

Flat-bottomed, vertical, cylindrical storage tanks for low temperature service

**Part 3. Recommendations for the design
and construction of prestressed and
reinforced concrete tanks and tank
foundations, and for the design and
installation of tank insulation, tank liners
and tank coatings**

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Pressure Vessel Standards Policy Committee (PVE/-) to Technical Committee PVE/15, upon which the following bodies were represented:

British Chemical Engineering Contractors' Association
British Compressed Gases Association
British Gas plc
Concrete Society
Energy Industries Council
Engineering Equipment and Materials Users' Association
Institution of Gas Engineers
Institution of Mechanical Engineers
Process Plant Association
Thermal Insulations Contractors' Association
Welding Institute

This British Standard, having been prepared under the direction of the Pressure Vessel Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 June 1993

© BSI 1993

The following BSI references relate to the work on this standard:
Committee reference PVE/15
Draft for comment 90/73029 DC

ISBN 0 580 21688 8

Amendments issued since publication

Amd. No.	Date	Text affected

Contents

	Page
Committees responsible	Inside front cover
Foreword	3
<hr/>	
Recommendations	
1 Scope	5
2 References	5
2.1 Normative references	5
2.2 Informative references	5
3 Definitions	5
4 Design conditions	5
5 Information to be exchanged between the purchaser and the contractor	5
6 Materials	5
6.1 General	5
6.2 Materials for prestressing steel and anchors	5
6.3 Reinforcing steels for concrete	6
6.4 Concrete	7
6.5 Earth fill	9
6.6 Insulation materials	9
6.7 Liners and membranes	11
7 Foundations	11
7.1 General	11
7.2 Soil investigation	11
7.3 Seismic investigation	12
7.4 Site selection	12
7.5 Foundation design	12
7.6 Types of foundation and tank base	14
7.7 Level tolerances	15
8 Prestressed concrete outer tank	15
8.1 General	15
8.2 Prestressing system	15
8.3 Loss of prestress	15
8.4 Design of tendons	15
8.5 Position of tendons	16
8.6 Protection of tendons	16
8.7 Design of concrete structure	16
8.8 Fire resistance	19
9 Reinforced concrete outer tank with earth embankment	19
9.1 General	19
9.2 Loading	19
9.3 Concrete properties at low temperatures	19
9.4 Reinforcing steel	21
9.5 Earth embankment	21
9.6 Wall heating	21
10 Insulation	21
10.1 General	21
10.2 Design	21