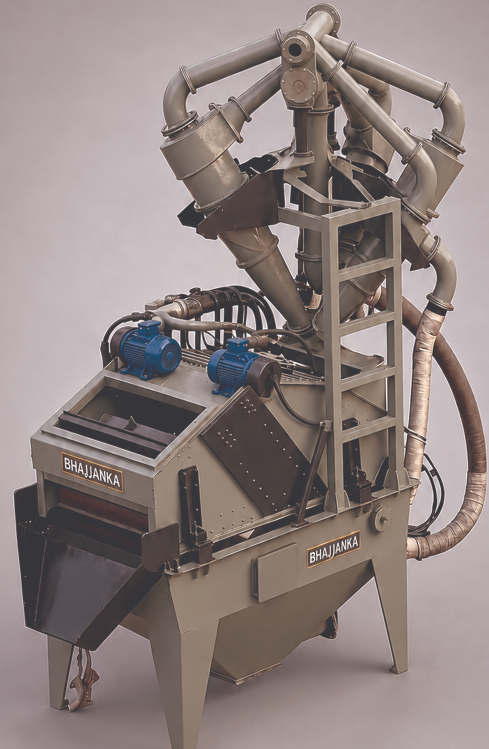


THE SIMLABS ADVANTAGE

DON'T CHOOSE A PLANT. CHOOSE THE OUTCOME.

A practical guide to using simulation, site data and engineering controls to select a duty-matched sand-washing circuit before CAPEX is committed.

**DESIGN BASIS > CONFIGURATION > VERIFIED DUTY**

The equipment is the output. The decision is the product.

01**MEASURE**

Feed, site and
operating reality

02**MODEL**

Mass, water,
hydraulics and
power

03**DECIDE**

Architecture,
controls and
acceptance

SIMULATE - DON'T SPECULATE.

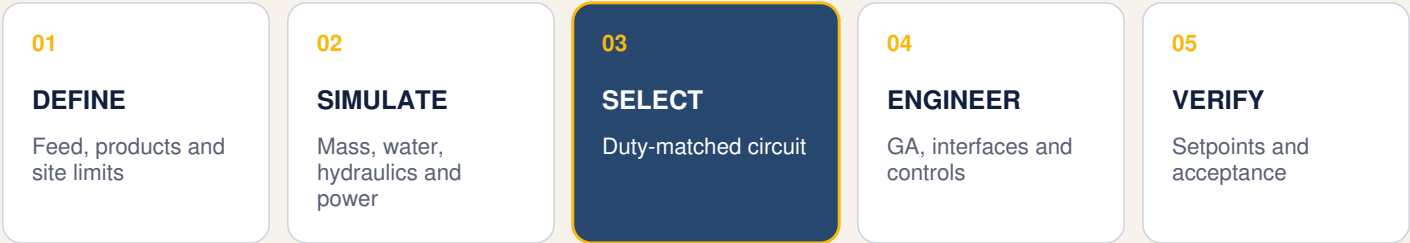
Manufactured in Howrah. Supported across India.



00 / THE METHOD

Certainty, before you commit.

SIMLABS shifts the buying question from 'Which machine is available?' to 'Which circuit will deliver the required outcome on this feed and site?'



ILLUSTRATIVE 100 TPH ROI MODEL - REPLACE WITH CLIENT DATA

Same duty. Different annual return.

INPUT / FORMULA	CONVENTIONAL	SIMLABS
Rated duty	100 TPH	100 TPH
Scheduled hours/year	16 x 26 x 12 = 4,992 h	Same 4,992 h
Availability	78%	88%
Saleable recovery	72%	80%
Saleable output/year	100 x 4,992 x 0.78 x 0.72 = 280,351 t	100 x 4,992 x 0.88 x 0.80 = 351,437 t
Net contribution/t	INR 120 after washing OPEX	INR 128 after washing OPEX
Annual contribution	280,351 x INR 120 = INR 3.36 Cr	351,437 x INR 128 = INR 4.50 Cr
Installed CAPEX	INR 2.40 Cr	INR 2.80 Cr
ROI on CAPEX	INR 3.36 Cr / INR 2.40 Cr = 140%	INR 4.50 Cr / INR 2.80 Cr = 161%
Simple payback	INR 2.40 Cr / INR 3.36 Cr x 12 = 8.6 months	INR 2.80 Cr / INR 4.50 Cr x 12 = 7.5 months

SIMLABS DIFFERENCE: +71,086 t/year saleable | +INR 1.13 Cr/year contribution

Incremental recovery = INR 40 lakh / INR 1.13 Cr x 12 = 4.2 months

Worked example only. Net contribution excludes feed, royalty, financing and tax. Final ROI follows sieve data, water balance, site constraints, local rates and measured validation.

01 / DEFINE THE OUTCOME

Start with the feed. Not the brochure.

A duty-matched plant begins with the material you actually process, the products you must sell and the operating limits of your site.

**SITE REALITY IS PART OF THE DESIGN**

Space, levels, services and interfaces are model inputs.

WHAT WE TAKE FROM YOU

- Representative feed sieve report and top size
- Required products, gradations and sale priorities
- Capacity, operating hours and seasonal variation
- Feed moisture, clay, organics and density evidence
- Water source, recovery target and discharge limits
- Power availability, site levels and footprint

DATA QUALITY GATE

Measured. Representative. Traceable.

A simulation can only be as reliable as its inputs. Unknown values are marked LIVE-PENDING; they are never silently assumed or entered as zero.

01

MEASURE

Sieve, moisture, density and site measurements

02

RANGE

Minimum, normal and maximum duty

03

VALIDATE

Confirm units, sampling and operating period

FIRST ADVANTAGE: WRONG ASSUMPTIONS ARE EXPOSED BEFORE THEY BECOME STEEL.

02 / SIMULATE THE CIRCUIT

Model the system - not isolated equipment.

Pump, cyclone, screen, sump, piping, water return and product split are interdependent. SIMLABS closes them as one operating circuit.



01

MATERIAL

PSD, solids, clay
and recovery

02

WATER

Fresh water, recycle
and overflow

03

HYDRAULICS

Flow, pressure and
line losses

04

ENERGY

Duty point, power
and loading

05

RELIABILITY

Wear, access,
spares and
downtime

WHAT YOU GET BACK

01

CIRCUIT

Matched pump, cyclone
and screen

02

OPERATING WINDOW

Flow, pressure, density and
setpoints

03

BALANCES

Mass, water and power
basis

04

RISK REGISTER

Constraints and validation
items

MASS IN = SALEABLE PRODUCT + RECYCLE + REJECTS / LOSSES | One basis. No double counting.

03 / SELECT THE ARCHITECTURE

Choose the layout that fits the duty.

The correct answer may be compact, mobile or site-integrated. The decision follows operating constraints - not a product gallery or a preferred machine list.



SELECTION MATRIX

Architecture follows the dominant constraint.

DECISION	COMPACT	MOBILE	SITE-INTEGRATED
Footprint	Dense package; tighter access planning	Transport envelope controls geometry	Permanent layout can spread functions
Relocation	Occasional	Designed for movement	Not the primary objective
Expansion	Planned through spare interfaces	Add modules or duplicate trains	Best for long-term staged buildout
Civil work	Compact but concentrated loads	Reduced permanent civil demand	Site works and water systems integrated
Best when	Space + interface certainty dominate	Mobility + deployment speed dominate	Stable high-utilisation operation dominates

SIMLABS VERDICT: THE BEST PLANT IS THE ONE THAT FITS YOUR CONSTRAINT MAP.

Selection is released only after duty, site, interfaces and commercial basis agree.

04 / ENGINEER THE DECISION

Turn simulation into buildable interfaces.

A good model is only useful when fabrication, civil, electrical, piping and commissioning teams receive one controlled design basis.



DESIGN RELEASE = MODEL + INTERFACES

The build is checked against the same approved basis.

CONTROLLED DELIVERABLES

- General arrangement, access and maintenance clearances
- Civil loads, foundations and platform interfaces
- Slurry line sizes, routing, elevations and flange orientation
- Pump duty point, motor, drive and protection philosophy
- Water recirculation, overflow route and drainage
- Equipment list, BOM, critical spares and commissioning setpoints

CHANGE CONTROL

Every change has an engineering consequence.

Capacity, cut-point, pipe route, water source, deck aperture or motor selection cannot change in isolation. SIMLABS links each revision to the approved design basis and recalculates affected interfaces.

01

REQUEST

Scope or site input changes

02

IMPACT

Affected balances and interfaces

03

RE-CHECK

Model and drawings updated

04

RELEASE

Revision and acceptance controlled

BUILD BENEFIT: FEWER SITE MODIFICATIONS, CLEANER PROCUREMENT, FASTER RESOLUTION.
 LIVE-PENDING items remain visible until evidence closes them.

05 / VERIFY AND IMPROVE

Commission. Measure. Improve.

The operating plant becomes a live model. Actual readings are compared with the design window so performance decisions are based on evidence.



OPERATING BASELINE

MEASURE	WHAT IT TELLS YOU
Feed rate + density	Confirms real hydraulic and solids loading
Cyclone pressure	Shows whether separation is inside its design window
Product moisture	Checks drainage, stroke, bed depth and residence time
Motor current + vibration	Signals load, mechanical health and instability
Overflow / underflow samples	Confirms cut, fines route and product recovery
Wear-part hours	Builds the replacement and lifecycle-cost baseline

THE BENEFIT MODEL

ANNUAL VALUE = SALEABLE OUTPUT GAIN + AVOIDED WATER / POWER / WEAR / DOWNTIME - INCREMENTAL OPEX

Payback = total CAPEX / annual net cash flow | Use validated local rates and measured plant data.

YOUR NEXT STEP

BRING US YOUR SIEVE REPORT.

WE WILL SHOW YOU THE PLANT BEFORE YOU BUY IT.

Your feed, product targets, site constraints and local costs become a preliminary SIMLABS decision model - before commercial commitment.

01

SHARE

Feed, products, water, power and site limits.

02

REVIEW

Circuit, operating window and open data.

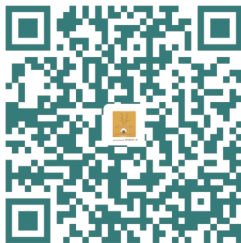
03

DECIDE

Duty-matched proposal and acceptance plan.

DEALER, SPARES & SERVICE AVAILABILITY**DEALER SUPPORT NETWORK | HOWRAH HUB - BAZPUR - FARIDABAD - BENGALURU - CHENNAI - COIMBATORE**

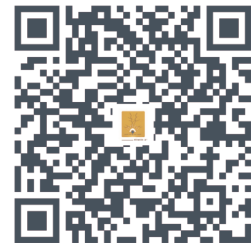
Regional support reach for spares, service, dispatch and response coordination. Dealer identities remain subject to local appointment.

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