

EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

FLOOR LEVELLING AS AN ENABLING TECHNOLOGY
FOR NEW-AGE INDUSTRIES

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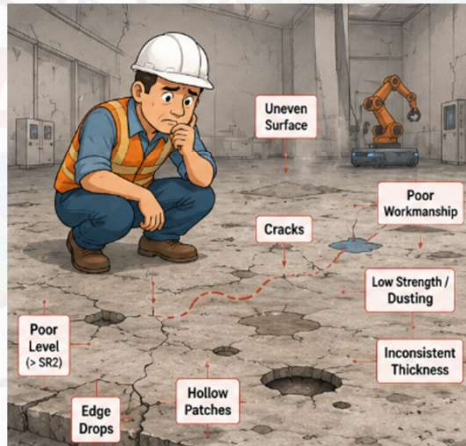


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Expectation & Demand



Existing Substrate





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EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

CONCRETE AND SCREED — TWO DIFFERENT ROLES



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CONCRETE — STRUCTURAL BASE

- Structural capacity
- Load transfer
- Thickness & reinforcement
- Joints
- Curing
- Movement behavior

SCREED — ENGINEERED INTERFACE

- Level / geometry correction
- Defined surface regularity
- Controlled thickness
- Interface for final floor
- May become final wearing surface

Structural floor → preparation → screed (where required) → functional layer → final floor

EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

THE SHIFT: FROM FLOOR AS FINISH TO FLOOR AS INFRASTRUCTURE



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- For a conventional building, a floor may primarily be judged by appearance, durability and ease of maintenance.
- In a new-age industrial facility, the floor can influence production continuity, equipment movement, contamination control, electrostatic protection, automation accuracy and maintenance downtime

EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

NEW-AGE INDUSTRIES DEMAND FROM FLOORS



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INDUSTRY / APPLICATION	KEY FLOOR EXPECTATIONS	SCREED / TECHNOLOGY RESPONSE
Automation / AGV / AMR	Geometry; Surface regularity; Joint performance; Abrasion; Low dusting; Final-floor compatibility	Self-smoothing / precision levelling where required; high-performance topping where exposed
Semiconductor / Electronics / ESD	Precision; Regularity; Abrasion; Low dusting; ESD compatibility	Screed to support the complete ESD flooring system; electrical performance not assumed from screed alone
Data Centres	Stable substrate; Moisture control; Service traffic; ESD compatibility	Design the complete floor build-up; screed is an enabling layer
Cleanrooms / Pharmaceutical	Cleanability; Low dusting; Continuity; Service traffic; Chemical resistance	Select for compatibility with the complete functional and final-floor system
EV / Battery / Solar / Advanced Manufacturing	Dense, low-defect surface; Cleanability; Chemical resistance; Low particle release	Select according to production environment, maintenance regime and final flooring
Commercial High-Performance Interiors	Traffic; Point loading; Abrasion; Impact; Chemicals; Maintenance	High-performance industrial topping where the screed itself is the exposed/final floor

EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

UNDERSTANDING AGV FLOOR REQUIREMENTS



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NO.	KEY QUESTION
1	What type of AGV is being used and what is its maximum operating weight including payload?
2	What are the wheel type, wheel size and maximum wheel load?
3	What are the operating speed and frequency of AGV movement?
4	What are the fixed AGV travel routes and critical turning locations?
5	What floor regularity or tolerance is specified by the AGV manufacturer?
6	What bump, joint offset or sudden level difference can the AGV tolerate?
7	What are the maximum allowable slopes and gradients along the travel route?
8	Where are the critical docking, charging, loading and transfer points?

UNDERSTANDING AMR FLOOR REQUIREMENTS



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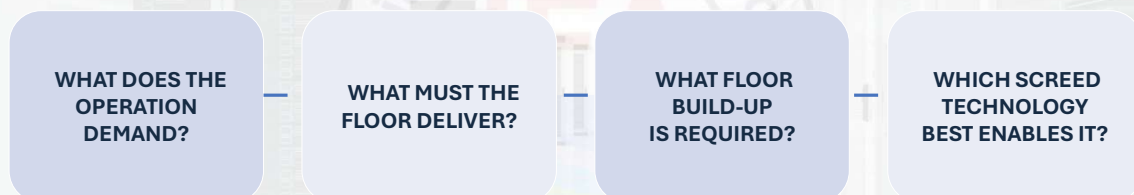
NO.	KEY QUESTION
1	What navigation technology does the AMR use — LiDAR, vision/camera, SLAM, QR markers or other sensors?
2	Does the AMR manufacturer have any requirements regarding floor colour, reflectivity, gloss or light reflection?
3	Can highly glossy, reflective or changing floor surfaces interfere with cameras or sensors?
4	Are consistent floor appearance and colour required across the operating area?
5	Can dust, tyre marks, stains or surface contamination affect navigation or sensor performance?
6	Does the AMR move dynamically across the entire area or mainly within defined operating zones?
7	What joints, gaps, bumps, transitions and level differences can the AMR safely negotiate?
8	Are tighter floor tolerances required at docking, charging, robotic transfer or precision positioning areas?

START WITH THE DEMAND — NOT THE SCREED

The right technology follows the operational requirement



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Operation → Performance → Floor system → Technology

SCREED TECHNOLOGY SPECTRUM



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Technology	Primary value	Typical application	Main caution
Cement-sand	Economical, familiar, robust	General commercial / industrial	Workmanship, shrinkage, drying, regularity
Fibre-reinforced	Crack-control contribution, toughness	Industrial / commercial screeds	Fibre type/dosage and joint design
Polymer / SBR modified	Bond, strength development, lower shrinkage	Industrial / repair / wearing screeds	"Polymer" alone is not a performance guarantee
Rapid / fast drying	Programme acceleration	Fast-track / refurbishment	Verify actual moisture before covering
Pumpable / self-levelling	Productivity, smooth plane, repeatability	LVT/vinyl, refurbishment, large areas	Profile, primer, moisture, flow control
Industrial cementitious topping	Wear, traffic, early strength	Warehouses / manufacturing	Specify as final wearing floor if exposed
Epoxy screed	Chemical & mechanical performance	Process heavy-duty areas	Resin chemistry, moisture, application skill
PU-cement	Chemical, thermal, impact resistance	Food / pharma / wet process / heavy industry	Exposure-specific design
MMA resin-bound	Very rapid cure / specialist performance	Shutdown-sensitive specialist areas	Specialist chemistry and installation

SELF-LEVELLING SCREEDS — BEYOND JUST "LEVELLING"

A controlled substrate-correction technology for applications where regularity and repeatability matter.



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SURFACE REGULARITY

Creates a controlled, repeatable plane for sensitive final floors.

PRODUCTIVITY

Pumpable systems can improve output and reduce manual levelling effort on large areas.

PREDICTABILITY

Factory-controlled formulation can reduce some site-mixing variability.

THIN-LAYER CORRECTION

Useful where controlled correction is required without a conventional thick build-up.

FINAL-FLOOR COMPATIBILITY

Important for LVT, vinyl, resin and decorative flooring systems.

REFURBISHMENT SPEED

Can support shorter programs when substrate and moisture conditions are suitable.

SELF-LEVELLING DOES NOT MEAN SELF-CORRECTING.

WHEN SHOULD WE NOT USE SELF-LEVELLING?

Good specification is not about using the most advanced technology — it is about using the right one.



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STRUCTURALLY UNSTABLE

Fix the substrate problem first.

UNSUITABLE MOISTURE

Do not use levelling technology to hide a moisture problem.

MAJOR THICKNESS CORRECTION

A different screeding strategy may be more appropriate.

EXPOSED HEAVY INDUSTRIAL FLOOR

A high-performance industrial topping may be the better solution.

POOR SURFACE PREPARATION

Self-levelling cannot compensate for contamination or weak surfaces.

UNCONTROLLED SITE CONDITIONS

Mixing, primer, flow and protection still determine the result.

WRONG FINAL-FLOOR INTERFACE

Select the screed with the specified finish and adhesive/system in mind.

NO REAL VALUE FROM THE TECHNOLOGY

Conventional screed may be sufficient where the demand is modest.

The question is not “Can we self-level it?” — It is “Should we self-level it?”

EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

SCREED : FROM A “LEVELLING MATERIAL ” TO AN ENABLING PART OF THE COMPLETE FLOORING SYSTEM

The Indian market offers levelling and screed products with different formulations, raw materials, polymer modification, aggregate grading, quality-control systems and levels of technical documentation.

- Batch consistency and documented performance.
- Controlled water demand and mixing requirements.
- Flow, setting and working-time characteristics.
- Surface hardness and resistance to dusting.
- Shrinkage and crack behaviour.
- Bond to the nominated substrate.
- Compatibility with the specified final flooring system.
- Independent or project-specific verification where the consequence of failure is high.

A poor screed can make the expensive top layer the visible victim. LVT can telegraph defects; vinyl can expose pinholes and surface irregularities; resin floors can exhibit defects, debonding or premature wear. The root cause may be below the visible flooring.



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WHAT DOES THIS MEAN FOR THE LEVELLING SCREED

The new-age requirement changes the hierarchy of screed properties. Thickness and compressive strength remain relevant, but they are no longer sufficient descriptors.

- **Geometry** — level, flatness and controlled surface regularity.
- **Surface integrity** — smoothness, hardness, low dusting and defect control.
- **Bond** — reliable adhesion to the substrate and compatibility with the final flooring system.
- **Dimensional stability** — controlled shrinkage and movement.
- **Moisture behaviour** — drying, moisture tolerance and compatibility with the final floor.
- **Mechanical performance** — compression, flexure, abrasion and impact as appropriate.
- **Functional compatibility** — ESD, cleanroom, chemical, traffic or automation requirements where applicable.
- **Execution reliability** — repeatability across large areas and realistic working windows.

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SURFACE REGULARITY: SR2 IS A BENCHMARK, NOT THE DESTINATION

The right question is not “Is the floor SR2?”
It is “Is the specified regularity sufficient for this operation?”

- SR classifications are useful because they convert the vague word 'flat' into a measurable surface-regularity requirement
- SR2-type regularity can be relevant where the final floor or operational equipment is sensitive to local variations, but it should not automatically be imposed on every project
- Long-wave waviness may not be fully captured by a single straightedge measurement.

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WHEN THE SCREED ITSELF IS THE NEW-AGE FLOOR

In some industrial applications the screed is not covered by another finish. It becomes the final wearing floor. In that situation, the expectations are much higher than those of an underlayment.

- Traffic type: pedestrian, forklift, pallet truck, AGV/AMR or other wheeled traffic.
- Point and distributed loading.
- Abrasion and impact resistance.
- Chemical and cleaning exposure.
- Surface hardness, texture, appearance and traction.
- Joint design, continuity and maintainability.
- Curing and protection before commissioning.
- Cleaning, maintenance and expected service life.

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FROM “LEVEL” TO “FIT FOR PURPOSE”

A practical change in the way we specify and discuss floors

TRADITIONAL QUESTION	NEW-AGE QUESTION
Is the floor level?	Is the floor fit for the operation?
Is it SR2?	Is the required regularity appropriate?
What screed is available?	What technology best meets the demand?
Can we install the final floor?	Is the substrate compatible with the final floor?
Who completed their layer?	Who owns the complete floor performance?

EXPECTATIONS & DEMANDS OF FLOOR LEVELLING SCREEDS

THREE EXPECTATIONS THAT SHOULD DEFINE THE NEXT GENERATION OF SCREEDS



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The industry should move from product selection to performance assurance

1

PREDICTABILITY

Consistent material, controlled installation, drying and surface quality

2

COMPATIBILITY

The screed must support the complete functional and final-floor system

3

FIT-FOR-PURPOSE PERFORMANCE

Specify what the operation needs — not simply what the screed can achieve

**The future is not about choosing the most sophisticated screed.
It is about choosing the right technology for the right demand.**

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