

## **Technical Note A1973 TN01**

Date: 8<sup>th</sup> August 2024  
To: Bidwells: Joe Croisdale / Tom Gambell (PM)  
Stride Treglown: Francis Carpenter (Planning)  
From: Ion Acoustics: David O'Neill

**Scheme: Barton Peveril College Arts Block: Transformer**  
**Title: Transformer Noise Emissions**

### **1 Introduction**

As part of the new Arts Block scheme at Barton Peveril College there is a requirement to provide a new substation. This is proposed to be located along the North side of the existing car park adjacent to the rear gardens of housing on Locksley Road.

The local authority, Eastleigh Borough Council, has requested a noise assessment of the transformer and this document is prepared to provide that assessment.

The assessment finds that the proposed transformer is very quiet and would have no significant noise impact.

### **2 Proposed Transformer**

The transformer is proposed to be located on the north side of the car park, with the location as indicated in Figure 1.

The transformer is a Schneider Electric Minera unit. We have been provided with a sound level test certificate, which is attached. This indicates that it generates a sound power level of 44.3 dBA, which is a low level. There is a tone at 100Hz as is common with transformers, but this gives a level of only 32.7dB SPL at 0.3m from the test compared with an SPL of 36.7dB. This is also low.

The transformer will run 24 hours a day, so needs to be considered in respect of day and night noise levels.

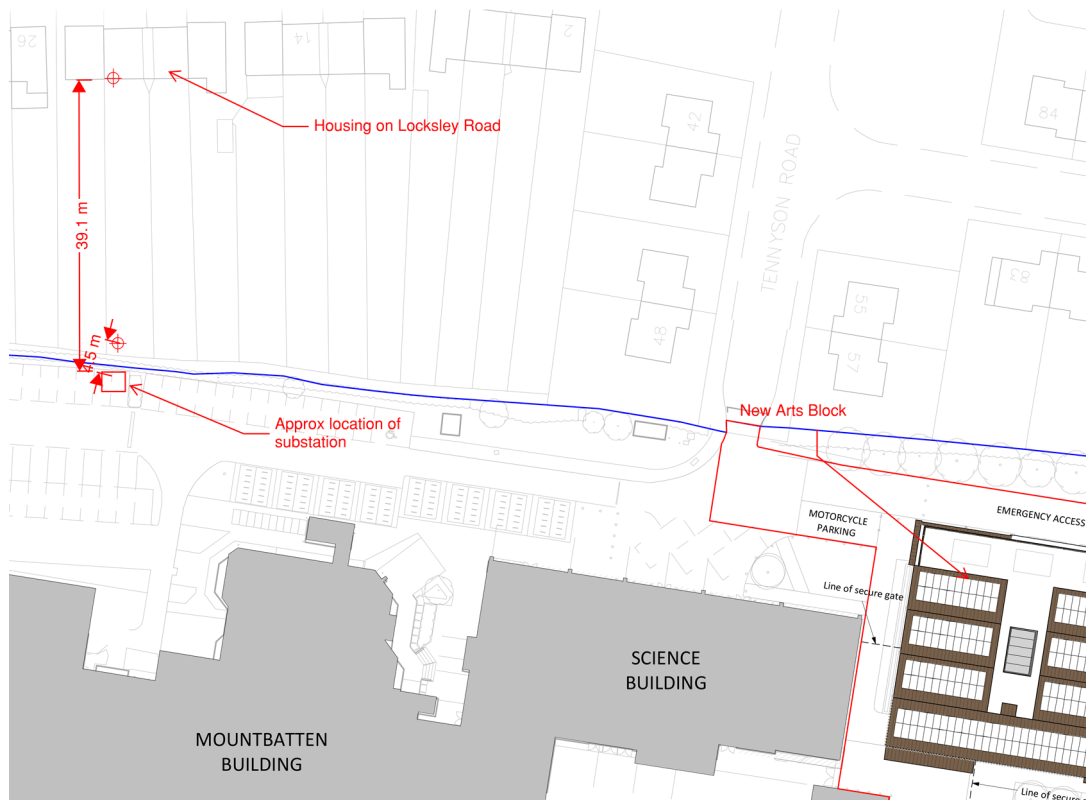


Figure 1: Location of Substation and Residential receptors

### 3 Assessment

We have calculated the noise level to two receptors (both shown in Figure 1). The main assessment is to the closest dwelling at 39.1m from the unit. However, as there is a garden backing onto the unit we have also calculated to the rear of the garden at around 4.5m from the unit.

The calculation are given at the end of this note. The predicted levels are 5dBA at the house and 22dBA in the garden. These are very low absolute noise levels and would be acceptable when considered in terms of absolute noise levels alone.

However, to give context and in line with BS4142, the background noise levels measured during the baseline noise survey for the Arts Block were LA90 39dB at night, LA90 41dB evening and LA90 45dB during the day. The transformer will operate at night, so that is the key level. The predicted level is around 34dB below the background noise level. This is therefore an insignificant noise level and would not be expected to be audible at the housing, even allowing for a 100Hz tone.

In the garden, the noise limit for outdoor amenity spaces is usually taken from BS8233 as 50dB LAeq. The level is some 28dBA below that. It is also more than 10dBA below the background noise level.

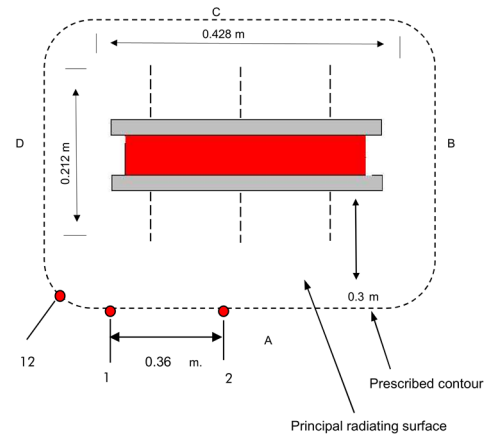
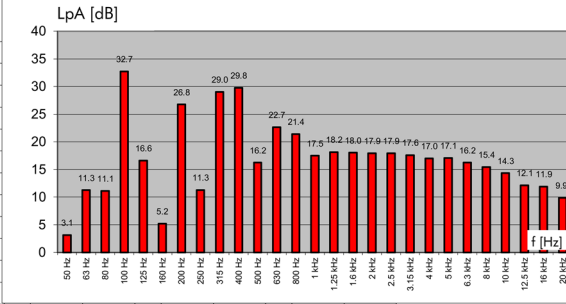


Therefore the noise of the transformer is not significant and is not an issue when considered in respect of residential amenity.

#### **4 Conclusion**

Ion Acoustics has carried out a noise assessment of the proposed transformer at Barton Peveril College. The predicted noise levels are very low. This demonstrates that the noise is not significant and will not be an issue in respect of residential amenity.

Transformer Sound Test Certificate

| Test Certificate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              | N°: I760109-01                                                                                                                                      |                  | Schneider Electric           |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------|---|------|------|------|------|------|---|------|------|---|------|------|-----------------|------|----------|--------------------------------------------------------------------------------------------------------------|--|---|------|--|--|--|---|------|--|--|--|---|------|--|--|--|---|------|--|--|--|---|------|--|--|--|---|------|--|--|--|----|------|--|--|--|----|------|--|--|--|----|------|--|--|--|--------------------------------------------------------------------------------------|--|--|--|
| Type : MINERA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Determination of Sound Level |                                                                                                                                                     |                  | Page Nr. : 1 of 1 pages      |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Customer : WPD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Fb Nr : 760109               | Mach. Nr : 760109-01                                                                                                                                |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Power (kVA) : 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage (kV) : 11 / 0.433    | Standard IEC 60076-10                                                                                                                               |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Measurement method :<br>Sound pressure <input checked="" type="checkbox"/><br>Sound intensity <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              | Trf. Coolers with <input type="checkbox"/> without <input type="checkbox"/><br>Fans switch on <input type="checkbox"/> off <input type="checkbox"/> |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Test conditions :<br>Test laboratory MPT<br>Ambient temperature 22.9(±2) °C<br>Height of mic. above grd. 1/2 h 0.531 m<br>Excitation voltage 0.433 kV<br>Frequency 50 Hz<br>Tap position -<br>Measurement distance 0.3 m<br>Length of prescribed cont. 4.3 m<br>Height of test object, h 1.062 m<br>Area of meas. surface (S) 5.8 m <sup>2</sup><br>10lg(S/S <sub>0</sub> ) 7.6<br>A-weighted sound pressure levels of the background noise :<br><table border="1"><thead><tr><th>Pos.</th><th>At start of test</th><th>At end of test</th></tr></thead><tbody><tr><td>A</td><td>24.0</td><td>24.2</td></tr><tr><td>B</td><td>23.9</td><td>24.1</td></tr><tr><td>C</td><td>23.5</td><td>23.7</td></tr><tr><td>D</td><td>24.4</td><td>23.9</td></tr><tr><td>L<sub>bg</sub></td><td>24.0</td><td>24.0 (A)</td></tr></tbody></table>                                 |                              | Pos.                                                                                                                                                | At start of test | At end of test               | A | 24.0 | 24.2 | B    | 23.9 | 24.1 | C | 23.5 | 23.7 | D | 24.4 | 23.9 | L <sub>bg</sub> | 24.0 | 24.0 (A) | Plan of test object :<br> |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Pos.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | At start of test             | At end of test                                                                                                                                      |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 24.0                         | 24.2                                                                                                                                                |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 23.9                         | 24.1                                                                                                                                                |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 23.5                         | 23.7                                                                                                                                                |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 24.4                         | 23.9                                                                                                                                                |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| L <sub>bg</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 24.0                         | 24.0 (A)                                                                                                                                            |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| A-weighted sound pressure levels L <sub>pA</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              | Average 1/3 Octaveband Analyse :                                                                                                                    |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| <table border="1"><thead><tr><th>Pos.</th><th>1/2 h</th><th>-</th><th>-</th><th>-</th></tr></thead><tbody><tr><td>1</td><td>34.6</td><td></td><td></td><td></td></tr><tr><td>2</td><td>38.1</td><td></td><td></td><td></td></tr><tr><td>3</td><td>38.0</td><td></td><td></td><td></td></tr><tr><td>4</td><td>37.6</td><td></td><td></td><td></td></tr><tr><td>5</td><td>38.3</td><td></td><td></td><td></td></tr><tr><td>6</td><td>37.4</td><td></td><td></td><td></td></tr><tr><td>7</td><td>36.7</td><td></td><td></td><td></td></tr><tr><td>8</td><td>36.9</td><td></td><td></td><td></td></tr><tr><td>9</td><td>34.5</td><td></td><td></td><td></td></tr><tr><td>10</td><td>34.2</td><td></td><td></td><td></td></tr><tr><td>11</td><td>36.3</td><td></td><td></td><td></td></tr><tr><td>12</td><td>35.1</td><td></td><td></td><td></td></tr></tbody></table> |                              | Pos.                                                                                                                                                | 1/2 h            | -                            | - | -    | 1    | 34.6 |      |      |   | 2    | 38.1 |   |      |      | 3               | 38.0 |          |                                                                                                              |  | 4 | 37.6 |  |  |  | 5 | 38.3 |  |  |  | 6 | 37.4 |  |  |  | 7 | 36.7 |  |  |  | 8 | 36.9 |  |  |  | 9 | 34.5 |  |  |  | 10 | 34.2 |  |  |  | 11 | 36.3 |  |  |  | 12 | 35.1 |  |  |  |  |  |  |  |
| Pos.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1/2 h                        | -                                                                                                                                                   | -                | -                            |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 34.6                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 38.1                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 38.0                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 37.6                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 38.3                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 37.4                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 36.7                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 36.9                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 34.5                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 34.2                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 36.3                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 35.1                         |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| L <sub>pA0</sub> 36.7 dB(A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| L <sub>pA0</sub> - maximum L <sub>bgA</sub> 36.7 - 24.0 = 12.7 dB(A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              | Measuring instrument :                                                                                                                              |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Correction for sound reflections by factor K = 0.0 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              | Manuf. : 01dB-Metavib Meter type : NETdB                                                                                                            |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Correction for steady-state background noise = - dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              | Serial number : LCF026330-262                                                                                                                       |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Corrected average A-weighted sound pressure level L <sub>pA</sub> = 36.7 dB(A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              | Microphone type : MCE 212                                                                                                                           |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Calculated A-weighted sound power level L <sub>WA</sub> = 44.3 dB(A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              | Serial number : 101069                                                                                                                              |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              | Power Analyser: Yokogawa WT 3000                                                                                                                    |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              | Serial number : 91KB11116                                                                                                                           |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| L <sub>pA</sub> : Guaranteed - dB(A) Result : -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| L <sub>WA</sub> : Guaranteed - dB(A) Result : -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                                                                                                                                                     |                  |                              |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Tested by : E.ORFA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              | Checked by : H.SEVİL                                                                                                                                |                  | Customer or Representative : |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Test Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              | Test Team Leader                                                                                                                                    |                  | Revision No -                |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |
| Date : 07.09.2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              | Date : 07.09.2021                                                                                                                                   |                  | Date :                       |   |      |      |      |      |      |   |      |      |   |      |      |                 |      |          |                                                                                                              |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |   |      |  |  |  |    |      |  |  |  |    |      |  |  |  |    |      |  |  |  |                                                                                      |  |  |  |

Schneider Enerji Endüstriyel Sanayi Tic. A.Ş. TOBB Organize Sanayi Bölgesi 1. Cadde. No:6 41420 Şekerpınar-Çayyova / KOCAELİ / TÜRKİYE t : +90 262 648 04 00

**Barton Peveril College: Transformer Noise**

**08/08/2024**

$L_p = L_w - 20 \log r - 8 + DI - \text{shielding}$  (hemispheric spreading)

**To rear of closest house**

|                         |    |                |
|-------------------------|----|----------------|
| transformer sound power |    | 44.3 dBA       |
| distance                |    | 39 m           |
| 20log r                 |    | 31.8 dB        |
|                         | -8 | 8              |
| DI                      |    | 0              |
| shielding               |    | 0              |
| Lp                      |    | <b>4.5 dBA</b> |

**To rear of garden**

|                         |    |                 |
|-------------------------|----|-----------------|
| transformer sound power |    | 44.3 dBA        |
| distance                |    | 5 m             |
| 20log r                 |    | 14.0 dB         |
|                         | -8 | 8               |
| DI                      |    | 0               |
| shielding               |    | 0               |
| Lp                      |    | <b>22.3 dBA</b> |