

## Overview

*Building Envelope Test Consulting Solutions (beTcs) Asia-Pacific offers highly specialised, independent and accredited inspection services for the witnessing and supervision of performance testing on curtain wall and facade systems by overseas facilities, delivering assurance verification of a project's facade specification.*

*This expertise assures confidence in the acceptance process for project stakeholders, relieving them of unrealised risks in the unfamiliar field of performance testing.*

Queen's Wharf Tower 1, Brisbane

## Core Competencies

beTcs Asia-Pacific helps those project stakeholders responsible for delivering and accepting the facade package by applying technical knowledge and providing our own calibrated technical resources to verify performance testing, including:

- Advise on proposed test schedule and PMU configuration
- Test witnessing & supervision
- Scrutineering of overseas facility's credentials & scope
- Review & confirm facility equipment and instrumentation for operability, range, calibration and accuracy
- Ensure test procedures, parameters and PMU configuration are as agreed to by all parties
- Effective oversight for correct application of test procedures and parameters
- Independent analysis of results, verifying compliance with performance requirements
- Comprehensive documentation and issue of a NATA endorsed report

308 Exhibition Street, Melbourne

## Accreditation

beTcs Asia-Pacific is an Inspection Body accredited by the National Association of Testing Authorities (NATA), Australia.

- NATA Accreditation No.: 20528
- Compliant to ISO/IEC 17020
- Type A Inspection Body
- Accredited to inspect: Cladding systems; Curtain walling; Door, window & skylight assemblies; Facade assemblies; Sloped glazing systems
- Accredited to conduct inspections of overseas test facilities and testing covered under the relevant Standards and Codes for AS, AS/NZS, SIROWET, AAMA, ASTM, BS EN, CWCT, and NCC BCA



NATA is an Australian government-endorsed peak accreditor of inspection bodies, and a leader in accreditation internationally. NATA is a signatory to the international mutual recognition arrangements of the International Laboratory Accreditation Cooperation (ILAC) and the Asia Pacific Accreditation Cooperation (APAC) for inspection.

## Supported Clients





## Facade, window & sliding door test witnessing & supervision

Witness and supervise facade testing to the following standards for curtain wall prototypes to - AS/NZS 4284 (SIROWET); ASTM E283, E330, E331 & E547; BS EN 12152, 12153, 12154, 12155, 12179, 12600, 13116 & 14019; AAMA 501.1, 501.4 & 501.5; CWCT TN75 & TN76; and, windows and sliding doors to - AS/NZS 4420.1 for AS 2047; and, BS EN 1026, 1027, 12207, 12210, 12211 and 13049.

## Field inspection of installed facade and fenestration systems

AAMA 501.2 is the widely accepted method for quality assurance and water penetration check for installed curtain walls and sloped glazing systems.

AAMA 503 and BS EN 13051 are more exacting means for on-site assessment.

## Building envelope compliance guidance

In 2015 the Building Code of Australia (BCA) introduced Verification Methods FV1 (Vol. 1) and V2.2.1 (Vol. 2) to evaluate the weatherproofing performance of direct-fix cladding, cavity and unique wall systems. The methods provide a means to verify compliance with the relevant NCC BCA Performance Requirements of FP1.4 and P2.2.2 for water penetration in an external wall.

## Practised Standards & Codes

AS/NZS 4284 Testing of building facades  
SIROWET Testing of building facades  
AS 2047 Windows and external glazed doors in buildings  
AS/NZS 4420.1 Windows, external glazed, timber and composite doors - Methods of test test sequence, sampling and test methods  
BS EN 14019 Curtain Walling. Impact resistance. Performance requirements.  
BS EN 13049 Windows. Soft and heavy body impact. Test method, safety requirements and classification  
BS EN 12600 Glass in building. Pendulum test. Impact test method and classification for flat glass  
CWCT TN75 Impact performance of building envelopes: guidance on specification  
CWCT TN76 Impact performance of building envelopes: method for impact testing of cladding panels  
BS EN 12152 Curtain walling. Air permeability. Performance requirements and classification  
BS EN 12153 Curtain walling. Air permeability. Test method  
BS EN 12154 Curtain walling. Watertightness. Performance requirements and classification  
BS EN 12155 Curtain walling. Watertightness. Laboratory test under static pressure  
BS EN 12179 Curtain walling. Resistance to wind load. Test method  
BS EN 13116 Curtain walling. Resistance to wind load. Performance requirements  
BS EN 12210 Windows and doors. Resistance to wind load. Classification  
BS EN 12211 Windows and doors. Resistance to wind load. Test method  
BS EN 13051 Curtain walling. Watertightness. Site test  
BS EN 12207 Windows and doors. Air permeability. Classification  
BS EN 12208 Windows and doors. Watertightness. Classification  
BS EN 1026 Windows and doors. Air permeability. Test method  
BS EN 1027 Windows and doors. Watertightness. Test method  
AAMA 501.1 Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure  
AAMA 501.2 Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems  
AAMA 501.4 Recommended Static Test Method for Evaluating Window Wall, Curtain Wall and Storefront Systems Subjected to Seismic and Wind-Induced Inter-Story Drift  
AAMA 501.5 Test Method for Thermal Cycling of Exterior Walls  
AAMA 503 Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems  
ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen  
ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference  
ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference  
ASTM E547 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference  
BCA Vol 1: FV1 Weatherproofing Verification Method  
BCA Vol 2: V2.2.1 Weatherproofing Verification Method  
AS 4040.0 Introduction, list of methods and general requirements  
AS 4040.1 Resistance to concentrated loads  
AS 4040.2 Resistance to wind pressures for non-cyclone regions  
AS 4040.3 Resistance to wind pressures for cyclone regions

## Experience

Metro Martin Place North Tower, Sydney  
308 Exhibition Street, Melbourne  
Queen's Wharf Tower 1, Brisbane  
West Side Place 2 podium, Melbourne  
Jewel, Gold Coast  
Melbourne Square  
Arthur Phillip High School (Tower), Parramatta  
447 Collins Street, Melbourne  
UTS Central, University of Technology Sydney  
60 Martin Place, Sydney  
80 Collins Street, Melbourne  
Crown Sydney Hotel & Resort  
CSR Inclose - system  
Australian National University, New Hall of Residence, Canberra  
International Convention Centre Hotel, Darling Harbour, Sydney  
International Convention Centre, Darling Harbour, Sydney  
AFP Forensic Facility, Canberra  
888 Collins Street, Melbourne  
Crown Towers, Perth  
727 Collins Street, Melbourne  
CSR Cemintel - system  
CSR Hebel - system  
333 George Street, Sydney  
Abercrombie Precinct, University of Sydney  
One William Street, Brisbane  
480 Queen Street, Brisbane  
Brookfield Place Tower 2, Perth  
New Children's Hospital, Perth  
720 Bourke Street, Melbourne  
New Royal Adelaide Hospital  
Barangaroo - Towers C4 & C5, Sydney  
Chris O'Brien Lifehouse - Royal Prince Alfred Hospital, Sydney  
SAHMRI, Adelaide  
171 Collins Street, Melbourne  
700 Bourke Street, Melbourne  
University of Adelaide Illumin8 project  
Metro Residences, Chatswood  
Queensland Children's Hospital, Brisbane  
The Residence Hyde Park, Sydney  
Fusionopolos, Singapore  
Museum of Contemporary Art, Sydney  
Fiona Stanley Hospital, Perth  
Brisbane Airport Domestic Terminal  
Star Casino, Sydney  
Westfield Tower, Sydney  
ALDI Head Office, Minchinbury  
City Square project, Perth  
Central Plaza 3 Tower, Brisbane  
National Portrait Gallery, Old Parliament House, Canberra - for 3M

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