

SESSION 2 OF 2

# FIDIC vs India's Construction Contracts

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CPWD • MES • PWD • State Contracts

*How India's traditional government contracts compare with the international FIDIC standard  
and what this means for defence officers in practice*

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← *Session 1: FIDIC Foundation & Core Concepts already covered*

MCHRHD Hyderabad • 2-Session FIDIC Lecture Series



## Quick check: 5 things you should know from Session 1

01

**What does FIDIC stand for?**

Fédération Internationale des Ingénieurs-Conseils — International Federation of Consulting Engineers. Geneva, 1913.

02

**Name the 4 books of the Rainbow Suite.**

Red (Construction), Yellow (Design-Build), Silver (EPC/Turnkey), Green (Short Form).

03

**Who bears the risk of design errors in the Red Book?**

The EMPLOYER — because the employer's team prepared the design. Contractor cannot be liable.

04

**What is the 28-day rule?**

Contractor must give written notice of any claim within 28 days of the event — otherwise the claim is BARRED.

05

**What makes the FIDIC Engineer unique?**

The Engineer is appointed by the employer but acts IMPARTIALLY. Cannot be pressured to dismiss valid claims.

 INSTRUCTOR: Spend 3 minutes on quick verbal recall. Ask 5 trainees — one question each. Builds confidence and reinforces Session 1 before contrast in Session 2.

# India's Construction Contract Ecosystem

## CPWD

Central Public Works  
Department

**Contract: Form 7 / Form 8**

Central Govt buildings,  
PM/Parliament complex

## MES

Military Engineer  
Services

**Contract: GS Contract /  
Lump Sum**

Army, AF, Navy  
construction & maint.

## NHAI

National Highways  
Authority

**Contract: EPC / HAM  
(FIDIC-based)**

National highways  
and expressways

## State PWD

State Public Works  
Department

**Contract: State SOR-based  
contracts**

State roads, bridges,  
buildings

## Railways

Indian Railways /  
Metro Corps

**Contract: IRS Specifications /  
FIDIC (new lines)**

Rail infra, metro  
tunnels, stations

## ULBs

Urban Local Bodies  
Municipal Corps

**Contract: Own templates  
(weakest)**

City roads, drains,  
Smart City works

Central Public Works Department — India's premier central government construction agency since 1854

## How CPWD Contracts Work

- **Two main forms: CPWD Form 7 (Lump Sum) & Form 8 (Item Rate / Measurement)**
- Delhi Schedule of Rates (DSR) is the pricing bible — updated annually
- Contractor bids as a % above or below DSR (e.g., '+5.6% above DSR 2023')
- CPWD always does the design — contractor builds to CPWD drawings
- Engineer-in-Charge is an EE (Executive Engineer) — a government employee
- Measurement Book (MB) records every item measured — basis of payment
- Security Deposit: 5% deducted from bills until completion
- No independent dispute board — disputes go to arbitration under A&C Act 1996
- Time Extension: SE or CE grants EOT — discretionary, no standard formula

## ✓ Strengths

- Well understood by Indian contractors
- SOR standardises pricing across projects
- MB creates clear audit trail
- Govt retains design control

## ✗ Limitations vs FIDIC

- No independent Engineer — EE IS the employer
- Risk allocation: vague, defaults to contractor
- No standard EOT formula — officer discretion
- No dispute board — straight to slow arbitration
- Not accepted by international funders (WB/ADB)

MES governs ALL construction and maintenance work for Indian Army, Air Force and Navy

## How MES Contracts Work

- **Governed by Defence Works Regulations (DWR) and MES Schedule of Rates**
- Two key forms: GS (General Services) Contract & Lump Sum Contract
- GE (Garrison Engineer) = the Engineer-in-Charge — an Army officer
- CWE (Chief Works Engineer) oversees GEs — hierarchical control
- All designs by MES — contractor builds to MES drawings
- Measurement and payment through Work Charged Account
- Performance Security: 5–10% of contract value
- Dispute: Court of Survey → Arbitration (rare, slow)
- No equivalent of DAAB — biggest structural gap

## MES-Specific Features You Must Know

### Security Vetting

Contractors on defence establishments vetted by IB/Intelligence — MES contracts are security documents.

### Notice to Commence

Formal written notice gives contractor right to enter defence premises. Cannot start without it.

### Defect Liability Period (DLP)

12 months standard. Contractor must rectify defects within DLP at own cost.

### Govt Material Supply

Unlike FIDIC, MES sometimes supplies key materials (cement, steel) to contractor — creates its own accounting complexity.

INSTRUCTOR: This is personal for this audience — ask: 'How many of you know your garrison's GE?' He is your FIDIC 'Engineer' equivalent — but without independence.

## STATE PWD CONTRACTS

- **Each state has its own Schedule of Rates (e.g., AP SOR, MH DSR, Telangana SOR)**
- Tendering through state e-procurement portals (GEM, Telangana portal, etc.)
- Engineer-in-Charge is a PWD AEE/EE — directly under employer
- Payment based on state SOR — highly variable across states
- Dispute resolution: Arbitration → often Court litigation (slowest of all)
- Very limited risk allocation — no clear provisions for unforeseen conditions
- No international recognition — used only within state jurisdiction
- No DAAB, no independent Engineer, no structured EOT formula
- WORST performer in every contract metric — but used on millions of projects

## NHAI / MoRTH — Roads

- EPC (Engineering Procurement Construction) — close to FIDIC Yellow Book
- HAM (Hybrid Annuity Model): Govt + private funding, FIDIC-influenced
- Independent Engineer: closer to FIDIC approach than any other

## Railways / Metro Projects

- Indian Railways: Standard IRS specifications — own system, closed
- Metro rail (Delhi, Hyderabad, Bengaluru): JICA/WB funding = FIDIC Yellow Book mandatory
- New metro lines increasingly advertised with FIDIC terms

## Urban Local Bodies / Smart Cities

- Municipal corporations use own templates — weakest contracts of all
- AMRUT, Smart City Mission: international funding → FIDIC adoption growing

## The SINGLE BIGGEST structural difference between FIDIC and all Indian contracts.

### FIDIC — The INDEPENDENT Engineer

- Appointed by Employer but contractually bound to act **NEUTRALLY**
- Cannot be instructed by employer to dismiss a valid claim
- Makes determinations on claims within set timeframes
- Decisions challengeable only at DAAB — not by political pressure
- Creates TRUST — contractor bids lower knowing they'll get fair treatment
- Result: Fewer disputes, lower bid prices, faster projects

### CPWD / MES / State — Engineer = Employer's Officer

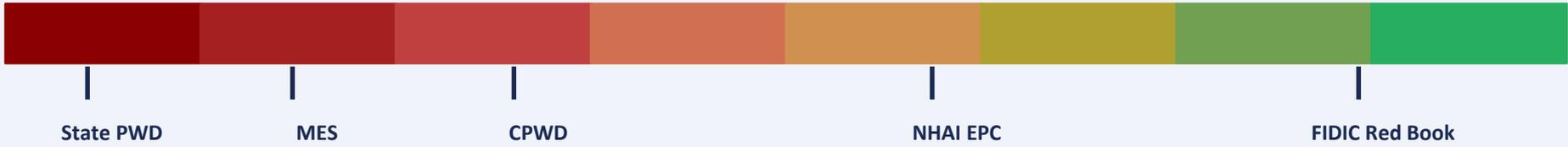
- EE / GE / AEE is a government employee — works in the same office as employer
- Cannot act impartially — their KRAs and promotions depend on protecting govt interest
- EOT, extra claims, variations all need hierarchical approval (SE → CE → MoD)
- Contractor has no independent forum for early resolution
- Result: Contractor inflates bids to hedge against unfair treatment — costs Govt MORE
- Disputes go straight to arbitration — 3–10 year wait, ₹crores in legal costs

# Critical Difference #2 — Risk Allocation

Indian contracts push almost ALL risk to the contractor. FIDIC allocates risk to who can manage it best.

← All risk on CONTRACTOR

Risk SHARED fairly →



RISK TYPE	FIDIC (Red Book)	CPWD / MES	State PWD
Design Errors	EMPLOYER's risk — contractor not liable for someone else's drawings	CPWD/MES: Govt rarely accepts liability. Contractor penalised even for govt design failures	No provision — contractor absorbs all by default
Unforeseen Ground Conditions	EMPLOYER's risk — Cl. 4.12. Contractor claims cost + time	CPWD/MES: No standard clause. Discretionary — usually rejected	Contractor's risk — even if unforeseeable
Material Price Escalation	Shared via Clause 13.8 price adjustment formula — fair to both	CPWD: Limited PVC for cement/steel only. MES: MES SOR updates partially compensate	Contractor's risk — entire inflation burden
Force Majeure	Both parties excused — contractor gets	CPWD/MES: EOT possible but	Poorly defined — litigation inevitable

INSTRUCTOR: Key impact: Contractors in India bid 15–30% higher than in FIDIC-governed markets for the same work — precisely because they price in the risk they are forced to absorb.

FIDIC prevents disputes from escalating. Indian contracts have no equivalent mechanism — disputes go straight to slow, expensive arbitration.

## FIDIC — 5-Step Dispute Ladder

- 1 Notice of Claim (28 days)**  
Written notice mandatory. Miss it = claim barred.
- 2 Engineer's Determination (42 days)**  
Fair, binding determination by impartial Engineer.
- 3 DAAB Decision (84 days)**  
Expert board on site. Resolves 80%+ of disputes here.
- 4 Amicable Settlement (28 days)**  
Last chance to negotiate before formal arbitration.
- 5 ICC Arbitration (Final)**  
Binding globally. Very expensive. Last resort.

## CPWD / MES / State — Weak Mechanism

- 1 Representation to EE / GE**  
Contractor writes to the same officer who IS the dispute. Clear conflict of interest.
- 2 Escalation to SE / CWE**  
Same department, same hierarchy — no independence.
- 3 Arbitration (A&C Act 1996)**  
Expensive. Adversarial. Average 3–7 years to conclude.
- 4 High Court Litigation (State PWD)**  
Many state contracts have no arbitration — straight to court. Can take 15–20 years.

# Critical Differences #4 & #5 — Time & Payment

## TIME MANAGEMENT

ASPECT	FIDIC	CPWD / MES	State PWD
<b>Extension of Time (EOT)</b>	Cl. 8.4: Contractor ENTITLED to EOT if employer causes delay. Notice-based, formula-driven.	SE / CWE / CE grants EOT — discretionary. Officer faces audit if liberal. No entitlement as of right.	Rarely granted. Political interference. No standard formula. Contractor absorbs cost.
<b>Liquidated Damages (LD)</b>	Pre-agreed rate in Contract Data. Applied only if no EOT. Can be challenged at DAAB. Fair cap.	LD deducted from final bill — contractor disputes in arbitration. Rate sometimes disproportionate.	LD clause exists but enforcement inconsistent. Politically waived sometimes — no transparency.

## PAYMENT MECHANISM

ASPECT	FIDIC	CPWD / MES	State PWD
<b>Payment Certification</b>	Engineer issues IPC in 28 days. Employer must pay within 28 days or INTEREST accrues automatically.	EE/GE certifies MB — payment via treasury. Delays of 90–180 days common. NO interest penalty.	SE certifies — state treasury. Very slow, 120–180+ days. No interest. Contractor finances govt.
<b>Retention Money</b>	5% held back. Released in two parts: 50% at completion; 50% after DLP.	5% SD held. Released after DLP. Process bureaucratic — often delayed by 6–18	5–10% retention. Release process highly bureaucratic. Years of delay common.

 INSTRUCTOR: Real-world impact: 90–180 day payment delays mean the contractor is effectively financing the government — then prices future bids higher to compensate. FIDIC auto-interest removes this incentive for delay.

# When Is FIDIC Mandatory or Preferred in India?

India's engineers increasingly **MUST** know FIDIC — international funding and large projects mandate it.

## MANDATORY — International Funding

- World Bank, ADB, AIIB, JICA-funded projects — FIDIC Red or Yellow Book mandatory
- Metro rail expansion (Hyderabad, Bengaluru Phase 3) — JICA funding = FIDIC applies
- Zoji La Tunnel, Sela Tunnel (BRO) — ADB/JICA funded = FIDIC
- Smart Cities, AMRUT projects with multilateral loans — FIDIC required
- Any loan >\$50 million from multilateral banks — FIDIC standard clause

## PREFERRED — Govt Policy & Best Practice

- NITI Aayog recommends FIDIC for projects >₹200 crore
- MoRTH EPC highway contracts — modelled closely on FIDIC Yellow Book
- DMRC, BMRCL, MMRDA metro — FIDIC-style for tunnelling
- Ministry of Jal Shakti — large dam projects adopting FIDIC
- PM Gati Shakti NMP — large infrastructure increasingly FIDIC-based

## EMERGING — Defence & Strategic

- Defence projects with foreign EPC contractors (DPP 2020 provisions)
- DRDO and HAL projects with international JV partners
- BRO exploring FIDIC for complex Himalayan tunnels
- Andaman & Nicobar connectivity — ADB-funded = FIDIC
- Strategic projects under QUAD infrastructure initiatives

As defence officers — you may work alongside FIDIC contracts. Knowing this framework is no longer optional.

**INSTRUCTOR:** Practical takeaway: If your next posting involves ADB/JICA/WB funded works, the contractor will cite FIDIC clauses. You need to know what they mean.

# Summary Scorecard – FIDIC vs Indian Systems

CRITERION			FIDIC	CPWD	MES
Risk Alloc	●		●●●●●	●●●●●	●●●●●
Engineer	●		●●●●●	●●●●●	●●●●●
Dispute A	●		●●●●●	●●●●●	●●●●●
Payment	●		●●●●●	●●●●●	●●●●●
EOT Fram	●		●●●●●	●●●●●	●●●●●
Intl Accep	●		●●●●●	●●●●●	●●●●●
Audit Tra	●		●●●●●	●●●●●	●●●●●

● Strong (4-5)  
● Large Pro

INSTRUCTOR: The scorecard tells the story at a glance. FIDIC dominates every metric. State PWD is weakest across all. The question for India is: how do we close the gap?

## ✓ Always Do — Lessons from FIDIC

- Issue **ALL** instructions in writing — never verbal only
- Keep Measurement Book / instruction register updated — it is a legal document
- Respond to contractor's claims and letters within prescribed time — silence = acceptance
- Document all reasons for granting or refusing EOT — protects you from audit
- Certify **ONLY** work that has actually been done — over-certification = personal liability
- Issue variation orders **BEFORE** extra work begins — never after
- In FIDIC-governed projects, let the Engineer make determinations — do not bypass
- Know your contract deadlines — Engineer's determinations have time limits too

## ✗ Never Do — Costly Mistakes

- **Verbal instructions that contractor claims as variations — unprovable**
- Approving extra work without a written variation order — unauthorized expenditure
- Ignoring EOT requests — contractor takes it to arbitration claiming deemed acceptance
- Over-certifying MB measurements — audit queries, even criminal liability
- Releasing Security Deposit / Retention before Completion Certificate — DLP breach
- Dismissing claim notices without Engineer's determination — in FIDIC, 28-day notice has legal force
- Mixing CPWD SOR logic with FIDIC clauses — two different systems cannot be merged
- **Assuming dispute will 'go away' — undocumented**

 INSTRUCTOR: Pause and ask: 'Which of these mistakes have you seen or heard about in your training so far?' Practical grounding makes this memorable.

01

India has 6+ parallel contract systems — CPWD, MES, NHAI, State PWD, Railways, ULBs — each developed independently with no uniform standard.

02

The absence of an INDEPENDENT ENGINEER in all Indian contracts is the structural root cause of most disputes. The EE/GE cannot be impartial — they work for the employer.

03

Indian contracts push almost ALL risk to the contractor. This inflates bid prices by 15–30%. Fair risk allocation in FIDIC actually saves government money.

04

FIDIC's DAAB resolves disputes in 84 days. India's contracts have no equivalent — disputes take 3–20 years, blocking funds, delaying projects, and exposing officers.

05

FIDIC knowledge is increasingly mandatory for India's defence officers — ADB/JICA/WB-funded border roads, tunnels and metro projects already operate under FIDIC.

**Better contracts = Fewer disputes = Faster delivery = Better infrastructure for India**

