PASC
PAN-AFRICAN STANDARDS COUNCIL

STANDARD / INSTITUTIONAL EDITION

PASC-PD-CM-01 · ED. 1.0 · NOVEMBER 2026

Construction, materials and psychodesign performance

Site · Materials · Quality · Life cycle · Occupant outcomes

Issuing authority
Pan-African Standards Council (PASC)

Publication status
Council-approved · Published

Publication date
1 November 2026

Foreword

Buildings, neighbourhoods and infrastructure shape physical safety, health, attention, social relations, environmental comfort and cultural continuity. Construction decisions also determine whether a facility can be maintained, repaired and operated economically throughout its service life. This standard connects material selection and construction acceptance to measurable performance in use, drawing on the MHD psychodesign method and the existing PASC-PD residential-housing framework.

It establishes requirements that can be tested at design, procurement, construction, handover and post-occupancy stages. Project-specific technical values SHALL be determined from applicable building law, engineering calculations, recognised material tests and the approved project performance specification.

1. Scope

1.1 PASC PD-CM 01 applies to buildings, public facilities, residences, schools, healthcare facilities, campuses, commercial premises and associated outdoor spaces, for new construction, renovation, rehabilitation and extension.

1.2 It covers the material chain from source and technical specification to site verification, installation, maintenance and end-of-life recovery. It addresses structural and nonstructural materials, finishes, assemblies, building envelope, circulation, water and drainage, environmental comfort and operational quality.

1.3 Statutory construction requirements, design codes, professional engineering approvals, product laws, occupational safety rules and fire regulations remain applicable to the project and jurisdiction. This PASC standard SHALL be implemented in conjunction with them.

1.4 Where PASC-PD 1.0 applies to residential housing, its PEI, CFI and EII mechanisms and annexes remain the primary psychodesign assessment baseline. PASC PD-CM 01 adds construction and materials lifecycle controls across building categories.

2. Terms and normative language

SHALL indicates a mandatory requirement; **SHOULD** a recommendation; **MAY** a permitted option.

- **Psychodesign:** spatial design and evaluation that examines measurable consequences for psychological comfort, dignity, perception, safety, behaviour, cultural fit and everyday use.
- **Material passport:** controlled record of an installed product’s identity, origin, technical characteristics, batch or lot, applicable tests, location, maintenance and replacement instructions.
- **Fit-for-purpose material:** product whose evidenced properties match the climatic, structural, operational and usage conditions of the intended application.
- **Constructability:** ability to build, inspect, maintain and repair an approved design with available or realistically procured capacity.

- **Commissioning:** evidence-based confirmation that a constructed system meets its approved installation and operational performance requirements.
- **Post-occupancy evaluation (POE):** controlled assessment of performance and occupant experience after use begins.

3. Accountability and project baseline

CM.GV.01 Every project SHALL have a defined client or public authority, design authority, licensed engineering functions where applicable, construction quality owner, operation/maintenance owner and independent testing functions as required by the project risk profile.

CM.GV.02 Before detailed design approval, the project SHALL establish a controlled baseline containing site characteristics; intended use; projected users; cultural and accessibility requirements; climatic exposures; legal and technical standards; safety and security objectives; whole-life cost assumptions; maintenance capacity; and design constraints.

CM.GV.03 The project SHALL maintain an approved requirements-to-evidence matrix linking each critical function to design decisions, specifications, inspections, tests, acceptance results and responsible parties.

CM.GV.04 Significant substitutions of materials, building layout or building services SHALL undergo controlled technical, user-performance and life-cycle review before installation.

4. Site, environment and local suitability

CM.SI.01 Design inputs SHALL include observed local hazards, drainage, groundwater where relevant, solar path, prevailing wind, noise sources, heat, precipitation, dust, access constraints and infrastructure reliability. The evidence sources and survey dates SHALL be recorded.

CM.SI.02 Geotechnical and structural assumptions SHALL be defined by competent professionals and supported by appropriate investigation. Ground conditions SHALL not be inferred solely from nearby developments where the design demands site-specific evidence.

CM.SI.03 The design SHALL assess the effects of surrounding roads, industries, neighbours and future development on safety, air, noise, privacy and accessibility. Mitigations SHALL have verifiable performance objectives.

CM.SI.04 Water supply, storage, drainage, wastewater and maintenance access SHALL be designed for the applicable climatic and service conditions, with inspection and test points identified.

5. Materials: selection, identification and evidence

CM.MT.01 Each critical material or assembly SHALL have an approved specification that identifies intended function, material grade or class, applicable test method or standard, environmental exposure, expected performance, acceptance criteria and responsibility for verification.

CM.MT.02 Procurement SHALL retain evidence of supplier identity, manufacturer, product and batch, technical data, certification or test reports where applicable, shelf life and conditions of storage and transport. Product documentation SHALL be linked to the installed location.

CM.MT.03 Product suitability SHALL be assessed against moisture, corrosion, salinity, ultraviolet exposure, heat, biological agents, fire, impact, mechanical loads and user contact as relevant. Unsuitable generic substitutions SHALL be rejected at technical acceptance.

CM.MT.04 Where a supplier's product claims are used to satisfy a critical performance objective, the project SHALL obtain relevant independent or accredited laboratory evidence where legally required or risk justified. The method, sample, batch relationship and limitations SHALL be documented.

CM.MT.05 Materials SHALL be assessed for cleanability, repairability, local replacement availability, expected service life, lifecycle maintenance cost and end-of-life treatment. Operational dependence on inaccessible proprietary supplies SHALL be included in the project risk record.

CM.MT.06 Products with sensitive indoor exposure, such as adhesives, coatings, insulation, flooring and composite wood, SHALL be screened for applicable chemical, emissions and fire-safety requirements. Installation and ventilation procedures SHALL be documented.

CM.MT.07 A material passport SHALL be issued for major structural elements, weatherproofing systems, critical fire components, principal mechanical/electrical products and other items designated by project risk. The passport SHALL remain available for maintenance and future modification.

6. Construction and installation controls

CM.CN.01 Approved drawings, specifications, calculations and inspection-and-test plans SHALL identify controlling editions. Site teams SHALL access the same current controlled release.

CM.CN.02 The quality plan SHALL define hold points before work becomes concealed, including foundations, structural reinforcement, waterproofing, critical fire separations, service penetrations and other project-critical interfaces.

CM.CN.03 Incoming-material checks SHALL verify identity, condition, quantity, batch, transport and storage. Failed or ambiguous material SHALL be quarantined pending disposition by an authorised function.

CM.CN.04 Field inspection records SHALL identify the inspected location, acceptance criterion, method, measurement or test evidence, result, inspector role, date and disposition.

CM.CN.05 Deviations SHALL be documented with technical consequence, corrective measure, approval and reinspection. Concealment or handover SHALL not close an unresolved safety-critical failure.

CM.CN.06 Construction-stage changes affecting openings, acoustics, lighting, ventilation, circulation, accessibility or privacy SHALL be evaluated against the approved psychodesign requirements in addition to engineering criteria.

7. Human-centred spatial performance

CM.PD.01 Each occupied space SHALL have a user profile identifying primary activities, occupancy pattern, privacy requirements, sensory exposures and accessibility needs. These SHALL inform the room data sheet and acceptance tests.

CM.PD.02 The project SHALL define measurable environmental-comfort targets for thermal conditions, light, acoustic disturbance, ventilation and glare appropriate to its function. Measurements and user testing SHALL be planned at representative conditions.

CM.PD.03 Circulation SHALL be legible and safe, with protected entries, transition zones, accessible routes and suitable emergency egress under local law. Wayfinding effectiveness SHALL be validated using appropriate representative users.

CM.PD.04 Spaces used for healthcare, learning, recovery, worship, meetings or confidential transactions SHALL account for dignity, privacy, stress, cognitive load and noise propagation. Where music or performance is intended, the design SHALL assess sound insulation, building services noise, operating periods and neighbouring land uses.

CM.PD.05 Cultural fit SHALL be established through documented consultation and use scenarios. Material and spatial choices SHALL support local customs, household organisation, climate and community needs without reducing structural or safety performance.

CM.PD.06 Landscape and public-realm elements SHALL be evaluated for shade, water, safety, accessibility, stewardship, upkeep and continuity with the surrounding environment.

8. Adaptability, maintenance and lifecycle

CM.LC.01 Design documentation SHALL describe how critical systems and materials can be inspected, cleaned, repaired, replaced and isolated without avoidable service disruption.

CM.LC.02 Whole-life decisions SHALL include procurement, installation, planned maintenance, foreseeable replacement, local workforce availability, operating energy and water, and decommissioning where material.

CM.LC.03 Handover SHALL include as-built drawings, commissioning results, material passports, product warranties, maintenance schedules, safety instructions, asset identifiers, defect records and operation training evidence.

CM.LC.04 The operator SHALL retain a periodic inspection and defect-resolution process with risk priority, owner, target date, completed work and effectiveness evidence.

9. Performance verification and acceptance

CM.VE.01 Acceptance criteria SHALL be established before procurement or installation for each critical performance objective. Acceptance evidence SHALL show the criterion, observation, method, result and decision.

CM.VE.02 Representative samples and mock-ups SHOULD be used to test tactile quality, lighting, acoustic conditions, material finishes, user orientation and maintainability before irreversible work.

CM.VE.03 At practical completion, the project SHALL perform safety, commissioning, environmental and user-function checks appropriate to risk and applicable law. Outstanding defects SHALL be classified and controlled.

CM.VE.04 A POE plan SHALL define the assessment interval, measured environmental conditions, user sample, accessibility and cultural-fit measures, complaint channels, corrective ownership and evidence retention. The interval SHALL fit operational use and seasonality.

CM.VE.05 PASC-PD 1.0 PEI, CFI and EII scoring SHALL be applied when that scheme is within scope; the denominator, sampling and assessment method SHALL be preserved. Other building categories SHALL use preapproved objective criteria and SHALL not present residential scores as universally valid.

CM.VE.06 The final project dossier SHALL connect planned performance to as-built reality and observed use. Evidence gaps and unresolved deviations SHALL remain explicit in the acceptance record.

10. Conformity

CM.CO.01 A conformity statement SHALL specify the building/project, site, owner, edition of this standard, related codes and PASC-PD editions, applicable clauses, assessed scope, result, date and evidence register.

CM.CO.02 The reviewer SHALL assess all applicable SHALL requirements through primary records and a risk-based physical or documentary sample. Critical safety or lifecycle deficiencies SHALL prevent an unqualified conformity conclusion.

CM.CO.03 Independent PASC recognition, where claimed, SHALL follow the applicable organisational eligibility prequalification and PASC assessment decision process. The publication of this construction standard does not itself issue certification to a project, contractor or material supplier.

Annex A — Material passport: minimum fields (Normative)

Field	Minimum record
Project and location	Project ID; building, zone, element/location
Product identity	Manufacturer; supplier; product; model; grade/class

Field	Minimum record
Batch trace	Batch/lot; dates; quantity; delivery record
Intended function	Design function and exposure class
Performance	Applicable technical specifications, tests and results
Installation	Installer, installation date and controls performed
Health and safety	Relevant fire, emissions and handling data
Service lifecycle	Maintenance, repairs, service life and replacement
Approval trail	Reviewer/approver role, exception status, linked evidence

Annex B — Site acceptance and post-occupancy evidence (Normative)

Stage	Evidence	Acceptance question
Site baseline	Surveys, climate, ground and infrastructure records	Conditions and constraints actually measured?
Design	Room data, engineering design, accessibility, calculations	Requirements mapped to test methods?
Procurement	Lot trace, declarations, independent test as required	Materials match the approved specification?
Construction	Inspections, hold points, nonconformities	Installation and correction documented?
Commissioning	Functional tests, environmental measures	Intended performance demonstrated?
Handover	As-built, passports, operations training	Operator can maintain and repair?
POE	User study, climate measurements, defects and actions	Outcomes sustained in real operation?

Annex C — Technical proponent and source architecture (Informative)

Miezi Home Designs (MHD) developed the underlying psychodesign application framework, connecting material quality, circulation, climate, culture and occupant outcomes. The current standard extends that applied approach into procurement, site inspection, commissioning and material traceability. PASC-PD 1.0 remains the governing published psychodesign housing reference when residential conformity is claimed.

Annexe D — Résumé de mise en œuvre (informatif)

Objet : la norme PASC PD-CM 01 fixe les exigences vérifiables de conception, sélection des matériaux, approvisionnement, construction, réception et suivi des usages. Elle s'applique à l'habitat, aux établissements de soins et d'enseignement, aux campus, aux bâtiments publics et aux autres espaces occupés.

Preuves attendues : cahier des besoins, études de site, fiches matériaux, résultats d'essais, contrôle chantier, dossiers d'ouvrages exécutés, réception technique, réception des usages et évaluation après occupation. Les codes locaux, la responsabilité des professionnels qualifiés et les exigences d'accessibilité restent applicables.

Principe de la psychodesign : les effets humains, culturels, sensoriels et environnementaux sont intégrés aux exigences et vérifiés pendant le cycle de vie du bâtiment. Les indices PEI/CFI/EII de PASC-PD 1.0 sont utilisés lorsque le champ de l'habitat résidentiel les rend applicables.

References

1. PASC Institute, *PASC-PD 1.0: African Psychodesign for Residential Housing*, December 2025, https://doi.org/10.5281/zenodo.18035332.
2. Miezi Home Designs, *Psychodesign: Habitat, Cities & Construction*, executive institutional brochure, October 2026.
3. Miezi Home Designs, *Psychodesign Standards & Qualité Constructive*, technical service presentation, 2026.
4. International building product and construction standards applicable to each declared jurisdiction and project scope.

Publication history

Edition	Publication date	Summary
1.0	2026-11-01	Construction and materials lifecycle requirements, with psychodesign verification