

## Event Report

**Event Name:** Quality Assurance and Quality Control

**Date of the Event:** 9<sup>TH</sup> September 2023

**Duration of the Event:** Whole day

**Venue:** Online Mode

**Name of the Event Coordinator:** Dr. Pappu Kumar and Mr. Faiyaz Alam

### **About the Event:**

The online event on "Quality Assurance and Quality Control in Highway Engineering" organized by Sandip University commenced on September 9, 2023, at 1:00 PM. The session was conducted in collaboration with the esteemed speaker, Mr. SK Suman, who is a renowned expert in the field of highway engineering.

### **About the Centre for Entrepreneurship and Incubation and Civil Engineering :**

Quality Assurance (QA) and Quality Control (QC) are two essential aspects of highway engineering that ensure the construction and maintenance of safe, durable, and efficient road infrastructure. These processes involve systematic measures to monitor, evaluate, and enhance the quality of materials, construction techniques, and project management throughout the lifecycle of a highway project.

Quality Assurance and Quality Control are indispensable components of highway engineering, ensuring that infrastructure projects meet safety, durability, and efficiency requirements. Their integration contributes to successful project outcomes, benefiting both the public and stakeholders involved in the transportation sector.

### **Outline of the Program:**

- The event began with a warm welcome from the organizers, emphasizing the importance of Quality Assurance (QA) and Quality Control (QC) in highway engineering projects.
- Mr. SK Suman commenced the session by providing an insightful overview of the fundamental concepts of QA and QC in highway construction. He shared valuable insights on industry best practices and highlighted the significance of quality management in ensuring safe and durable road infrastructure.
- The session delved into various techniques and methodologies employed in QA and QC for highways. Mr. Suman covered topics such as material testing, field inspections, and documentation processes crucial for maintaining high-quality standards.
- The audience was presented with real-world case studies, illustrating successful implementation of QA and QC measures in highway projects. This segment provided attendees with practical insights and demonstrated the positive impact of effective quality management.
- A lively question and answer session followed, allowing participants to engage with Mr. SK Suman and seek clarifications on specific topics related to QA and QC in highway engineering.
- The event concluded with closing remarks from the organizers, expressing gratitude to Mr. SK Suman for his valuable contribution. Attendees were encouraged to provide feedback on the session, enabling further improvement for future events.



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# SCHOOL OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Organising

## Expert Lecture on Quality Assurance & Quality Control

Coordinators: Mr. Faiyaz Alam, Dr. Pappu kumar

on **08<sup>th</sup> September 2023**

**Time: 1:00 PM**

**Mode: Online/Offline**

Venue: Naina Jha Auditorium Hall, B.Ed Building,  
Sandip University, Neelam Vidya Vihar, Sijoul, Madhubani

**Dr. S. K Suman**

Associate Professor  
NIT, Patna



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Sanjeev Kumar Suman (Presenting)

### INDIAN ROAD NETWORK

**NATIONAL HIGHWAYS**  
Central government

**STATE HIGHWAYS**  
State governments

**DISTRICT ROADS**  
Local governments, panchayats & municipalities

**RURAL ROADS**  
Local governments, panchayats & municipalities

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People

- All muted
- Add people
- PINTU KUMAR YADAV
- Praduman Kumar
- Pramod Sahu
- Pratik Sahu
- praveen kumar
- Principal Shri Ram polyt... Meeting host
- Rakesh Kumar Sahani
- Raviranjn Kumar
- Sanjeev Kumar Suman Meeting host
- Sanjeev Kumar Suman Presentation
- Santosh Kumar
- Shahjadi Begum
- Shivam Krishnan Civil

13:07 | wfw-ggjp-wvh

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Sanjeev Kumar Suman (Presenting)

### Composition of road network

Category	Percentage
Rural Roads	50%
Other PWD Roads	21%
Urban Roads	9%
Project Roads	6%
National Highway	2%
State Highway	3%

People

- All muted
- Add people
- Pramod Sahu
- Pratik Sahu
- praveen kumar
- Principal Shri Ram polyt... Meeting host
- Rakesh Kumar Sahani
- Ramesh kumar
- Raviranjn Kumar
- Sanjeev Kumar Suman Meeting host
- Sanjeev Kumar Suman Presentation
- Santosh Kumar
- Shahjadi Begum
- Shivam Krishnan Civil
- SUJEET KUMAR

13:08 | wfw-ggjp-wvh

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Sanjeev Kumar Suman (Presenting)

## What is construction management ?

- Construction management is a professional service that provides a project's owner(s) with effective management of the project's schedule, cost, **quality**, safety, scope and function.

Processes performed to define a new project or a phase

Establish the scope of the project, and define the course of action required to meet the objectives of the project or the phase

Processes used to regulate the progress and performance of the project. Identify corrective actions if required

Finalize all activities across all Process Groups to formally close the project or the phase

Initiation

Planning

Execution

Closure

Monitoring & Controlling

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Sanjeev Kumar Suman Meeting host

Sanjeev Kumar Suman Presentation

Santosh Kumar

Shahjadi Begum

Shivam Krishnan Civil

SUJEET KUMAR

surendra kumar

uday kumar

Sanjeev Kumar Su... HOD CE SUM Principal Shri Ram... Dr Pappu Kumar Viku Kumar

Monu Patel Shivam Krishnan ... 39 others keshav kumar

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Sanjeev Kumar Suman (Presenting)

## Basic Principle of Control Chart

Upper Control Limit

Center Line = Mean of the measured value

Lower Control Limit

Distance = three times the standard deviation

Measurement

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SUJEET KUMAR has left the meeting

Sanjeev Kumar ... PINTU KUMAR ... Dr Pappu Kumar Nausherwan R... Rajshekhhar Ku... Ashish kumar ... 18 others keshav kumar

14:06 | wfw-ggjp-wvh



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Sanjeev Kumar Suman (Presenting)

### The Root of all Evils

NEGLIGENCE

Non-compliance to specifications

Poor Supervision

No testing materials and system

Sanjeev Kumar Su... HOD CE SUM Principal Shri Ram... Dr Pappu Kumar PINTU KUMAR YA... Monu Patel Shivam Krishnan ... 35 others keshav kumar

13:14 | wfw-ggjp-wvh

People

All muted Add people

- Principal Shri Ram polyt... Meeting host
- Rakesh Kumar Sahani
- Raviranjn Kumar
- Sanjeev Kumar Suman Meeting host
- Sanjeev Kumar Suman Presentation
- Santosh Kumar
- Shivam Krishnan Civil
- SUJEET KUMAR
- surendra kumar
- uday kumar
- Vijay S Roy
- Viku Kumar

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Sanjeev Kumar Suman (Presenting)

### Quality Control and Quality Assurance

- Quality Control (QC) : An **evaluation** to indicate needed corrective responses, the act of guiding a process in which variability is attributed.
- Quality Assurance (QA) : The **planned and systematic** activities implemented in a quality system so that quality requirements for a product or service will be fulfilled.

QC + QA = Quality Assurance - A Road

Sanjeev Kumar Su... HOD CE SUM Principal Shri Ram... Dr Pappu Kumar PINTU KUMAR YA... Raviranjn Kumar Shivam Krishnan ... 29 others

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People

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- praveen kumar
- Principal Shri Ram polyt... Meeting host
- Rakesh Kumar Sahani
- Raviranjn Kumar
- Sanjeev Kumar Suman Meeting host
- Sanjeev Kumar Suman Presentation
- Santosh Kumar
- Shivam Krishnan Civil
- SUJEET KUMAR
- surendra kumar
- uday kumar
- Vijay S Roy

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Sanjeev Kumar Suman (Presenting)

## Comparison of LWD and Geogauge device

Purpose	LWD	Geogauge
Mode of measurement	Geophone or accelerometer	Velocity (frequency of small dynamic force)
Standards	ASTM E2583	ASTM D6758
Output	Deformation modulus	Modulus
Influence depth	0.9-2 times the plate diameter	220-310 mm
Calibration of device	Required	Calibration plate
Durability	Satisfactory	Satisfactory
Operator skill and training	Moderate	Moderate
Operation	Easy	Easy
Destructive	No	No
Portability	Yes	Yes
Storing data	Yes	Yes
Man power	One	One
GPS	Yes	Yes
Advantages	Rapid results Appropriate for all materials	Quick and non-intrusive Simple to use and very light
Disadvantages	High inconsistency in soft weak soils Rubber pad not suitable below 5°C Shallow Influence depth	Highly sensitive to seating conditions Shallow Influence depth

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Pooja Jha has left the meeting

Sanjeev Kumar ... PINTU KUMAR ... Dr Pappu Kumar Santosh Kumar Rajshekhhar Ku... Ashish kumar ... 17 others keshav kumar

14:01 | wfw-ggjp-wvh

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Sanjeev Kumar Suman (Presenting)

## Control Chart

- Control charts determine whether a process is stable and in control or whether it is out of control and in need of adjustment.
- Uses of control charts
  - Used as a technique for improving productivity.
  - Used as an effective measure to prevent defects.
  - Used to avoid unnecessary process adjustments.
  - Used to provide diagnostic information.
  - Used to provide information related to process capability.

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Sanjeev Kumar ... PINTU KUMAR ... Dr Pappu Kumar akashdeep ku... Rajshekhhar Ku... Ashish kum Nausherwan Raunaque has joined

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**Conclusion:**

The online event on Quality Assurance and Quality Control in Highway Engineering was a resounding success, thanks to the invaluable insights shared by Mr. SK Suman. The session provided participants with a comprehensive understanding of the crucial role that QA and QC play in the construction and maintenance of highways. The practical examples and engaging Q&A session further enriched the learning experience.

Sandip University extends its gratitude to Mr. SK Suman for his expertise and to all the participants for their active involvement, making this event a fruitful endeavor towards promoting excellence in highway engineering.

Prepared by:  
Department of Civil Engineering  
Sandip University, Sijoul, Madhubani  
Date: 9<sup>th</sup> September 2023