

Structural Assessment Report

Two-storey residence (specimen) — Dumaguete City, Negros Oriental

Report reference	AEDO-SA-SPECIMEN-01
Subject building	Two-storey single-family residence, approx. 118 m ² total floor area
Location	Specimen address, Dumaguete City, Negros Oriental (withheld)
Client	Property owner (withheld in specimen)
Purpose of assessment	Evaluate reported diagonal cracking above a ground-floor window and report on the overall structural condition
Assessment type	Visual condition survey with engineering evaluation. No destructive or laboratory testing.
Date of inspection	Specimen — a live report states the actual date
Date of issue	Specimen — not issued
Prepared by	Civil engineer, AEDO Construction OPC (name and PRC licence number omitted from specimen)
Reviewed by	Principal engineer, AEDO Construction OPC (omitted from specimen)
Status	SPECIMEN DOCUMENT — NOT FOR CONSTRUCTION, PERMIT OR TRANSACTION USE

About this document. AEDO Construction OPC publishes this specimen so that building owners, boards and buyers can see what a complete structural assessment report contains before they commission one. The building described here does not exist. Every observation, measurement, finding and recommendation is illustrative. In a live report, page 8 carries the signature, PRC licence number and dry seal of the civil engineer who performed the inspection; those are deliberately omitted here.

Revision history

Rev	Date	Description	Prepared	Reviewed
0	Specimen	Issued for publication as a specimen document	-	-

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Executive summary

The building is in serviceable structural condition. Of five conditions recorded, one requires repair within one month (corroding reinforcement at the entrance canopy beam, Finding F-4), one requires monitoring over three months (diagonal cracking in an infill wall panel above window W-2, Finding F-1), and three require no structural action.

Nothing observed requires the building to be vacated, and no area needs to be taken out of use. The second floor slab carries a normal residential load satisfactorily but should be re-assessed before any additional load is added. No structural drawings were available; the evaluation therefore rests on measured member sizes and stated assumptions, both recorded in Sections 4 and 6.

1. Introduction and scope

AEDO Construction OPC was engaged by the property owner to inspect and report on the structural condition of the subject building following the appearance of a diagonal crack above a ground-floor window, which the owner reported as widening over roughly six months.

The agreed scope of this assessment covers:

In scope	Not in scope
Visual condition survey of the accessible structural frame, slabs, roof structure and visible foundations	Removal of finishes, opening of members, or excavation to expose foundations
Measurement of recorded defects and of accessible member sizes	Laboratory or in-situ material testing (see Section 8 for when this is triggered)
Engineering evaluation of the observed conditions against NSCP 2015	Architectural, electrical, plumbing, fire protection or sanitary systems
A written report with findings, severity classification and prioritised recommendations	Design of any repair or retrofit, which is a separate engagement
A monitoring plan where a condition warrants observation over time	Certification of the building for any regulatory, insurance or transaction purpose

2. Basis of assessment and references

Observed conditions were evaluated against the following, applied to the loads relevant to a two-storey residence on this site:

Reference	Applied to
NSCP 2015, Section 204	Dead loads: self-weight of frame, slab, walls, roof and finishes
NSCP 2015, Section 205	Live loads for residential occupancy, including the second floor slab check
NSCP 2015, Section 208	Seismic demand, Zone 4 site, for the frame's lateral system
NSCP 2015, Section 207	Wind demand on the roof structure and exposed canopy
PD 1096, Sections 214-215	Dangerous-building criteria, screened against but not triggered by any finding here
RA 544, Section 14	Seal and signature requirement for the issuing civil engineer

3. Description of the building

Two-storey single-family residence of approximately 118 square metres total floor area, reported by the owner to have been completed around 2008 and in continuous residential use since. No change of occupancy was reported and none was evident.

Element	As observed
Structural system	Reinforced concrete moment frame, three bays on the north elevation (grids A to C)
Columns	300 x 300 mm typical, measured at accessible faces on both levels
Beams	250 x 400 mm typical at the second floor line; canopy beam 200 x 300 mm

Element	As observed
Second floor slab	Reinforced concrete suspended slab, 3.6 m clear span in the living area, approx. 125 mm thick at the edge
Walls	150 mm concrete hollow block infill, plastered both faces; non-load-bearing
Roof	Pre-painted metal roofing on steel purlins over a timber-framed ceiling
Foundation	Not exposed. Isolated pad footings assumed, consistent with the frame and the construction period

4. Methodology and instruments

The inspection was carried out on foot from floor level throughout, with the roof space inspected from the ceiling access hatch only. All interior rooms and the full exterior perimeter were accessible. Conditions were dry throughout the inspection.

Activity	Method / instrument
Crack width measurement	Graduated crack comparator card, read at the widest point of each crack
Member dimensions	5 m steel tape at accessible faces; plaster thickness not deducted
Verticality of columns	Spirit level and plumb line over a 2.4 m height; method tolerance approx. 3 mm
Slab deflection	String line across the span with offset measured at mid-span
Photographic record	Digital camera, each frame located and dated (Appendix B)
Concrete strength	Not tested. No cores, no rebound hammer survey (see Section 8)
Reinforcement	Not scanned. Bar sizes noted only where already exposed at the spalled canopy beam

The absence of testing is deliberate rather than an omission: nothing observed on this building raised a question that a visual survey could not answer. Section 8 states the conditions that would trigger testing on a later visit.

5. Observations

Ref	Location / member	Observation	Measured
O-1	Ground floor, north elevation, infill wall panel above window W-2, grid A-B	Diagonal crack from the upper window corner running toward the beam soffit, visible on both faces of the wall, following the mortar joints in part and passing through blocks elsewhere	2.6 mm at widest, 1.4 m long
O-2	Ground floor, column C-3, north face	Fine vertical hairline cracking over approx. 600 mm above floor level. No spalling, no rust staining, no exposed reinforcement, no displacement across the crack	Below 0.3 mm
O-3	Second floor slab, living area, grid B-2	Slight downward deflection under normal furniture loading. The ceiling line reads visibly curved against the adjacent wall. No cracking on the slab soffit	11 mm over a 3.6 m span (span/327)
O-4	Entrance canopy beam, exterior, grid C	Rust staining across the soffit and one 220 mm length of exposed, corroded reinforcement where the concrete cover has spalled. Corrosion is active; product is loose and flaking	Cover loss approx. 220 x 60 mm; 1 bar exposed

Ref	Location / member	Observation	Measured
O-5	Ground floor, rear service area	Floor tiles sound hollow when tapped over approximately 1.2 square metres. No cracking in the slab below or in the wall above	Approx. 1.2 m ² ; finish only

Photographs of each observation are in Appendix B. The location of O-1 is shown on the elevation sketch in Appendix A.

6. Structural evaluation

No structural drawings, building permit or previous engineering report were available from the owner. The evaluation therefore proceeds from measured member sizes and the assumptions below, each stated so that a later engineer can test it rather than inherit it.

Assumption	Consequence if wrong
Reinforcement detailing is consistent with the bar sizes visible at the spalled canopy beam and with ordinary residential practice of the reported construction period	Frame capacity conclusions in this section would require re-examination, most likely with reinforcement scanning
Concrete strength is consistent with ordinary residential practice of that period	Core testing under NSCP 2015 Section 426.12 would be required to establish actual strength
Footings are isolated pads bearing on undisturbed soil	Any settlement-related finding would need foundation exposure to confirm

6.1 Gravity and live load

The second floor slab spans 3.6 m clear and carries a residential live load under NSCP 2015 Section 205. The measured 11 mm deflection at mid-span is approximately span/327. For a slab of this span, age and loading, this magnitude is consistent with long-term deflection under sustained load rather than with distress: no cracking was observed on the soffit, and the deflected profile is smooth rather than locally kinked. The margin is adequate for the present use and is not adequate to absorb arbitrary additional load, which is the basis for the recommendation in Section 8.

6.2 Lateral system, seismic and wind

The lateral system is the reinforced concrete moment frame; the concrete hollow block walls are infill and were not counted as resisting elements. Under NSCP 2015 Section 208 the site is in Seismic Zone 4. No condition was observed that reduces the frame's lateral capacity: columns are plumb within the tolerance of the method used, no beam-column joint shows cracking, and no displacement was measured across any crack. Wind demand under Section 207 governs only the roof structure and the entrance canopy; the canopy condition is covered by Finding F-4.

6.3 Infill wall cracking

The crack at O-1 originates at the upper corner of window W-2, which is the stress concentration point in an infill panel and the location where in-plane movement, thermal movement and shrinkage all concentrate. Its width and the owner's account of progression place it beyond shrinkage. Because the panel is infill rather than load-bearing, the condition is a serviceability and durability matter, not a loss of frame capacity. It does, however, record that movement has occurred, which is why Section 9 sets a monitoring plan rather than a repair instruction.

7. Findings and severity classification

Severity is assigned using the criteria in Appendix C.

Ref	Finding	Severity	Action
F-1	Diagonal cracking in a non-load-bearing infill panel above W-2, consistent with movement rather than shrinkage. No effect on frame capacity	S2	Monitor
F-2	Hairline surface cracking at column C-3, consistent with shrinkage. No section loss, no corrosion, no overload pattern	S1	None
F-3	Second floor slab deflection within the expected range for span, age and loading. No soffit cracking	S1	None now; re-assess before adding load
F-4	Active corrosion with section loss in exposed reinforcement at the entrance canopy beam. Progressive if left open to weather	S3	Repair within 1 month
F-5	Debonded floor tiles in the rear service area. Finish defect with no structural component	S0	Cosmetic only

8. Recommendations and indicative repair scope

Priority	Action	Refers to
Immediate	None. No condition observed requires the building to be vacated or any area to be taken out of use.	-
Within 1 month	Repair the entrance canopy beam. Break back loose and delaminated concrete to sound material; clean the exposed bar to bright metal and apply a corrosion-inhibiting primer; reinstate cover with a polymer-modified repair mortar to the original profile; restore the drainage fall so water does not stand on the soffit line.	F-4
Within 3 months	Implement the monitoring plan in Section 9 for the O-1 crack. Do not fill or plaster over the crack before the monitoring period ends, as that destroys the evidence.	F-1
Before any change of load	Re-assess the second floor slab before adding partition walls, heavy storage, a water tank or any structure at second floor level.	F-3
At next renovation	Re-lay the debonded floor tiles. Cosmetic priority only.	F-5

8.1 Indicative cost of the recommended work

Item	Indicative band
Canopy beam concrete repair, as scoped above (materials and labour)	PHP 12,000 - 25,000
Crack monitoring points, installation and three monthly readings	PHP 4,000 - 8,000
Follow-up inspection, if monitoring shows growth beyond the trigger	PHP 5,000 flat
Re-assessment of the slab before added load, if that change is made	PHP 5,000 flat

Indicative bands only, for budgeting. They are AEDO practice figures for Philippine work in 2026, not a quotation, and exclude access equipment, out-of-town mobilisation and any work arising once the member is opened up.

8.2 What would trigger testing

Testing is not recommended at this stage. It becomes necessary if any of the following occurs: the O-1 crack grows beyond the trigger in Section 9; further corrosion is found once the canopy beam is opened up; or the owner decides to add load at second floor level. In those cases the relevant work is reinforcement scanning to establish bar size and cover, and, where concrete strength itself is in question, core testing under NSCP 2015 Section 426.12, where the average of three cores must reach 85 percent of the specified strength and no single core may fall below 75 percent.

9. Monitoring plan

Parameter	Requirement
What is monitored	Width of the O-1 crack at two fixed points: at the window corner and at mid-length
How	Two tell-tale gauges bonded across the crack, or paired reference pins measured with a comparator card
Frequency	Monthly for three months, each reading dated and photographed
Trigger	Cumulative growth exceeding 0.5 mm over the three-month period, or any sudden increase
If triggered	Follow-up inspection by a civil engineer; scope to include reinforcement scanning at the adjacent columns
If not triggered	Movement is complete. Repair the crack cosmetically and close the monitoring record

10. Limitations of this report

This assessment is a professional opinion on the condition observed on the date of inspection, within the scope stated in Section 1 and by the methods stated in Section 4.

- 1 The survey is visual. No finishes were removed, no structural member was opened, and no foundation was exposed. Conditions concealed behind plaster, within members or below ground were not inspected and are not covered by any finding.
- 2 No structural drawings were available. No comparison against an original design was possible, and the assumptions in Section 6 carry through every conclusion that depends on them.
- 3 No material testing was performed. Statements about concrete strength and reinforcement are inferences from observed condition, not measurements.
- 4 This report does not certify the building as safe, and does not constitute a certificate of structural integrity, occupancy or compliance for any regulatory, insurance or transaction purpose.
- 5 This report does not transfer or discharge liability for design or construction defects, which remains with the parties identified in Article 1723 of the Civil Code of the Philippines.
- 6 The report is valid for the condition as found. Subsequent events, alteration, added load or deterioration are outside it, and it should not be relied on after any of those without re-inspection.
- 7 The report must be read in full. Individual findings, severities or photographs quoted in isolation may mislead.

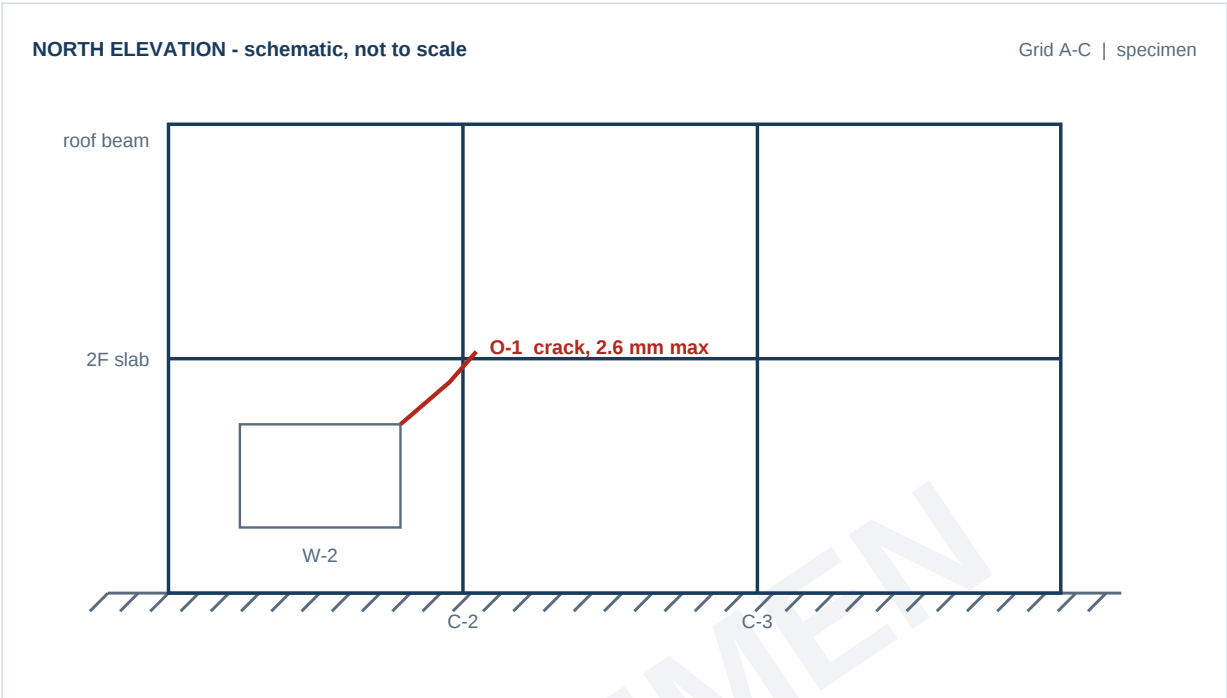
11. Statement and signature

In a live report the issuing engineer signs the statement below. Section 14 of Republic Act 544, the Civil Engineering Law, requires a registered civil engineer to obtain a seal and requires plans and specifications prepared by, or under the direct supervision of, that engineer to be stamped with it.

I inspected the building described in this report on the date stated, and the observations, findings and recommendations set out here are my professional opinion, subject to the limitations in Section 10.

Prepared by	Reviewed by
Signature over printed name PRC Licence No. _____ PTR No. _____ Civil Engineer, AEDO Construction OPC	Signature over printed name PRC Licence No. _____ Principal Engineer, AEDO Construction OPC
Omitted from specimen Dry seal	Omitted from specimen Date of issue

Appendix A — Crack location sketch



Schematic elevation, not to scale. Prepared from measurements taken on site; no architectural drawing was available. Specimen.

Appendix B — Photographic log



Photo 1 — O-1, diagonal crack above window W-2, north elevation, ground floor. Comparator card in frame. Illustrative photograph.



Photo 2 — O-2, column C-3 inspected at close range; hairline surface cracking only. Illustrative photograph.

A live report contains one located, dated photograph for every observation in Section 5, with the member reference in the caption. The two frames above stand in for that log in this specimen.

Appendix C — Severity classification criteria

Severity	Meaning	Typical action
S0	Finish or cosmetic defect with no structural component	Repair at convenience
S1	Structural element affected but capacity and serviceability unimpaired; condition stable	No action; record

Severity	Meaning	Typical action
S2	Condition indicates movement or deterioration whose progression is not yet established	Monitor to a stated trigger
S3	Active deterioration or measurable section loss; will worsen if untreated, capacity not yet compromised	Repair to a defined scope and date
S4	Capacity demonstrably reduced, or load path compromised	Restrict use; design a retrofit
S5	Risk of collapse or of harm is immediate	Vacate; notify the building official

AEDO's own classification, used to keep the language of a finding consistent between engineers and between reports. It is not a code classification and no Philippine code prescribes one.

End of specimen report. The guide explaining each section is at aedoconstruction.com/blog/structural-assessment-report-philippines/ . An AEDO structural assessment is PHP 5,000 flat: site visit, NSCP 2015 evaluation and a written report within five business days. aedoengineering@gmail.com | 0956 142 1819 | aedoconstruction.com

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