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THE NEW CODE OF PRACTICE FOR NOISE CONTROL ON CONSTRUCTION AND OPEN SITES

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It has taken nearly 2 years to revise and expand British Standard BS5228: 1975 "The control of noise on construction and demolition sites". The revised code which is currently in the process of being published now encompasses other situations.

Structure

The new code "Noise control on construction and open sites" is at present in four parts. These are as follows:

1. Basic information and procedures.
2. Construction and demolition including road construction and maintenance.
3. Surface coal extraction by open cast methods.
4. Piling operations.

Part 1 contains general information which is common to all types of work on open sites, i.e. noise and site personnel, noise and the neighbourhood, project supervision and general noise control principles. Extensive information is also given on making noise estimates, monitoring and noise levels associated with certain types of plant or activities.

Each of the other parts comprises mainly legislation and special control techniques specific to the activities which are the subject of that part.

The format of the new code is such that further parts, e.g. hard rock quarrying, sand and gravel extraction, railway construction and maintenance, and dredging, can be added later.

The reason for adopting this format is a consequence of the difficulties experienced with working with BS5228: 1975.

Used in its original form there was confusion in certain situations. BS5228: 1975 was primarily intended for use with sections 60 and 61 of the Control of Pollution Act 1974. However, because there was no equivalent document it was being used in situations where other legislation was appropriate. Open cast mining, sand and gravel extraction and quarrying are typical examples.

Whilst there was some opposition to the introduction of separate parts it was considered on balance that it would be easier to update, particularly if there were changes in legislation.

Interpretation

Misinterpretation of the advice given in BS5228: 1975 and taking information out of context also led to difficulties in its use.

The noise level of 75 dBA Leq has been widely interpretted as a standard. This was never the intention. It was the starting point from which to make allowances and adjustments to arrive at an acceptable noise level target for the protection of the public and allow work to be carried out. It was always intended that noise limits, if appropriate, would be dealt with on an ad hoc

basis depending upon local circumstances.

The new code therefore does not mention 75 dBA Leq or any other level. The reader is directed to considering the important factors, i.e. location, existing ambient noise level, duration of the works, hours of working, public relations, etc. The emphasis is on encouraging both local authorities and contractors to keep their own records and use their own experience of situations where problems are likely to occur.

Other passages where interpretation has been a problem have also been rectified.

Technical Developments

The author of this paper prepared the original draft of BS5228: 1975 during the first 9 months of 1973. At that time there was very little information available on the control of noise from construction and demolition sites.

Since then there have been considerable technical developments. The method of predicting noise from mobile noise sources has been improved and considerable noise level data has been assembled. Both of these were reported in CIRIA report 64. These have been incorporated in the new code, together with more recent developments.

Excluded Material

Section 73 of the Control of Pollution Act defines noise to include vibration. Whilst guidance is required on vibration control on construction sites, it was not within the brief of the code drafting committee to assemble such advice. This information is therefore not included.

In the space available it is not possible to describe in detail exactly what is in the new code and why. However, in order to indicate the topics covered, the contents list for the first three parts is reproduced in Table 1. Parts 1 to 3 should be on sale before June 1984. Part 4 will not be available until late 1985.

References

A. L. BEAMAN and R. D. JONES 1977. Noise from construction and demolition sites - measured levels and their prediction. Construction Industry Research and Information Association Report 64.

A NEW CODE OF PRACTICE FOR NOISE CONTROL ON CONSTRUCTION AND OPEN SITES

TABLE 1

Part 1 Contents

SECTION ONE. GENERAL
1. Scope
2. Definitions
3. Legislative background
4. Standards and Codes of Practice
5. Community relations
6. Training

SECTION TWO. NOISE AND PERSONS ON SITE
7. Protection from noise induced hearing loss
8. Ear protectors
9. Noise-induced stress

SECTION THREE. NOISE AND NEIGHBOURHOOD NUISANCE
10. Disturbing effects of noise
11. Description of site noise
12. Criteria for setting noise control targets

SECTION FOUR. PROJECT SUPERVISION
13. General
14. Works preparation
15. Execution of works

SECTION FIVE. CONTROL OF NOISE
16. Control of noise at source
17. Controlling the spread of noise

APPENDICES

A Acoustics terminology
B. Estimating noise from sites
C. Noise monitoring
D. Guide to sound level data on site equipment and site activities
E. Noise sources, remedies and their effectiveness, acoustic screens
F. Bibliography

TABLES

1. Relationship of distance ratio and 'equivalent on-time' for slow moving plant
2. Addition of steady sound levels
3. Example of prediction of noise from a building site
4. Estimation of daily L_{Aeq} according to sampling technique
5. Index of site equipment referred to in Tables 6 to 14
6. Sound level data on demolition
7. Sound level data on site preparation
8. Sound level data on piling
9. Sound level data on concreting operations
10. Sound level data on general site activities
11. Sound level data on roadworks
12. Sound level data on motorway construction
13. Sound level data on opencast coal sites
14. Sound level data on dredging

A NEW CODE OF PRACTICE FOR NOISE CONTROL ON CONSTRUCTION AND OPEN SITES

TABLE 1 (Cont/d)

15. Methods of reducing sound levels from construction plant
16. Sound insulation characteristics of common building materials
17. Sound absorbing materials for lining of covers and enclosures
18. Measured sound reduction given by types of partial enclosure

FIGURES

1. Flow chart for the prediction of site noise
2. Distance adjustment K_d for activity L_{Aeq} method
3. Distance adjustment K for plant sound power method
4. Adjustment to sound level to give resulting L_{Aeq} (plant sound power method)
5. Nomograph - combined L_{Aeq} from activity L_{Aeq}s and their respective durations
6. Office development site showing plant locations in relation to the nearest affected facade
7. Spoil movement of a haul road showing location of the nearest affected property
8. Example of machine enclosure
9. Typical acoustic shed
10. Examples of acoustic open-sided sheds

Part 2 Contents

0. Introduction
1. Scope
2. Definitions
3. Legislative requirements
4. Guidance notes on legislation
5. Noise control targets

APPENDIX A. Bibliography

Figure 1. Procedures to control construction noise under the Control of Pollution Act

Part 3 Contents

0. Introduction
1. Scope
2. Definitions
3. Legislation
4. Site planning to reduce noise
5. Practical measures to reduce site noise
6. Limitations on emission of noise from sites

APPENDIX A. Bibliography