

# BS 4142:2014.

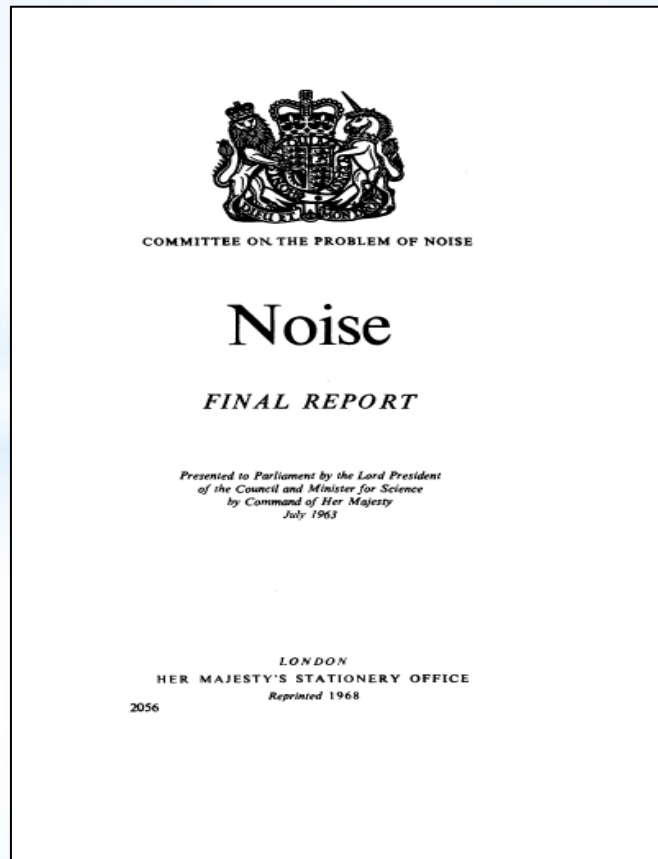
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**Chairman BS: 4142 Revision Drafting Panel**

# How old is BS 4142?

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## **APPENDIX XV**

### **SIMPLIFIED PROCEDURE FOR ASSESSING REACTION TO INDUSTRIAL NOISE IN MIXED RESIDENTIAL AND INDUSTRIAL AREAS**

**(A NOTE BY THE BUILDING RESEARCH STATION)**

1. The simplified procedure mentioned in paragraphs 379-386 in the Chapter on Industrial Noise is described here. It is intended as a quantitative guide to whether an existing industrial noise is likely to cause complaint from those people, having a normal reaction to noise, who live nearby, and also to give an indication of the probable limiting level of noise from a proposed factory without likelihood of complaint.

# Wilson Report 1963.

For the purposes of this Report we accept the definition of noise as "sound which is undesired by the recipient ". A noise problem must involve people and their feelings, and its assessment is a matter rather of human values and environments than of precise physical measurement.

# Wilson Report 1963, Appendix XV.

It is intended as a quantitative guide to whether an existing industrial noise is likely to cause a complaint from those people, having a normal reaction to noise, who live nearby,.....

# Wilson Report 1963, Appendix XV.

It is well known that the actual loudness of a noise is not, by itself, a measure of whether it will give rise to annoyance or complaint. The reaction of the hearer is affected, for example, by the kind of noise, by whether it occurs during the daytime or at night, by the general level of noise already existing, by whether the hearer has become accustomed to it, and so on.

# Wilson Report 1963, Appendix XV.

At appendix 15 of the Wilson Report (1963) reference was made to reaching the wrong answers most of the time due to the absence of context.



# What happened next?

March 1967 it became a separate entity as BS 4142.

Second Edition was published November 1990.

Third Edition was published September 1997.

# The History of BS 4142.

Early 2012 the fifteen year review point was reached.

May 2012 EH/1/3 decided that a substantial rewrite was required and that the best way forward was a small drafting panel.

# The History of BS 4142.

## The Drafting Panel

The drafting panel originally consisted of just five people:

**Phil Dunbavin, Drafting Panel Chairman, Chairman of the Association of Noise Consultants.**

**Bernard Berry, Chairman of EH/1/3 and Chairman of EH/1.**

**Colin Cobbing, Chartered Institute of Environmental Health.**

**Tony Clayton, The Environment Agency.**

**Ken Collins, The Institute of Acoustics.**

# The History of BS 4142.

Work started in August 2012.

In September 2012 EH/1/3 decided on the structure and scope of the revision.

On the 19<sup>th</sup> of October 2012 we held a workshop on the revision in Birmingham. The purpose was to have the users establish a 'road map' for the standard based on experience of using the 1997 version.

# The History of BS 4142.



Some of the eighty delegates discussing BS 4142.

# The History of BS 4142.

Having established the views and guidance of users work started on the first draft.

In November 2012 the first substantive draft was sent to EH/1/3 for review.

There then followed a period of review and modification to prepare the draft for Public Consultation.

In July 2013 EH/1/3 gave the draft for Public Consultation to the BSI Content Developer.

# The History of BS 4142.

The draft BS 4142 went out for Public Consultation in October/November 2013.

During December 2013 all 943 public comments were collated.

January 2014 saw the start of the process of examining every comment and attempting to resolve them all.

# The History of BS 4142.

The comment resolution period was quite taxing because the comments ranged from ‘this is the best thing since sliced bread’ to ‘this is heresy, how dare you alter this’.

The reconvened drafting panel was expanded to help with the huge work load that this represented.

Eventually every comment was examined and sentenced and following much proof reading we now have BS 4142:2014.



# The History of BS 4142.

Before BS 4142:2014 could be published it had to be reviewed by EH/1/3 and any comments dealt with.

Having been approved by EH/1/3 it then had to be approved by the parent committee EH/1.

Finally BS 4142:2014 was published last month.

# Foreword

The general basis for the standard is derived from the application of previous editions, together with accumulated experience.

Some aspects, including guidance on character corrections, are based upon research which has been reported since publication of the previous edition of this standard.

# Foreword

This edition clarifies the application of the standard.

The examples in Annex A have been considerably expanded from four to eleven.

New to this edition is the introduction of uncertainty, including good practice for reducing uncertainty.

# Foreword

Response to sound can be subjective and is affected by many factors, both acoustic and non-acoustic.

The significance of its impact, for example, can depend on such factors as the margin by which a sound exceeds the background sound level, its absolute level, time of day and change in the acoustic environment, as well as local attitudes to the source of the sound and the character of the neighbourhood.

# Foreword

This edition of the standard recognizes the importance of the context in which a sound occurs.

Great care has been taken in the use of the words “sound” and “noise”.

Sound can be measured by a sound level meter or other measuring system.

Noise is related to a human response and is routinely described as unwanted sound, or sound that is considered undesirable or disruptive.

# Foreword

## Use of this document:

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

# Scope

This British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:

- a) sound from industrial and manufacturing processes;
- b) sound from fixed installations which comprise mechanical and electrical plant and equipment;
- c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
- d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.

# Scope

The methods described in this British Standard use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.



# Scope

This standard is applicable to the determination of the following levels at outdoor locations:

a) rating levels for sources of sound of an industrial and/or commercial nature; and

b) ambient, background and residual sound levels,

for the purposes of:

# Scope

- 1) investigating complaints;
- 2) assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and/or commercial nature; and
- 3) assessing sound at proposed new dwellings or premises used for residential purposes.

# Scope

The determination of noise amounting to a nuisance is beyond the scope of this British Standard.

Sound of an industrial and/or commercial nature does not include sound from the passage of vehicles on public roads and railway systems.

The standard is not intended to be applied to the rating and assessment of sound from:

# Scope

Exclusions:

- a) recreational activities, including all forms of motorsport;
- b) music and other entertainment;
- c) shooting grounds;
- d) construction and demolition;
- e) domestic animals;
- f) people;
- g) public address systems for speech; and
- h) other sources falling within the scopes of other standards or guidance.

# Scope

The standard is not intended to be applied to the derivation of indoor sound levels arising from sound levels outside, or the assessment of indoor sound levels.

The standard is not applicable to the assessment of low frequency noise.

*NOTE: Information on the assessment of low frequency noise is given in NANR45.*

# Normative References.

Not really controversial so we will skip it.

# Terms and definitions

## **acoustic environment**

ambient sound

ambient sound level

background sound level

equivalent continuous A-weighted sound pressure level

measurement time interval

rating level

## **reference time interval**

residual sound

residual sound level

specific sound level

specific sound source

# Terms and definitions

## **acoustic environment**

sound from all sound sources as modified by the environment [BS ISO 12913-1:2013]

## **reference time interval, $T_r$**

specified interval over which the specific sound level is determined

*NOTE: This is 1 h during the day from 07:00 h to 23:00 h and a shorter period of 15 min at night from 23:00 h to 07:00 h.*

*NOTE All the measurements and values used throughout this standard are “A”-weighted. Where “A” weighting is not explicit in the descriptor, it is to be assumed in all cases, except where it is clearly stated that it is not applicable, as in the case of tones.*



# Preparation.

The assessor should gain a sufficient understanding of the situation (context) to be rated and assessed by conducting an appraisal, as appropriate, in order to:

- a) identify and understand all the sounds that can be heard, and identify their sources;
- b) identify which measurement methods, instruments and metrics would be most appropriate for the assessment;
- c) identify potential measurement locations;
- d) identify the necessary measurement frequencies, durations and timings; and
- e) where a new development is to be assessed, understand what kind of sound a new industrial source would introduce, or what potential impact would be imposed from an existing source on a new sensitive receptor.

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# Refreshment Break