

# DIN EN 16272-6:2014-12 (E)

## Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 6: Intrinsic characteristics - In situ values of airborne sound insulation under direct sound field conditions

---

<b>Contents</b>		<b>Page</b>
Foreword .....		4
Introduction .....		5
1	Scope .....	8
2	Normative references .....	8
3	Terms and definitions .....	8
4	Symbols and abbreviations .....	13
5	Sound insulation index measurements .....	15
5.1	General principle .....	15
5.2	Measured quantity .....	15
5.3	Test arrangement .....	16
5.4	Measuring equipment .....	20
5.4.1	Components of the measuring system .....	20
5.4.2	Sound source .....	21
5.4.3	Test signal .....	21
5.5	Data processing .....	21
5.5.1	Calibration .....	21
5.5.2	Sample rate .....	22
5.5.3	Background noise .....	22
5.5.4	Scanning technique using a single microphone .....	22
5.5.5	Scanning technique using nine microphones .....	23
5.5.6	Adrienne temporal window .....	23
5.5.7	Placement of the Adrienne temporal window .....	24
5.5.8	Low frequency limit and sample size .....	25
5.6	Positioning of the measuring equipment .....	26
5.6.1	Selection of the measurement positions .....	26
5.6.2	Post measurements .....	27
5.6.3	Additional measurements .....	27
5.6.4	Reflecting objects .....	27
5.6.5	Safety considerations .....	27
5.7	Sample surface and meteorological conditions .....	28
5.7.1	Condition of the sample surface .....	28
5.7.2	Wind .....	28
5.7.3	Air temperature .....	28
6	Measurement uncertainty .....	28
7	Measuring procedure .....	28
8	Test report .....	29
8.1	Expression of results .....	29
8.2	Further information .....	29

<b>Annex A (informative) Measurement uncertainty .....</b>	<b>31</b>
<b>A.1 General .....</b>	<b>31</b>
<b>A.2 Expression for the calculation of sound insulation index .....</b>	<b>31</b>
<b>A.3 Contributions to measurement uncertainty .....</b>	<b>32</b>
<b>A.4 Expanded uncertainty of measurement .....</b>	<b>33</b>
<b>A.5 Measurement uncertainty based upon reproducibility data .....</b>	<b>33</b>
<b>Annex B (informative) Template of test report on airborne sound insulation of railway noise barriers .....</b>	<b>34</b>
<b>B.1 Template of test report .....</b>	<b>34</b>
<b>B.2 Test setup (example) .....</b>	<b>36</b>
<b>B.3 Test object and test situation (example) .....</b>	<b>38</b>
<b>B.4 Results (example) .....</b>	<b>40</b>
<b>Bibliography .....</b>	<b>46</b>