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NSAI Standards

Irish Standard
I.S. EN 16727-3:2017

# Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 3: General safety and environmental requirements

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## National Foreword

I.S. EN 16727-3:2017 is the adopted Irish version of the European Document EN 16727-3:2017, Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 3: General safety and environmental requirements

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 16727-3

January 2017

ICS 93.100

English Version

# Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 3: General safety and environmental requirements

Applications ferroviaires - Voie - Écrans antibruit et dispositifs connexes influant sur la propagation aérienne du son - Performances non acoustiques - Partie 3 : Exigences générales pour la sécurité et l'environnement

Bahnanwendungen - Oberbau - Lärmschutzwände und verwandte Vorrichtungen zur Beeinflussung der Luftschallausbreitung - Nicht akustische Eigenschaften - Teil 3: Allgemeine sicherheits- und umweltbezogene Anforderungen

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# European foreword

This document (EN 16727-3:2017) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2017 and conflicting national standards shall be withdrawn at the latest by July 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This European Standard is one of the series EN 16727 "Railway applications — Track — Noise barriers and related devices acting on airborne sound propagation — Non-acoustic performance" as listed below:

— *Part 1: Mechanical performance under static loadings — Calculation and test methods*

— *Part 2-1: Mechanical performance under dynamic loadings due to passing trains — Resistance to fatigue*

— *Part 2-2: Mechanical performance under dynamic loadings caused by passing trains — Calculation method*

— *Part 3: General safety and environmental requirements*

It should be read in conjunction with:

prEN 16727-1, *Railway applications — Track — Noise barriers and related devices acting on airborne sound propagation — Non-acoustic performance — Part 1: Mechanical performance under static loadings — Calculation and test methods*

prEN 16727-2-1, *Railway applications — Track — Noise barriers and related devices acting on airborne sound propagation — Non-acoustic performance — Part 2-1: Mechanical performance under dynamic loadings due to passing trains — Resistance to fatigue*

EN 16727-2-2, *Railway applications — Track — Noise barriers and related devices acting on airborne sound propagation — Non-acoustic performance — Part 2-2: Mechanical performance under dynamic loadings caused by passing trains — Calculation method*

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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# Introduction

While performing their primary function, noise barriers and related devices acting on airborne sound propagation installed along railways should not pose hazards to rail users or other people in the vicinity or to the environment at large. Noise barriers and related devices should not assist the spread of fire from adjacent verges or nearby land. Fire resistance in accordance with particular standards can in addition be required to minimize risk to adjacent premises, or to rail users in confined corridors. Noise barriers and related devices should not reflect light towards train drivers in such a way as to compromise rail safety. They should be made from materials which do not emit noxious fumes or leachates as the result of natural or industrial processes, or as the result of fire. Noise barriers should allow a means of escape by rail users and access by operatives in the event of an emergency.

Noise barriers and related devices acting on airborne sound propagation are not, in general, expected to resist the impact of vehicles, but designers can utilize information about the consequences of such impact load to establish the requirements for protection of rail users and passers-by.

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# 1 Scope

This European Standard specifies minimum requirements and other criteria for assessing the general safety and environmental performance of noise barriers and related devices acting on airborne sound propagation under typical rail-side conditions. Requirements for more onerous conditions are a matter for consideration by the designer. Appropriate test methods are provided where these are necessary, but for some aspects a declaration of material characteristics may be required for the information of designers. The treatment of each topic is covered separately in Annexes A to G.

# 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

prEN 16727-1:2015, *Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 1: Mechanical performance under static loadings - Calculation and test methods*

EN 50122-1, *Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock*

EN ISO 2813, *Paints and varnishes - Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

# 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1**
**noise barrier**
noise reducing device, which obstructs the direct transmission of airborne sound emanating from railways and which will typically span between posts and also may overhang the railway

Note 1 to entry: Noise barriers are generally made of acoustic and structural elements (see 3.3 and 3.4).

**3.2**
**cladding**
noise reducing device, which is attached to a wall or other structure and reduces the amount of sound reflected

Note 1 to entry: Claddings are generally made of acoustic and structural elements (see 3.3 and 3.4).

**3.3**
**acoustic element**
element whose primary function is to provide the acoustic performance of the device

**3.4**
**structural element**
element whose primary function is to support or hold in place acoustic elements

Note 1 to entry: In some noise barriers, the acoustic function and the structural function cannot be clearly separated and attributed to different components.

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