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AS 2566—1982

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PLASTICS PIPELAYING DESIGN

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This Australian standard was prepared by Committee PL/21, Rigid PVC Pipe. It was approved on behalf of the Council of the Standards Association of Australia on 3 May 1982, and published on 13 September 1982.

The following interests were represented on the committee responsible for the preparation of this standard:

Department of Public Works, New South Wales

Engineering and Water Supply Department, South Australia

Federated Master Plumbers of Australia

Hunter District Water Board

Melbourne and Metropolitan Board of Works

Metropolitan Water Sewerage and Drainage Board, New South Wales

Plastics Institute of Australia Incorporated

Queensland Water Resources Commission

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PREFACE

This standard was prepared by the Association's Committee on Rigid PVC Pipe under the authority of the Plastics Standards Board. It constitutes the revision and metrication of AS CA68—1972, with editiorial updating, and which it accordingly supersedes. The ISO system of nomenclature with respect to pipe diameter has been adopted in conformity with changes made in recently published Australian standards.

The general design principles in this standard are based on Marston and Spangler's work at the Iowa Engineering Experiment Station on underground conduits. The general format and much of the data incorporated in AS CA33* have been used in the preparation of this standard. The committee considered the feasibility of presenting safe burial depths for pipes in tabular or graphical form. This approach was not possible because of the large variations of design factors to be incorporated in each calculation. The standard, however, enables calculation of the safe burial depth of all plastics pipes. The method of calculation is illustrated in Appendix C.

Only one formula for calculating the total vertical load acting on the pipe has been used in the standard, on the assumption that there is little difference in the load-sharing between the pipe and the side fill for the three types of laying conditions specified. Soil box tests have supported the calculations in the standard and long-term field testing has confirmed them.

Temperature derating factors have been given for E_c and Y, but it will be seen by calculation (and has been confirmed experimentally in soil box tests) that within the range of deflection (up to 5 percent), material temperature (up to 40°C) and values for modulus of soil reaction (up to 7 MPa) covered by this standard, the effect of temperature does not have a very great effect on deformation performance.

By using criteria and values set out in this standard, it is possible to design for the wide range of conditions likely to be met in practical situations. The design sequence for two such installations is illustrated in Appendix C.

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* AS CA33, Code of Recommended Practice for Concrete Pipe Laying Design.

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CONTENTS

STANDARD *Page*

1 Scope 4
2 Application 4
3 Referenced Documents 4
4 Definitions 4
5 Notation and Values of Variables 4
6 Design Parameters 7
7 Pipeline Design 8
8 Loads on Pipes 8
9 Combined External Loading and Internal Pressure 9
10 Calculation of External Load Capacity of Pipe 9

APPENDICES

A Formulas for Calculation of Vertical Loads on Pipes Due to Fill Material 15
B Standard Installation Conditions 17
C Sample Calculations 24

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