

**Specially for Engineers & Contractors**

# TENDERING

(Useful for Govt. & Pvt. Projects)

**For Profit**

**120** Points of Tender Document

**250** Check Points while Rate Analysis

**100** Thumb Rules

**3** Projects Case Study

**470 Techniques in 16 Hours**  
**5 Out of 1000 Only Know These Tendering Techniques**

**2 Days Workshop**

Civil Engineering IIT, Pune

3rd Floor, Ketki Apt., Alka Talkies Chowk, Behind Bank of India,  
Sadashiv Peth, Pune 411030

**91120 78538 / 34**



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**ENGINEERS & CONTRACTORS**

# TENDERING

For Profit

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**DISCOVER THE SCIENCE OF TENDERING**

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TENDERING

470

Points Must Check



Civil ENGINEERING IIT

# TENDERING For Profit 2 Day WORKSHOP

## DAY 1

10 to 11.00	:	Introduction, Attendees demand form, Business Questionnaire, What are current practices followed, Importance of Tendering Examples
11 to 11.15	:	Tea Break
11.15 to 12	:	Basic Terms of Tendering, Types of Tenders
12.00 to 1.0	:	Tender Reading for identify Cost Impacts I
1.00 to 2.00	:	Lunch Break
2.00 to 4.00	:	Tender & BOQ Reading for identify Cost Impacts II
4 to 4.15	:	Tea Break
4.15 to 4.45	:	Constants, Thumb Rules to Quickly Analysis of Tenders
4.45 to 6.00	:	Working of Overheads, Manpower & Equipments

## Day 2

9.00 to 11.00	:	Working of <u>With material</u> Lock & Key Built-up Project
11.0 to 11.15	:	Tea Break
11.15 to 1.00	:	Working of Item Rate Project
1.00 to 2.00	:	Lunch Break
2.00 to 3.00	:	Working of RCC Built up Work <u>With Material</u>
3.00 to 4.00	:	Working of RCC Built up Work on <u>Labour Rate</u>
4.00 to 4.15	:	Tea Break
4.15 to 5.00	:	Question & Answers
5.00 to 5.30	:	Working of RCC Built up Work <u>With Material</u> by <u>Aluform</u> Shuttering
5.30 to 6.00	:	Certificate Distribution, Awards & Conclusion

# Training Going to Cover

1. Introduction
2. 200 Thumb Rules & Constants
3. Tendering : 196 Points
4. Lock & Key With Material Building Project, Built up Rate
5. RCC + Masonary Works : Item Rate : Built-up Project
6. RCC Builtup Rate Conventional Shuttering Working
7. RCC Builtup Rate Aluform Shuttering (Mivan) on Thumb Rules Working
8. Work Order Formats
9. Tendering Engineers Job Responsibilities



# 200 Thumb Rules & Constants

## Useful for Tendering



1. Builtup Work Constants : 111 Constants
2. Item Rate Constants : 92 Constants
3. Labour Constants : 14 Items
4. Machinery Fuel Consumptions :
5. Shuttering Built-up : 10 Constants

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- **BUILT-UP WORKS CONSTANTS / THUMB RULES** : 111
- Specimen For Built-up Area Calculations
- Standard Material Consumption Constants on Built-up Area Basis  
 “ For Ext. Wall 6” & Int. Wall 4” : 23 Materials
- Direct & Indirect Cost Breakup Sq.ft Wise & Percentage : 10 Points
- Built-up Material Cost Breakup : 13 Points
- Built-up Labour Cost Breakup : 10 Points
- Built-up Plumbing Cost Breakup : 6 Points
- Direct Cost Breakup : 12 Points
- Standard Repetation of Shuttering Material : 4 Points
- 2500 Sq.ft Slab area Shuttering Material Required : 9 Points
- Built-up Steel Consumption : 12 Points
- All Items Constants Thumb rules per Sq.ft by Built-up : 12 Points



- **ITEM WORKS CONSTANTS / THUMB RULES** : 92
- Standard Material Consumption for : 60 Items
  - Items in Plinth : 3 Items
  - Concrete Items : 4 Items
  - Concrete Blocks : 2 Items
  - Masonary Work : 6 Items
  - Plastering Work : 12 Items
  - Pointing Work : 7 Items
  - Flooring & Tiling : 8 Items
  - Waterproofing : 3 Items
  - Spreading Capacity of Different Paints : 15 Items
- MODE OF MEASUREMENTS for Major Items : 12 Items
- Multiplication Factors of Uneven Surface : 20 Items

# Constants for Shuttering Builtup

- **SHUTTERING WOODEN MATERIAL :**

- Plywood 1.60 SFT/ SFT
  - Consider 10 Repetitions of Ply
- White wood ( Silver Patti) 1.30 CFT/SMT
  - Consider 15 Repetitions of silver

- **SHUTTERING CONSUMABLES MATERIAL:**

- Nails 0.30 KG / SQM 3.00 KG / 10 SQM
- Shuttering oil 0.10 Lit / SQM 1 LIT / 10 SQM
- Hassin cloth Depending upon No of floors & surface area of Column
- Masking Tape 4 Rmt Per Ply required for floor slab

- **SHUTTERING ASSET MATERIAL:**

- M S Span 0.5 NOS/SMT
- M S Props 2 NOS/SMT
- M S Clamps (Shikanja) 1 NOS/SMT
- Tie Rod Wingnut
- H frame / Cuplock / M.S. Platform
- Wooden Props 2 NOS/SMT



# Tendering



## 196 Points Must Check

1. Tender Document : 29 Points
2. BOQ : 8 Points
3. Site Visit : 15 Points
4. Overhead Calculations : 120 Points
5. Machinery : 25 Points

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# Tender Document

## 29 Points Which affects Cost

### Points to Consider While Reading Tender Document

1. Client / Company
  2. Nature of Company : Partnership, Pvt. Ltd, Public Ltd, Govt. Sector
  3. Project In charge
  4. Architect
  5. RCC Consultant
  6. MEP Consultant
  7. Project Location Address
  8. Geological Survey: Trial Pit Report
  9. Project Duration
  10. Project Details : Area, Floors, Qty
  11. Project Cost
  12. EMD : Earnest Money Deposit
  13. Retention Money
  14. Performance Bond (B.G.)
  15. Mobilization Advance
  16. Quality Parameters
  17. Safety Requirements
  18. Manpower Specific Requirements
  19. Shuttering Material Specific Requirements
  20. Mode of Measurement : Item Rate, Built up etc.
  21. Basic Rates
  22. Billing Cycle
  23. Payment Cycle
  24. Royalty Scope
  25. Water & Electricity Scope
  26. DLP : Defect Liability Period
  27. Pre Bid MOM
  28. Site Visit
  29. Quantity Variation Clause
- Etc.

# BOQ

## 8 Points to Consider While Reading BOQ:

1. Listing out Material : For Market Survey of Rates
2. Listing out Labour : For Market Survey of Rates
3. Listing out Equipments : For Market Survey of Rates
4. Listing out Sublet Agencies : For Market Survey of Rates
5. Special Items
6. Mode of Measurement
7. Dewatering Scope
8. Crosschecking of BOQ By Thumb rules
  1. Concrete : 0.0325 Cum/Sqft
  2. Steel : 3.00 Kg/Sqft
  3. Shuttering: 1.6 to 1.8 Sq.ft/Sq.ft
  4. Plastering : 5 Sq.ft/Sq.ft





# Site Visit

7 Points to Consider While Site Visit:

1. Project Location: Topography
2. Geological Survey: Trial Pit, Nearby Ground Water Level
3. Access Roads
4. Land for Storage
5. Land for Equipments : Tower Crane, Batching Plant etc.
6. Land for Labour Colony
7. Market Area

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# Machinery Feasibility Checking

1. Capacity
2. Fuel Consumption
3. Installation Cost
4. Rents
5. Purchase Cost

Concrete Pump : Pumping Per Hr, Vertical, Horizontal  
Capacity

Batching Plant : Production Per Hr

Tower Crane : Boom Length, Area, Tip Capacity



# Overheads Calculations

5%?

7%?

8%?

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# Overheads Calculations

## 83 Checkpoints

- **Misc Expenses** : 7 Checkpoints
- **Statutory Compliance** : 4 Checkpoints
- **Stationary and Communication** : 4 Checkpoints
- **Conveyance Site** : 4 Checkpoints
- **Staff Salary & Wages : ESIC, PF** : 4 Checkpoints
- **Staff Welfare** : 5 Checkpoints
- **Transport** : 7 Checkpoints
- **Site Establishment** : 15 Checkpoints
- **Tools** : 9 Checkpoints
- **Water & Electricity** : 6 Checkpoints
- **QC Testing Charges** : 6 Checkpoints
- **Safety Setup** : EHS Budget : 8 Checkpoints
- **HEAD OFFICE CONTRIBUTION** : 4 Checkpoints

# Overheads Calculations : **Misc Expenses**

## **7 Check Points to Consider**

1. Tender Documents & Preparation Cost
2. Interest on S D upto Completion
3. Interest on Retention
4. Interest on Defect Liability Amount
5. NOC/Completion Certificate
6. Costs Bank Guarantee Charges
7. Interest on Work Loans



# Overheads Calculations : **Statutory Compliance**

## **4 Check Points to Consider**

1. Insurance, Premiums etc e.g. CAR POLICY
2. Works Contact Tax (WCT)
3. Labour License
4. Legal & Statutory Expenses

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# Overheads Calculations

## Stationary and Communication

### 4 Check Points to Consider

1. Stationary
2. Telephone
3. Internet
4. Walky Talky

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# Overheads Calculations : **Conveyance**

## **4 Check Points to Consider**

1. Site to Site Visit (Staff)
2. Site purchases
3. HO to Site Visit
4. Site to HO (site Staff)

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# Overheads Calculations

## Site Staff & Labour Compliance

### 4 Check Points to Consider

1. Staff PF
2. Staff ESIC
3. Labour PF
4. Labour ESIC

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# Overheads Calculations : **Staff Welfare**

## **5 Check Points to Consider**

1. Tea & Breakfast
2. Accident / Emergency Expenses
3. Medical
4. Staff Accommodation
5. Guest House Operating Expenses

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# Overheads Calculations : **Transportation**

## **7 Check Points to Consider**

1. Labour Transport
2. Scaffolding Material
3. Shuttering Materials
4. Mobilization
5. Demobilization
6. Misc. Materials
7. Transport for Machinery



# Overheads Calculations : **Site Establishment**

## **15 Check Points to Consider**

1. Site Office
2. Site Office Furniture & Setup
3. Cement Godown
4. Site Stores
5. QC Lab Setup
6. Toilet Block for Staff
7. Toilet Block for Labours
8. Labours Quarters/ Huts
9. Cretch
10. Water Storage Tank
11. Centering Yard
12. Security Cabin
13. Fencing
14. Access Roads
15. Steel Yard

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# Overheads Calculations : Tools

## 9 Check Points to Consider

1. Drill Machine
2. Rebaring equipments
3. Grinder
4. Steel Cutting Machine
5. Breakers
6. Ply Cutting Machine
7. Tool Consumables
8. Repair & Maintenance ( Debit to P&M)
9. P&M Assistant ( Debit to P&M)



# Overheads Calculations : **Water & Electricity**

## **6 Check Points to Consider**

### **Water & Electricity Initial Expenses:**

1. Water Connection
2. Electricity Connection
3. Telephone Connection

### **Water & Electricity Operational Charges:**

1. Water distribution Lines
2. Electricity, Distribution & Boards, Halogens
3. Electrical Assistant



# Overheads Calculations : QC Testing

## 6 Check Points to Consider

### QC External Testing Charges

1. Cube Test (External)
2. Steel Test (External)
3. Cement Test (External)
4. Other Material Test (External)

### QC Internal Testing Charges

1. Internal Testing Charges
2. QC Works Labours



# Overheads Calculations : Safety Setup

## 8 Check Points to Consider

1. PPE
2. Security
3. Operational Charges
4. Safety Net Purchase
5. Safety Net Fixing Charges
6. EHS Monitoring & Testing Charges
7. Safety Events Charges
8. Safety Training Charges



# Overheads Calculations : Head Office Contribution

## 4 Check Points to Consider

1. Head Office Rent
2. Head Office Departments & Staff Involvement
3. Head Office Salaries
4. Head office Overheads

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# Rate Analysis

## Horizontal Method Benefits:

- Total Project Working on One Sheet
- Total Individual Material Qty can be analyzed for further planning Like : Store, Strategic Decision of buying or renting
- Items can be verified through Thumb rules
- Thumb rules can be derived for that project
  - Like Cement, Steel, Binding Wire, Bricks etc.
- Balancing of Rates can be possible
- After Allotment in 1 Hour we have Budget of Same



# Rate Analysis of RCC Builtup L+M

- **MATERIAL**

– CONCRETE	: 0.0325 Cum/Sq.ft x 5000/- Cum	: 162.50
– STEEL	: 3.5 Kg/Sq.ft x 45 Kg	: 157.50
– SHUTTERING	: 1.8 Sq.ft/Sq.ft x 25/- Sft	: 45.00
		<b>: 365.00 Per Sft</b>

- **LABOUR**

– CONCRETE	: 0.0325 Cum/Sq.ft x 500/- Cum	: 16.25
– STEEL	: 3.5 Kg/Sq.ft x 5 Kg	: 17.50
– SHUTTERING	: 1.8 Sq.ft/Sq.ft x 20/- Sft	: 36.00
		<b>: 69.75 Per Sft</b>

- **PLANT & MACHINERY**

**: 20.00 Per Sft**

- **OVERHEADS**

**: 45.00 Per Sft**

- **PROFIT**

**: 50.00 Per Sft**

- **TOTAL**

**: 550.00 Per Sft**



# Rate Analysis of RCC Builtup Conventional Shuttering

- **SHUTTERING WOODEN MATERIAL**
- **SHUTTERING CONSUMABLES MATERIAL**
- **SHUTTERING ASSET MATERIAL:**
- **LABOUR**
- **PLANT & MACHINERY - Tools**
- **OVERHEADS:**

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# Rate Analysis of RCC Builtup Conventional Shuttering

- **LABOUR**

- **Reinforcement cost**
- Shuttering - Fixing
- Shuttering - Making
- **Cost of Reinforcement & Shuuetring**
- PCC Placing
- Surface Preparation
- Concrete Pumping
- Concrete Placing
- Scaffolding Erection and Dismantalling
- **MISC. LABOURS :**
- Curing
- Quality : Cube, & Other
- House Keeping,
- **STORE**
- Cover Blocks Making



# Rate Analysis of RCC Builtup Conventional Shuttering

- **PLANT & MACHINERY - Tools**
  - Needle Vibrator - With 2nos Needle for Each
  - Concrete Mixer
  - Concrete Lift
  - Crane : Tower / Mobile
  - water Pump - 2HP
  - BAR Cutting Machine
  - BAR Bending Machine
  - Steel Rod cutting Machine
  - Wood Cutting Machine
  - Concrete Braking Machine
  - Grinder Machine
  - Drill Machine
  - Compactor
  - Water Tank for Water Storage
  - SMALL TOOLS & TACKLES



# Rate Analysis of RCC Built-up Aluform Shuttering

- **SHUTTERING MATERIAL**
- **SHUTTERING CONSUMABLES MATERIAL**
- **LABOUR**
- **PLANT & MACHINERY - Tools**
- **OVERHEADS:**

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# And Many More Topics

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- Econ Infra Projects, Mumbai.
- Tirupati Construction, Ghatkopar
- Desale Construction, Dhule
- Deshpande Builders, Pune
- SARIKA INFRATECH, PUNE
- THE KILA, MUMBAI
- JAI MATA DI CONSTRUCTION, A'NAGAR
- Omega Promoters, Pune
- Nyati Group, Pune
- Prescient Informatics Pvt. Ltd., Kolhapur
- RP Shah Pvt. Ltd, Mumbai
- Saket Buildcon, Aurangabad
- Autade Construction Pvt. Ltd, Sangli
- Madhuban Landmark, Pune
- Mauli Buildcon, Solapur
- Dhanashree Construction, Solapur



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- ASAN Systems LLP
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- Parag Sura Engineers and Contractor
- The Edge Consultant & Contractors
- Sharva Constructions Pvt Ltd
- Impact infraheight pvt.Ltd
- Landlords realty
- Kate Buildcon
- Shine Developers
- Y D Venture
- Niketan Enterprises Pvt Ltd
- Varad Projects
- Global Associates
- M3 Construction
- Norvica Realities pvt ltd.
- Sandesh Gangwal & associates
- SECON PROJECTS
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- Swarajya Construction
- A. B. Enterprises
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- Aditya consultants
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- Abhiyanta structure
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- Shubham Infra
- JP INFRA Co.
- Niwara Infracon
- SS Infra Projects Pvt. Ltd.
- Sainkeet builder Pvt lit
- S&P infra and constructions
- AN-ICON Engineering Technologies & Infrastructure Developments Pvt. Ltd
- ISOSCELES INFRA PROJECTS PVT. LTD.
- Gopal Construction
- R & S construction
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- M/s Farag Dilip Deshpande
- Sai construction
- Samarth Constrotech
- Rajguru Constructions
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- Construction solutions(I)Pune
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2. Mr. Rajesh Jujare	: 25 Years	: Costing
3. Mr. Chandrakant Thatte	: 35 Years	: Contracts
4. Mr. S.S. Mahashikare	: 25 Years	: QS & Estimation
5. Mr. Prakash Bhat	: 25 Years	: Project Execution
6. Mr. Riyaz Patel	: 20 Years	: Concrete Spl.
7. Mr. Prakash Medhekar	: 30 Years	: Construction Mgmt
8. Mr. Tamhankar	: 30 Years	: Quality & Safety
9. Mr. Ganesh Sawant	: 15 Years	: Project Execution



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