



**DALMIA CEMENT (B) LIMITED – CEMENT PLANT
ARIYALUR
SAFETY DEPARTMENT MANUAL**



Issue No. 01	Rev. No: 03	Effective Date: 20.09.2013	WI-33(PI-14; AM-7)
Issued By: M.R		Approved By: HOD -SAFETY	
WORK PERMIT SYSTEM			

WI-33(PI-14; AM-7)

1.0 Scope:

This procedure describes the Work Permit system (WPT), which is used to provide the controls necessary in achieving the safe performance of a specified range of potentially hazardous tasks.

This Work Permit System serves as a legal and compulsory document to be observed and complied with by all DCBL employees and Subcontractors.

Note: All personnel should be aware that the Work Permit system is not an absolute safeguard in itself. It is the responsibility of each individual to be alert to hazardous situations that may arise during the operation.

2.0 Purpose:

DCBL is determined to achieve the following objectives, through implementation of this Work Permit system:

- Controlling potential hazards and risks associated with non-routine, high risk and hazardous Operation & maintenance activities.
- Preventing the occurrence of incidents / accidents by ensuring compliance with established HSE plans and procedures.
- Reducing and minimizing HSE impacts on, and disturbances to, the surrounding environment and neighboring residents / contractors / facilities.

3.0 Responsibility:

3.1 Concerned HOD/ Safety Head to enforce / ensure the effectiveness of Work Permit System.

3.2 Performing Authority: Section Engineer under whose direct supervision the job is being carried out.

The Performing Authority is the person who requires the work to be done (or who will do the work) and is the senior person in charge of the work controlled by a permit.



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Note: The same person shall not have the role of both Issuing Authority and Performing Authority for the same WPT.

The Performing Authority is responsible for:

- Safety at the work site.
- Identifying the hazards and disseminating the resulting output to the personnel who will be doing the work.
- Ensuring that only those activities detailed on the WPT are undertaken.
- Immediately informing the Issuing Authority of any event which might impact on the safe performance of a task or on the associated precautions.
- Ensuring that adequate handover takes place at shift change, crew change or other change-out of Performing Authority.
- Ensuring that the work team is withdrawn, and the work site is left in a safe and clean condition, on completion (or suspension) of the task.

3.3 Issuing Authority: Section Head who is in-charge for the Area

The Issuing Authority is responsible for:

- The safety of personnel and the safe execution of all activities undertaken within his area of authority.
- The operation of the WPT system, and supporting procedures, in his area of authority.
- Facilitating the identification of the hazards and precautions to be taken before, during and after all tasks covered by all WPTs and Supplementary Certificates (e.g. Isolation / Lock-out / Tag-out, Vertigo Test Certificates etc.).
- The issue of Permits, etc. to Performing Authorities in his area, and subsequent re-validation.
- Ensuring that adequate handover takes place at shift change, crew change or other Change-out of Issuing Authorities, Performing Authorities.
- Maintaining a display board of all Permits and Certificates in use in his area of authority.

3.4 Extension: Section In- Charge

Extension & Renewal of the permit can be done with the consent of Issuing Authority.



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4.0 Work Permit (WPT) Categories

For the purposes of this WPT System, work tasks are classified as below based on the activity performed and extent of precautions to be taken.

1. Electrical Shut down Permit
2. Height Work Permit
3. Hot Work Permit
4. Confined Space Entry Permit
5. Excavation Permit
6. General Work Permit

4.0.1 Procedure:

- Performing Authority raises Permits to Issuing Authority before actual Commence -ment of work. Work Instructions & Risk Assessments must prevail for the work activities planned and be known to both.
- Permits requiring Concurrence must be produced to Issuing Authority well in advance before commencement of work.
- Performing Authority will take the permits to Safety Manager for review, and verification, before commencing the work for confined space entry & work.
- Safety Manager returns permits to Performing Authority after verifying that all Safety requirements specified in the permits are appropriate(confined space entry & work)
- Issuing Authority, with Performing Party conducts onsite inspection to ensure all requirements are in place.
- On fulfillment of requirements, Issuing Authority issues the Work Permit. If the requirements are not fulfilled, withhold issuance.
- On receipt of permit from Issuing Authority, the Performing Authority commences work after Safety requirements have been discussed with those personnel performing the work.
- When work is completed, Performing Authority signs and returns permit to Issuing Authority.
- Issuing Authority and Performing Authority inspect worksite to ensure reinstatement / restoration of normal operation.
- When satisfied, Issuing Authority signs permit as **closed**.



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- Issuing Authority returns permit to Performing Authority for record.
And the retention period is one year.

4.1 Energy Isolation Permit – Work requiring electrical isolation.

- Before issuing a Work Permit, it is essential to ensure that the equipment / facility to be worked on is electrically safe and electrical power is isolated to the extent necessary for the safe conduct of the authorized work.
- Issuing, Executing authorities and Electrical Maintenance shall jointly decide the extent of isolation required.
- 'DO NOT OPERATE' tag shall be used when isolation by local switch is decided as adequate protection.
- Lock-Out systems to be used in addition to the above.

4.1.1 Lock out – Tag out

- Before service or maintenance is performed on machinery or equipment, the machinery or equipment must be turned off and disconnected from the energy source, and the energy-isolating device must be either locked or tagged out.
- The lockout /tag-out standard apply to equipment in which the unexpected start-up or the release of stored energy could cause injury to employees.

4.1.2 Energy Control Program

The procedure includes the following steps:

- (1) Preparing for shutdown,
- (2) Shutting down the machine(s) or equipment,
- (3) Isolating the machine or equipment from the energy source(s),
- (4) Applying the lockout or tag-out device(s) to the energy-isolating device(s),
- (5) Safely releasing all potentially hazardous stored or residual energy, and
- (6) Verifying the isolation of the machine(s) or equipment prior to the start of service or maintenance work.

In addition, before lockout or tag-out devices are removed and energy is restored to the machines or equipment, certain steps must be taken to re-energize equipment after service is completed, including:



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- (1) Assuring that machines or equipment components are operationally intact;
- (2) Notifying affected employees that lockout or tagout devices are removed from each energy-isolating device by the employee who applied the device.

4.2 Height Work Permit - working at 2mt and above where in a danger of falling exists.

- The condition stipulated in the safety work at height permit should be ensured by Performing Authority and Issuing authority.
- The Permit will be raised by area Performing Authority (Area Section Engineer) and approved by issuing authority (Section Head).
- Safety Department can stop the work in case of any violation of the condition stipulated in work at height permit. Follow WI-23(PI-14:AM-7)

4.3 Hot Work Permit - Welding /gas cutting / Grinding / Open Flame operations in an inflammable area.

- In case of hot work permit, apart from safety requirements mentioned in the permit, the condition of welding machine, cables, earthing and availability of On/Off switch can be ensured by electrical department through inspection.
- In the same way condition of the regulator and gas hose can be ensured by mechanical department before doing any gas cutting work.

Follow WI-15(PI-14:AM-7)

4.4 Confined Space Entry Permit - For Entry to work in confined place –

- An area which is not designed for human occupancy has restricted access/egress or where the presence of toxic or flammable gases, or deficiency / enrichment in oxygen possibly exists.



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- In case of Confined space work permit, the Performing Authority gets the Electrical Work Permit for all the related drives as indicated in the permit, and produces the same to the Safety Manager, who in turn confirms the Safety Requirements.
- Then the permit will be approved by Production in-charge (Issuing Authority). After taking the permit, Performing Authority will counter check the conditions and hand over the same to person who is going to carry out the job.

Follow WI-25(PI-14:AM-7)

- Confined Space Entry permit has to be revalidated by carrying out oxygen test every eight hours. Before and after general shift Process in charge shall carry out oxygen test.

4.5 Excavation Permit – Excavation more than a depth of one meter.

The permit will be raised by area Performing Authority (Section Engineer) and clearance obtained from the Elect, Inst, IT, Mech. and Safety Department and approval from Issuing Authority(Civil Head).

4.6 General Work Permit - shall be used for tasks that do not involve hot work but have high risk potential and, therefore, need to be covered by a permit.

Such General Work tasks / activities include, but are not limited to, the following:

1. Actual or possible breaking of containment of systems under pressure or systems that contain substances which are flammable, toxic or corrosive.
2. Any work affecting the integrity or availability of safety or emergency systems, e.g. fire pumps, fire mains, shutdown systems, fire and gas detection.
3. Pressure testing of plant and equipment.
4. General maintenance.
5. Lifting. (Lifting above 10 mts. height should be supported by Protocol)
6. Overhead works.



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4.7 Work Execution

- There are 2 copies of the WPT, which shall be located as follows:

1. The Performing Authority shall keep the First copy at the work site.
2. The second copy will be filed by the Issuing Authority for reference.

Note: The details of the work being carried out will be displayed on a WPT notice board at site in the prescribed board provided for the same so that all related personnel are continuously aware of all potentially hazardous work being carried out on site.

- During execution of the work, process or operational conditions may change. Safety Department Personnel will conduct regular inspections of the work area to ensure the conditions remain unchanged & safe for work to continue.
- The Performing Authority will ensure the implementation of safe working practices and the monitoring of his work area for any change in conditions.
- Should there be any changes in processes or work conditions, all works will be suspended immediately and the WPT withdrawn. A new WPT taking account of the changed conditions will be raised before recommencing work.
- Safety Department Personnel will be authorized to stop any work whenever he thinks fit, or when the stated precautions in the WPT are not being fully observed and implemented.
- The Performing Authority is responsible for the safe execution of the work and will be present onsite at all times during the execution of the work.
- If the Performing Authority is absent whilst the work is being carried out, he will appoint a responsible supervisor to oversee the operation until his return.

4.7 No Permit Required:

- The Issuing Authority may allow certain specific, routine, non-hazardous tasks to be performed in his area without the issue of a permit or formal procedure, provided that the tasks do not impact on another area.
- The Issuing Authority must satisfy himself that the risks are as low as reasonably practicable (ALARP) and that the tasks are performed by suitable competent personnel.



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- Many of the tasks that do not require a permit or the use of a formal procedure are themselves the subject of written procedures that have been, or will be, risk assessed when originally produced.

Such activities include, but are not limited to, the following:

1. Routine crane operations using fixed cranes (excluding heavy lifts and mtce).
2. General cold work in workshops.
3. Routine work in offices, and domestic activities.
4. Visual inspections, excluding Confined Spaces.
5. Routine production operations.
6. Routine Inspection of Tunnel belts.

4.8 Formal Procedures

- Certain low risk residual tasks of a routine and continuous nature may be performed under a written formal Procedure, Method Statement or Work Instruction, rather than a Permit to Work.
- These formal Procedures, Method Statement or Work Instruction shall identify the full scope of the task to be performed, together with the hazards and precautions involved, and shall be authorized by DCBL – Technical Head and countersigned by the Safety Manager.
- Tasks performed under a formal Procedure, Method Statements or Work Instructions shall only be performed by suitably competent personnel.
- Formal procedures shall only be used where any isolations fall within the scope of “personal isolations” and they shall be reviewed at least annually.

Examples include, but are not limited to, the following:

- i. Fire and gas detector head checks and repairs.
- ii. Public address system checks and repairs.
- iii. Telephone system checks and repairs.
- iv. Inboard scaffolding.
- v. Planned maintenance.



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5. Multiple agencies

- * Where more than one agency is working, as many permits as the number of agencies are to be taken.
- * No department shall take advantage of the permit received by another dept and work on the equipment without taking a separate work permit.
- * Separate tags to be issued and displayed for each permit.

6. Validity, extension / renewal:

- Work permit is valid for the duration of issue only.
- Permit should be renewed on the following day by signature of Performing Authority and Issuing Authority.
- Renewal can be done on day to day basis for a maximum period of one week. After 7 days, new permit is to be taken and the same procedure for issuance to be followed. In case of Electrical isolation, Tag is to be changed with the mention of new permit Number.
- However for working in confined space it should be shift to shift renewal; if work activity continues beyond one week, new permit has to be obtained.

7. Surrender of work permit

- * No work permit shall be permitted to be cancelled through separate letters.
- * Personnel other than the job executing department shall not be permitted to return the work Permit.
- * No person will sign work permits for other personnel; rather the person can sign in his own capacity.



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8. Depositing of work permit:

- * Work permits of work activities that could not be carried out can be deposited.
- * Performing Authority and Issuing Authority should sign by indicating the time & date of deposit.
- * For resumption of work, the permit can be taken back by signature of performing authority and issuing authority in the same permit copy.

9. Supplementary Protective Activities

Five supplementary protective activities are also provided for use where specialist activities have to be performed before a Permit to Work can be safely issued:

- Isolation Tags/ Do Not Operate Tags / Lock Out
- Gas Test Certificate
- Scaffolding Tag (To be developed)
- Risk Assessment / Protocol
- Health Check Certificate for Vertigo

9.1 Isolation Tag / Do Not Operate Tag / Lock Out

An Isolation Tag / Do Not Operate Tag / Lock Out will be required for all work requiring isolation and lock-out / tag-out of equipment. The Isolation Tag / Do Not Operate Tag / Lock Out supports the PTW by providing the means of:

- a. Recording the isolations which are required before the task detailed in the associated WPT can proceed.
- b. Confirming isolations have been made so that the task can proceed (subject to authorization of other permits, e.g. Confined Space Entry).
- c. Authorization and recording of approval to isolate, lock-out/tag-out and block out the requested equipment.
- d. Requesting authorization to remove isolation, lock-out/tag-out devices on completion of the task detailed in the associated WPT.
- e. Provision of Isolation Tag / Do Not Operate Tag / Lock Out must be completed before the relevant Permit to Work can be authorized.



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9.2 Gas Test Certificate

Where required, the atmosphere in which the work will be carried out, particularly within confined spaces, must be tested by Safety Dept. personnel before entry is allowed.

Tests will be conducted for Confined Space Entry as below:

- a. Oxygen deficiency or enrichment.
- b. Flammable gases and vapours - LEL / UEL

Results of gas tests will be recorded on the respective work permit.

9.3 Scaffold Tag

If applicable, a Scaffold Tag will be required to supplement the WPT. In accordance with the *Scaffolding Procedure* (to be developed), this Scaffold Tag shall confirm that any scaffolding has been inspected and certified safe for use by Safety Dept. Personnel / Safety Steward. The tag stating "Scaffold Safe for Use" will be positioned at the access leading to the scaffold and will contain the following information:

- a. Location of the approved scaffold.
- b. Date the scaffold was erected.
- c. Name of Scaffold Subcontractor.
- d. Safe loading.
- e. Summary of inspection dates.

9.4 Risk Assessment / Protocol

Prior to undertaking any non-routine, high risk or hazardous activities, a risk assessment must be performed in accordance with the Hazard Identification and Risk Analysis Procedure to ensure that all associated hazards and risks have been identified and appropriate mitigation / control measures developed. The Issuing Authority shall not authorize any Permit without careful review of the associated risk assessment / Protocol.



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9.5 Health Check-up Certificate for Vertigo

Personnel working at height shall be subjected to Physical Fitness Test for Vertigo and clearance certificate shall be obtained from DCBL Medical Officer and record be maintained. The fitness check-up to be repeated once in six months.

10. Additional precautions

- Proper access and working platform to be provided.
- Scaffoldings to be made as per standards.
- Test certificate of safety belt to be kept.
- Whenever materials are handled at height they should be kept secured to avoid fall.
- More than a single work should not be done directly one below the other at a time.
- Manpower, Welding machine, gas cutting details to be specified and updated whenever there is a change.
- SWL and Load chart of the lifting tools & Tackles marked clearly and handling load shall not exceed the limit. It should be known to the executor/operator.
- Adequate locking arrangements ensured in the chain pulley blocks and other hoisting appliances.
- Load chart of crane to be available and the crane operator to be well conversant with the same.
- A copy of load test certificate of chain pulley blocks used to be kept.
- Healthiness of tools, tackles & PPE to be checked.
- Job should not be done while it is raining/drizzling (especially work at height).
- Pep talk to be given by job executors and same to be recorded.
- Drinking water should be made available in site.

11. Audit

The Site Manager, assisted by the Safety Manager, shall ensure the following:

- Self-regulatory audits of adherence to Work Permit System are performed at site.
- An Audit Register is maintained.
- A system is in place for tracking audit actions / recommendations to close-out.



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- Use of a Standard Audit Checklist is recommended, to allow comparison with external audit results, and the recommended audit frequency is as follows:
 - a. Area Supervisor - Daily.
 - b. Safety Manager - Weekly.
 - c. Safety Stewards - Monthly.
- Site Managers shall carry out regular internal reviews of the findings of WPT Audits, to ensure that any critical failings in the system, or its manner of implementation, have been identified and appropriate actions have been, or are being, taken.

Sl.No.	Description	Format No.	Location	Retention period
1	Excavation Permit	F-1/WI-33 (PI-14;AM-7)	All Sections	1 Year
2	Height Work Permit	F-2/WI-23 (PI-14;AM-7)	All Sections	1 Year
3	Hot Work Permit	F-3/WI-13 (PI-14;AM-7)	All Sections	1 Year
4	Confined Space Entry Permit	F-4/WI-25 (PI-14;AM-7)	All Sections	1 Year
5	Energy Isolation Permit	F-5/WI-33 (PI-14;AM-7)	All Sections	1 Year
6	General Work Permit	F-6/WI-33 (PI-14;AM-7)	All Sections	1 Year

New Energy Isolation permit system standard & Procedure(LOTO, Work at height & Scaffold & confined space) referred in **Annexure 13** .

Annexure -13

New Energy Isolation Permit System - Standard & Procedure

- 1.LOTO
- 2.Work at height & Scaffold
3. confined space



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WORK PERMIT WITHDRAWN & RE-ISSUE DURING EMERGENCY

In case of any emergency situation all the work permit should be collected by the issuing authority and all the work should be stopped immediately and permits were cancelled. After the emergency situation the performing authority raising the new work permit in relevant work with the approval from issuing authority.

SPECIAL ENTRY TOKEN SYSTEM TO CONFINED SPACE ENTRY.

Previously we are not having special entry token system in confined space entry to the HOD's and section head. Now we are introduced the special entry token system to all HOD's and section head. If any HOD and section head want to go enter the confined space, they should hang their special entry token on the confined space token board after their inspection they coming out from the confined space then they should remove their special token from the token board.