

CMIT(C)-2003-028

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Property	Test Method	HySSIL Test Results	Comments
Bulk Density	- Samples cut from pilot sized panels	- after de-moulding - 1500kg/m ³ - 28 days standard - 1450kg/m ³ - oven dried - 1250kg/m ³	
Strength ^a	- Flexural tests on 100x100x400mm prisms cut from pilot sized panels - Compressive strength results obtained from ISO type test on flexural test prisms	- Standard curing Flexural: 3.3-3.5 MPa @ 28d Compressive: 17-20MPa @ 28d Heat Accelerated Curing Flexural: 2.8-3.2 MPa @ 28d Compressive: 14r-17 MPa @ 28d	
Elastic Modulus	- tested on 100x100x200mm fog cured prisms	11 GPa	HySSIL approx. 50% of 20 MPa concrete with density of 2500 kg/m ³
Drying Shrinkage	- measured from stainless steel gauge studs embedded through full-thickness on longitudinal axis of 600x1800x100mm panel	500 microstain @ 56 days 600 microstain @ 1 year ^b 700 microstain ultimate ^b	AS3600 typical 30 year design shrinkage for internal environment ~ 860 microstain
Water Sorptivity	- 400x170x100mm slabs subjectes to 50mm hydro-static head in rain machine - Sample pre-dried for 21 days before testing	d ₂₄ = 8-13mm @ 28 days	Exceeds requirements eg for AS3600 exposure classification B2

Notes:

- a Both Flexural and compressive strength tests carried out on prisms cut from test panels. Typically 'cut' prisms test 15-20% lower than 'cast' prisms
b Estimated value

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Thermal Conductivity	- Guarded hot box method complying with ASTM C 518, AS/NZS 4859	- 0.35 - 0.6 W/mK for lab dry densities ranging between 900-1400 kg/m ³	Thermal conductivity of Normal density concrete typically ranges between 1.5 to 2.5 W/mK
Fire resistance	- Fire curve as per AS1530.4 on 1m ² wall panel area - Raw joints with no fire retarding seal	For 75mm thick panel - 2.5 hours to insulation failure - 1.2 hour joint to joint failure	Panel tests with raw joints - no fire retarding joint seal
Structural bending strength	- 600 x 800 x 100mm panels reinforced with single F62 mesh at centreline - 4 point bending at 540mm centres	- Serviceability bending capacity up to 1.5 MPa	- Up to 3 times less than N40 concrete - Ability to resist ultimate strength and serviceability limit state wind loads for 3m spans
Pull-out strength	- Tests on No. 14 Tapcon threaded fastener and D6058 Dynabolt	> 3 kN for Tapcon ~ 2 kN for Dynabolt	Capable of fixing 200kg/ linear metre (cabinets and contents)
Impact resistance	- Hard impact tests and measurement on diameter of indentation - 0.5 and 1.0kg balls from drop heights of 400 and 400mm	Diameter of indentation between 8 - 15mm	- Impact resistance of N40 normal density concrete panels about 30% better than HySSIL