



**Glossary, Acknowledgements
and References**
Second Edition 2004

9. GLOSSARY OF TERMS

The following glossary provides definitions of the key terms used in this document that may not be in common use or may be used in an unfamiliar context. It is not intended as a complete glossary of all technical terms used.

| | |
|------------------------------|--|
| Block | Large independent elements sometimes referred to as Nidger or super nidger in Scotland. For the purposes of this blocks have a minimum depth of 150 mm and a plan area varying between 320 - 1200 cm ² |
| Bogen | An arch based laying pattern common throughout Europe. Name is derived from the German for arch that is bogen |
| Channelisation | Term used to describe traffic flow on a restricted width pavement. Pavement deterioration can be greatly accelerated as a result of channelisation because all of the wheel loads are concentrated in a narrow area of the pavement. |
| Cropping | Term used to describe the process of mechanically breaking rock into elements for use in pavements. Resulting elements usually have considerable size and shape variation and coarse surface texture. |
| Cube | Nominally equi-dimensional elements. Most common form of element in Europe, becoming more popular in UK |
| Flagstone | Large tabular elements with a minimum thickness of 50mm and plan area varying from 900 - >2000 cm ² |
| Flexible Construction | Natural stone pavement construction using granular materials as bedding and joint infill. Pavement is stabilised through a combination of friction, element interlock and bedding support. |
| Rigid Construction | Natural stone pavement construction in which the surface elements are bound together with some form of grout or other binder and bedded onto cement stabilized or other form of bound aggregate bedding. |
| Segmental Arc | See Bogen |
| Sett | Traditional name for stone elements in UK. For the purpose of this guide setts have a minimum depth of 100 mm with their length normally greater than their breadth or depth. |
| Stretcher Bond | Traditional "brickwork" laying pattern used with setts, blocks, flags and tiles sometimes shortened to Stretcher |
| Stone Element | Basic building blocks of natural stone pavements that come in a range of shapes and sizes, See block, cube, flagstone, sett and tile. |
| Tile | Small tabular elements with a minimum thickness of 30mm and plan area of 250 - 650 cm ² . Rarely used in streetscapes. |

10. ACKNOWLEDGEMENTS

The original SCOTS Working Group produced this second edition of the guide. The Chairperson would like to acknowledge the help so freely given not only by members of the Working Group but also their numerous colleagues who provided advice and assistance. The Group members with their affiliations were:

SCOTS Working Group

| | |
|-------------------------|------------------------------------|
| M E Blair (Chairperson) | mrsb, Civil Engineering Consultant |
| A Bodie | West Dunbartonshire Council |
| G Gray (Secretary) | Angus Council |
| I Montgomery | Glasgow City Council |

Specialist Advisors

| | |
|-----------------|----------------------|
| George Mulvagh | Gillespie & Partners |
| George Matheson | Matrock |
| Hans Halstvedt | ID Consultants |

11. REFERENCES

ASTM D2938-71a. *Standard Method of Test for Unconfined Compressive Strength of Intact Rock Core Specimens.* American Society for Testing and Materials.

ASTM D5312-92. *Suggested method for the determination of Freeze-Thaw resistance.* American Society for Testing and Materials.

BRITISH GEOLOGICAL SURVEY (1998). *Directory of Mines and Quarries.* BGS, Keyworth, Nottingham.

BS 7533 : 1992 *Guide for the structural design of pavements constructed with clay or concrete block pavers.* British Standards Institution, HMSO London.

BS 1881: 1983. *Testing Concrete.* British Standards Institution, HMSO London.

BS 1881: Pt 202 : 1986. *Recommendations for surface hardness testing by rebound hammer.* British Standards Institution, HMSO, London.

BS 812: Pt 121: 1989. *Method for determination of Soundness (MSS).* British Standards Institution, HMSO, London.

BS 812: Pt 114: 1989. *Method for the determination of the Polished Stone Value (PSV).* British Standards Institution, HMSO, London.

BS812:1975 *Methods for determination of Water Absorption.* **British Standards Institution, HMSO, London.**

BS 435: 1975. *Specification for dressed natural stone kerbs, channels, quadrants and setts.* British Standards Institution, HMSO, London.

BS 4987: Part 1 and Part 2: 1993. *Coated macadams for roads and other paved areas.* British Standards Institution, HMSO, London.

BS DD 213 (1993). *Method for the determination of the indirect tensile stiffness modulus of bituminous mixtures.* British Standards Institution, HMSO, London.

BS7533 : *Pavements constructed with clay, natural stone or concrete pavers.* Published at various dates between 1997 and 2004.

Design Manual for Road and Bridges, Volume 7. *Pavement Design and Maintenance.* HMSO, London.

DIN 18 502 (1965). *Pfastersteine aus naturstein.*

EN 1341:2000. *Slabs of natural stone for external paving – Requirements and test methods.* **European Committee for Standardization, Brussels**

EN 1342:2000. *Setts of natural stone for external paving – Requirements and test methods.* **European Committee for Standardization, Brussels**

EN 1343: 2000. *Kerbs of natural stone for external paving – Requirements and test methods.* **European Committee for Standardization, Brussels**

Grant K (2000). *Personal communication.*

HISTORIC SCOTLAND (1999). *A future for stone in Scotland Business Plan.* (Unpublished private correspondence)

ISRM 1985. *Suggested method of determination of Point load Strength.* International Society for Rock Mechanics and mining Science, V.22.

ISRM 1973 *Suggested method of determination of hardness and abrasiveness of rock samples.* International Society for Rock Mechanics.

Manual of Contract Documents for Highway Works, Volume 1. *Specification for Highway Works.* HMSO, London

Matheson G D (1999) *The Characterisation and Specification of Natural Stone Setts for Streetscape Work.* GCC Report P/1013/2/IB/SKM. Matrock Consulting Ltd.

Matheson (2000). *An Audit System for Natural Stone Setts.* **GCC Report P/1013/2/IB/SKM. Matrock Consulting Ltd.**

McHale MJ and Fordyce D (1999). *Use of natural stone materials: Stage 1 Report. Project Report PR/SC/21/99.* Transport Research Laboratory, Scotland, Heriot-Watt University, 1999

Mildenhall HS and GDS Northcott (1986). *A Manual for the maintenance and repair of concrete roads.* Department of Transport, Her Majesty's Stationary Office.

Norme P (1993). *Chaussées urbaines.* Mise en oeuvre des pavés et dalles en béton, des pavés en terre cuite et des pavés et dalles en pierre naturelle Paris. AFNOR, 1993, p 98-335.

NJUG (1986). *Recommended positioning of Utilities, Mains and Plant for New Works.* NJUG Publication Number 7.

prEN 1341 *Specification for slabs of natural stone for external paving.* European Committee for Standardization, October 1993.

Rapra (1996). *The measurement of Floor Slip Resistance, Guidelines recommended by the UK Slip Resistance Group.* **Rapra Technology Ltd.**

SCOTTISH ENTERPRISE (1997) *Streets Ahead-Technical Guidelines for Quality Streetscape Projects.* Scottish Enterprise, Glasgow.

Taylor (1850). *Proceedings of the Institution of Civil Engineers,* Vol 9, pp. 214- 230, London (1850).

Transport Research Laboratory (1997). *Footways Design and Maintenance Guide.* TRL Application Guide 26. Transport research Laboratory, Crowthorne.

Transport Research Laboratory (2002) Road Note 39 Fifth edition

Wright PJF (1953). *Some notes on the types of Sett Paving used in Scotland, The methods of laying and their characteristics.* Research Note No. RN/1925/PJFW March 1953. Road Research Laboratory, Crowthorne. (Unpublished Report)