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Specification for

Propylene copolymer pressure pipe

Confirmed January 2009

This British Standard, having been approved by the Plastics Industry Standards Committee, was published under the authority of the Executive Board on 29 March 1974.

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The following BSI references relate to the work on this standard:

Committee references PLC/9, PLC/9/2, PLC/9/3 Draft for comment 72/50535DC

Co-operating organizations

The Plastics Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and industrial organizations:

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| *British Plastics Federation | *Ministry of Defence, Army Department |
| British Resin Manufacturers' Association | *Ministry of Defence, Navy Department |
| *Chemical Industries Association Ltd. | Ministry of Defence, Procurement Executive |
| Department of the Environment, Building Research Establishment | *Oil Companies Materials Association |
| Department of Trade and Industry | Plastics Institute |
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| *Engineering Equipment Users' Association | Rubber and Plastics Research Association of Great Britain |
| | *Society of Motor Manufacturers and Traders Ltd. |

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- | | |
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| Agrément Board | Institution of Municipal Engineers |
| Association of Industrialized Building Component Manufacturers Ltd. | Institution of Public Health Engineers |
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| Department of the Environment | Plastic Pipe Manufacturers' Society |
| Gas List Tube Association | Society of Builders' Merchants |
| Greater London Council | Water Companies Association |
| Institute of Plumbing | Water Research Association |
| Institution of Civil Engineers | |



**Amendment Slip No.1, published 29 April 1977
to BS 4991 : 1974
Propylene copolymer pressure pipe**

Revised text

**AMD 2262
April 1977**

Clause 4.2

Delete the existing text and substitute the following:

‘A guide to working pressures for grey pigmented Series 2 pipe transporting a non-aggressive fluid (e.g. water) at elevated temperatures for shorter periods of service than 50 years is given in table 1.’

**AMD 2262
April 1977**

Table 1. A guide to working pressures at various temperatures and working life times with water

Delete the existing text and table entirely and substitute the following:

Table 1. A guide to working pressures for grey pigmented Series 2 pipe

If grey pigmented Series 2 pipe is required to be used for the transport of non-aggressive fluids (e.g. water) at temperatures higher than 20 °C or if a shorter period of anticipated service than 50 years is acceptable, the following multiplying factors can be used to calculate the permissible sustained working pressures from the nominal class pressures given in 4.1.’

Working temperature	Acceptable duration of service life	Multiplying factor
°C	Year	
20	1	1.40
	5	1.21
	10	1.14
	50	1.00
40	1	0.96
	5	0.80
	10	0.76
	50	0.60
60	1	0.66
	5	0.54
	10	0.50
80	1	0.42
	5	0.30
	10	0.22
100	1	0.28
	5	0.14



Amendment No. 2
published and effective from 31 July 1987
to BS 4991 : 1974

Specification for propylene copolymer pressure pipe

Revised text

AMD 5337
July 1987

Inside front cover

Delete the committee references 'PLC/9, PLC/9/2, PLC/9/3' and substitute 'PLM/9 and PLM/9/2'.

AMD 5337
July 1987

Contents

In the entries for figures 1 and 2, delete the title and substitute '*Figure deleted.*'

AMD 5337
July 1987

Foreword

After paragraph 3, insert the following paragraph:

'The requirements for the effects of materials upon water quality have been updated to enable pipes complying with this British Standard to be acceptable to UK water undertakings.'

AMD 5337
July 1987

Clause 2.1.2

In paragraph 2, line 1, delete 'by Method 434D of the revised BS 2782, in course of preparation' and substitute 'in accordance with BS 2782 : Method 434D'.

AMD 5337
July 1987

Clause 2.1.6

In lines 1 and 2, delete 'according to Procedure A of Method 105C of BS 2782 : 1970, modified by using a temperature of 230 °C,' and substitute 'when tested in accordance with test condition 12 of BS 2782 : Method 720A : 1979,'.

AMD 5337
July 1987

Clause 2.2.1.1 Black

In paragraph 1, lines 1 and 2, delete 'by Method 405A of BS 2782 : 1970' and substitute 'in accordance with BS 2782 : Method 452B'.

Delete paragraph 2 and substitute the following:

'When tested across the pipe wall by the method described in BS 2782 : Method 823B : 1978, the numerical ratings for the dispersion of test pieces from carbon black pigmented pipes shall be 5 or less and the uniformity of appearance in respect of smears and streaks shall be equal to or better than photomicrograph A of figure 1 of BS 2782 : Method 823B : 1978.'

In paragraph 3, lines 1 and 2, delete 'by Method 434D of the revised BS 2782, in course of preparation' and substitute 'in accordance with BS 2782 : Method 434D'.

AMD 5337
July 1987

Clause 2.2.1.2 Natural

In line 2, after 'antioxidant', insert 'when tested in accordance with BS 2782 : Method 434D'.

AMD 5337
July 1987

New clause 2.2.1.3

After clause 2.2.1.2, insert the following:

2.2.1.3 Effect of non-metallic materials on water quality. When used under the conditions for which they are designed, non-metallic materials in contact with or likely to come into contact with potable water shall not constitute a toxic hazard, shall not support microbial growth and shall not give rise to unpleasant taste or odour, cloudiness or discoloration of the water.

Concentrations of substances, chemicals and biological agents leached from materials in contact with potable water, and measurements of the relevant organoleptic/physical parameters shall not exceed the maximum values recommended by the World Health Organization in its publication 'Guidelines for drinking water quality Vol. 1 Recommendations' (WHO, Geneva, 1984)* or as required by the EEC Council Directive of 15 July 1980 relating to the quality of water intended for human consumption (Official Journal of the European Communities L229, pp 11–29)*, whichever in each case is the more stringent.

NOTE 1. Requirements for the testing of non-metallic materials in these respects are set out in the UK Water Fittings Byelaws Scheme Information and Guidance Note No. 5-01-02, ISSN 0267-0313, obtainable from the Water Research Centre, Water Byelaws Advisory Service, 660 Ajax Avenue, Slough, Berkshire SL1 4BG.

NOTE 2. Pending the determination of suitable means of characterizing the toxicity of leachates from materials in contact with potable water, materials approved by the Department of the Environment Committee on Chemicals and Materials of Construction for use in Public Water Supply and Swimming Pools are considered free from toxic hazard for the purposes of compliance with this subclause. A list of approved chemicals and materials is available from the Technical Secretary of that Committee at the Department of the Environment, Water Division, Romney House, 43 Marsham Street, London SW1P 3PY.

NOTE 3. Products manufactured for installation and use in the United Kingdom which are verified and listed under the UK Water Fittings Byelaws Scheme administered by the Water Research Centre (address as in note 1) are deemed to satisfy the requirements detailed in this subclause.'

Insert the following footnote.

*Available from HMSO.'

AMD 5337
July 1987

Clause 2.2.2 Series 2

In paragraph 1, line 2, delete 'by Method 434D of the revised BS 2782, in course of preparation' and substitute 'in accordance with BS 2782 : Method 434D'.

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Fig. 1. Examples of satisfactory dispersion of carbon black

Delete the figure and after the title insert '*Figure deleted.*'.

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Fig. 2. Examples of unsatisfactory dispersion of carbon black

Delete the figure and after the title insert '*Figure deleted.*'.

AMD 5337
July 1987

Appendix F. Tensile test

In paragraph 1, line 2, delete 'Fig. 301.9 of BS 2782 : 1970.' and substitute 'figure 1 of BS 2782 : Methods 320A to 320F : 1976.'

In paragraph 4, line 1, delete 'Method 301F of BS 2782 : 1970,' and substitute 'BS 2782 : Method 320A'.

AMD 5337
July 1987

Inside back cover

In the list of BSI publications referred to, after the reference to 'BS 2782 Methods of testing plastics', insert the following subordinate references:

'Methods 320A to 320F Determination of tensile strength, elongation and elastic modulus
Method 434D Determination of antioxidants in polyolefin compounds by a spectrophotometric method
Method 452B Determination of carbon black content of polyolefin compound
Method 720A Determination of melt flow rate of thermoplastics
Method 823A and 823B Methods for the assessment of carbon black dispersion in polyethylene using a microscope'.

