



# WE104: Supervision and Control Skills of Drainage System Network



## Training Description:

This intensive training course is designed to provide participants with a detailed and up-to-date overview of supervision and control skills of drainage system network. It covers the earth closet, water closet and those who are involved in the development of sanitation; the types of traps and gulleys including buchan traps and interceptor (Windsor) traps; the poor position of waste pipe, blocked gulleys and cracked; the blockages, grease blockages, cracks and collapse; the blockages, grease build up, lost rodding eye stopper and discharge through rodding eye; and the types of pipes, pipe joints, pipe sizes and fall, self-cleansing velocity, laying of pipes and pipe strength.

This course will also discuss the blockages, grease build up, cracks, partial collapse and other issues during pipework; the access to drainage and during rodding eyes and inspection chambers; the septic tanks, cesspools and miscellaneous drainage elements; the remedies of rodding, electromechanical, chemical, high pressure jetting, excavation and repair and relining systems, dye testing, smoke testing, air testing, water testing and CCTV surveys; and the design of subsurface drainage system covering the removal of drainage water design of open and closed underdrains.

During this interactive course, participants will learn the surface drainage system, surface drainage, general design, considerations of outfall culvert, design consideration of tidal channels, channel design and outfall sluices; the water-logging and salinity covering the causes of water logging problem, causes of the salinity problem, saltwater intrusion in coastal aquifers and the causes of the drainage problem; the remedial measures to combat water logging salinity; the importance of drainage projects; the remote sensing and the technology for food control; planning food control measures and flood warning; the operations management, control strategies, physical control structures, control concepts, control at bifurcations, operating techniques and remote and automatic controls; integrating measurement and control; and the performance monitoring and evaluation.

## Training Objectives:

**By the end of the training, participants will be able to:**

- ✓ Apply and gain a good working knowledge on drainage system supervision
- ✓ Discuss the earth closet, water closet and those who are involved in the development of sanitation
- ✓ Identify the types of traps and gulleys including buchan traps and interceptor (Windsor) traps
- ✓ Avoid the poor position of waste pipe, blocked gulleys and cracked gulleys as well as blockages, grease blockages, cracks and collapse with buchan traps
- ✓ Avoid blockages, grease build up, lost rodding eye stopper and discharge through rodding eye
- ✓ Identify the various types of pipes, pipe joints, pipe sizes and fall, self-cleansing velocity, laying of pipes and pipe strength
- ✓ Discuss the blockages, grease build up, cracks, partial collapse and other issues during pipework
- ✓ Recognize access to drainage using rodding eyes and inspection chambers
- ✓ Discuss septic tanks, cesspools and miscellaneous drainage elements
- ✓ Identify the remedies of rodding, electromechanical, chemical, high pressure jetting, excavation and repair and relining systems
- ✓ Carryout dye testing, smoke testing and air testing, water testing and CCTV surveys
- ✓ Recognizer the design of subsurface and drainage system covering the removal of drainage water and design of open and closed underdrains





- ✓ Discuss surface drainage system, surface drainage channel design, general design consideration of outfall, culvert design consideration of tidal channels and outfall sluices
- ✓ Illustrate the water-logging and salinity covering the causes of water logging problem, causes of the salinity problem, saltwater intrusion in coastal aquifers and the causes of the drainage problem
- ✓ Identify the remedial measures to combat water logging salinity and identify the importance of drainage projects
- ✓ Apply remote sensing, recognize technology for flood control and plan flood control measures and flood warning
- ✓ Carryout operations management as well as a control strategy covering physical control structures, control concepts, control at bifurcations, operating techniques and remote and automatic controls
- ✓ Integrate measurement and control and apply performance monitoring and evaluation

### Training Designed for:

This course is designed in all significant aspects and considerations of supervision and control skills of drainage system network for supervisors, superintendents and engineers.

### Training Program:

#### DAY ONE:

- ❖ Pre-Test
- ❖ Introduction
- ❖ History
  - Introduction
  - Earth Closet
  - Water Closet
  - Important People in the Development of Sanitation
- ❖ Traps & Gulleys
  - Types of Traps & Gulleys
  - Buchan Traps
  - Interceptor (Windsor) Traps
- ❖ What Goes Wrong with Gulleys
  - Poor Position of Waste Pipe
  - Blocked Gulleys
  - Cracked Gulleys
- ❖ What Goes Wrong with Buchan Traps
  - Blockages
  - Grease Blockages
  - Cracks & Collapse

#### DAY TWO:

- ❖ What Goes Wrong with Windsor Traps
  - Blockages & Grease Build Up
  - Lost Rodding Eye Stopper & Discharge Through Rodding Eye



❖ **Pipework**

- Types of Pipes
- Pipe Joints
- Pipe Sizes & Fall
- Self-Cleansing Velocity
- Laying of Pipes
- Pipe Strength

❖ **What Goes with Pipework**

- Blockages
- Grease Build Up
- Cracks & Partial Collapse
- Other Issues

❖ **Access to Drainage**

- Rodding Eyes
- What Goes Wrong with Rodding Eyes
- Inspection Chambers

DAY THREE:

❖ **Septic Tanks**

❖ **Cesspools**

❖ **Miscellaneous Drainage Elements**

DAY FOUR:

❖ **What Can be Done – The Remedies**

- Rodding
- Electromechanical
- Chemical
- High Pressure Jetting
- Excavation & Repair
- Relining Systems

❖ **Testing Drains**

- Dye Testing
- Smoke Tests
- Air Tests
- Water Tests
- CCTV Surveys

❖ **Practical Sessions**

- This hands-on and includes real-life case studies and exercises

DAY FIVE:

❖ **Operation Management**

❖ **Control Strategies**

- Physical Control Structures
- Control Concepts
- Control Bifurcations
- Operating Techniques



- Remote & Automatic Controls
- ❖ Integrating Measurement & Control
- ❖ Performance Monitoring & Evaluation
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

### Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request”.

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

### Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

### Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

### Training Fees:

**As per the course location** - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01<sup>st</sup> of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

### Training Timings:

#### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

**For training registrations or in-house enquiries, please contact:**

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Training & Career Development Department

