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Institution of Safety Engineers (India)

“Aim to prevent Accident, Protect Environment & Minimises Losses during disaster”
www.iseindia.in



About us: Institution of Safety Engineers (India) is established in year 2012 under ZJEW Trust, Registered under Public Trust Act in India, **Govt. Registration No. 5240** with objective to prevent accident, Protect Environment & minimise Losses during Disaster. Institution of Safety Engineers (India) is An ISO 9001:20015 certified institution and working to save Natural resources & control pollution. ISE (India) imparting EHS related Training to society and needy people for creating employment opportunities.

Services: Institution of Safety Engineers (India) provides Services to Industries, organization, Institution or needy related to Safety Health Environment & Quality. Such Services help to Control Risk at work place, Protect environment, improving Quality & Safety performance in Organisation. Highly Qualified, Skilled & Experienced Professional perform such Task from Institution of Safety Engineers (India) ends. Services Provide by Institution of Safety Engineers (India) is here under:

- Services for ISO Auditing & Certification (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 45001:2018) etc.
- Developing safety Manuals, poster, banner, sticker, Pocket booklet.
- 3rd Party Safety Health Environment Quality (SHEQ) Audit, Training, Inspection, Environmental monitoring, Testing & examination of Tools, Tackles, equipments, structures etc.
- Consultation services for Emergency Plan, DMP, QAP, EIA, EMP, EC, Waste Mgt. Plan, HAZOP Study, Fire Load calculation & survey, Lightning Protection Study, Safety Mgt. Plan etc.

Training: Institution of Safety Engineers (India) Conduct Short Term Training to create awareness among people to work for Preventing accident, Protecting Environment, minimizing losses during Disaster and create employment opportunities as EHS professional. Job oriented and short term Training Courses conducted by Institution of Safety Engineers (India) are:



- ISE-SM (Safety Management at work place), 24 Hours Duration.
- ISE-ICCOHSEM (International Certificate Course in Occupational Health Safety & Environmental Mgt.), Duration 96 hours.

- ISE-IDOHSEM (International Diploma in Occupational Health Safety & Environmental Mgt.), Duration One year.
- ISE-TQM (Total Quality Mgt.), Duration 24 hours.
- Integrated Lead Auditor (ISO45001:2018, ISO 14001:2015, ISO 9001:2015), Duration 6 days & Lead Auditor (ISO45001:2018,), Lead Auditor (ISO 14001:2015) & Lead Auditor (ISO 9001:2015), Duration 30 hours each.
- Post Diploma Industrial Safety, Duration One year.
- Diploma in Industrial Safety/ Fire/ Environment, Duration One year.

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Journal & Publication: Institution of Safety Engineers (India) published Journal Quarterly online on name of International Journal of Institution of Safety Engineers (India) and share with member and needy. Institution of Safety Engineers (India) accept Article/ Journal from professional and editing team review to article and in case of shortlisted, it published in **International Journal of Institution of Safety Engineers (India)**. Institution of Safety Engineers (India) issue Journal publication certificate to author. For more details mail editor@iseindia.in

Award: To promoting Safety Health Environment & Quality Management System in organization, Institution of Safety Engineers (India) accept application and reward to elected person, organisation & Institution.





Need of Behaviour Based Safety in Industries

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Abstract:

In industries Behaviour Based Safety (BBS) is very important to prevent accident and control workplace risk. Construction or Engineering industries is hazardous prone industries. Each and every day several people killed, several injured due accident and major numbers of injury, fatality or harm occur in construction or Engineering industries due to unsafe behaviour of employees. Behaviour Based Safety (BBS) help to gain more interest across construction or engineering industry and has the great advantage of needing the involvement of the individual Employee, in addition of course, to employer commitment to prevent workplace injury & Illness.

Keyword: Behaviour Based Safety (BBS), Safety Culture, Risk Control at work place, Importance of Behaviour based safety, Behaviour Based Approach, Employees Negative and Positive Attitude, Risk and Safe Behaviour.

Benefits of Behaviour Based Safety (BBS)

- Increase Safety Culture at construction site.
- Prevent Risk behaviour and create safe behaviour in each individual person.
- Reduce workers compensation cost.
- Increase productivity.
- Reduce injury & illness rate.
- Reduce absenteeism.
- Workers feel good about their work and increase trust on employer/Occupier
- Increase good relation with stake holders & provides a forum for recognition of positive behaviours.
- Prevent from Prosecution by legal authority.

1. Introduction:

Behaviour Based Safety (BBS) is an approach that creates a **safety** partnership between management and employees that continually focuses people's attentions and actions on daily **Safety Behaviour** that help to prevent work-related injuries and illnesses. The goal of behaviour-based safety is to **change** the behaviour of employees from "at risk" behaviour's to "safe" behaviour's.

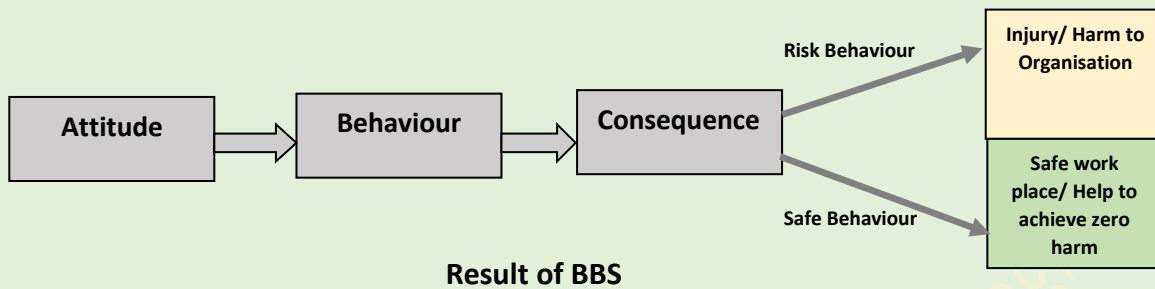
Behaviour based safety (BBS) addresses to company culture and values and, most importantly, when it works, it is an excellent parameter to improve safety performance at workplace. Behaviour based safety help to create awareness among employees and employees understand their responsibility respect to safety and they protect self or their sub-ordinates from exposure of Potential hazard. Employees become habitual to



follow safety laws and practices through self-desire and always try to adopt best safety practices to maintain high safety standard to achieve zero harm. Behaviour can be defined as Negative and Positive behaviour.

Negative behaviour always create Poor attitude among employees and which lead to cause of Accident.

Positive behaviour create good/positive attitude among employees and employees follow safety rules and procedures through it own desire and always involve to control work place risk.

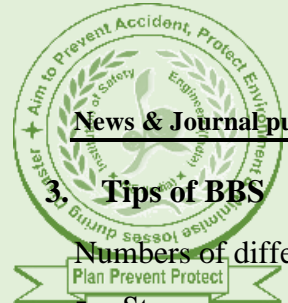


Unsafe behaviour always hamper to work place safety culture. Poor management commitment and individual employee negative behaviour are responsible for poor workplace safety culture. Safety related Initiatives taken from employer ends in Coordination with Social partner organization as per respective state regulation and initiative such as involvement of employees in safety activity result help to achieve zero harm. In simple way we can say that Safety initiative taken from employer/occupier ends help to create work safety culture. A safety culture is a culture in which individuals hold safety as a ‘value on priority and take responsibility for the safety of their co-workers.

To reduce unsafe behaviour’s from work place various approaches such as Surveillance, Effective implementation and follow up Company policy, Procedures, rules & respective state laws help to create BBS at workplace. Conducting Training & motivate to employees through reward, incentive and recognition, help to increase safety culture & Control work place risk in industries. Safe behaviour always bring good safety culture in industries.

2. Causes of Negative behaviour:

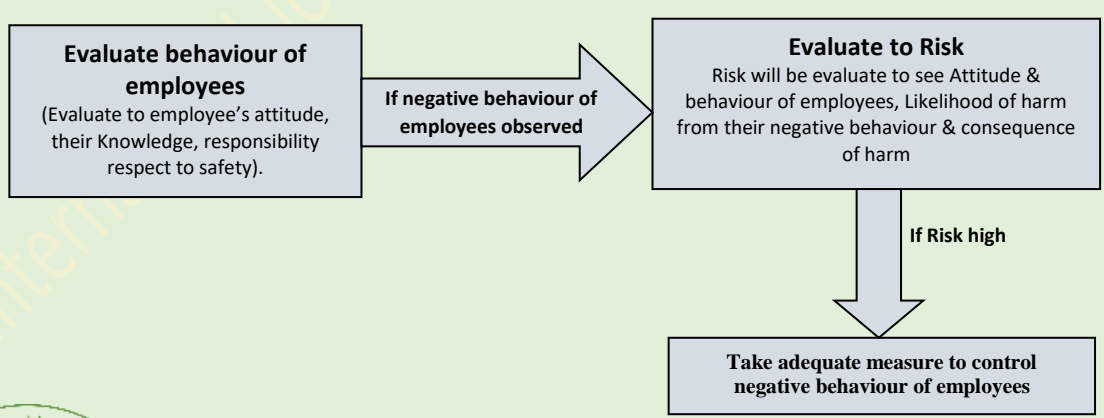
Poor management commitment, No provision to motivate to workforce through reward, incentive and recognition, Heavy work load, Poor method of communication among management and employees, Blame culture, Ineffective implementation of Safety laws and procedure and few measure cause of Negative behaviour of employees in industries and increase unsafe behaviour and it may lead to cause of accident, Property damage or harm to industries. Employee Negative attitude parameter is main factor of negative behaviour. Lack of Training such as general safety training and need based safety Training and resources as Personnel Protective equipments area also cause to develop negative behaviour among employees.



3. Tips of BBS

Numbers of different approach and tips used in industries for BBS, in which few major are:

- Strong management commitment & its effective implementation
- **Set clear and realistic Objective:** Management should clear identify their objective related safety that want to achieve.
- **Target & result evaluation:** Identify Time that will required to achieve objective and identify such parameter that will help to measure company objective have achieved or not?
- Defined Clear role & responsibility section or Department wise and select easy, Positive and stable method to
- To work with associated with different similar industries and trade association to achieve Company objective
- Listen to company employees and involve him to participate in safety activity and use their idea to improve system whenever applicable.
- Make communication with employees including workmen in local/regional Language and eliminate to other factor that help to create blame culture.
- Always focus on Corrective/Preventive action to motivate workforce instead of penalty or Action on Incident investigation report.
- Identify Training need and conduct time to time to improve knowledge and skill among employees including workmen
- Motivate to workforce to create desired among them to adopting safe practices.
- Leadership: Personnel leadership quality and their competence will help to identify gap and seek opportunities to create safe behaviour among employees.



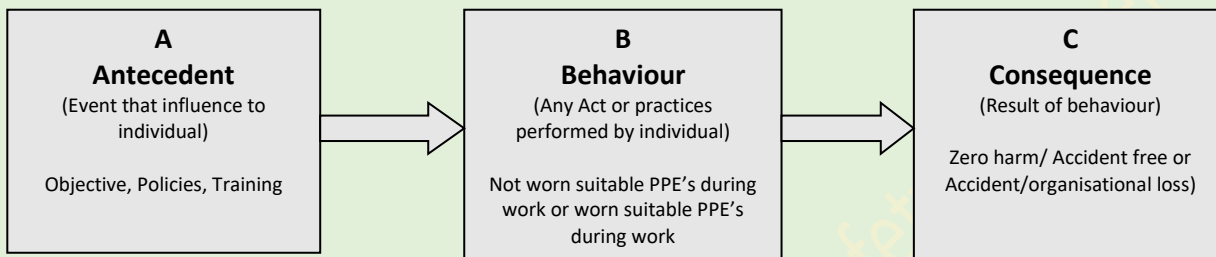
Behaviour Based risk evaluation Method



To evaluate risk, we identify attitude of employees then after evaluate their behaviour, after evaluating behaviour, we identify employees behaviour that is negative or positive, if employees behaviour is negative then we assess risk to see likelihood of event that may occur due to negative behaviour & their consequence.

Whenever risk evaluated then, management take adequate control measure to minimise risk based behaviour as low as reasonable practicable (ALARP).

The goal of behaviour-based safety is to **change** the behaviour of employees from “at risk” behaviour’s to “safe” behaviour’s. ABC model is best tool to change human behaviour. Most of today's behavioural safety efforts are based on this theory that says all behaviours are a result of antecedents and consequences.



ABC Model

4. **Conclusion:** Behaviour based Safety (BBS) approach always helps to control work place. Behaviour-based safety help to **change** the behaviour of employees from “at risk” behaviour’s to “safe” behaviour’s. Behaviour-based safety creates good safety culture at workplace and each individuals hold safety as a ‘value on priority and take responsibility for the safety of their co-workers also. ABC model is best tool change the behaviour of employees. In BBS safety employees follow Safe Procedure and rules. In BBS Employees always eager and work to adopt safe practices and understand safety is prime responsibility of each individual.

Strong management commitment, enforcement of rules and procedures, Reward to employees, trusting them and making communication between mgt. and employees regularly in regional language are few major parameter that help to create safety culture at workplace and develop .

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Excavation & Trenching work Safety: A review

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Abstract: Excavation & Trenching is beginning stage of any civil construction Project. Excavation carried out initially to proceed next step of project activity. Large numbers of accident occurs in construction industries during different phase of construction work in which one is excavation & Trenching phase. Excavation & Trenching related accidents occur at workplace due to failure or collapse of soil edge of excavation or trenching or personnel contact with heavy equipment during operation. There are many potential sources such as loose soil, underground utilities, equipment operation, unsafe behaviour of workman may lead to cause of injury, death or harm during Excavation and trenching activity. Objective to publish this paper is to know safe procedure of excavation and trenching work and Control excavation & Trenching related accident.

Keywords:

Excavation & Trenching, Risk control during excavation & Trenching activity, Incident prevention, Safe method of excavation and trenching activity.

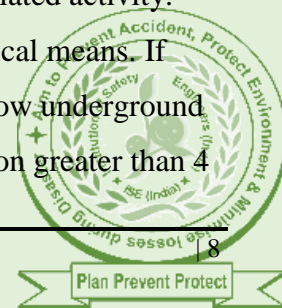
Objectives

- To Identify Potential sources of harm during excavation & trenching activity.
- Protect to person from potential source of Accident.
- Increase employees morale.
- To Ensure Compliance as per respective state & country law and regulation
- To control or minimise cost of accident and avoid from project delay.
- To achieve world class recognition and reputation among top industries.

1. Introduction:

Accident directly effect to construction industries business such as poor reputation, increase project cost and cause of project delay. Each and every year several people killed, several injured and caused of huge organisational losses due to not taking adequate safety control measure to minimise or control risk. Excavation and trenching related accident occur due to poor method of hazard identification and not taking adequate measure to control risk. Hazard identification is a Technique used to identify all potential sources of harm that may lead to cause of accident and associated with excavation and trenching related activity.

Excavation means a process of removal of earth surface or digging manually or by mechanical means. If Excavation that is deeper than width is known as trench. As per OSHA, Trench means narrow underground excavation that is deeper than its wide, and no wider than 4.5 meter. As per OSHA excavation greater than 4





feet deep is considered as Confined space and need to take additional safety control measures for such deep excavation.

Excavation is done by two methods, manually and by mechanical means. In manually excavation, excavation is carried out manually. By Mechanical means, heavy equipments such as excavator, JCB used to excavate the ground. Loose soil, undercutting, Adjacent structure nearby excavation area, equipment operation, availability of underground utilities, Sudden release of toxic gas during excavation are few major Potential source of harm.

2. Hazard during excavation work

Few major hazards associated with excavation & Trenching activity are follow:

- Fall of person inside excavation or trenches
- Fall of materials such debris, loose soil on workers body, those who are working inside excavation or trenches
- Underground utilities such as cables, water lines
- Availability of Toxic, flammable and explosive gases
- Potential to damage or collapse of nearby adjacent Structures
- Uneven surface or poorly placed materials nearby excavation area
- Tripping over equipment or other sources that is associated with heavy equipment operation

In few area where excavation running, presence of water may lead to cause of drowning, presence of snake in grassy area may cause of bite, are also potential source of harm.

Principle to prevent Excavation & Trenching related incident

Excavation & Trenching related incident can be controlled by following ways:

Hazard identification & Risk Assessment (HIRA): Before Starting Excavation and trenching work, Hazard identification and Risk assessment must be carried out and on based on hazard identification and risk assessment document, all safety control measure should be taken to minimise risk As low as reasonable practicable (ALARP).

Slope, support & Barricading: Ensure adequate slope as per soil condition. Provide adequate shoring as per need. Excavation should be done by benching & sloping method. Simple and multiple are basic two types of benching. Avoid undercutting of soil. Avoid to keep excavated soil or loose materials near edge of excavation. As per OSHA Temporary spoil must be keep away minimum 2 ft (0.61 m) from the surface edge of the excavation. Always take adequate control measure to prevent building or structure collapse that is present nearby of excavation or trenching work area.





Administrative control: Effective enforcement of Rules, Regulation & procedure help to control excavation and trenching related risk. Take work permits before starting excavation work and ensure all safety measure

has been taken as per safety checklist of work permit. Conduct Training on regular basis and display adequate Numbers of Traffic and safety signage. Carry out regular supervision through skill & experience person to avoid unsafe practices to motivate workforce and preventing excavation and trenching related incident.

Personnel Protective equipments (PPE): Always use suitable Personnel Protective equipments (PPE's) to protect to workers from hazard exposure. PPE's not eliminate to hazard, it only minimise the severity of Harm. Safety Helmet, Shoes, Fluorescent jacket, Apron, Safety goggle, Safety gloves, Ear plug, Ear muss, Safety mask are few example of PPE's .

Earth moving equipment safety: Ensure all Safety devices such as Proximity Warning and Alert System (PWAS), rear side mirror, Horn, brakes good working condition or not. Before starting equipment, be certain that it has been inspected and serviced according to the regular schedule and manufacturer guidelines. Shut off engines during refuelling or when equipment not in use. Ensure all rotating parts of equipment guarded. Keep Fire extinguisher with equipment. Depute Flagman with heavy equipment during operation. Avoid to take rest or stand near equipment operation area. Ensure operator fitness and their competency before assigning on duty.

Apart from this ensure water sprinkling arrangements to control dust generation, ensure dewatering whenever required and ensure good housekeeping on daily basis. Avoid to take rest in excavation area. Carry out manual excavation in operational plant or utilities area.

3. Summary:

This paper will help to identify excavation & trenching activity related hazard and ensuring suitable control measure to minimize risk. To prevent accident during excavation and trenching work, Carry out survey of site before starting work, check soil condition and on based on soil condition, ensure suitable slope of excavation, avoid undercutting, cutting must be done by slopping & benching method. Heavy equipment such as excavator should be good working and safe condition. Carry out regular supervision to motivate to operator and engage workers to prevent human error. Ensure good health of operator and impart training time to time to engage workmen. Effective implementation of Safety rules and procedure helps to prevent excavation and trenching related accident.

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Training Calendar

Plan Prevent Protect

ISE (India) Training Calendar (Jul-2019 to Sep-2019)

Plan Prevent Protect

Training Title/ Course	Duration	Schedule	Location	Remarks
ISE-SM (Safety Management at work place)	3 day or Min.24 hours Training	02/07/2019 to 04/07/2019	Raipur	
Integrated Lead Auditor (ISO 45001:2018, ISO 9001:2015, ISO 14001:2015)	6 Days	22/07/2019 to 27/07/2019	Raipur	
ISE- ICCOHSEM (International Certificate course in Occupational Health Safety & Env. Mgt.)	E-learning	Last Date of Registration 16/07/2019	Al-Hasa	Exam Date 02/08/2019
Lead Auditor ISO 45001:2018	5 day	06/08/2019 to 10/08/2019	Raipur	
ISE- ICCOHSEM (International Certificate course in Occupational Health Safety & Env. Mgt.)	Min. 96 hours Training	12/08/2019 to 21/08/2019	Raipur	Exam Date 22/08/2019
Workshop on Safety Management in Engineering Industries	2 days	22/08/2019 to 23/08/2019	Raipur	
ISE-SM (Safety Management at work place)	3 day or Min.24 hours Training	27/08/2019 to 29/08/2019	Raipur	
Lead Auditor ISO 14001:2015	5 day	03/09/2019 to 07/09/2019	Raipur	
ISE- ICCOHSEM (International Certificate course in Occupational Health Safety & Env. Mgt.)	Min. 96 hours Training	10/09/2019 to 19/09/2019	Delhi	Exam Date 20/09/2019
ISE- ICCOHSEM (International Certificate course in Occupational Health Safety & Env. Mgt.)	Min. 96 hours Training	18/09/2019 to 27/09/2019	Raipur	Exam Date 28/09/2019
ISE- ICCOHSEM (International Certificate course in Occupational Health Safety & Env. Mgt.)	E-learning	Last Date of Registration 05/09/2019	Dammam	Exam Date 27/09/2019
Diploma/ Post Diploma in industrial Safety	One year	December 2019-20	Raipur/ Rampur	
ISE- IDOHSEM (International Diploma in Occupational Health Safety & Env. Mgt.)	One year	Last Date of Registration 30/08/2019	Raipur	Exam Date December 2019 (Proposed)
ISE- IDOHSEM (International Diploma in Occupational Health Safety & Env. Mgt.)	E-learning	Last Date of Registration 30/08/2019	Al-Hasa	Exam Date December 2019 (Proposed)

Risk assessment & Control, Behaviour Based Safety, chemical safety in industries, Safety in construction industries, Scaffolding safety, Petroleum & Gas industries safety, Ergonomics, Mock Drill, HAZOP study, Emergency planning, Disaster Mgt., Fire Safety, Environmental Mgt., EIA Like Training also conduct as per organisational Need.

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