



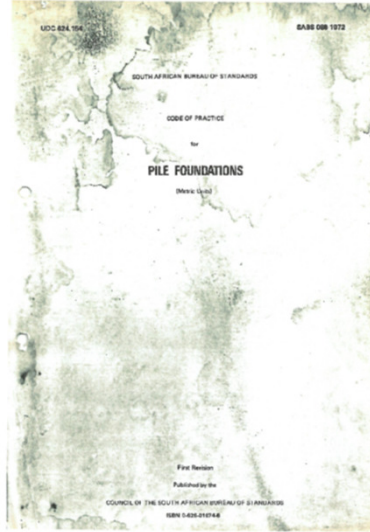
PILING CODES OF PRACTICE IN SOUTHERN AFRICA



PILING CODES OF PRACTICE IN SOUTHERN AFRICA

- A historical review of Piling Codes of Practice in Southern Africa
- Current pile design and construction practice in our region
- Do we need a pile design Code of Practice?
- Do we need to update or replace SABS 1200F as a Code of Construction practice?
- What should be used as the basis for a new pile design Code?
- What should be used as the basis for a Code of Construction Practice?
- Who should be included in the Piling Code Committee?
- What is the most effective way of introducing these Codes?

SABS 088



3

CONTENTS



- Section 1 Scope
- Section 2 Definitions
- Section 3 Material
- Section 4 Site Investigations
- Section 5 Types
- Section 6 General
- Section 7 Design of Piles
- Section 8 Formulae and Test Loads
- Section 9 Records and Contracts

4

APPENDICES

- Appendix A **Applicable Standards**
- Appendix B **Formulae for Pile Groups**
- Appendix C **Anchor Piles**
- Appendix D **Frictional Resistance of Piles**
- Appendix E **Recommended Sizes of Piles**

5

SABS 1200F - 1983

- SCOPE
- INTERPRETATIONS
- MATERIALS
- **PLANT**
- **CONSTRUCTION**
- TOLERANCES
- **TESTS**
- MEASUREMENTS AND PAYMENT

6

CURRENT PILE DESIGN AND CONSTRUCTION PRACTICE

- Most piling projects are undertaken on a design and construct basis in the region
- Mainly due to the specialist and empirical nature of the construction and design of piles
- Most design is done on working stress design principles with Eurocode 7 Limit State being introduced on large or “international” projects
- The Franki “Blue Book” or publications such as “Tomlinson” are commonly used in our region
- SABS 1200F remains as a construction Code of Practice with many additional specifications and requirements added

7

QUESTION 1 : DO WE NEED A PILE DESIGN CODE OF PRACTICE?

- The piling industry has managed to maintain acceptable standards without a code for more than 30 years
- The RSA piling industry is expanding geographically and in number and diversity of participants, both local and foreign
- Important to have a robust, relevant and accepted pile design code to ensure standards and safety are maintained
- The code should refer to and advise on geotechnical investigation requirements for piling

8

QUESTION 2 : DO WE NEED TO UPDATE OR REPLACE SABS 1200F?

- A comprehensive, relevant and accepted pile construction code is essential to ensure performance and quality standards are maintained
- A construction code compatible with the design code is an essential requirement
- The code should include a section with guidelines on measurement and pricing of piling items (based on SABS 1200F)
- A detailed section on current pile load and integrity testing methods must be included

9

QUESTION 3 : WHAT DESIGN BASIS SHOULD BE USED FOR THE NEW PILE DESIGN CODE?

- Limit State design methods are the preferred design basis internationally
- Limit State methods are generally used by the structural engineering fraternity and much needed compatibility with foundation design will be achieved
- Eurocode 7 has been in the making for many years and is now widely adopted and is often a requirement for use on “international” projects
- We should adopt Eurocode 7 as the design basis and research whether the development of an RSA Annex is feasible or whether the UK Annex (or similar) would be compatible with our regional requirements

10

QUESTION 4 : WHAT CODE(S) WOULD BE SUITABLE AS A REPLACEMENT FOR SABS 1200F?

- Eurocodes for bored and displacement piles are compatible with Eurocode 7 but only cover installation comprehensively
- Testing is covered in the Eurocode design section and limited reference is made to integrity testing
- Eurocode makes no reference to measurement and commercial aspects on piling and this aspect of piled foundations is often the source of disputes and the clear recommendations in SABS 1200F would be of benefit

11

QUESTION 5 : WHO SHOULD BE INCLUDED IN THE PILING CODE COMMITTEE?

- The members of the SABS 008 – 1972 Committee makes interesting reading
- Members of the Geodiv Division from academic institutions, consulting practices and the piling industry will form the core
- It would be good to include members from the public sector / parastatals as well as other engineering disciplines to ensure broader acceptance of the codes
- At this stage the composition of the Committee is as follows :
 - Gavin Byrne – Chairman (Construction)
 - Gavin Wardle (Design and Construction)
 - Dr. Eduard Vorster (Design)
 - Dr. Michael Pavlakis (Design)
 - Dr. Irvin Luker (Testing)
 - Malcolm Jaros (Design)
 - Anton Stoll / Garry Boyd (Construction)
 - Steven Crous (Construction)

12



QUESTION 6 : WHAT IS THE MOST EFFECTIVE WAY OF INTRODUCING THESE CODES?

- It is essential that the codes are accepted as best practice by all segments of the construction industry as well as client bodies
- The relatively recently introduced geotechnical investigation code is often overlooked by the industry and client bodies and sometimes by members of the geotechnical fraternity
- It is essential to “market” the piling codes to all stake holders before the codes are published
- Consideration should be given to elevating their status at a later stage

13

Thank you for your attention

