

# On-Site Material Control Audit Checklist

## PROJECT PLANNING AND STARTUP

1. Do site material control personnel have copies of reference materials:
  - a. Company Material Operations Standard Practices?
  - b. Computerized Material Systems User Manuals?
2. Are site material control personnel familiar with the:
  - a. Contract?
  - b. Construction execution plan?
  - c. Engineering schedule?
  - d. Construction schedule?
  - e. QA/QC inspection plan?
  - f. Safety and security regulations?
3. Does the project have third-party engineers?
  - a. If yes, Does the engineer furnish bills of material for:
    - i. Piping (isometric and orthographic drawings)?
    - ii. Electrical?
    - iii. Instrumentation?
    - iv. Insulation?
  - b. Does the engineer furnish multiple levels of material takeoffs:
    - i. Preliminary?
    - ii. Intermediate?
    - iii. Final?
  - c. Does the engineer identify shop-fabricated versus field-erected materials on piping bills of material?
  - d. Does the engineer provide fabrication coordination?
  - e. Does the engineer have automated systems for the identification and control of the following material requirements:
    - i. Major and minor equipment?
    - ii. Piping (bulks)?
    - iii. Valves?
    - iv. Electrical (bulks)?
    - v. Wire and cable?
    - vi. Insulation?
  - f. If no, briefly explain the material identification and control method to be used by the project.
  - g. Do any of these systems require a conversion program to transfer data (tag number, stock number, size, and material descriptions) to the project's computerized material tracking systems?
    - i. If yes, has construction coordinated the requirements for the conversion program?
    - ii. If no, briefly explain how the engineer's material data will be used and updated into the site material control inventory system.
  - h. Does the engineer plan to make an initial purchase of bulk materials?
    - i. If yes, briefly explain the basis and timing for the initial purchase quantities.
  - i. Does the engineer provide procurement and delivery status reports for material furnished by the engineer?

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4. Are site material control personnel familiar with:
  - a. Major/minor equipment list?
  - b. Bulk material specifications?
  - c. Owner supplied equipment and materials?
5. Has the project materials responsibility matrix been developed for the identification, purchase, inspection, receipt, storage, preventive maintenance, and issue of the following:
  - a. Major equipment?
  - b. Minor equipment?
  - c. Fabricated piping and structural steel?
  - d. Bulk materials?
  - e. Wire and cable?
  - f. Insulation?
  - g. Consumables?
  - h. Small tools?
  - i. Construction equipment?
6. Has the project materials responsibility matrix been:
  - a. Approved?
  - b. Distributed?
7. What tracking, status, and inventory control systems are planned for:
  - a. Major equipment? \_\_\_\_\_
  - b. Minor equipment? \_\_\_\_\_
  - c. Piping & Pipe Fabrication? \_\_\_\_\_
  - d. Structural steel? \_\_\_\_\_
  - e. Bulk materials? \_\_\_\_\_
  - f. Civil? \_\_\_\_\_
  - g. Instrumentation? \_\_\_\_\_
  - h. Insulation? \_\_\_\_\_
  - i. Architectural? \_\_\_\_\_
  - j. Wire and cable? \_\_\_\_\_
  - k. Small tools? \_\_\_\_\_
  - l. Consumables? \_\_\_\_\_
  - m. Construction equipment? \_\_\_\_\_
8. Are these systems appropriate for the scope and needs of this project?
9. Are any of these systems extensions of the engineer's or fabricator's systems?
  - a. If yes, has construction coordinated the update responsibility and status report requirements with the engineer or fabricator?
10. Have the automated or manual systems been established to correspond with the overall project responsibility matrix (PRM)?
11. Have the computer hardware, printer, and communication requirements been determined?
12. Are site material control personnel familiar with the requirements for temporary facilities (warehouses, toolrooms, and laydown areas)?
13. Are site material control personnel familiar with any long-term or climate-controlled storage requirements?
14. Does the on-site warehouse provide adequate covered storage space?

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- a. If no, have arrangements been made to provide adequate covered storage elsewhere?
15. Does the project have multiple locations requiring more than one permanent, covered warehouse?
  - a. If yes, will one site serve as the primary warehouse and receiving point in support of the other site warehouses?
  - b. Have procedures been developed for transferring materials and controlling inventory between the multiple warehouses?
  - c. Do the warehouse(s) have adequate security and safety measures including, limited access and controlled areas for receiving and issuing material?
16. Does the warehouse have access to off-loading equipment to insure the receipt of material in a timely manner?
17. Are material laydown areas matrixed, and do they have adequate security?
18. Are warehouse personnel assigned to the laydown areas to control material received and issued?
19. Do warehouse personnel receive all materials sent to the construction site?
20. Have warehouse personnel reviewed the receiving, inspection, inventory tracking and OS&D (over, short or damaged) documentation procedures with the QA/QC department?
21. Have the warehouse personnel reviewed the traffic plan for receiving items that require special handling?
22. For international projects, are the site material control personnel familiar with marshaling, customs clearance, and in-country transportation requirements?
23. Are the site material control personnel familiar with the project responsibility matrix (PRM) and the material code of accounts?
24. Has site material control personnel held coordination and interface meetings with:
  - a. Engineering?
  - b. Construction Management?
  - c. Crafts?
  - d. Administration?
  - e. Cost?
  - f. Scheduling?
  - g. Procurement, expediting, and subcontracts?
  - h. QA/QC?
  - i. Document management?
  - j. Safety and Security?
25. Has the site material control workhour budget and staffing schedule been:
  - a. Developed?
  - b. Approved?
  - c. Distributed?
26. Is the site material control organization adequately staffed to support the project?
27. Has the site material control organization chart been developed?
28. Have the site material control procedures been:
  - a. Developed?
  - b. Approved?
  - c. Distributed?
29. Are they consistent with the project scope and execution plan?

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30. Do they include work plan procedures for material availability and construction?

### PROJECT EXECUTION

1. Have automated or manual material systems been established, and do operational interfaces provide status reporting and inventory balances for:
  - a. Major and minor equipment?
  - b. Bulk materials?
  - c. Civil?
  - d. Piping?
  - e. Electrical?
  - f. Instrumentation?
  - g. Insulation?
  - h. Architectural?
  - i. Valves?
  - j. Piping fabrication?
  - k. Structural steel fabrication?
  - l. Wire and cable?
  - m. Consumables?
  - n. Small tools?
2. Have crafts been given an overview of material systems applications, status reporting, and material availability planning systems?
3. Is there a verification procedure to ensure that the automated or manual material inventory control balances agree with the available inventory?
4. Are site material control personnel verifying that the automated or manual material status and inventory control systems are accurate and current?
5. Are the material systems being audited and adjusted regularly?
6. Are material status reports being produced and distributed on a regular or as-required basis?
7. Are the following material-receiving practices followed?
  - a. Warehouse personnel maintain a daily dock report of all materials received at jobsite.
  - b. Warehouse personnel receive copies of all purchase orders and requisitions.
  - c. Material is not received without purchase orders or requisition.
  - d. Quantities, descriptions, and tag numbers of materials received are verified against the purchase orders.
  - e. Material overages, shortages, and damages are identified on OS&D forms and reported.
  - f. Material receiving reports are completed and forwarded to project accounting, purchasing, and material control in a timely manner.
  - g. Warehouse personnel have copies of site inspection procedures and coordinate inspections with jobsite QA/QC personnel.
  - h. Warehouse personnel keep file copies of all material inspection reports and applicable material test certificates.
8. What is the material receiving report turnaround time for the project? \_\_\_\_\_  
(Turnaround time is the time period beginning when material is listed on daily dock

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report until material receiving report is issued to project accounting.)

Briefly explain.

9. Is an aged invoice list used on the project?
  - a. If yes, what is the longest outstanding receipt? \_\_\_\_\_  
Briefly explain.
10. Is there a procedure for receiving, storing, and issuing consumable materials?
11. Do the warehouse and laydown areas provide adequate storage for the project's needs?
  - a. Are warehouse storage areas organized, cleaned, and maintained?
  - b. Are materials stored in bins, on pallet racks, and laydown areas clearly identified?
12. Are appropriate safety precautions observed when storing materials?
13. Are the warehouse and outside material storage areas secure with limited access?
14. Do the warehouse personnel have a preventive maintenance program in effect for permanent equipment during storage?
  - a. Is a preventive maintenance log maintained?
15. Are the warehouse personnel maintaining appropriate records for these returnable items:
  - a. Oxygen and acetylene bottles?
  - b. Cable reels?
  - c. Scaffolding?
  - d. Pallets?
  - e. Drums?
  - f. Concrete forms?
16. Are the inventory levels of max-min materials appropriate?
17. Are materials that are subject to supplier buy-back maintained in returnable condition as specified in the purchase order?
18. Is there a procedure for issuing and returning small tools?
  - a. If yes, does the procedure require the identity of each individual and the specific tool checked out?
19. Are periodic physical inventories conducted on all toolrooms and tool assignments?
20. Are toolrooms attended during working hours?
21. Are toolrooms and gang boxes locked after hours?
22. Are tool use and availability records maintained at each toolroom?
23. Are appropriate records maintained on lost tools and tools sent for repair?
24. Does site material control have a procedure for updating the material system with those requirements identified by construction?
25. Are negative job balance reports reviewed in a timely manner to ensure the procurement of required materials?
26. Is there a procedure in place to verify and adjust requirements for any necessary double issue or project variance materials?
27. Are all field purchase requisitions reviewed and signed by site material control before purchase?
28. Are all warehouse requisitions verified and signed by site material control personnel before the material is issued?
29. Are material availability reports used by crafts for work planning?

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30. Do site material control personnel maintain records of warehouse requisitions and issues against bills of material where applicable?
31. What is the normal turnaround duration for material issue? \_\_\_\_\_ (number of workdays) (Turnaround duration is the time period beginning when warehouse personnel receive a written material request and ending when the material is issued to crafts.)
32. Is the turnaround duration defined in project procedures?
33. Do warehouse personnel transmit material issue information to site material control in a timely manner?
34. Are material issues updated into the inventory control system in a timely manner?
35. Is there a backlog of material issues that exceed the 24 hours?
  - a. If yes, what is the backlog? \_\_\_\_\_ (number of workdays)
  - b. What is the recovery plan?
36. Do site material control personnel prepare, maintain, and distribute a material shortage list?
37. Is there a procedure for identifying, using, and disposing of surplus material?
  - a. Is the procedure being followed?
38. Is there a working interface between the engineering and construction materials management personnel?
39. What enhancements, changes, or improvements does the project recommend for site material control practices, procedures, or systems?

### PROJECT CLOSEOUT

1. Has site material control met with the project administration department to determine the material records required for closeout?
2. Have arrangements been made to return the following items to the suppliers:
  - a. Oxygen and acetylene bottles?
  - b. Scaffolding?
  - c. Small tools?
  - d. Maximum-minimum bulk materials?
  - e. Cable reels?
  - f. Rental equipment?
3. Are the following logs and records current, complete, and ready for closeout?
  - a. Container logs?
  - b. Cylinder demurrage logs?
  - c. Daily dock reports?
  - d. Railroad car log?
  - e. Rental scaffolding and forms log?
  - f. Shipping records and logs?
  - g. Mill test reports (MTRs) and site inspection reports?
  - h. Over, short, and damaged (OS&D) material logs?
  - i. Final material status report?
4. Are material inventory control records current, and have final reports been produced on paper and cd?
5. Is the surplus material record current, including the dollar value of the surplus?

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6. Have arrangements been made for the disposal of surplus material that has been declared scrap?
7. Have final reports been produced for historical files?
8. Has all material inventory control software been removed from the site's computers?
9. Briefly describe what worked well and what did not work well with site material control during this project.
10. Suggest recommendations for improvement, if any.

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