp.</b>    | 19.5°C |
| <b>TECHNICIAN</b>    | CRS   | <b>Receive Humidity</b> | 60%    | <b>Source Humidity</b> | 60%    |

| FREQ<br>(Hz)      | BACKGROUND<br>SPL<br>(dB) | ABSORPTION<br>m <sup>2</sup>      | SOURCE<br>SPL<br>(dB) | RECEIVE<br>SPL<br>(dB) | SPECIMEN<br>TL<br>(dB)     | 95%<br>CONFIDENCE<br>LIMIT | NUMBER<br>OF<br>DEFICIENCIES |
|-------------------|---------------------------|-----------------------------------|-----------------------|------------------------|----------------------------|----------------------------|------------------------------|
| 80                | 39.5                      | 17.5                              | 108                   | 74                     | 32                         | 4.3                        | -                            |
| 100               | 32.6                      | 13.3                              | 106                   | 66                     | 40                         | 2.2                        | -                            |
| 125               | 32.6                      | 12.3                              | 104                   | 65                     | 40                         | 2.5                        | 5                            |
| 160               | 31.4                      | 10.1                              | 103                   | 65                     | 40                         | 1.1                        | 8                            |
| 200               | 27.3                      | 10.0                              | 102                   | 57                     | 47                         | 1.4                        | 4                            |
| 250               | 30.2                      | 9.9                               | 101                   | 52                     | 51                         | 1.2                        | 3                            |
| 315               | 24.1                      | 9.9                               | 104                   | 52                     | 54                         | 0.8                        | 3                            |
| 400               | 20.5                      | 8.5                               | 101                   | 47                     | 57                         | 0.7                        | 3                            |
| 500               | 21.0                      | 7.6                               | 102                   | 45                     | 59                         | 0.7                        | 2                            |
| 630               | 21.5                      | 7.6                               | 103                   | 44                     | 62                         | 0.4                        | 0                            |
| 800               | 24.3                      | 7.5                               | 101                   | 44                     | 60                         | 0.4                        | 3                            |
| 1000              | 23.4                      | 7.7                               | 101                   | 41                     | 63                         | 0.5                        | 1                            |
| 1250              | 20.5                      | 7.6                               | 101                   | 38                     | 66                         | 0.7                        | 0                            |
| 1600              | 16.5                      | 7.9                               | 102                   | 37                     | 68                         | 0.3                        | 0                            |
| 2000              | 14.8                      | 9.0                               | 101                   | 35                     | 68                         | 0.3                        | 0                            |
| 2500              | 11.7                      | 9.7                               | 99                    | 33                     | 68                         | 0.4                        | 0                            |
| 3150              | 10.7                      | 10.6                              | 101                   | 30                     | 72                         | 0.4                        | 0                            |
| 4000              | 8.3                       | 12.1                              | 102                   | 29                     | 73                         | 0.4                        | 0                            |
| 5000              | 6.7                       | 13.9                              | 101                   | 26                     | 75                         | 0.4                        | -                            |
| 6300              | 6.7                       | 17.6                              | 95                    | 17                     | 77                         | 0.7                        | -                            |
| 8000              | 6.8                       | 23.2                              | 94                    | 12                     | 80                         | 0.9                        | -                            |
| 10000             | 6.9                       | 23.2                              | 89                    | 7                      | 81                         | 0.7                        | -                            |
| <b>STC Rating</b> | <b>61</b>                 | <i>(Sound Transmission Class)</i> |                       |                        | <b>Sum of Deficiencies</b> | <b>32</b>                  |                              |

- Notes:**
- 1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
  - 2) Specimen TL levels listed in red are potentially limited by the laboratory flanking limit.
  - 3) Specimen TL levels listed in blue indicate the lower limit of the transmission loss.
  - 4) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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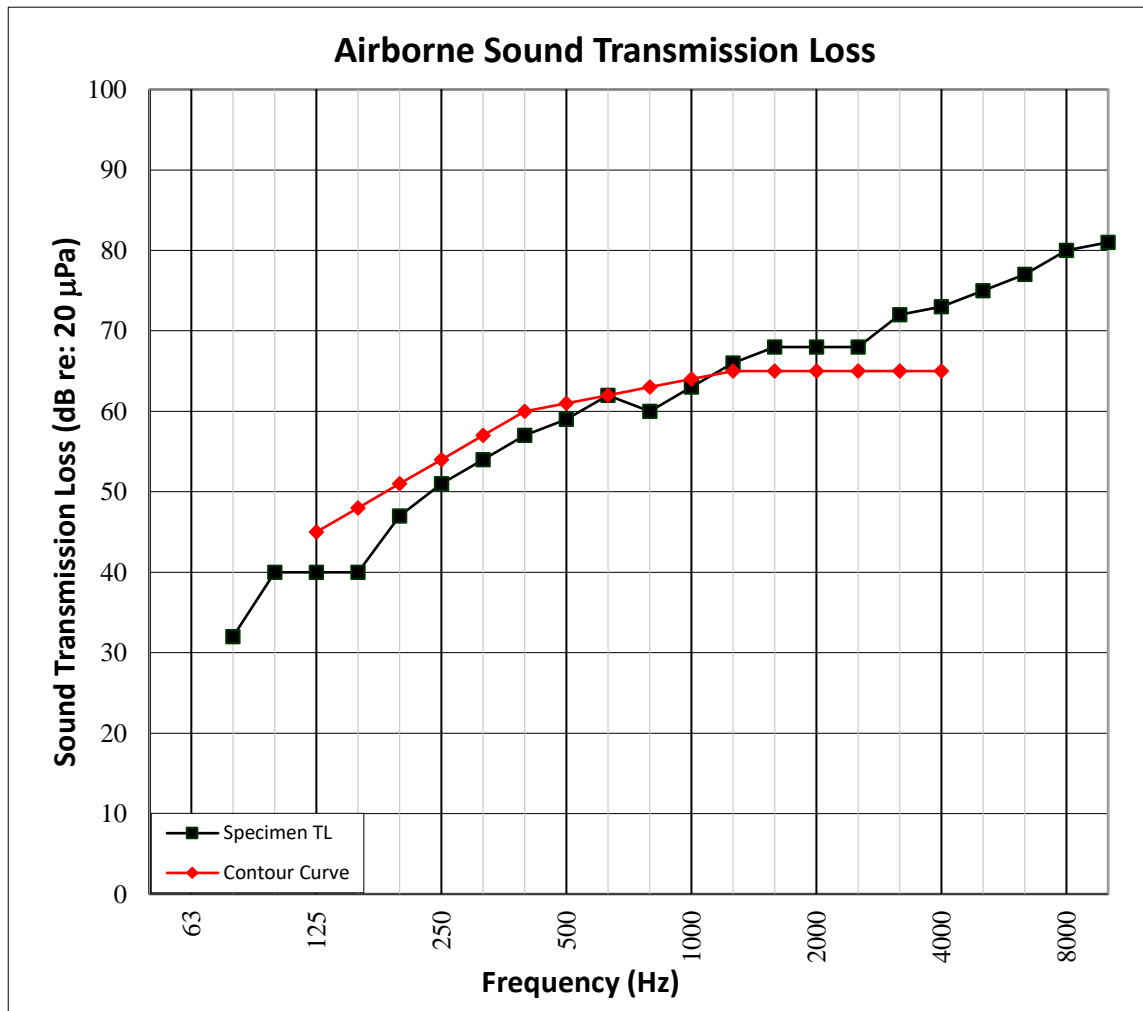
Date: 02/11/19

### SECTION 11

#### TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



|                      |   |                         |        |                        |        |
|----------------------|---|-------------------------|--------|------------------------|--------|
| <b>TEST DATE</b>     | 2/6/2019  |                         |        |                        |        |
| <b>DATA FILE NO.</b> | J3418.05  |                         |        |                        |        |
| <b>CLIENT</b>        | Regupol America   |                         |        |                        |        |
| <b>DESCRIPTION</b>   | 3 mm Primo Florz Wilmington Luxury Vinyl Plank, 2 mm Regupol® Sonus™ LV 200 Rubber Underlayment, 203.2 mm 5000 PSI Concrete Slab, 63.5 mm Knauf EcoBatt® R-08 Fiberglass Insulation, 31.75 mm Regupol® SonusClip™ Resilient Sound Isolation Clip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel |                         |        |                        |        |
| <b>SPECIMEN AREA</b> | 10.98 m <sup>2</sup>  | <b>Receive Temp.</b>    | 18.3°C | <b>Source Temp.</b>    | 19.5°C |
| <b>TECHNICIAN</b>    | CRS   | <b>Receive Humidity</b> | 60%    | <b>Source Humidity</b> | 60%    |





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### SECTION 12

#### TEST RESULTS - IMPACT SOUND TRANSMISSION



|                      |   |                      |        |                      |        |
|----------------------|---|----------------------|--------|----------------------|--------|
| <b>TEST DATE</b>     | 2/6/2019  |                      |        |                      |        |
| <b>DATA FILE NO.</b> | J3418.05  |                      |        |                      |        |
| <b>CLIENT</b>        | Regupol America   |                      |        |                      |        |
| <b>DESCRIPTION</b>   | 3 mm Primo Florz Wilmington Luxury Vinyl Plank, 2 mm Regupol® Sonus™ LV 200 Rubber Underlayment, 203.2 mm 5000 PSI Concrete Slab, 63.5 mm Knauf EcoBatt® R-08 Fiberglass Insulation, 31.75 mm Regupol® SonusClip™ Resilient Sound Isolation Clip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel |                      |        |                      |        |
| <b>SPECIMEN AREA</b> | 10.98 m <sup>2</sup>  | <b>Maximum Temp.</b> | 18.4°C | <b>Minimum Temp.</b> | 18.3°C |
| <b>TECHNICIAN</b>    | CRS   | <b>Max. Humidity</b> | 60%    | <b>Min. Humidity</b> | 60%    |

| FREQ<br>(Hz)      | BACKGROUND<br>SPL<br>(dB) | ABSORPTION<br>m <sup>2</sup>     | NORMALIZED IMPACT SPL<br>(dB) | 95%<br>CONFIDENCE<br>LIMIT | NUMBER<br>OF<br>DEFICIENCIES |
|-------------------|---------------------------|----------------------------------|-------------------------------|----------------------------|------------------------------|
| 80                | 37.6                      | 18.3                             | 60                            | 2.6                        | -                            |
| 100               | 29.0                      | 14.3                             | 57                            | 1.7                        | 7                            |
| 125               | 30.8                      | 12.3                             | 55                            | 2.1                        | 5                            |
| 160               | 29.5                      | 10.1                             | 50                            | 1.2                        | 0                            |
| 200               | 25.4                      | 9.8                              | 51                            | 0.7                        | 1                            |
| 250               | 30.3                      | 10.2                             | 53                            | 0.6                        | 3                            |
| 315               | 24.5                      | 10.0                             | 55                            | 0.8                        | 5                            |
| 400               | 21.0                      | 8.4                              | 50                            | 0.4                        | 1                            |
| 500               | 22.5                      | 7.8                              | 51                            | 0.6                        | 3                            |
| 630               | 22.6                      | 7.3                              | 47                            | 0.4                        | 0                            |
| 800               | 26.6                      | 7.5                              | 48                            | 0.4                        | 2                            |
| 1000              | 26.5                      | 7.5                              | 44                            | 0.4                        | 0                            |
| 1250              | 21.7                      | 7.6                              | 39                            | 0.4                        | 0                            |
| 1600              | 17.3                      | 7.9                              | 30                            | 0.5                        | 0                            |
| 2000              | 15.6                      | 9.0                              | 20                            | 0.5                        | 0                            |
| 2500              | 12.6                      | 9.7                              | 16                            | 0.6                        | 0                            |
| 3150              | 11.4                      | 10.6                             | 10                            | 0.5                        | 0                            |
| 4000              | 8.6                       | 12.2                             | 7                             | 0.3                        | -                            |
| 5000              | 6.8                       | 14.1                             | 6                             | 0.3                        | -                            |
| 6300              | 6.5                       | 17.7                             | 7                             | 0.4                        | -                            |
| 8000              | 6.7                       | 22.9                             | 8                             | 0.4                        | -                            |
| 10000             | 6.9                       | 22.9                             | 9                             | 0.5                        | -                            |
| <b>IIC Rating</b> | <b>62</b>                 | <i>(Impact Insulation Class)</i> |                               | <b>Sum of Deficiencies</b> | <b>27</b>                    |

**Notes:** Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.

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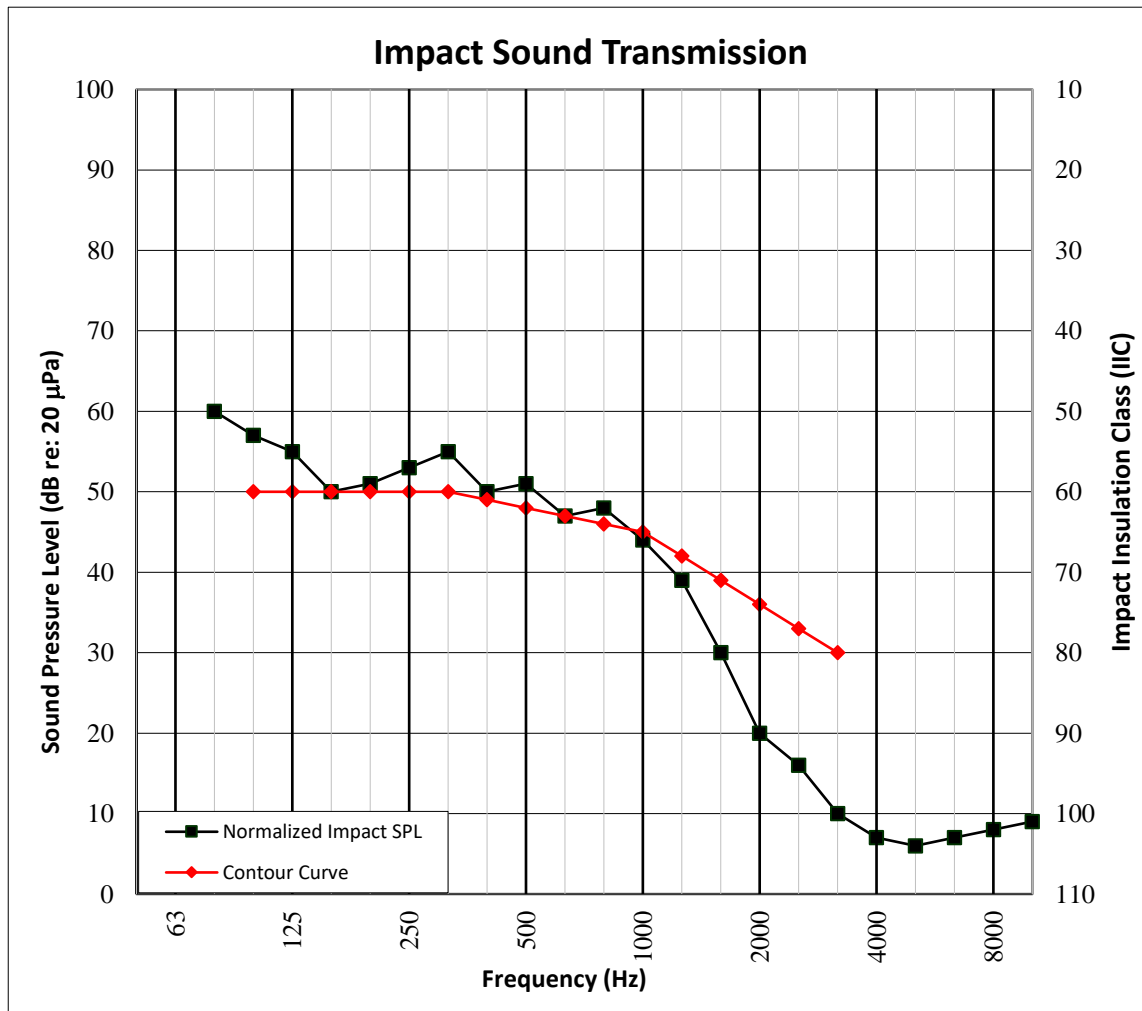
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### SECTION 13

### TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



|                      |   |                      |        |                      |        |
|----------------------|---|----------------------|--------|----------------------|--------|
| <b>TEST DATE</b>     | 2/6/2019  |                      |        |                      |        |
| <b>DATA FILE NO.</b> | J3418.05  |                      |        |                      |        |
| <b>CLIENT</b>        | Regupol America   |                      |        |                      |        |
| <b>DESCRIPTION</b>   | 3 mm Primo Florz Wilmington Luxury Vinyl Plank, 2 mm Regupol® Sonus™ LV 200 Rubber Underlayment, 203.2 mm 5000 PSI Concrete Slab, 63.5 mm Knauf EcoBatt® R-08 Fiberglass Insulation, 31.75 mm Regupol® SonusClip™ Resilient Sound Isolation Clip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel |                      |        |                      |        |
| <b>SPECIMEN AREA</b> | 10.98 m <sup>2</sup>  | <b>Maximum Temp.</b> | 18.4°C | <b>Minimum Temp.</b> | 18.3°C |
| <b>TECHNICIAN</b>    | CRS   | <b>Max. Humidity</b> | 60%    | <b>Min. Humidity</b> | 60%    |



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### SECTION 14

#### PHOTOGRAPHS



Photo No. 1

Source Room View of Test Specimen Installation



Photo No. 2

Receive Room View of Test Specimen Installation



Total Quality. Assured.

130 Derry Court  
York, PA 17406

Telephone: 717-764-7700  
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www.intertek.com/building

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### SECTION 15

#### REVISION LOG

| REVISION # | DATE     | PAGES | DESCRIPTION           |
|------------|----------|-------|-----------------------|
| R0         | 02/11/19 | N/A   | Original Report Issue |