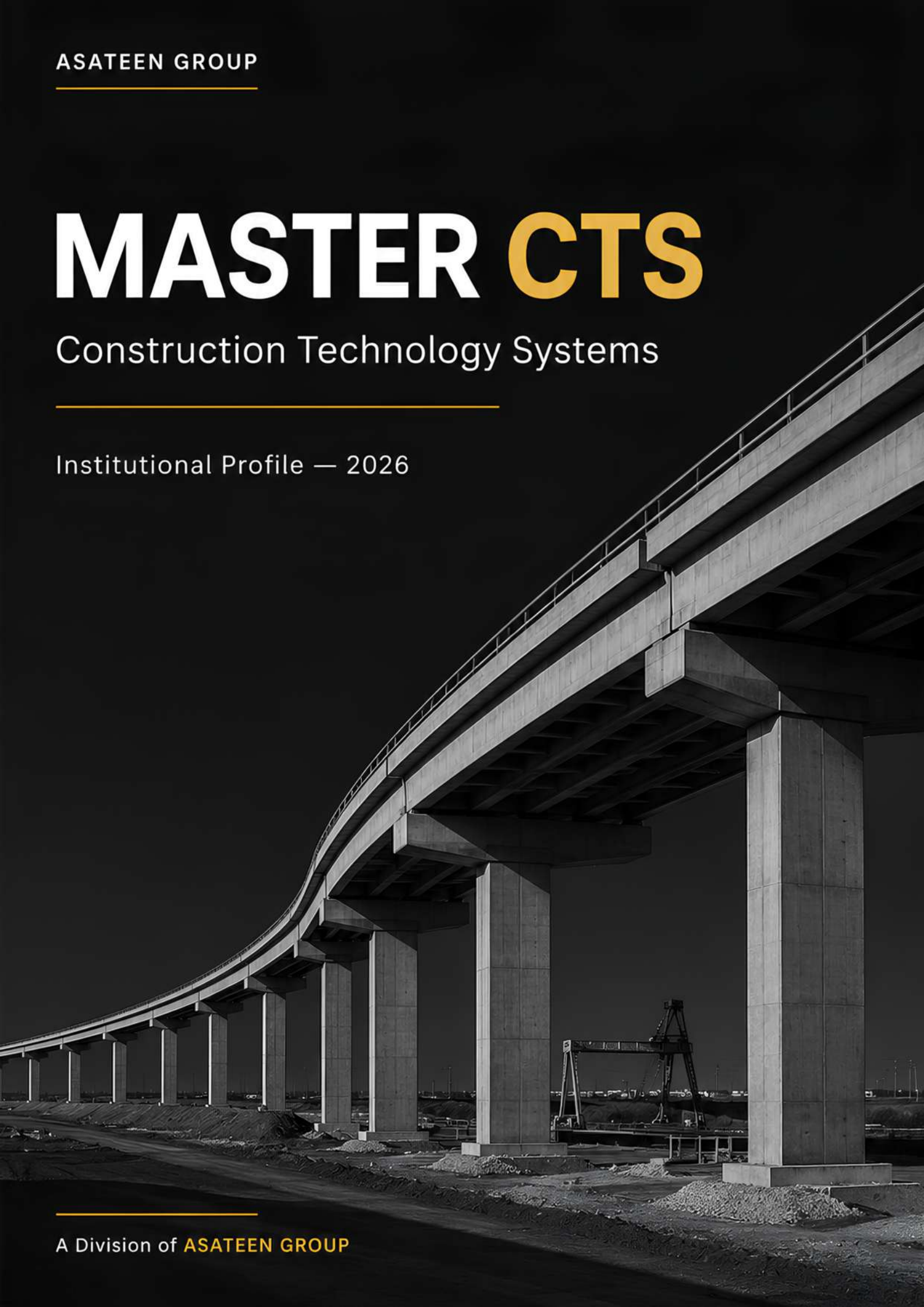
ASATEEN GROUP

# MASTER CTS

## Construction Technology Systems

Institutional Profile — 2026



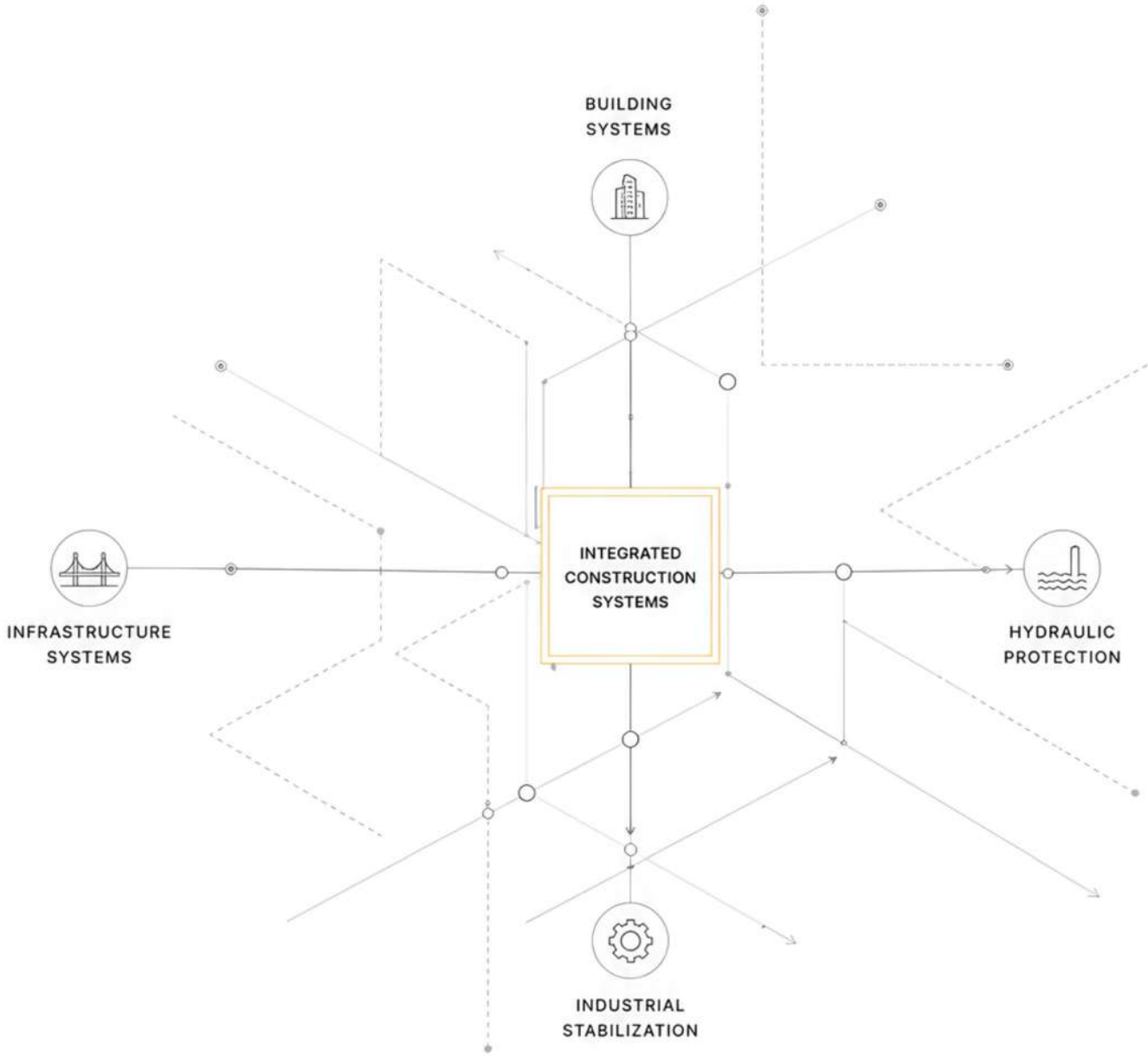
A Division of ASATEEN GROUP

# MASTER CTS

## Construction Technology Systems

### A DIVISION OF ASATEEN GROUP

A governed construction technology systems division connecting building systems, infrastructure systems, hydraulic protection, and industrial stabilization.



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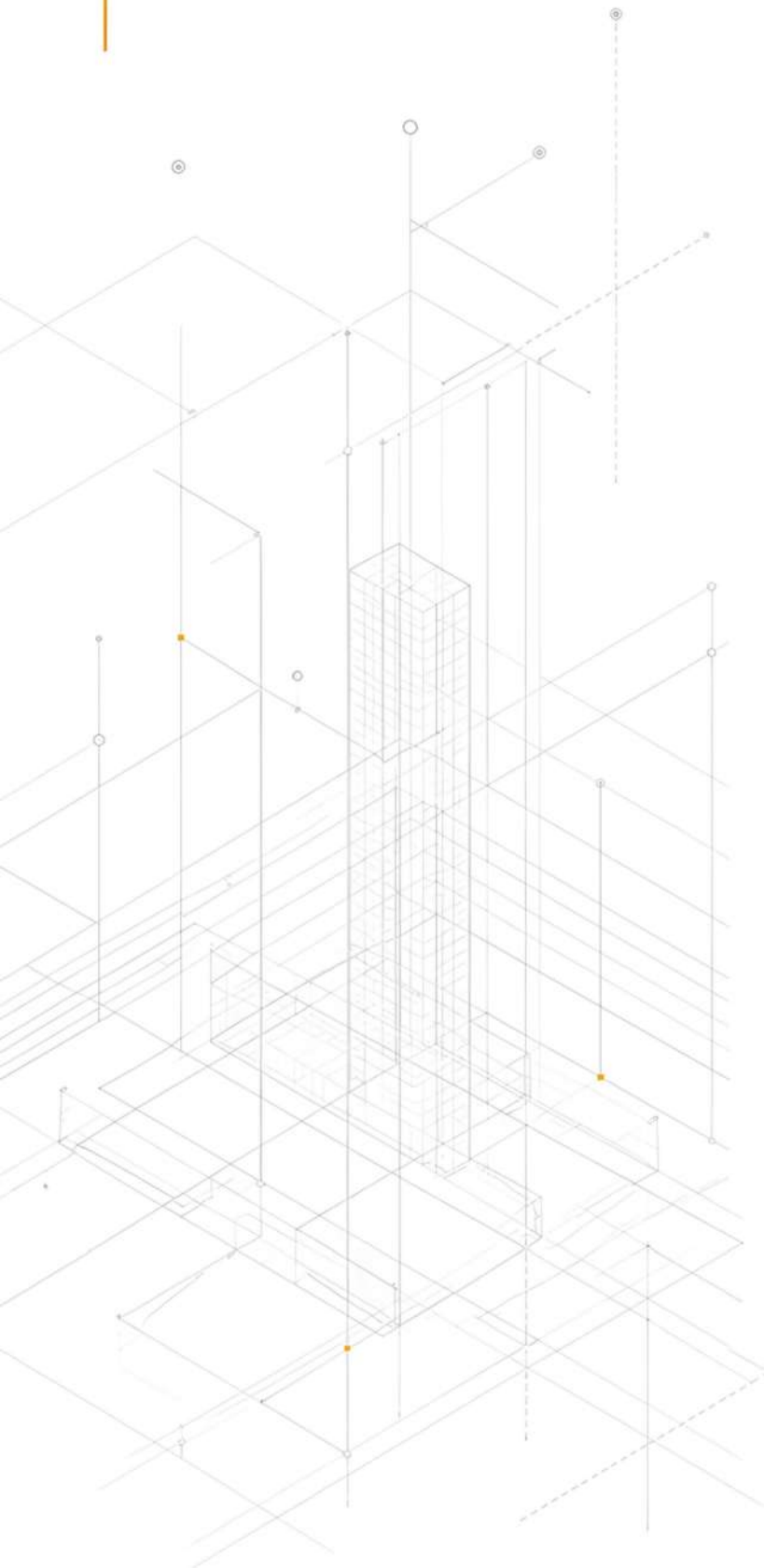
**MASTER CTS**
Construction Technology Systems

A Division of ASATEEN GROUP



# INSTITUTIONAL OVERVIEW

MASTER CTS operates as a construction technology systems division within ASATEEN GROUP.

**ASATEEN GROUP**

INTEGRATED CONSTRUCTION, MOBILITY & SERVICES

Strategic Leadership • Operational Execution • Multi-Sector Delivery

**MASTER CTS**

CONSTRUCTION TECHNOLOGY SYSTEMS

Systems Engineering • Technology Development • Deployment Solutions

### BUILDING SYSTEMS

- Structural Solutions
- Modular Systems
- Performance Materials

### INFRASTRUCTURE SYSTEMS

- Roads & Pavements
- Water Infrastructure
- Hydraulic Protection

### INDUSTRIAL STABILIZATION

- Soil Stabilization
- Environmental Solutions
- Material Engineering

## OUR SYSTEM STRENGTH

### SYSTEMS ENGINEERING PLATFORM

We operate a fully integrated engineering platform that unifies systems, methods, and technologies under one institutional structure.

### PROJECT-SPECIFIC DEPLOYMENT LOGIC

Every solution is developed through project-specific logic to ensure relevance, efficiency, and reliable field performance.

### TECHNICAL PRODUCT INTEGRATION

Our technologies and materials are engineered to integrate seamlessly, delivering complete and reliable construction systems.

# SYSTEMS ENGINEERING PHILOSOPHY

**MASTER CTS develops construction systems, not isolated materials.**

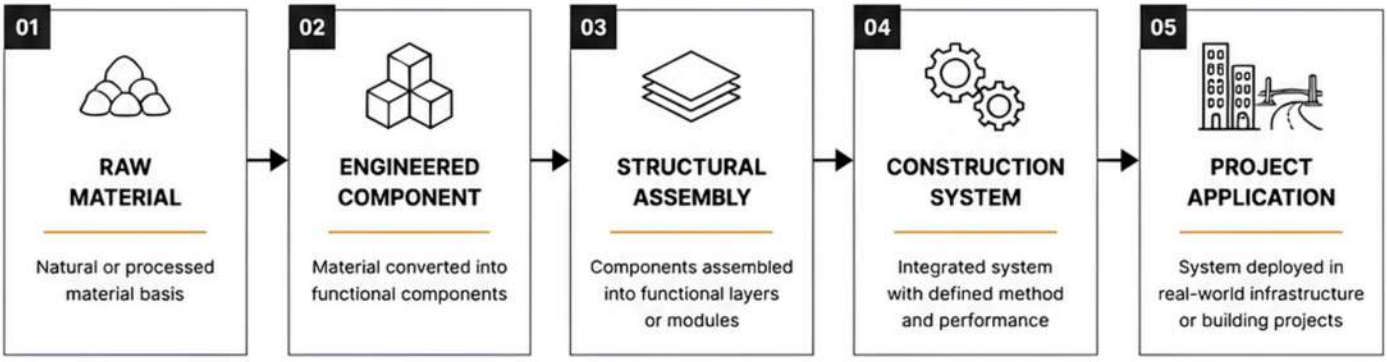
The engineering approach integrates materials, assemblies, deployment logic, and project-scale application into one governed construction technology framework under ASATEEN GROUP.

Rather than positioning materials as isolated products, the division organizes construction technologies into operational systems designed for housing, infrastructure, hydraulic protection, and industrial stabilization environments.

The engineering framework combines material performance, deployment sequencing, field integration, lifecycle behavior, infrastructure compatibility, and execution efficiency.

This approach allows systems to be adapted according to project conditions, environmental requirements, and operational constraints while remaining technically governable across different construction sectors.

## INTEGRATED SYSTEM TRANSFORMATION LOGIC




## CONTROLLED MATERIAL-TO-SYSTEM EXAMPLES

| Material Basis | Component Logic | System Role | Deployment Context |
|---|---|---|---|
| **GFRP reinforcement** | Structural reinforcement element | Corrosion-resistant reinforcement systems | Infrastructure / water exposure |
| **Fiber cement** | Board and enclosure layer | Lightweight building systems | Housing / modular construction |
| **Foam concrete** | Lightweight fill layer | Thermal and structural support systems | Infrastructure / leveling |
| **Fired clay** | Architectural masonry element | Envelope and facade systems | Building applications |
| **Stabilization additives** | Soil treatment mechanism | Road stabilization systems | Transportation infrastructure |
| **Cementitious mats** | Hydraulic lining layer | Canal and erosion protection systems | Water infrastructure |

## ENGINEERING DEPLOYMENT PRINCIPLE

MASTER CTS evaluates construction technologies through system behavior rather than material identity alone. Each deployment framework is developed around environmental condition, structural requirement, execution methodology, maintenance reduction, lifecycle durability, and operational scalability.

**This systems-oriented methodology enables construction technologies to function as coordinated engineering environments rather than disconnected material layers.**

# INTEGRATED SYSTEMS PORTFOLIO

## Eight Construction Technology Systems. One Integrated Engineering Platform.

MASTER CTS organizes and deploys eight engineered systems that work together to solve complex construction, infrastructure, and environmental challenges across Iraq and the Middle East.

Each system is a complete solution framework built on engineering standards, proven materials, and field-proven deployment logic.

◯ = MASTER CTS System

### BUILDING SYSTEMS

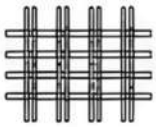
STRUCTURAL • MODULAR • ARCHITECTURAL • ENERGY EFFICIENT

01

#### MASTER GREEN BUILDING

Integrated modular systems including LSF, board, foam, and energy-efficient construction solutions.

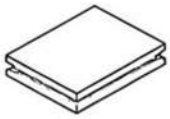
02



#### MASTER BAR

GFRP and advanced reinforcement systems for high-performance structural applications.

03



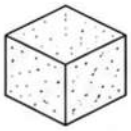
#### MASTER BOARD

High-performance panels and board systems for walls, facades, and interior applications.

### INFRASTRUCTURE SYSTEMS

TRANSPORTATION • WATER • ENVIRONMENT • PROTECTION

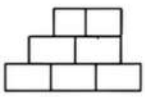
04



#### MASTER FOAM CONCRETE

Lightweight foam concrete systems for filling, insulation, void control, and thermal performance.

05



#### MASTER BRICK

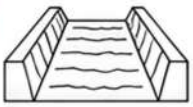
Engineered architectural bricks and facade systems for aesthetic and structural excellence.

06

#### MASTER FLOK

Soil stabilization and road performance systems for durable and cost-efficient transportation infrastructure.

07



#### MASTER GCCM

Geosynthetic cementitious composite mats for canal lining and hydraulic protection systems.

### INDUSTRIAL STABILIZATION SYSTEMS

STABILIZATION • REMEDIATION • INDUSTRIAL PERFORMANCE

08

**MASTER REPHOS**

Specialized industrial solutions including stabilization technologies, remediation systems, and performance enhancement tracks.

# BUILDING SYSTEMS

**MASTER CTS building systems integrate structure, envelope, insulation, façade, and reinforcement.**

A complete construction approach that combines engineered materials and advanced system components into high-performance, durable, and sustainable building solutions.

**05 MASTER BRICK FAÇADE SYSTEM**

Architectural brick façade system providing durability, aesthetic value, and long-term performance.

**04 MASTER BOARD ENVELOPE SYSTEM**

High-performance board system forming the exterior envelope with strength, stability, and weather resistance.

**03 MASTER FOAM CONCRETE CORE**

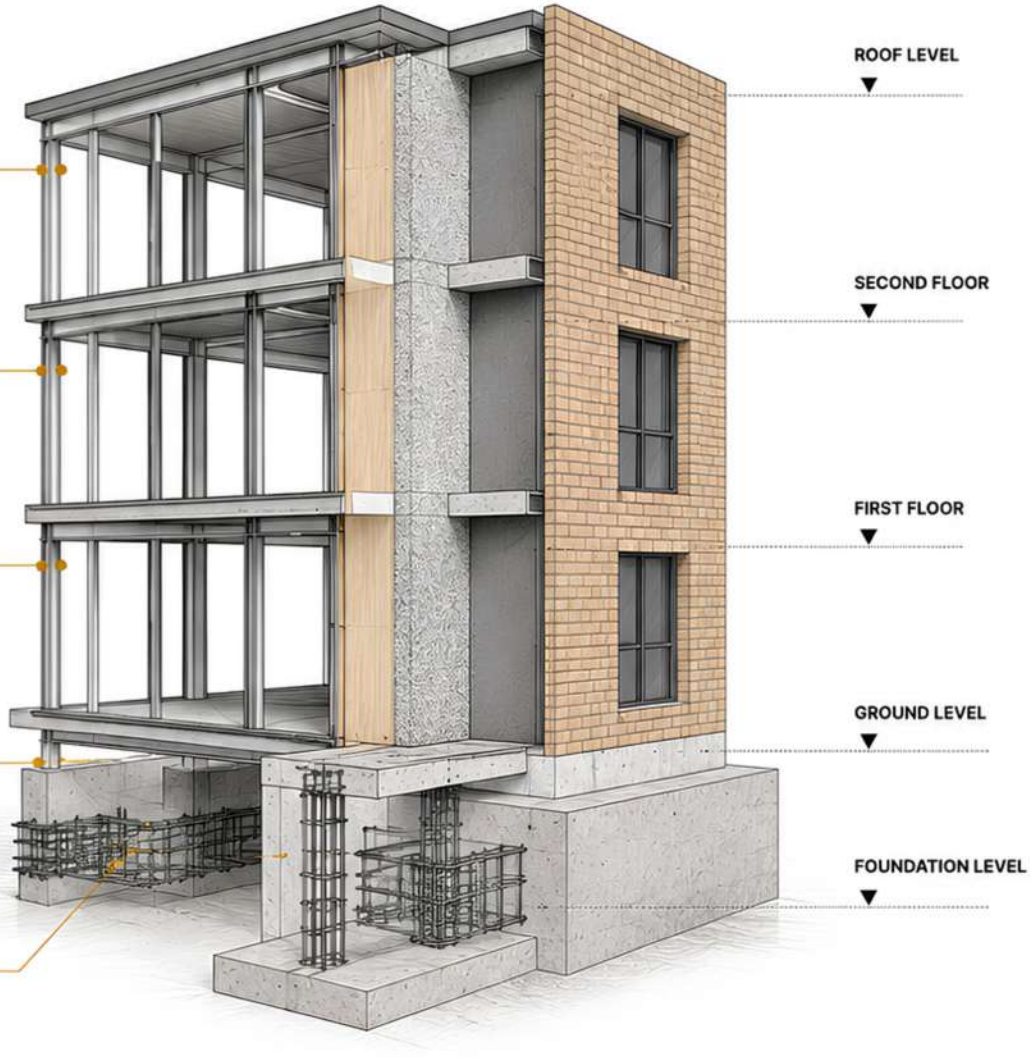
Lightweight foam concrete core providing thermal insulation, void control, and structural efficiency.

**02 MASTER GREEN BUILDING LSF STRUCTURE**

Light Steel Frame (LSF) structural system engineered for high strength, precision, and rapid construction.

**01 MASTER BAR FOUNDATION REINFORCEMENT**

GFRP and advanced reinforcement system ensuring structural integrity, durability, and long-term stability.




## SYSTEM INTEGRATION BENEFITS

**STRUCTURAL INTEGRITY**

Engineered systems work together to ensure high strength and stability.

**THERMAL PERFORMANCE**

Integrated insulation and envelope systems optimize energy efficiency.

**EXECUTION EFFICIENCY**

System-based construction reduces time, complexity, and on-site variability.

**DURABILITY**

Corrosion-resistant, weather-protected, and long-life performance.

**LIFE-CYCLE VALUE**

Lower maintenance and operational costs across the building lifecycle.

# Infrastructure Systems

Integrated engineering systems for infrastructure durability, stabilization, and hydraulic protection.

MASTER CTS infrastructure systems address:

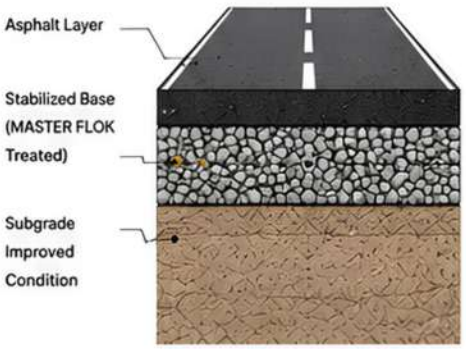
- **road stabilization**
- **reinforcement durability**
- **hydraulic protection**

through integrated construction technology systems designed for Middle East operating conditions.

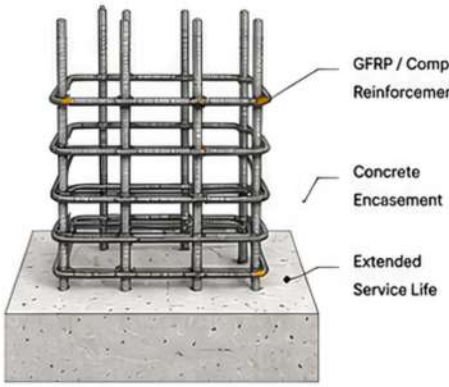
**MASTER FLOK**
Road Stabilization System

**MASTER BAR**
Reinforcement Durability System

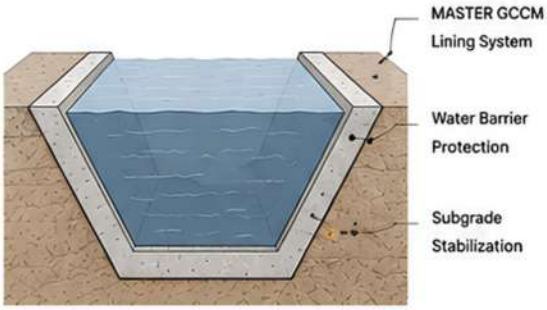
**MASTER GCCM**
Canal Lining System




Enhances subgrade strength, reduces deformation, and improves load distribution.




Provides corrosion resistance, structural integrity, and extended service life in aggressive environments.




Protects hydraulic infrastructure, reduces seepage, and extends canal operational efficiency.

**INTEGRATED INFRASTRUCTURE SYSTEMS**

Engineered Compatibility • Faster Deployment • Longer Service Life • Lower Lifecycle Cost

### ROAD SYSTEMS

Stabilization and subgrade performance systems.

Improved bearing capacity, reduced rutting, and longer pavement life.

### STRUCTURAL SYSTEMS

Durable reinforcement technologies for harsh environments.

Corrosion resistance, structural resilience, and extended design life in aggressive conditions.

### WATER INFRASTRUCTURE

Hydraulic protection and canal lining systems.

Reduced seepage, improved water efficiency, and increased infrastructure durability.

# Industrial Stabilization

## MASTER REPHOS extends MASTER CTS into controlled industrial by-product treatment and reuse qualification.

Our approach transforms phosphogypsum and related industrial by-products into engineered, compliant materials through a documented treatment and qualification process aligned with environmental, structural, and operational performance requirements.

### 01 PHOSPHOGYPSUM STREAM

Industrial phosphogypsum generated from fertilizer production is collected and characterized.

- Source identification
- Initial characterization
- Moisture and purity assessment

### 02 NEUTRALIZATION

Chemical neutralization reduces acidity and stabilizes reactive components.

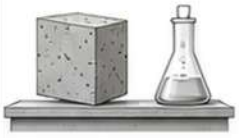
- pH adjustment
- Impurity reduction
- Process control and monitoring

### 03 STABILIZATION

Stabilization binds free components and improves material consistency and performance.

- Binder integration
- Physical stabilization
- Strength and durability enhancement

### 04 QUALIFICATION



Material is tested and qualified against defined engineering and regulatory criteria.

- Laboratory testing
- Performance verification
- Compliance confirmation

### 05 CONTROLLED REUSE PATHWAY

Qualified material is directed into approved applications with full traceability and performance oversight.

- Approved applications
- Traceability and control
- Long-term performance monitoring

**DOCUMENTED PROCESS • CONTINUOUS CONTROL • TRACEABLE QUALITY**

### SYSTEM EXTENSION

MASTER REPHOS is the industrial stabilization system within MASTER CTS dedicated to by-product treatment, material stabilization, and engineered reuse.

- Reduces environmental burden
- Improves material usability
- Supports circular resource efficiency

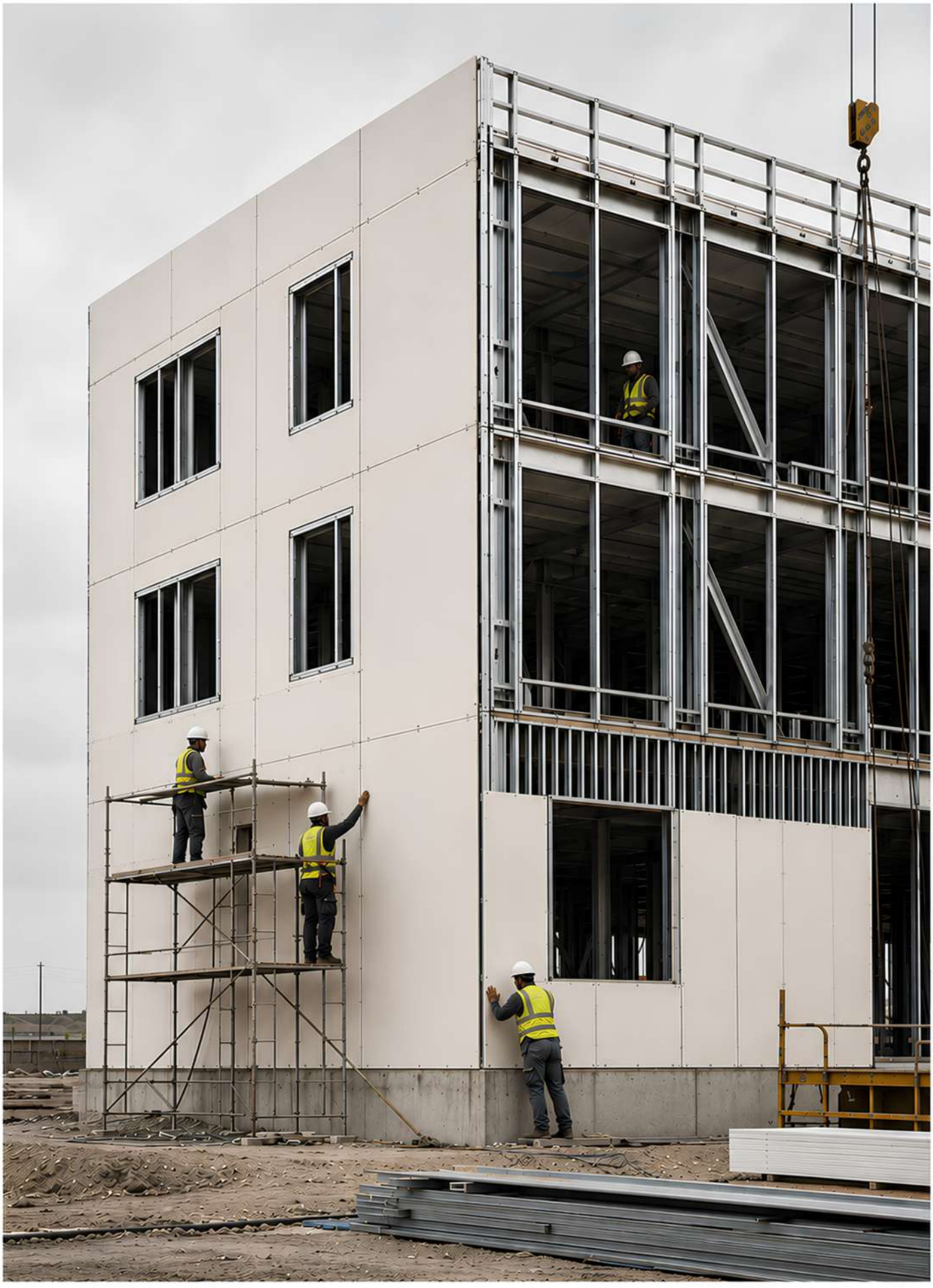
### ENGINEERING VALUE

The system converts industrial by-products into reliable construction and infrastructure materials through controlled engineering processes.

- Improved material performance
- Reduced disposal dependency
- Enhanced project sustainability

### APPLICATION EXAMPLES

- Road base materials
- Backfill and embankment components
- Non-structural concrete products
- Land rehabilitation layers
- Industrial area development



# MASTER GREEN BUILDING

## Industrialized LSF / LGSF Building System

The MASTER GREEN BUILDING system integrates lightweight steel framing, board envelopes, engineered insulation, and controlled façade solutions into one industrialized building methodology.


### 01 | INDUSTRIALIZED BUILDING LOGIC

The system uses controlled lightweight steel framing and modular assembly principles to support faster construction deployment, reduced on-site complexity, and higher quality consistency.

### 02 | LIGHTWEIGHT ENVELOPE ASSEMBLY

The wall composition integrates structural framing, engineered board systems, insulation layers, and façade control into one coordinated envelope designed for thermal efficiency and structural performance.

### 03 | INTEGRATED SYSTEM COMPONENTS

All components are engineered to work together as a unified system, enabling reliable structural behavior, fire resistance, moisture control, and long-term durability in housing and controlled building applications.

### INDUSTRIALIZED ASSEMBLY SEQUENCE

**FRAME**
LSF / LGSF steel framing structure.

**BOARD**
Board envelope sheathing installed.

**INSULATION**
Foam core / insulation integrated.

**ENVELOPE**
Interior board and envelope completed.

**FINISHED SYSTEM**
Façade applied. System ready.

CONTROLLED QUALITY • FASTER DEPLOYMENT • HIGHER DURABILITY

# MASTER BAR

## GFRP Reinforcement System

MASTER BAR is a high-performance GFRP reinforcement system engineered to deliver long-term durability, structural reliability, and corrosion resistance in aggressive environments.

### RUSTPROOF GFRP REINFORCEMENT

Non-corrosive, non-magnetic, and chemically inert.

### LIGHTWEIGHT HANDLING

Up to 75% lighter than steel reinforcement for faster installation.

### DESIGNED FOR AGGRESSIVE ENVIRONMENTS

High resistance to chloride, moisture, and chemical exposure.

### KEY PROPERTIES

| PROPERTY | VALUE | UNIT | TEST METHOD |
|---|---|---|---|
| Density | 1.80 – 2.00 | g/cm³ | ASTM D792 |
| Tensile Strength | ≥ 900 | MPa | ASTM D7205 |
| Tensile Modulus | ≥ 45 | GPa | ASTM D7205 |
| Corrosion Resistance | 100 | % | ASTM G31 |
| Thermal Expansion | 9 – 11 | µm/m·°C | ASTM D696 |
| Non-Magnetic | Yes | – | ASTM F2213 |

### APPLICATION AREAS

- Concrete Structures
- Bridges and Marine Structures
- Water and Wastewater Facilities
- Industrial and Chemical Plants
- Roads and Infrastructure
- Aggressive Soil and Chloride Zones

### SYSTEM BENEFITS

- Zero corrosion – extended service life
- Reduced maintenance and lifecycle cost
- High strength-to-weight ratio
- Electrical and thermal insulation
- Easy cutting, handling, and installation

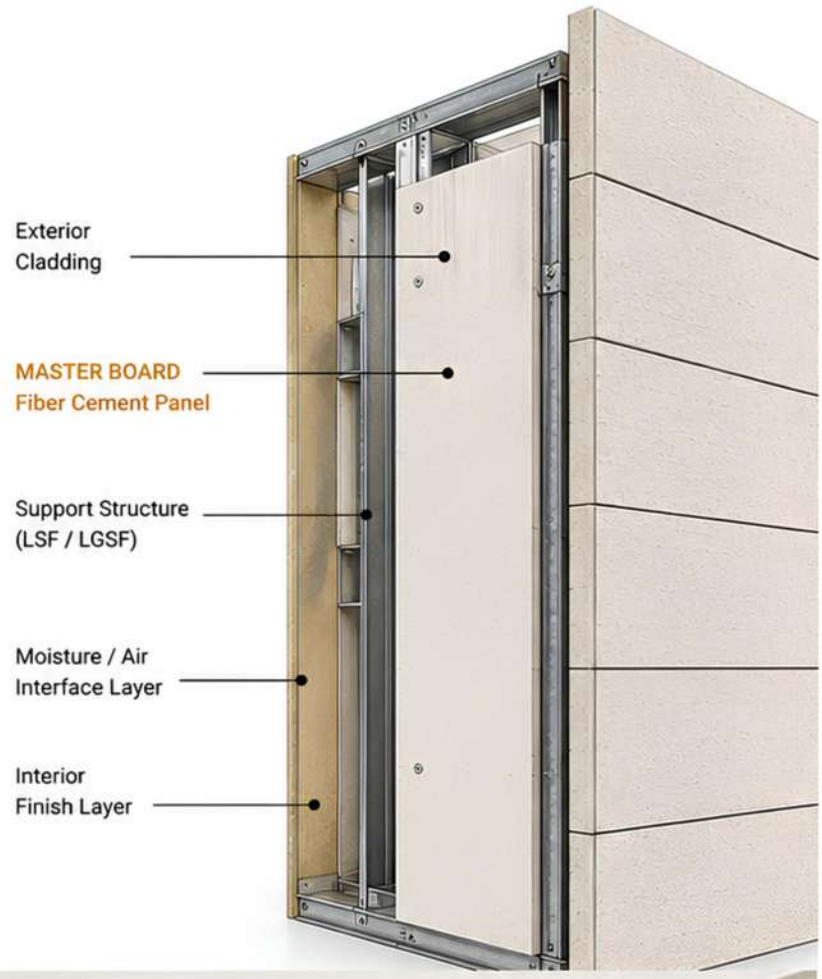
### ENGINEERED FOR PERFORMANCE

MASTER BAR is produced under controlled manufacturing processes and tested to international standards to ensure consistent performance in the most demanding infrastructure applications.

# MASTER BOARD

## High-Density Fiber Cement Board

High-density fiber cement panel system designed for interior and exterior envelope applications requiring dimensional stability, moisture resilience, and controlled surface performance under demanding environmental conditions.



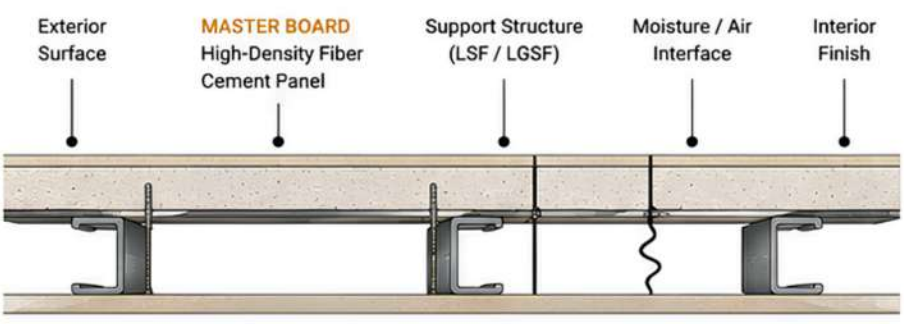

### ENGINEERED APPLICATION LOGIC

- Interior and exterior wall-envelope integration
- High-density fiber cement structural surface logic
- Moisture- and fire-resilient interface behavior
- Suitable for controlled modular and lightweight building systems
- Stable dimensional behavior under harsh environmental exposure

### CONTROLLED APPLICATION MATRIX

| Application Area | System Role |
|---|---|
| Exterior Envelope | Weather-resistant panel layer |
| Interior Partition Systems | Stable interior surface solution |
| Lightweight Building Systems | Integrated modular enclosure |
| Infrastructure Support Spaces | Durable controlled wall interface |

### TYPICAL WALL ENVELOPE SECTION




### KEY PROPERTIES

| | |
|---|---|
| High Density | ≥ 1,100 kg/m³ |
| Compressive Strength | ≥ 12 MPa |
| Flexural Strength | ≥ 9 MPa |
| Moisture Resistance | High |
| Fire Resistance | Non-combustible |
| Dimensional Stability | Excellent |
| Impact Resistance | High |
| Thermal Stability | Excellent |

Test methods available upon request.

# MASTER FOAM CONCRETE

## Engineered Cellular Concrete

MASTER FOAM CONCRETE is a controlled cellular concrete system engineered to deliver lightweight, insulating, and pumpable fill and screed solutions for modern construction and infrastructure applications.

### LIGHTWEIGHT FILL AND LEVELING

Low-density engineered fill for voids, slabs, roofs, and slope correction with minimal load.

### THERMAL AND ACOUSTIC SUPPORT

Cellular structure provides effective thermal insulation and acoustic dampening.

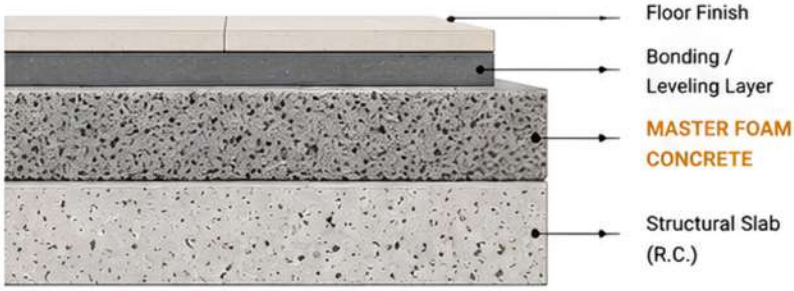
### PUMPABLE CELLULAR CONCRETE SYSTEM

Highly pumpable mix with self-leveling behavior for fast, efficient, and uniform installation.

### TYPICAL APPLICATIONS

| Application Area | Use |
|---|---|
| Roof Insulation Fill | Lightweight thermal fill for flat roofs |
| Floor Leveling and Screeds | Self-leveling underlayment and service layer |
| Void Filling | Filling of trenches, ducts, and structural voids |
| Slope Formation | Lightweight slope to drains and scuppers |
| Infrastructure Backfill | Controlled low-load backfill over structures and utilities |

### TYPICAL SECTION — FLOOR APPLICATION




### TYPICAL AROPERTIES (GUIDE VALUES)

| PROPERTY | VALUE RANGE | UNIT | TEST METHOD |
|---|---|---|---|
| Dry Density | 300 – 1,600 | kg/m³ | ASTM C1693 |
| Compressive Strength (28d) | 1 – 10 | MPa | ASTM C39 |
| Thermal Conductivity | 0.07 – 0.35 | W/m-K | ASTM C518 |
| Water Absorption | ≤ 15 | % | ASTM C642 |
| Fire Resistance | Non-combustible | – | ASTM E136 |
| Pumpability | Excellent | – | Project Standard |

### SYSTEM ADVANTAGES

- Reduces structural dead load
- Provides thermal insulation and energy support
- Improves acoustic performance
- Fast installation through pumping and leveling
- Minimizes site congestion and labor
- Compatible with multiple finish systems

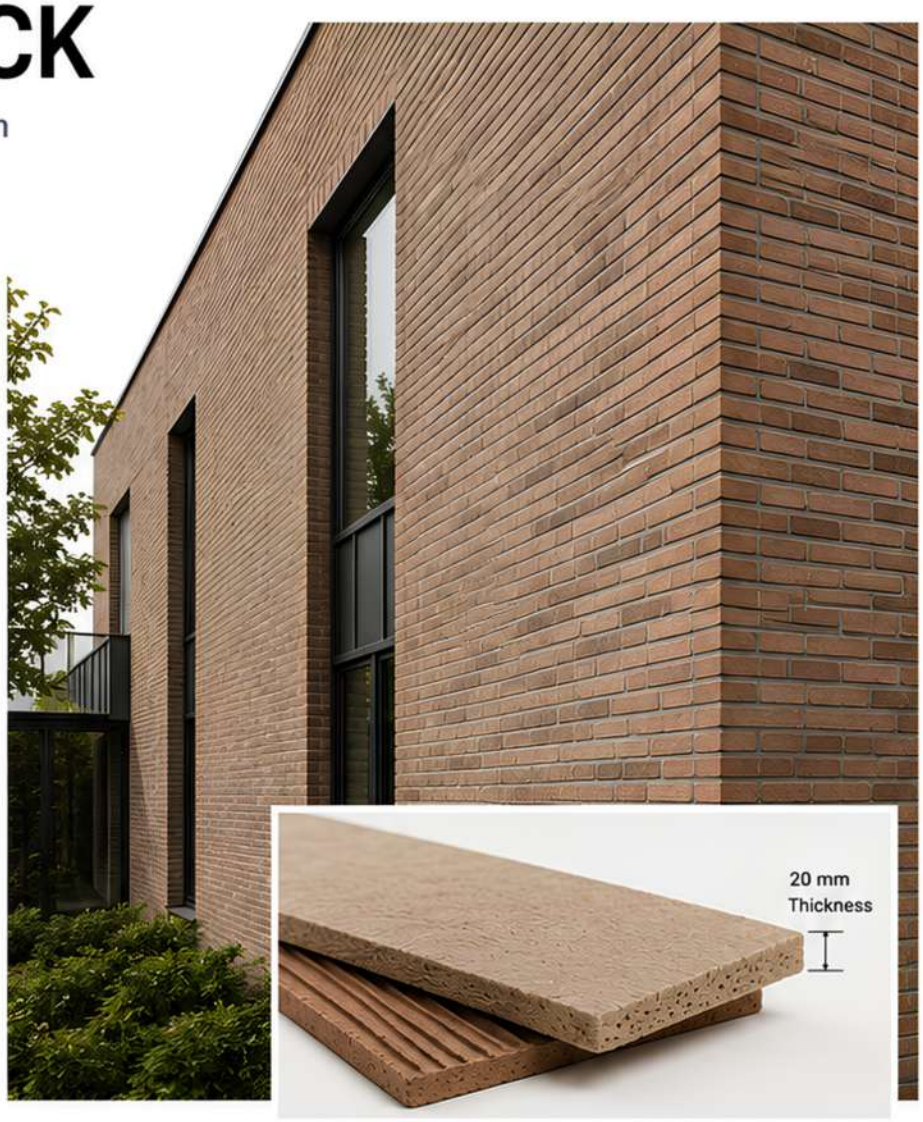
### ENGINEERED FOR PERFORMANCE

MASTER FOAM CONCRETE is produced under controlled mix design and quality procedures to ensure consistent density, strength development, and long-term durability in demanding environmental conditions.

# MASTER BRICK

## Fired Clay Façade / Cladding System

MASTER BRICK is a premium fired clay thin-brick system engineered for architectural façades and cladding. It delivers natural material performance, long-term durability, and timeless aesthetic quality for modern and heritage applications.




### ARCHITECTURAL FAÇADE LAYER

Thin-brick system designed for elegant, durable architectural skin and cladding solutions.

### NATURAL FIRED CLAY BODY

Produced from high-quality clay and fired at high temperature for strength, color stability, and weather resistance.

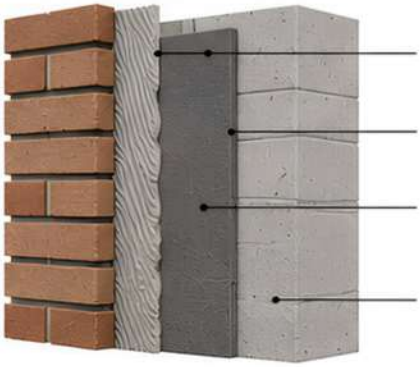
### MULTI-APPLICATION VERSATILITY

Exterior, interior, restoration, and hardscape applications with consistent performance and aesthetic flexibility.

### TYPICAL PRODUCT PROPERTIES

| PROPERTY | VALUE | UNIT | TEST METHOD |
|---|---|---|---|
| Thickness | 20 | mm | EN 771-1 |
| Dimensional Tolerance | ± 1.5 | mm | EN 771-1 |
| Compressive Strength | ≥ 25 | MPa | EN 772-1 |
| Water Absorption | ≤ 10 | % | EN 772-21 |
| Freeze / Thaw Resistance | ≥ F2 | Cycle | EN 772-22 |
| Flexural Strength | ≥ 6 | MPa | EN 772-5 |
| Reaction to Fire | A1 | – | EN 13501-1 |
| Thermal Conductivity (λ) | 0.60 – 0.80 | W/m·K | EN 1745 |

### SYSTEM SECTION — VENEER CLADDING




### APPLICATION AREAS

**EXTERIOR FAÇADES**
Weather-resistant cladding for modern architectural designs.

**INTERIOR WALLS**
Natural clay aesthetic for interior feature walls and finishes.

**RESTORATION PROJECTS**
Ideal for heritage restoration and historical façade compatibility.

**HARDSCAPE ELEMENTS**
Durable and aesthetic solution for landscape and hardscape applications.

### SYSTEM BENEFITS

- Natural and timeless appearance
- Freeze-thaw stability and weather resistant
- High durability and color stability
- Compatible with multiple substrates
- Low maintenance
- Sustainable natural material

# MASTER FLOK

## Road Stabilization System

MASTER FLOK is a road and soil stabilization system developed to improve subgrade performance and support more controlled infrastructure deployment conditions. The system is used in combination with Portland cement and project-specific engineering evaluation.

### ROAD AND SOIL STABILIZATION

Improves subgrade strength and supports long-term pavement performance.

### USED WITH PORTLAND CEMENT

Engineered to work with Portland cement for optimum stabilization results.

### FIELD VERIFICATION REQUIRED

Performance must be verified through field testing and project-specific engineering validation.


### SYSTEM BENEFITS

- Increases subgrade strength and stiffness
- Reduces deformation under repeated load
- Improves bearing capacity of road layers
- Enhances moisture resistance
- Supports controlled construction quality
- Suitable for a wide range of soil types
- Cost-effective infrastructure solution

### TYPICAL PERFORMANCE INDICATORS*

| PROPERTY | TYPICAL VALUE | UNIT | TEST METHOD |
|---|---|---|---|
| Unconfined Compressive Strength (7 days) | 1.5 – 3.0 | MPa | ASTM D1633 |
| California Bearing Ratio (CBR) | > 30 | % | ASTM D1883 |
| Modulus of Resilience | 150 – 300 | MPa | ASTM D7369 |
| Moisture Resistance | Improved | – | Project Specific |
| Durability | High | – | Field Verification |

* Values are typical and vary based on soil type, cement content, and field conditions.

### APPLICATION AREAS

- Road infrastructure
- Access roads
- Industrial zones
- Site preparation
- Low-volume roads
- Rural infrastructure

### SYSTEM DEPLOYMENT LOGIC

1. **ASSESS** — Evaluate soil conditions and determine design.
2. **PREPARE** — Prepare and shape subgrade to required levels.
3. **STABILIZE** — Apply MASTER FLOK with Portland cement and mix.
4. **COMPACT** — Compact to achieve required density and performance.
5. **VERIFY** — Conduct field tests to verify performance and acceptance.


BOMAG
FAYAT GROUP

# MASTER GCCM

## Canal Lining / Hydraulic Protection System

MASTER GCCM is an integrated canal lining system engineered to deliver durable hydraulic protection, minimize seepage, and resist erosion under demanding operational and environmental conditions.

### CANAL LINING

Provides a continuous hydraulic barrier for irrigation and water conveyance canals.

### SEEPAGE CONTROL

Reduces water loss through the canal bed and banks, improving system efficiency.

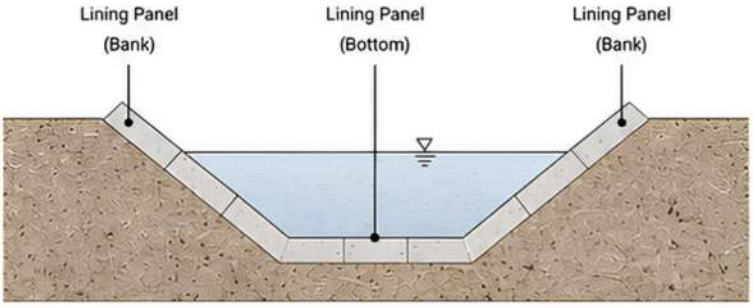
### EROSION PROTECTION

Protects canal surfaces against scour, abrasion, and long-term environmental degradation.


### SYSTEM SPECIFICATION OVERVIEW

| Item | Description |
|---|---|
| System Type | Trapezoidal canal lining system |
| Lining Coverage | Both sloped banks and canal bottom |
| Joint Orientation | Perpendicular to water flow (across the canal) |
| Primary Function | Seepage control and erosion protection |
| Application | Irrigatios canals, main canals, branches, and water conveyance systems |
| Service Life | Designed for long-term hydraulic performance |
| Installation Method | Pre-cast panels / cast-in-place (project-specific) |
| Design Validation | Field verification required |

### TYPICAL CANAL CROSS-SECTION




**IMPORTANT:**
Seams are oriented across the canal, perpendicular to the direction of water flow, ensuring structural continuity and hydraulic performance.

### TYPICAL PERFORMANCE INDICATORS*

| Property | Typical Value | Unit | Test Method |
|---|---|---|---|
| Water Permeability | ≤ $1.0 \times 10^{-7}$ | m/s | ASTM D5084 |
| Compressive Strength (28d) | ≥ 35 | MPa | ASTM C109 |
| Flexural Strength (28d) | ≥ 6 | MPa | ASTM C78 |
| Abrasion Resistance | High | – | Project Specific |
| Freeze / Thaw Resistance | ≥ F2 | Cycle | ASTM C666 |
| Sulfate Resistance | High | – | ASTM C1012 |

* Values are typical and vary based on mix design, site conditions, and project requirements.

### APPLICATION AREAS

- Main irrigation canals
- Branch canals and distributaries
- Water conveyance channels
- Canal rehabilitation projects
- Critical water infrastructure

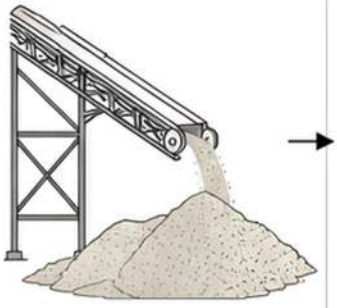
**FIELD VERIFICATION REQUIRED**
All designs and installations must be verified through site-specific engineering evaluation and testing.

# MASTER REPHOS

## Phosphogypsum Neutralization / Stabilization System

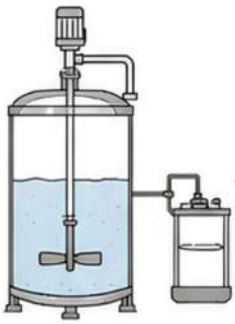
MASTER REPHOS is an engineered system for the neutralization and stabilization of phosphogypsum. The process controls acidity, stabilizes the material, and qualifies it for safe and beneficial reuse in approved applications.

### 01 PG STREAM



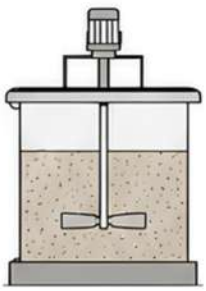
Phosphogypsum (PG) generated from phosphate production is collected, characterized, and prepared for treatment.

### 02 pH CONTROL



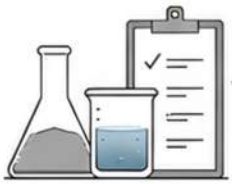
Chemical reagents are dosed to control pH and reduce acidity to the target operating range. Continuous monitoring ensures process stability.

### 03 STABILIZATION



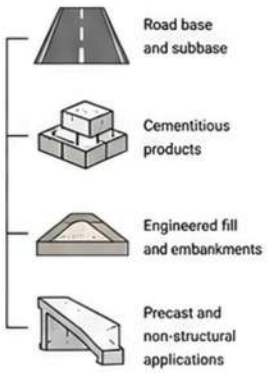
Stabilizing agents are added to reduce leachability, improve material structure, and create a stable engineered matrix.

### 04 QUALIFICATION



Treated material undergoes laboratory and field testing to verify chemical, physical, and environmental performance against qualification criteria.

### 05 REUSE PATHWAY




Qualified material is directed to approved reuse applications with controlled specifications and ongoing performance oversight.

### KEY SYSTEM NOTES

- **Industrial by-product treatment**
  Transforms phosphogypsum into a controlled and usable resource.
- **Chemistry-controlled stabilization**
  Engineered chemistry manages pH, reduces reactivity, and stabilizes the matrix.
- **Qualification before reuse**
  Material must meet defined criteria before being released to approved applications.

### TYPICAL PROCESS CONTROL PARAMETERS

| Parameter | Typical Range | Objective | Monitoring Method |
|---|---|---|---|
| Initial pH (PG Slurry) | 1.5 – 2.5 | Acidic by-product condition | pH Meter |
| Target pH After Control | 6.5 – 8.5 | Neutralization to stable range | pH Meter |
| Stabilization Additive Dosage | 2 – 8 % | Improve stability and reduce leachability | Project Specific |
| Setting / Conditioning Time | 1 – 24 h | Allow full stabilization reaction | Process Control |
| Final Leachability (P) | ≤ 10 mg/L | Meet environmental criteria | ICP / Lab Test |
| Strength (28 days) | ≥ 1.0 MPa | Suitability for intended use | ASTM C39 |

* Values are typical and vary based on source material and project requirements.

# SECTOR APPLICATIONS

MASTER CTS systems are engineered to perform across a wide range of infrastructure and construction sectors. Each sector benefits from systems developed for Middle East conditions and built for Iraq.

## 01 RESIDENTIAL BUILDINGS

Integrated systems for foundations, structures, walls, facades, and protection solutions that improve durability, comfort, and long-term performance.

## 02 COMMERCIAL BUILDINGS

High-performance systems for flooring, partitions, facades, and structural elements designed to support demanding commercial environments.

## 03 PUBLIC FACILITIES

Reliable and resilient solutions for schools, hospitals, administrative buildings, sports facilities, and other public infrastructure with long-term lifecycle value.

## 04 ROADS AND HIGHWAYS

Stabilization, strengthening, and protection systems for subgrades, base layers, and pavement structures to extend service life and reduce maintenance.

## 05 BRIDGES AND STRUCTURES

Engineered systems for concrete protection, strengthening, joint treatment, and durability enhancement in bridges and structural assets.

## 06 CANALS AND DRAINAGE

Canal lining and hydraulic protection systems that control seepage, resist erosion, and improve water conveyance efficiency.

## 07 MARINE EXPOSURE

Corrosion-resistant and chloride-tolerant systems for marine structures, coastal infrastructure, and assets exposed to aggressive environments.

## 08 INDUSTRIAL FACILITIES

Chemical-resistant, heavy-duty systems for industrial floors, bunds, tanks, structures, and facilities operating under high-demand conditions.

## 09 MATERIAL REUSE PATHWAYS

Solutions that enable the treatment, stabilization, and qualified reuse of industrial by-products in controlled and engineered applications.

**CROSS-SECTOR ADVANTAGES**

Engineered for Durability

Extended Service Life

Lower Life-Cycle Cost

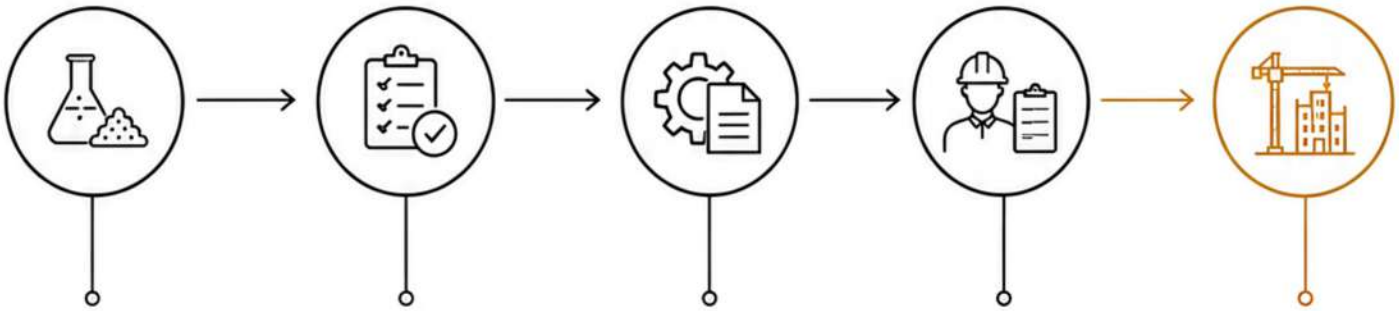
Faster Deployment

Quality and Compliance

# TECHNICAL EVIDENCE FRAMEWORK

## MASTER CTS systems are governed by technical data, validation, application logic, and project-specific review.

Each system is evaluated through controlled engineering methodology before deployment. The objective is not generalized marketing positioning, but technically governed application logic aligned with project conditions, infrastructure requirements, and operational constraints.



**01** MATERIAL DATA

**02** TECHNICAL VALIDATION

**03** APPLICATION METHOD

**04** SITE REVIEW

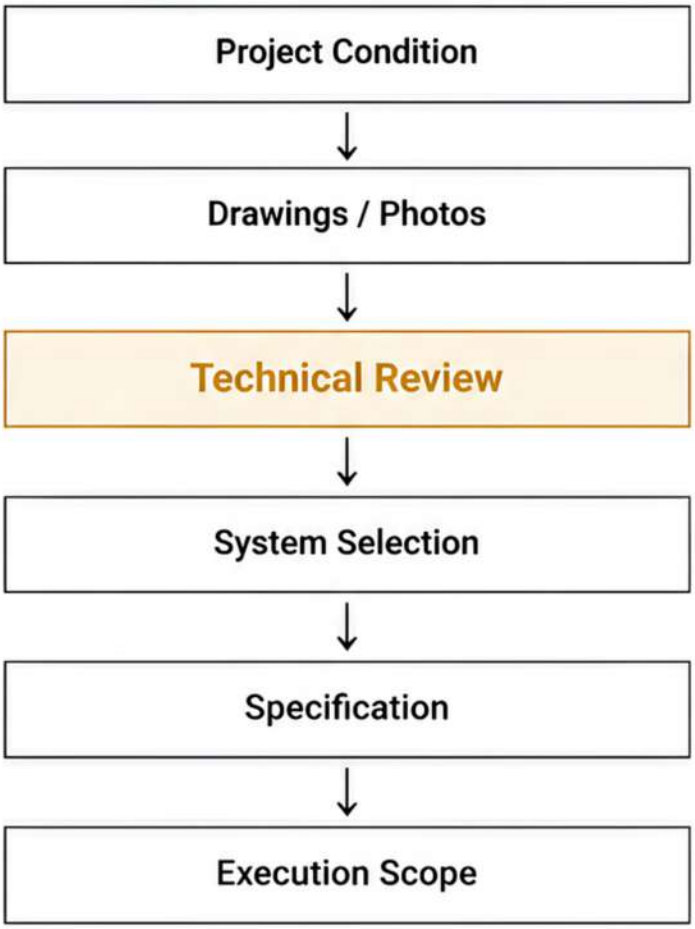
**05** PROJECT-SPECIFIC DEPLOYMENT

| 01 | 02 | 03 | 04 | 05 |
|---|---|---|---|---|
| Controlled material properties, composition logic, and measurable technical characteristics are collected and documented as the foundation of the system. | Evaluation through recognized standards, laboratory references, comparative assessment, and documented validation methods to verify performance potential. | Deployment logic, installation sequence, execution requirements, and system integration pathway are defined to ensure correct application. | Project environment, exposure conditions, infrastructure constraints, and operational assessment are reviewed to confirm suitability and risk alignment. | Final engineering alignment is completed based on project objectives, conditions, and implementation feasibility to ensure reliable results. |

Evidence before marketing.

# ENGINEERING WORKFLOW

Project deployment begins with technical review, not generic product selection.




## Technical review evaluates:

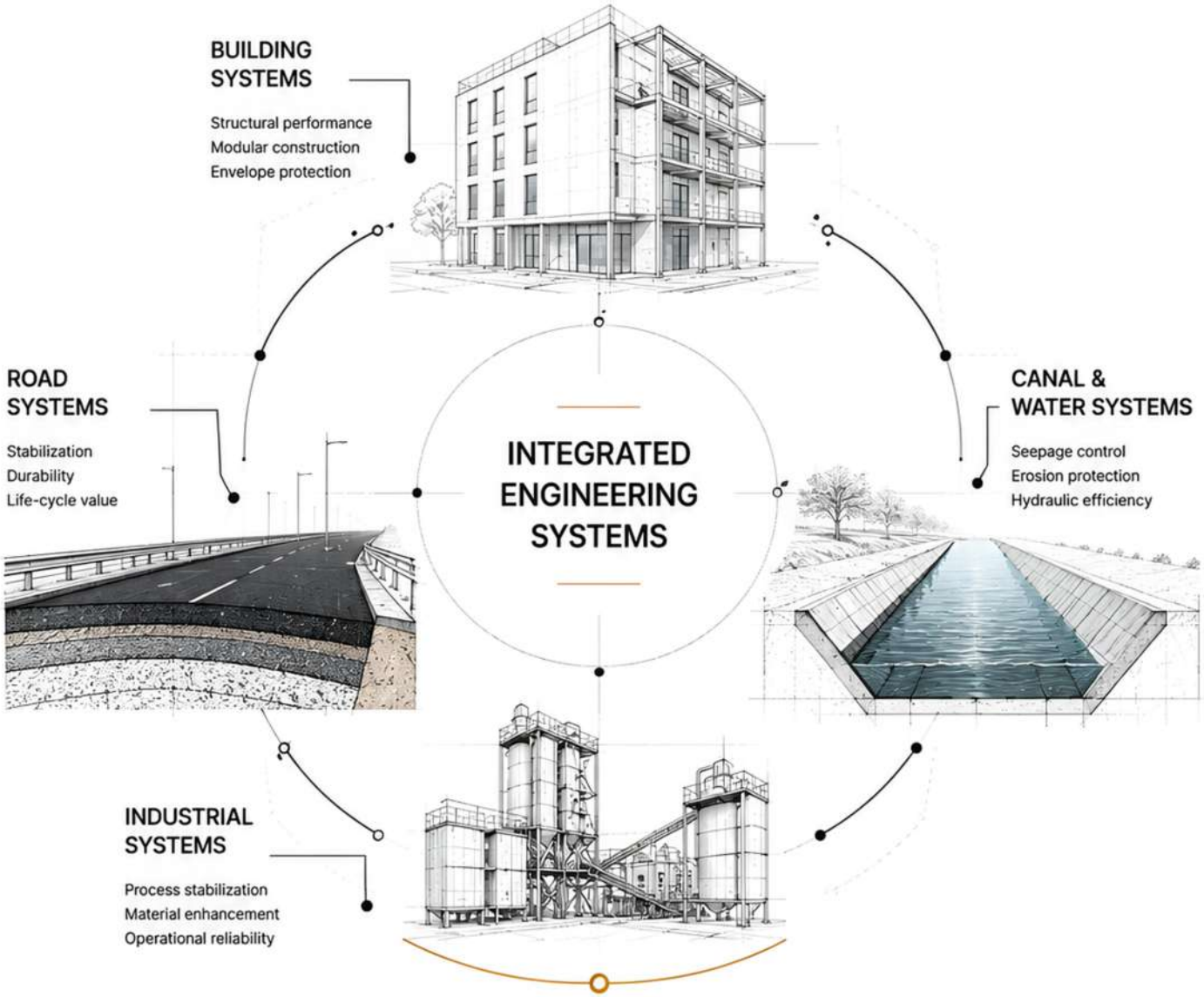
- environmental conditions
- structural requirements
- execution constraints
- deployment suitability
- system compatibility

| WORKFLOW TYPE | CLASSIFICATION | DOCUMENT CONTEXT |
|---|---|---|
| Process Flow Diagram | Engineering Deployment Review | Institutional Profile |

# MASTER CTS

## Construction technology systems, structured for engineering deployment.

Building systems. | Infrastructure systems. | Hydraulic protection. | Industrial stabilization.



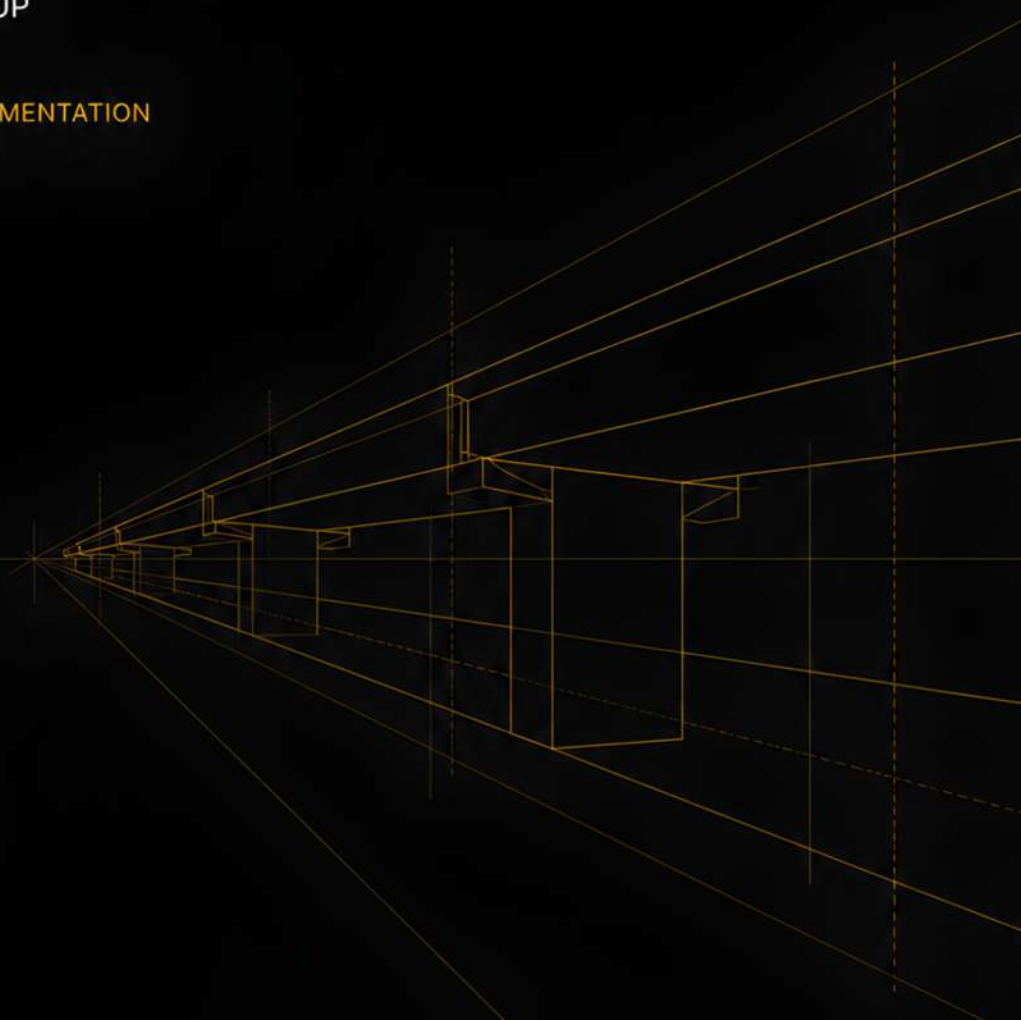

ENGINEERED SOLUTIONS | TECHNICAL EVIDENCE | SYSTEM INTEGRATION | PRACTICAL DEPLOYMENT | MEASURABLE RESULTS | LONG-TERM RESILIENCE

# MASTER CTS

## Construction Technology Systems

A Division of ASATEEN GROUP

INSTITUTIONAL SYSTEMS DOCUMENTATION

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