

Mechanical Properties	Cement Concrete	Polymer Concrete	GRC	Plastic
<p>Compressive strength The enclosure's wall/base is subject to compressive loads in use and needs to withstand specified loads.</p> <p>Flexural strength Affects site handling and when enclosure is installed in areas where encasement and soils are suspect.</p> <p>Tensile strength Generally only relevant to an enclosure's lid/cover.</p>	25MPa	96MPa C-579	50MPa	58MPa D-695
Thermal/Electrical Properties				
<p>Water absorption The enclosure's wall/base is designed to keep moisture away from it's contents where possible.</p> <p>Electrical resistivity The electrical insulation capability of an enclosure's materials.</p> <p>Freeze-thaw Inability to withstand freeze-thaw cycles causes surface spoiling and leads ultimately to an enclosure's failure.</p> <p>Coefficient of expansion/contraction Excessive movement between enclosure's wall/base and encasement materials (usually concrete) creates unwanted stresses which may lead to failure.</p> <p>Water vapour transmission WVT is a measurement of water vapour flow through a material. Passage of water vapour may be critical in some instances.</p>	<3%	+0.07% C-97	12%	+0.31% D-570
	1 x 10 ⁸ Ω/sq	1 x 10 ⁸ Ω/sq	1 x 10 ⁸ Ω/sq	1 x 10 ¹⁶ Ω/sq
	300 cycles maintain 80% structural integrity	300 cycles modulus of elasticity 95.1% C666	modulus of elasticity unchanged	223 cycles FAILED modulus of elasticity test C666
	11.7 x 10 ⁻⁶ per °C	19.8 x 10 ⁻⁶ per °C D696	20 x 10 ⁻⁶ per °C	97.2 x 10 ⁻⁶ per °C D696
	See water absorption test	WVT - 0.0364g/m ² - 1,592hrs E96	1 x 10 ⁻⁴ gm/s.MN	WVT - 0.1392g/m ² 1,592hrs E96
Surface Properties				
<p>Surface burning Cable enclosures are often used around petrol stations, chemical processing and interior applications and may be subject to fire. They should be non-flammable and not give off fumes or smoke.</p> <p>Weathering The majority of cable enclosures are used in exterior applications. Ability to withstand adverse weather will ensure long service life (erosion, UV degradation etc).</p> <p>Chemical resistance Cable enclosures may be subject to acidic or alkaline soils.</p>	Non-combustible	Flame spread : 0 Smoke density : 5 E84	Non combustible Ignitability: P Fire propagation: 0 Flame spread : 1 BS476	Flammable
	Good depending upon proper curing	2000hr exposure no change G-153	Similar to cement concrete. UV stable	1000hr exposure no change G-154 FAILED TEST
	Poor	Good	Poor - better than cement concrete	Good

Colour Key: - Good - Acceptable - Poor

Cement concrete values obtained from AS 3600 and SA HB64 Guide to Concrete Construction (Cement & Concrete Assoc. of Australia)

Polymer concrete values obtained from experimental data using ASTM testing procedures

GRC values obtained from Design, Manufacture & Installation of Glass Reinforced Concrete (GRC Industry Group of NPCAA)

Plastic values obtained from experimental data using ASTM testing procedures

Electrical resistivity test based upon experimental data conducted by University of NSW