

ISO 12051:2026-09 (E)

Plastics piping systems for water supply and drainage and sewerage under pressure - Modified poly(vinyl chloride)(PVC-M) pipe

Contents	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviated terms	2
3.1 Terms and definition	2
3.1.1 Terms related to geometrical definitions	3
3.1.2 Terms related to material	4
3.1.3 Terms related to material characteristics	5
3.1.4 Terms related to service conditions	5
3.2 Symbols	6
3.3 Abbreviated terms	8
4 Material	8
4.1 General	8
4.2 General requirements for compounds or formulations	8
4.3 Special requirement for compounds or formulations for components in contact with drinking water	8
4.4 Use of reworked material and recycle material	9
4.5 Density	9
4.6 Classification and verification of materials	9
4.6.1 Classification of compounds or formulations in pipe form	9
4.6.2 Verification of compounds or formulations in pipe form of PVC-M 250	9
5 General characteristics	9
5.1 Appearance	9
5.2 Colour	10
5.3 Opacity of pipes intended for the above-ground conveyance of water	10
6 Geometrical characteristics	10
6.1 Measurement of dimensions	10
6.2 Nominal outside diameters	10
6.3 Mean outside diameters and their tolerances	10
6.4 Wall thickness and their tolerances	11
6.5 Length of pipe	13
6.6 Pipes with sockets	14
6.6.1 Sockets for solvent cementing	14
6.6.2 Sockets for elastomeric ring seal type joints	15
6.6.3 Minimum depth of engagement of sockets	16
6.6.4 Calculation of depth of engagement	16
6.7 Pipe ends for ring seal or solvent cement joints	19
7 Classification and selection of pipes	19
7.1 Classification	19
7.2 Selection of nominal pressure and pipe series S for water up to and including 25 °C	19
7.3 Determination of the allowable operating pressure for water up to 45 °C	19

8	Mechanical characteristics	20
8.1	Resistance to high velocity impact	20
8.2	Resistance to internal pressure	20
8.3	Ring stiffness	21
8.4	C-Ring toughness test	21
8.5	Long-term toughness	21
8.6	Resistance of notched pipe to internal pressure	21
9	Physical characteristics	21
10	Sealing rings	22
11	Adhesives	22
12	Performance requirements	23
13	Marking	23
13.1	General	23
13.2	Minimum required marking	23
13.3	Additional marking	23
	Annex A (normative) Allowable operating pressures	24
	Annex B (normative) Resistance to high velocity impact fracture	26
	Annex C (normative) Method for determination of C-ring toughness	29
	Annex D (informative) Calculation of negative pressure capability of pipes	33
	Annex E (normative) Method for determination of long-term toughness	34
	Annex F (normative) Method for determining the resistance of notched pipe to internal pressure ...	37
	Bibliography	39