



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



Issue No. 01	Rev. No: 01	Effective Date: 07.07.2017	SOP/CIVIL/001
Issued By: M.R		Approved By: HOD – CIVIL	
SOP FOR EARTH WORK EXCAVATION			

**SCOPE:** This SOP covers the procedure for safe earth work

**RESPONSIBILITY:** Concern contractor & Workers.

**Accountability:** Civil-Section In charges

**PPE:**

1. Safety helmet,
2. Safety shoe,
3. Nose Mask,
4. Cum -Boot

**TOOLS:**

1. Crowbar
2. spade
3. mortar pan
4. Ladder
5. Excavator
6. Tippers

**Hazard Analysis:**

**Risks associated:**

**Mitigating Measures**

Underground cable/Pipe lines : Clearance from concern dept (Through Work permit)

Movement of vehicle; providing Barricade Surrounding areas & sign boards for diversions.

Earth Collapse in sides: shoring & shuttering the Sides excavated areas

**Training needs:**

- 1 .Emergency preparedness.



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**PROCEDURE:**

Before starting the work at site, ensure the following things.

1. Availability of good for construction drawing
2. Safety induction for all labors, operators, drivers and contractor supervisors has to be completed.
3. Preparing the JSA(Job safety analysis
4. Work permit for the job has been taken from respective section in charge
5. Clearance has been obtained from Electrical Department for underground Cables and the same have been de-energized.  
Necessary protocol is available and clearance for starting the work has been obtained
6. All labours are wearing the required safety PPE like helmet & shoes
7. Area to be barricaded by safety tape
8. Area for dumping excavated earth has been identified.

Depending on the depth of earth to be excavated and the type of earth Encountered, the Section incharge &HOD may decide on the nature of cut to be made (vertical

Or at an angle etc). Proper leading arrangement to be made for excavation at depth. For depth of excavation greater than 3.0m, shoring to be provided to prevent the sides of the pit from collapse. Water encountered should be immediately pumped out to prevent the collapse of earth. In case of any cables encountered only manual excavation needs to be done. Ensure that the depth of



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excavation is as per drawings. In case of the bottom of excavation being loose/unconsolidated inform HOD for further instruction. Excavation bottom shall be properly leveled before carrying out further works.

**Emergency / Emergency Shut OFF:**

1. If any incident happens there, inform to the Safety department or Call Emergency number 3108/9865152222/9750963761

**Records/Annexure:**

1. Refer the work permit.
2. JSA as enclosed below.



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<b>Job Safety Analysis</b>	Job: Earth work excavation	Date:	Analysis by: K.Dinesh	Reviewed by: S.Chandra Bose
Title of employee doing job: Contractor Worker (Excavator opp & Drivers)(Unskilled labours)	Supervisor: SECTION ENGINEER	Department: Civil	Section: General	Approved by:T.Vivekanandan
Req'd/recommended PPE: SAFETY HELMET, SAFETY SHOES, NOSE MASK, CUM-Boot, Excavators and tippers.				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
1 While doing the earthwork	Underground cable/Pipe lines	Necessary protocol and clearance from concern dept for starting the work has to be Obtained	Electric shock and major injury lead to fatal.  Pipe lines damage has leads to excess water accumulate/ oil accumulates in to work area.	Proper sign boards for electric /pipe lines route marking has to fix on concern areas.
	Earth Collapse in sides	shouring & shuttering the Surrounding areas	Earth slide leads major injury or fatal  Injury or faulty	Identify soil classification of the exact location (trail pit)or existing records  shouring & shuttering to be provided for sides of the excavated areas
While operating the excavator & Tippers	Injury or fatality	Providing Barricade Surrounding areas.  Area has to be identify for dumping of excavated earth	Soil spill on the road ways which leads to other vehicles or person may slip	Identify the expertise operators & drivers. Proper sign board has t be fix while running the Excavators