



AVC WHITE PAPER 03

THE COST OF GETTING THE SEQUENCE WRONG

How Backward Planning, Specialist-Item Pricing and Repair-Aware Design Prevent Late-Stage Construction Failure

A practical paper for contractors, quantity surveyors, architects, project managers, developers, foremen and specialist trades.

AVC SITE TRUTH

The specialist cost does not disappear when it is cut from the quotation. It returns later as loss, delay, dispute, defect or remedial work.

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Based on nearly forty years of practical construction experience and more than twenty years of construction-control tool development.

About This Paper

A specialist finish is never only a finishing item.

It can control procurement, pricing, access, lifting, storage, cutting, substrate tolerances, trade sequence, inspection, programme, replacement stock and the later cost of repair. When these consequences are not interrogated early, the project may carry a hidden technical and commercial risk from tender stage into handover.

This paper explains how contractors and professional teams can work backward from the completed building, identify specialist items before award, price them transparently, test whether the local market can execute them, and create decision gates before the work becomes concealed or inaccessible.

The paper is deliberately practical. It does not attempt to replace project-specific design, engineering, quantity-surveying, manufacturer or specialist-installer advice. Its purpose is to create the questions that cause those responsible people to investigate, decide, record and coordinate earlier.

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COMPOSITE CASE NOTE

The hotel scenario in this paper is a composite teaching example based on recurring construction patterns. It is not a finding on a named property, contractor, consultant or product.

Any similarity to a current or past project is incidental. A real defect investigation must remain evidence-led and project-specific.

Executive Summary

Modern construction increasingly uses products that create a simple visual result through a difficult hidden process. Large-format tiles, concealed mixers, imported sanitaryware, oversized glazing, stone slabs, specialist cladding, smart-home systems and custom joinery may appear in a finishing schedule as a single line item. In reality, each may alter access, sequence, labour, equipment, tolerances, inspection, risk and price.

The most dangerous commercial response is to recognise that the tender is high and then remove the specialist allowance merely to match cheaper competitors. The project requirement remains unchanged. The deleted cost returns later as an unsuitable subcontractor, missing tools, rushed preparation, design compromise, variation, delay, defect, dispute or remedial work.

A competent tender should therefore make specialist risk visible. It should identify the product, the execution method, installer competency, access requirements, manufacturer guidance, trade dependencies, hold points, programme effect and realistic installed cost. The professional team can then compare tenders on equal technical ground and decide whether to retain, redesign or substitute the item before award.

Design teams also carry an important responsibility. A product should not be selected only for appearance. The team should consider whether it can be delivered, handled, cut, installed, inspected, maintained and replaced using available skills and reasonable disruption. Whole-building guidance supports integrated product and system decisions, maintainability, access and eventual replacement as part of design, not as an afterthought. [8][9][12]

The composite hotel case in this paper shows how one or two damaged large-format bathroom tiles can trigger removal of sanitaryware, shower screens, fittings, adhesives, waterproofing and adjacent finishes; generate noise and vibration through an occupied building; close rooms; and create a repair cost far beyond the visible tile. The purpose is not to blame one party prematurely. It is to show that repair consequences should have been interrogated during design, tender and preconstruction planning.

The Paper's Main Findings

- A missed technical question during pricing becomes a cost problem during construction and a defect problem during handover.
- A finish should be planned backward through handling, access, substrate, services, labour, tools, inspection, replacement and repair.
- The lowest tender may simply be the tender that failed to identify the specialist requirement.
- A specialist item hidden inside a general rate is easily misunderstood. A specialist item isolated and explained becomes a project decision.
- The compliant specified option and a professionally approved value-engineered alternative can be shown separately without undermining the tender.
- Design responsibility includes constructability, maintainability, access and replacement consequences, not appearance alone.
- Final-fix work should not proceed until specialist finishes are inspected, accepted and released.
- The Contractor's Control Toolbox creates the early questions, hold points and records that keep these risks visible.

AVC SITE LESSON

The most expensive sentence on a building site is often: "We should have asked that earlier."

1. The Cost Begins Before the Work Begins

The visible failure may occur during installation or handover, but the causal chain often begins much earlier: when a product is selected, the finish schedule is issued, the quantity is measured, the rate is estimated, the tender is adjusted and the programme is written.

A conventional rate assumes conventional conditions. It assumes ordinary handling, ordinary access, ordinary cutting, ordinary tolerances, ordinary labour and an ordinary production rate. A bespoke product may remove every one of those assumptions while still appearing under the same heading of “tiling”, “plumbing”, “joinery” or “glazing”.

The Typical Underpricing Chain

1. The specification includes an unusual product or fitting.
2. The estimator applies a familiar generic rate because detailed installation information is not yet available.
3. The completed tender total appears high against the client budget or competing quotations.
4. The finishing allowance is reduced because the work is months away and the difficulty is not visible yet.
5. The specialist supplier or installer later prices the real requirement at two or three times the allowance.
6. The contractor must absorb the loss, seek additional payment, change the method or appoint a cheaper resource.
7. Commercial pressure enters the workforce and becomes a quality-control problem.

AVC SITE TRUTH

Cutting the allowance does not simplify the product. It only removes the money needed to execute it correctly.

2. A Finish Can Control the Whole Construction Sequence

Backward planning starts with the finished result and follows every dependency toward the beginning of the project. The question is not merely “When do we tile?” It is “What must be true before this particular tile can be delivered, moved, cut, installed, inspected and protected?”

A full-height slab may not pass through completed doorways or turn within finished corridors. It may require open roof access, a crane, rigid carrying frames, suction equipment and several trained operators. Plumbing first fix may need to be completed and verified earlier. Wall backgrounds may need final tolerances before adjoining trades expect them. Shower screens, toilets, basins, ceilings and joinery may have to remain out until the finish is released.

Finished requirement	Question worked backward	Earlier project decision
Full-height bathroom panel	Can it enter, turn, lift and reach the wall after the building is enclosed?	Access route, lifting plan, delivery stage and temporary openings.
Concealed mixer through a slab panel	Are centre lines, depths, templates and penetrations fixed before cutting?	Coordinated shop drawings, plumber sign-off and mock-up.
Near-seamless appearance	How are movement joints, corners and changes of substrate accommodated?	Joint layout approved before procurement and setting out.
Very low grout tolerance	Can the wall achieve the required flatness and plumb?	Background tolerance specification and pre-tiling acceptance.
Replacement from the same visual batch	What happens if a panel cracks after final fix?	Spare-stock quantity, storage method and batch control.

AVC SITE LESSON

A finishing item can become an upper-structure, access, plumbing, procurement and programme decision months before installation.

3. Specialist Items Must Be Isolated, Not Hidden

The contractor who understands the work may submit the highest tender because the others have not priced the same technical requirement. A single total does not allow the professional team to see that difference. The specialist risk should therefore be separated and explained.

Recommended Quotation Heading

SPECIALIST ITEMS, CRITICAL INTERFACES AND SEQUENCING ALLOWANCES

This section isolates products and installations whose procurement, handling, specialist labour, tools, access, substrate tolerances, trade coordination, inspection or programme consequences are materially different from normal trade rates.

The listed amounts should be read together with the stated assumptions, exclusions, technical references and professional-team decisions.

What Each Specialist Item Should Show

- Specified product, reference, size, weight, thickness and intended location.
- Why the item is not comparable with the standard trade rate.
- Manufacturer, system-provider or recognised industry guidance reviewed.
- Required installer experience, training or demonstrable competency.
- Lifting, handling, storage, access, cutting, drilling and protection arrangements.
- Substrate, waterproofing, service-position and tolerance requirements.
- Trade dependencies and the effect on the construction sequence.
- Mock-up, sample, testing, inspection and hold-point requirements.
- Realistic material, labour, equipment, wastage and programme allowance.
- A compliant price and any alternative proposed for formal professional-team approval.

Compliant Option and Value-Engineered Alternative

A contractor should not silently substitute the product. The specified option should be priced as required. A technically more manageable alternative may be shown separately, with its cost, visual effect, programme benefit, maintenance implications and approval status clearly stated.

This approach preserves tender compliance while giving the professional team a genuine decision. The alternative may use a smaller format, locally supported system, easier access arrangement or more replaceable assembly while retaining the design intent as far as reasonably possible.

4. Why Contractors Cut the Wrong Allowances

The final tender total creates pressure. The contractor sees that his price is higher and asks, “What can I cut?” The better question is, “Why is my price higher?”

When the difference arises from a real technical requirement, hiding it inside a reduced general rate creates a false comparison. The contractor appears competitive, but the project has not been made cheaper. The future shortfall has simply been transferred from tender review to construction delivery.

The Commercial Trap

- The lowest generic rate becomes the internal budget even though it was never based on the specialist method.
- A competent subcontractor appears expensive because the original allowance was unrealistic.
- The contractor appoints an under-resourced installer or asks a normal trade team to learn on the project.
- Preparation, mock-ups, specialist equipment and slower production are treated as avoidable costs.
- The first completed work becomes the experiment, and the client owns the consequences.

AVC SITE TRUTH

When a contractor removes the specialist allowance to match a cheaper tender, the cost is not removed. It is postponed until it is more expensive to manage.

5. The Professional Team Must Think Beyond Appearance

A visually ambitious product may be appropriate, but it should not be specified in isolation from the system required to deliver and maintain it. Integrated-design guidance emphasises that products and systems should be coordinated across affected trades, selected for function as well as appearance, and considered in relation to operation, maintenance, access and eventual replacement. [8][9][12]

The professional team should therefore interrogate the full installed consequence before final approval. The architect, interior designer, quantity surveyor, project manager, engineer, specialist supplier and contractor each see a different part of the risk. The control failure occurs when those views are never brought together.

Questions for the Architect and Interior Designer

- Does the selected product have a recognised installation system for the intended location and service conditions?
- Can its dimensions, weight and fragility be accommodated by the access route and supporting background?
- Where are movement joints, corners, penetrations, transitions and changes of substrate resolved?
- Can the product be repaired or replaced without destroying several unrelated finishes and services?
- Is the intended near-seamless appearance compatible with the required technical joints?
- Are samples, mock-ups, shop drawings and visual tolerances specified before bulk procurement?

Questions for the Quantity Surveyor and Cost Manager

- Is the rate based on the actual product, method, local installer capacity and expected production output?
- Are lifting, cutting, specialist labour, preparation, wastage, protection, mock-ups and testing included?
- Have tenderers priced the same technical scope, or are unlike assumptions being compared?
- Should a defined provisional allowance, specialist quotation or pre-tender market test be used?
- Is the client being shown the full installed and lifecycle consequence, not only the purchase price?

Questions for the Project Manager and Contractor

- When must design information be frozen to protect procurement and cutting?
- What work must remain open or incomplete until the specialist finish is released?
- Who has authority to stop the sequence when the background, product or installer is not ready?
- How will damage, replacement stock, room closures and remedial access be controlled?
- What evidence will remain after the work is concealed by final fix?

AVC SITE LESSON

A design selection becomes a project-control obligation the moment it changes how the building must be priced, sequenced, inspected, maintained or repaired.

6. Composite Case: A Coastal Boutique Hotel and Large-Format Bathroom Panels

Consider a high-end coastal boutique hotel containing approximately 140 guest rooms. The design uses full-height large-format porcelain panels in bathrooms to create a refined, near-seamless finish. Each panel is visually impressive and costly. The rooms are completed with toilets, basins, concealed mixers, shower screens, accessories, ceilings, joinery and specialist lighting.

During handover, cracking is reported in one or two wall panels in a number of bathrooms. The visible defect appears limited. The remedial consequence is not.

The Visible Defect

- A crack through a panel behind a toilet or basin.
- A crack intersecting a mixer penetration or shower fitting.
- A crack close to a corner, transition, service route or change of substrate.
- A panel that may be well bonded with high-performance adhesive to a waterproofed background.

The Hidden Repair Chain

1. Confirm the cause before replacing the finish; otherwise the defect may recur.
2. Isolate services and protect the completed room and adjoining circulation routes.
3. Remove and store sanitaryware, shower screens, fittings and accessories that restrict access.
4. Cut and remove the damaged panel without uncontrolled damage to adjacent panels or concealed services.
5. Mechanically remove the adhesive while managing dust, vibration and substrate damage.
6. Assess the wall background, movement provision, moisture condition and waterproofing integrity.
7. Reinstall the background and waterproofing system where disturbed.
8. Source a matching replacement panel and complete specialist cutting, drilling and handling.
9. Reinstall, cure, grout or seal, reconnect services, test and commission.
10. Close out visual matching, cleaning, records, warranties and room release.

A repair of this nature may create noise and vibration through walls and slabs, dust-control requirements, restricted working hours, temporary room closures and coordination across tiling, plumbing, glazing, waterproofing, electrical, joinery and hotel operations. The remedial cost may therefore be materially greater than the visible tile suggests.

The Questions That Should Have Been Asked Earlier

- Can the panel be delivered, stored, handled and installed after the building is enclosed?
- What substrate tolerance and movement strategy does the system require?
- Who in the local market has proven experience with this exact format and application?
- What does the specialist installer charge, and how many rooms can the team realistically complete per week?
- What mock-up will demonstrate corners, penetrations, adhesive coverage, joints and final-fix interfaces?
- How many replacement panels from the same batch must be retained?
- How will a panel behind sanitaryware or a shower screen be replaced after handover?
- Would a smaller, more repairable format achieve an acceptable design result with lower installation and lifecycle risk?

PROFESSIONAL BOUNDARY

This composite scenario does not establish the cause of cracking or assign liability. In a real project, the evidence may implicate design, substrate, movement, materials, installation, sequencing, damage, environment or a combination of factors.

The responsible response is investigation, representative opening-up, technical review and a verified remedial method before widespread replacement.

AVC SITE LESSON

The crack may occupy one line across one panel. The repair can occupy the whole bathroom, several trades and a hotel room that cannot earn revenue while closed.

7. Repair-Aware Design and the Question Nobody Wants to Ask

A premium design is not weakened by asking how it will fail. It is strengthened by considering how the building will be inspected, maintained, repaired and eventually altered. Design-for-change and whole-building guidance explicitly recognise access, replacement cycles, maintainability and future adaptation as design considerations. [8][9]

The Repairability Test

Before a bespoke finish is approved, the team should imagine a defect in the most difficult location and ask:

- What must be removed to reach it?
- What adjacent finishes are likely to be damaged?
- Which services must be isolated or re-commissioned?
- Can the original product, batch, colour and size be sourced later?
- Can the repair be completed safely in an occupied building?
- What noise, dust, vibration, access and operational disruption will occur?
- Does the expected repair burden remain proportionate to the design benefit?

The purpose is not to make every building ordinary. It is to ensure that the client consciously accepts the full consequence of the premium choice and that the professional team designs the interfaces, stock, access and records needed to manage it.

When a Smaller Format May Be the Better Design

A smaller-format product may introduce more joints, but it may also improve handling, local installer availability, cutting, access, replacement, spare-stock storage and repair isolation. The decision should compare aesthetics, performance, installation risk, programme, cost and lifecycle consequences rather than treating size as a purely visual preference.

AVC SITE TRUTH

A product is not fully designed until the team understands how it will be installed, inspected, maintained and replaced.

8. Large-Format Tile Is a Technical System, Not a Normal Rate

Large-format ceramic and porcelain products are not installed by simply enlarging the method used for ordinary tiles. MAPEI South Africa identifies large format as having one side longer than 600 mm and notes that formats may reach approximately 3 m, with specialised handling, flat substrates, improved and deformable adhesives, movement joints and double-buttering among the key considerations. [4]

TAL similarly states that tiles above conventional size require special consideration, including flat and level substrates, suitable adhesive and grout systems, joint widths, lippage control and manufacturer instructions. TAL also identifies specialist lifting, moving, cutting and bonding tools as essential as formats become larger and more labour intensive. [5][6]

International standards distinguish gauged porcelain tile panels and slabs as a separate material and installation category. The current ANSI package includes material and installation standards A137.3, A108.19 and A108.20; the ANSI description notes that panels or slabs are one square metre or larger in facial area. [3] ISO 13007-1 classifies and specifies ceramic-tile adhesives, while ISO 13007-2 addresses test methods including open time, slip, adhesion and transverse deformation. [1][2]

Technical Questions Before Pricing

- What is the exact tile classification, nominal size, actual size, thickness, weight and permissible curvature?
- What substrate flatness, strength, dryness, curing and movement conditions are required?
- What adhesive class, deformability, open time, coverage and application method are specified?
- Is back-buttering or another full-contact method required?
- What movement joints, perimeter joints, intermediate joints and sealants are required?
- What lifting frames, suction devices, cutting tables, drill systems and number of operators are required?
- How are fragile edges, penetrations and corners protected?
- What training, demonstrations, mock-ups and technical support are available in the local market?
- What manufacturer or system-provider warranty depends on following a complete system?
-

Local Technical Support Is Part of the Procurement Decision

South African system providers publish technical guidance, provide advisory services and offer training to architects, contractors and installers. MAPEI South Africa describes design-to-site technical assistance and scheduled training, while TAL provides technical advice, installation guidelines and bespoke specifications. [4][5][6][7] The project team should use those resources before procurement, not after failure.

AVC SITE LESSON

When the product becomes more specialised, the team must move closer to the manufacturer, system provider and proven installer - not further away.

9. The Pre-Installation Sequence Gate

A specialist finish should not commence merely because the programme date has arrived. The work should pass a readiness gate that connects design, procurement, substrate, services, installer, tools, access and evidence.

Gate	Minimum evidence before release	Responsible confirmation
1. Product confirmed	Approved sample, batch, size, thickness, technical data and intended location.	Architect / designer / client representative.
2. Method confirmed	Manufacturer or system guidance, adhesive system, joints, cutting and handling method.	Specialist installer / supplier / contractor.
3. Access confirmed	Delivery, storage, lifting, turning, room entry and temporary-opening plan.	Contractor / logistics / project manager.
4. Background accepted	Flatness, plumb, strength, curing, moisture, cleanliness and movement review.	Contractor / installer / relevant professional.
5. Services fixed	Coordinates, depths, templates, penetrations, pressure tests and concealed records.	Plumber / electrician / contractor.
6. Mock-up approved	Representative panel, joint, corner, penetration and final-fix interface.	Professional team / client / contractor.
7. Installer ready	Competency, labour, tools, equipment, supervision and production plan.	Contractor / specialist subcontractor.
8. Hold point released	Signed readiness record and authority to proceed.	Named release authority.

The gate is not a substitute for competent design or installation. It is the control point that makes sure the required information and responsible people have met before irreversible work proceeds.

AVC SITE TRUTH

A programme date says when the work is expected. A release gate proves whether the work is ready.

10. The Specialist Items and Critical Interfaces Schedule

The schedule below can be issued during tender and then developed through preconstruction. It turns a hidden specialist risk into a visible management item.

Field	Required entry
Item reference	Drawing, finish schedule, specification and bill item.
Product description	Manufacturer, series, size, weight, thickness, finish and quantity.
Why specialist	Technical difference from the normal trade assumption.
Design dependencies	Substrate, joints, support, services, penetrations, access and tolerances.
Installer requirement	Experience, training, mock-up, references and supervision.
Tools and logistics	Storage, lifting, frames, suction, cutting, drilling, transport and protection.
Sequence effect	What must happen earlier, remain open, stop or be inspected first.
Commercial basis	Firm specialist quote, defined allowance, exclusions, wastage and production rate.
Inspection and hold point	What must be checked, by whom and what evidence releases the work.
Repairability	Spare stock, access, adjacent removals, room closure and future replacement method.
Decision status	Retain specified item, redesign, approve alternative or request further information.

Example Specialist Tender Note

SPECIALIST ITEM: LARGE-FORMAT BATHROOM WALL PANELS

The specified panel system requires installation methods materially beyond conventional ceramic wall tiling. The allowance includes specialist handling, rigid lifting frames and suction equipment, trained operators, controlled cutting and drilling, enhanced background tolerance, manufacturer-compatible adhesive and joint systems, representative mock-up, coordinated service penetrations, increased protection and a slower production rate.

The rate should not be compared directly with standard wall-tiling rates. The professional team is requested to review the full installed cost, access and replacement implications before final product approval.

A separate value-engineered alternative may be considered only upon written professional-team approval.

AVC SITE LESSON

The quotation should teach the client and professional team where the project is technically expensive - not hide the reason inside one unexplained total.

11. Comparing Tenders on Equal Technical Ground

Tender comparison should test whether the tenderers priced the same technical obligation. RICS guidance treats tendering as the process used to establish a contract price, while NRM provides standardised cost-management and measurement principles intended to improve consistency and client confidence in cost information. [10][11]

A tender that includes specialist labour, tools, mock-ups, background preparation, handling, slower production and replacement stock cannot be compared fairly with a tender that applies a standard rate and remains silent about those requirements.

Tender Clarification Questions

- What exact product, size and installation system has been allowed?
- Is the allowance based on a current specialist quotation or a generic historic rate?
- What substrate preparation, access, lifting and cutting equipment is included?
- What production rate and labour team has been assumed?
- What wastage, breakage and replacement stock is included?
- What mock-up, inspection, testing and technical support is included?
- What work is excluded or assumed to be completed by others?
- What sequence and programme effect has been allowed?
- What alternative is proposed, and does it require design approval?

Red Flags in a Low Specialist Rate

- No named product or system.
- No specialist installer input.
- No difference from ordinary trade production.
- No equipment, handling or access allowance.
- No mock-up or substrate acceptance.
- No movement, waterproofing or service-interface statement.
- No replacement-stock or reparability allowance.
- A broad exclusion that transfers all difficulty into future variations.

AVC SITE TRUTH

The professional team should not reward a tenderer for overlooking the work and penalise the tenderer who understood it.

12. Other Bespoke Items That Commonly Trap Projects

The principle extends far beyond large-format tile. Any item that changes access, specialist competency, early coordination, inspection or future repair should be isolated and worked backward.

Bespoke item	Hidden sequence or pricing risk
Concealed mixers and imported sanitaryware	Non-standard bodies, depth zones, templates, spares, pressure testing and wall-finish coordination.
Oversized glazing and sliding doors	Crane access, frame tolerances, waterproofing interfaces, temporary openings and replacement routes.
Stone countertops and full-height splashbacks	Templates after joinery, lifting, wall conditions, service cut-outs, breakage and route into the room.
Custom staircases and balustrades	Structural embeds, tolerances, temporary protection, specialist fabrication and late access.
Imported lighting and smart-home systems	Lead times, compatibility, commissioning, software access, local support and future replacement.
Facade cladding and feature screens	Engineering, brackets, wind loads, waterproofing, fire performance, access and future panel removal.
Very large doors or decorative panels	Frame installation, route, lifting, hinges, support, acclimatisation and later adjustment.

In every example, the same commercial mistake can occur: the item is described in one line, priced using a familiar rate, and only understood when the specialist arrives. The control response is also the same: interrogate, isolate, explain, price, sequence, hold, release and record.

13. The AVC Tender-to-Handover Control Pathway

The Contractor's Control Toolbox can carry the specialist item from tender to handover without allowing the risk to disappear between departments or project stages.

Stage	Control action	Evidence
Tender interrogation	Read the finishing and equipment schedules backward; identify non-standard products and interfaces.	Specialist item register and tender queries.
Market test	Obtain supplier, installer, equipment and local support information.	Technical responses and specialist quotations.
Transparent pricing	Separate the specialist item, assumptions, programme effects and alternative.	Tender schedule and clarification note.
Design decision	Retain, redesign or approve an alternative with full professional-team authority.	Recorded instruction and updated documents.
Make ready	Freeze information, order product, plan access, prepare substrate and coordinate services.	Readiness checklist and procurement record.
Check and hold	Inspect the background, mock-up, installer, equipment, joints and interfaces.	Signed inspection and hold-point record.
Release and install	Proceed only under the agreed method and supervision.	Release record, photographs and daily evidence.
Final-fix protection	Do not conceal or restrict access until the specialist finish is accepted.	Stage acceptance and final-fix release.
Handover and learn	Record product data, spare stock, repairs, warranties and lessons.	Handover file and lessons-learned note.

The Five Questions That Should Follow Every Specialist Item

1. What makes this item technically different from the normal trade assumption?
2. What earlier design, access, service or substrate decisions does it control?
3. What does it honestly cost to execute with the right people and equipment?
4. What must be inspected and released before it becomes concealed or inaccessible?
5. What will it take to repair or replace after the building is occupied?

AVC SITE LESSON

Plan the finish from the completed room backward and manage the work from tender forward.

Practical Tender Checklist

Before finalising the tender, ask:

- Have all finish, fitting, equipment and specialist schedules been reviewed rather than merely priced by trade heading?
- Which products exceed normal size, weight, tolerance, lead time, access, skill or warranty assumptions?
- Have the manufacturer and specialist installer requirements been obtained?
- Are local skills, tools, technical support, spares and replacement stock realistically available?
- Does the quoted rate include the full installed system and the real production rate?
- Have early access, temporary openings, first-fix coordination and preceding tolerances been priced?
- Are mock-ups, testing, hold points, protection and final-fix releases included?
- Are specialist items isolated in the quotation with assumptions and exclusions?
- Has a compliant price and any proposed alternative been shown separately?
- Can the tender explain clearly why its price differs from a generic competitor rate?
-

Practical Design-Team Checklist

Before final product approval, ask:

- Has constructability been tested with the contractor, supplier and specialist installer?
- Is the intended visual result compatible with required joints, tolerances and service conditions?
- Can the product be delivered and installed through the actual building sequence?
- Have local market capacity, specialist cost and programme been tested?
- Is the client aware of the complete installed cost and not only the product price?
- Has repairability been considered in the most difficult finished location?
- Are spare stock, batch control, storage and handover information defined?
- Would a more manageable alternative materially reduce risk without unacceptable loss of design intent?

AVC SITE TRUTH

Being competitive does not mean pretending the difficult work is ordinary. It means showing the client how to make an informed project decision.

Conclusion

The cost of getting the sequence wrong is rarely limited to the trade where the defect becomes visible. A specialist finish can carry consequences backward into tender, procurement, design, access, services and substrate preparation, and forward into final fix, operation, maintenance and remedial work.

The contractor should not hide that complexity to win the job. The professional team should not dismiss the higher tender without understanding why it is higher. The client should not be asked to approve a premium product without seeing its full installed and lifecycle consequence.

The practical answer is transparent control: identify specialist items, interrogate them early, obtain competent input, isolate the cost, compare tenders on equal technical ground, decide consciously, plan backward, inspect before concealment and preserve the evidence.

That is the real purpose of the Contractor's Control Toolbox. It cannot predict every future defect. It can force the questions that expose the risk while the project still has time to change the product, the price, the sequence, the installer or the design.

AVC SITE LESSON

Precaution is not the expensive option. The expensive option is discovering the requirement after the building has been finished around it.

Continue with AVC

Read AVC White Papers 01 and 02 together before purchasing or beginning to use an AVC manual. They explain why the Toolbox is needed and how it should be operated under live construction conditions.

- AVC White Paper 01 - Why Modern Construction Needs a Control Toolbox.
- AVC White Paper 02 - From Toolbox to Daily Site Control.
- AVC White Paper 03 - The Cost of Getting the Sequence Wrong.
- The Contractor's Control Toolbox manuals, printable checklists, holding points and practical appendices.
- AVC independent construction assessments, defect investigations, site-control support and non-accredited practical workshops.

Visit albertventerconsult.com for current resources, manuals and contact information.

Source Notes and Further Reading

These sources support the technical and management principles discussed in this paper. Project-specific compliance must always be checked against the applicable contract, drawings, specifications, product data, local law, current standards and responsible professional instructions.

[1] International Organization for Standardization. ISO 13007-1:2014 - Ceramic tiles - Grouts and adhesives - Part 1: Terms, definitions and specifications for adhesives. 2014; confirmed current in 2025. Applies to ceramic-tile adhesives for internal and external wall and floor installations and specifies performance requirements and classification.

<https://www.iso.org/standard/60880.html>

[2] International Organization for Standardization. ISO 13007-2:2013 - Ceramic tiles - Grouts and adhesives - Part 2: Test methods for adhesives. 2013; confirmed current in 2024.

Covers test methods including open time, slip, adhesion strength and transverse deformation. <https://www.iso.org/standard/60881.html>

[3] American National Standards Institute / Tile Council of North America. ANSI A137.3/A108.19/A108.20-2025 - Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs. 2025. Material and installation standards for gauged porcelain products; the ANSI description identifies panels/slabs as one square metre or larger in facial area.

<https://webstore.ansi.org/standards/tca/ansia137a10819202025>

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[12] Whole Building Design Guide. Determining Project Performance Requirements. Current web guidance accessed July 2026. Includes maintainability, access, constructability, installation evaluation, testing, quality, budget and schedule requirements in project performance planning. <https://www.wbdg.org/building-commissioning/determine-project-performance-requirements>

How the Sources Were Used

- Standards and manufacturer guidance were used to confirm that large-format and gauged porcelain products require system-specific decisions on materials, substrates, handling, tools, adhesives, joints and installation.
- Whole-building and design guidance was used to support integrated design, access, maintainability, replacement and lifecycle thinking.
- RICS sources were used to support transparent tendering, consistent cost information and technically comparable pricing.
- The practical tender, sequencing, control and remedial examples are AVC interpretations based on construction experience and should be adapted to the actual project.

About Albert Venter Consulting

Albert Venter Consulting (Pty) Ltd is an independent construction-specialist consultancy and knowledge platform built around nearly forty years of practical site experience, technical investigation, site-control development and project close-out responsibility.

AVC provides independent construction assessments, building-defect investigations, practical site-control support, evidence-led reporting, remedial pathway guidance, contractor-development resources and non-accredited practical workshops.

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The AVC White Paper Series develops practical construction-control ideas that can be applied across different countries, project types and professional teams. Each paper addresses a real construction problem, explains the control principle in plain language and connects the reader to further AVC manuals, checklists and services.

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Suggested Citation

Albert Venter Consulting (Pty) Ltd. (2026). The Cost of Getting the Sequence Wrong: How Backward Planning, Specialist-Item Pricing and Repair-Aware Design Prevent Late-Stage Construction Failure. AVC White Paper 03, International Edition.

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