# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

**IS : 2720 (Part -5)**

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : SPT

Location : BH-2(Tangri River-Saharanpur)

Depth : 43.5m

Date Of Testing : 21.09.12

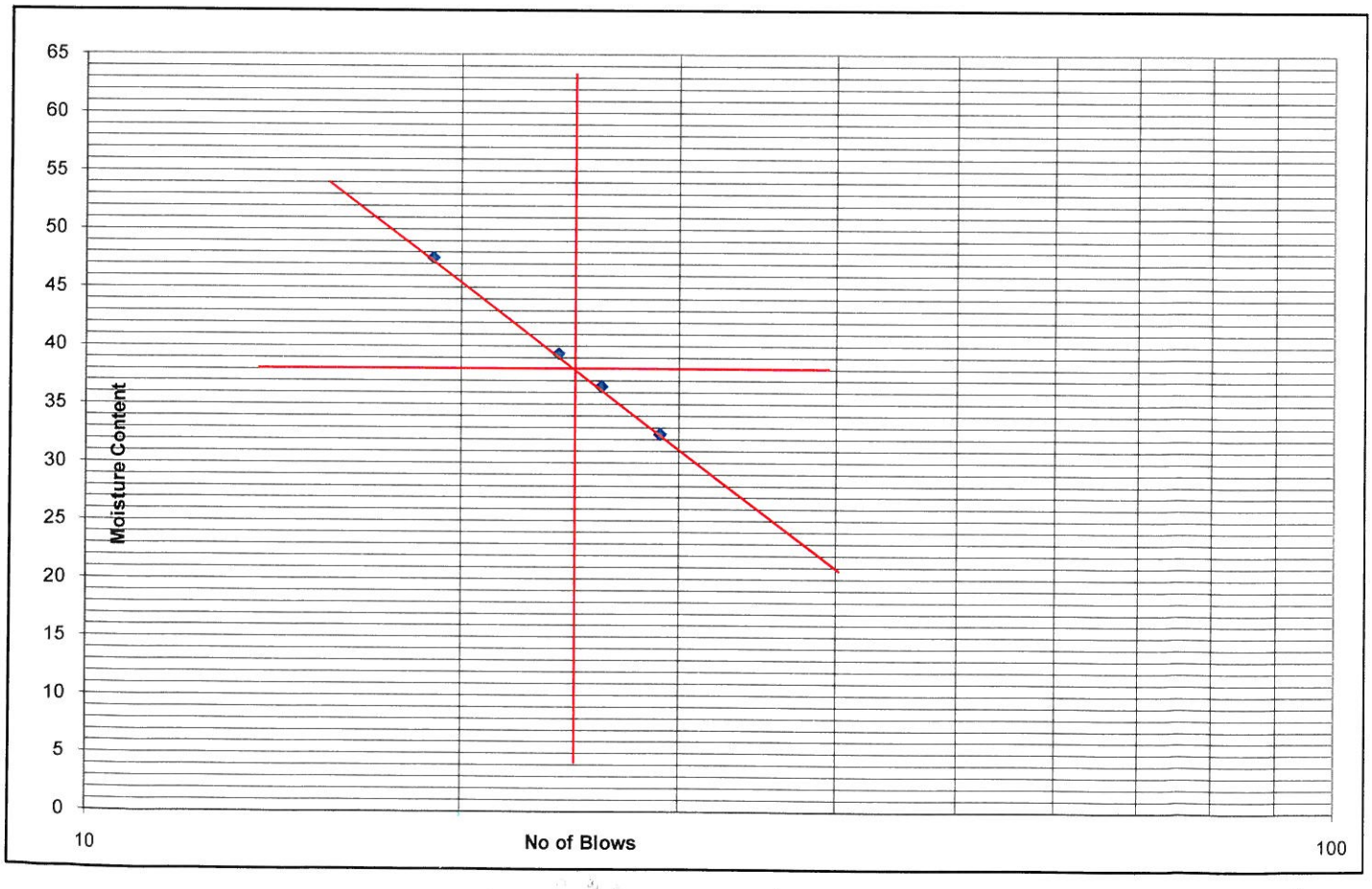
Sampled by : T. K. Das

Tested by : K.C.Sahoo

| Number of Blows | 29 | 26 | 24 | 19 | Plastic Limit | |
|---|---|---|---|---|---|---|
| Container No. | C25 | C26 | C27 | C28 | C29 | C30 |
| Container Weight (gm) (W1) | 35.83 | 33.36 | 31.2 | 39.42 | 34.86 | 30.76 |
| Container + Wt. of wet soil (gm) (W2) | 91.96 | 110.66 | 109.86 | 109.69 | 90.31 | 89.74 |
| Wt of Container + Wt. of oven dry soil (gm) (W3) | 78.21 | 89.98 | 87.65 | 87.05 | 81.63 | 80.67 |
| Wt. Of water (gm) (W2-W1)-(W3-W1) | 13.75 | 20.68 | 22.21 | 22.64 | 8.68 | 9.07 |
| Wt. of oven dry soil (gm) (W3-W1) | 42.38 | 56.62 | 56.45 | 47.63 | 46.77 | 49.91 |
| Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100 | **32.44** | **36.52** | **39.35** | **47.53** | **18.56** | **18.17** |

**Result Summary**

| | | |
|---|---|---|
| Liquid Limit (WL) | 38 | % |
| Plastic Limit (Wp) | 18 | % |
| Plasticity Index (Ip) | 20 | % |




4417

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

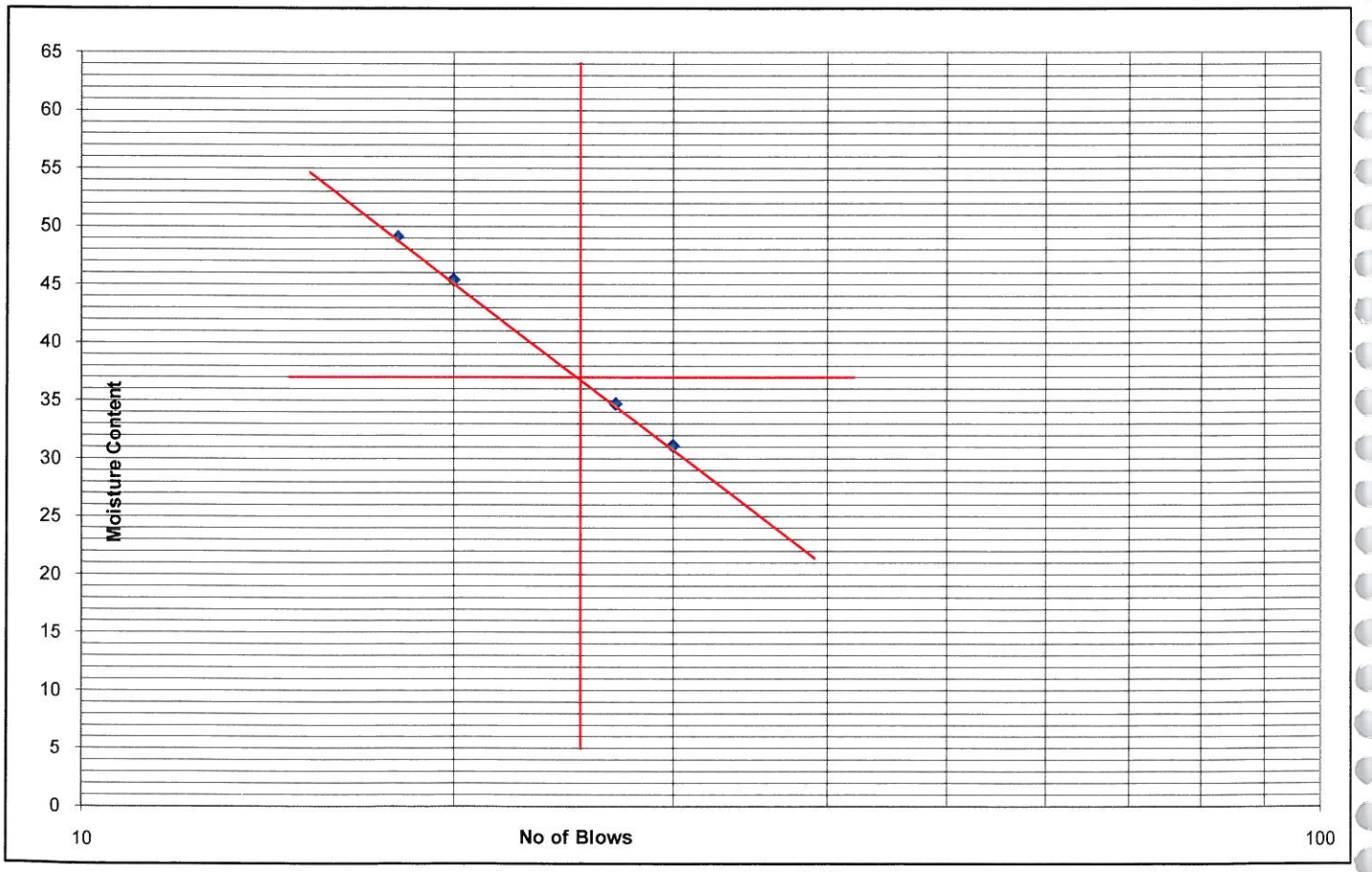
### IS : 2720 (Part -5)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 21.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 45.0m | Tested by | : | K.C.Sahoo |

| Number of Blows | 30 | 27 | 20 | 18 | Plastic Limit | |
|---|---|---|---|---|---|---|
| Container No. | C31 | C32 | C33 | C34 | C35 | C36 |
| Container Weight (gm) (W1) | 30.8 | 38.08 | 32.47 | 31.56 | 37.73 | 30.99 |
| Container + Wt. of wet soil (gm) (W2) | 93.39 | 105.31 | 109.86 | 114.31 | 89.65 | 89.85 |
| Wt of Container + Wt. of oven dry soil (gm) (W3) | 78.53 | 87.98 | 85.69 | 87.05 | 81.63 | 80.67 |
| Wt. Of water (gm) (W2-W1)-(W3-W1) | 14.85 | 17.33 | 24.17 | 27.26 | 8.02 | 9.18 |
| Wt. of oven dry soil (gm) (W3-W1) | 47.73 | 49.90 | 53.22 | 55.49 | 43.90 | 49.68 |
| Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100 | **31.12** | **34.73** | **45.41** | **49.13** | **18.26** | **18.47** |

**Result Summary**

| | | |
|---|---|---|
| Liquid Limit (WL) | 37 | % |
| Plastic Limit (Wp) | 18 | % |
| Plasticity Index (Ip) | 19 | % |




4413

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

### IS : 2720 (Part -5)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : SPT

Location : BH-2(Tangri River-Saharanpur)

Depth : 50.0m

Date Of Testing : 21.09.12

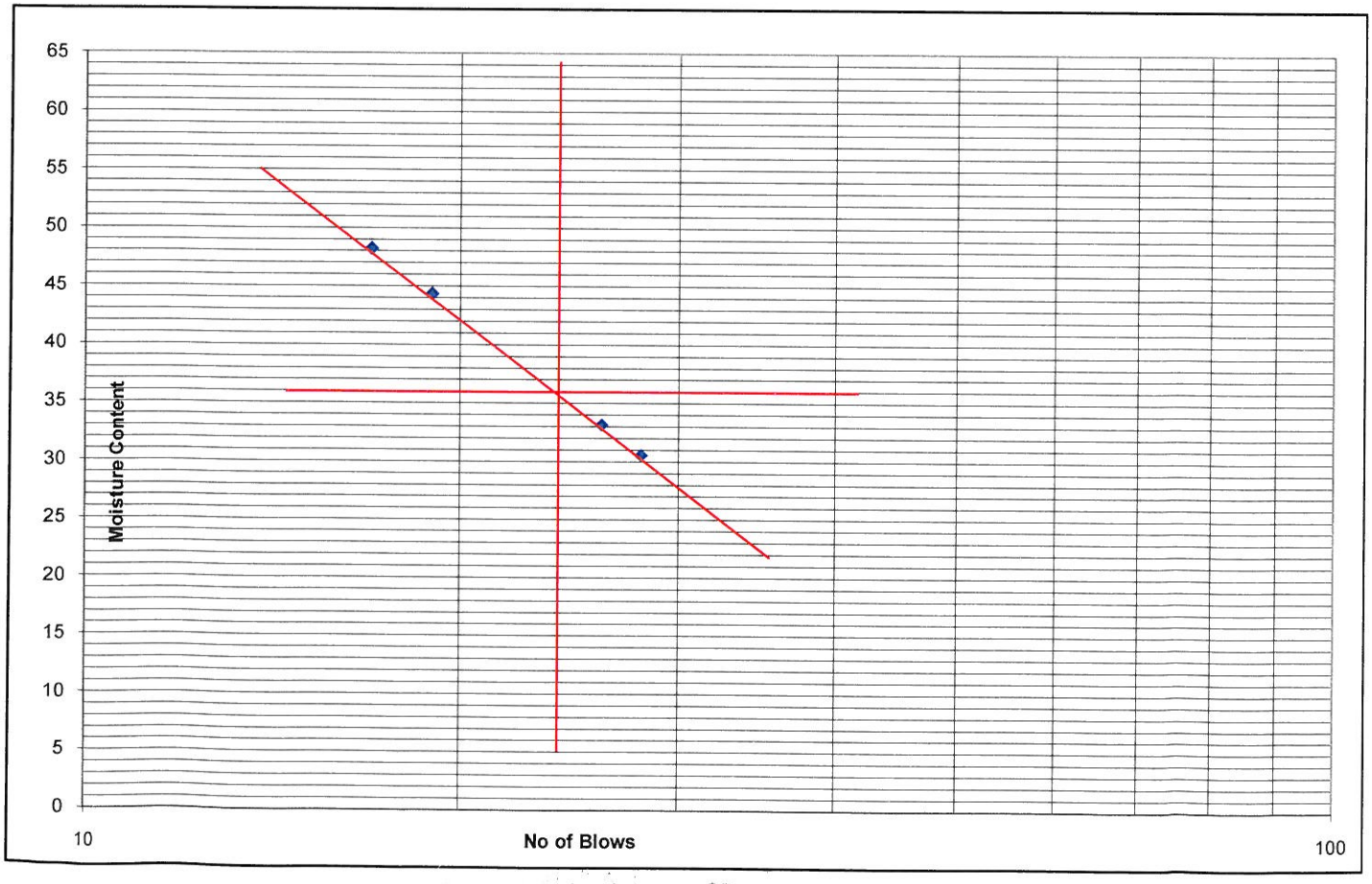
Sampled by : T. K. Das

Tested by : K.C.Sahoo

| Number of Blows | 28 | 26 | 19 | 17 | Plastic Limit | |
|---|---|---|---|---|---|---|
| Container No. | C37 | C38 | C39 | C40 | C41 | C42 |
| Container Weight (gm) (W1) | 38.52 | 37.22 | 39.43 | 30.5 | 37.6 | 35.55 |
| Container + Wt. of wet soil (gm) (W2) | 90.76 | 104.81 | 106.21 | 114.31 | 89.27 | 88.47 |
| Wt of Container + Wt. of oven dry soil (gm) (W3) | 78.53 | 87.98 | 85.69 | 87.05 | 81.63 | 80.67 |
| Wt. Of water (gm) (W2-W1)-(W3-W1) | 12.23 | 16.83 | 20.52 | 27.26 | 7.63 | 7.80 |
| Wt. of oven dry soil (gm) (W3-W1) | 40.01 | 50.76 | 46.26 | 56.55 | 44.03 | 45.12 |
| Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100 | **30.56** | **33.16** | **44.35** | **48.21** | **17.34** | **17.28** |

**Result Summary**

| | | |
|---|---|---|
| Liquid Limit (WL) | 36 | % |
| Plastic Limit (Wp) | 17 | % |
| Plasticity Index (Ip) | 19 | % |




4419

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

| | | | | | |
|---|---|---|---|---|---|
| Client | : DFCC | | | | |
| Project Name | : G.I For 3 Nos. Important Bridges | Date Of Testing | : | 20.09.12 | |
| Type of Sample | : UDS | Tested by | : | K.C Sahoo | |
| Location | : BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das | |
| Depth | : 5.0m | Weight of Sample | : | 10gm | |

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 10.0 | 0.00 | 0 | 5 | 50% |
| 2 | 10 | 10.5 | 0.50 | 5 | | |
| 3 | 10 | 11.0 | 1.00 | 10 | | |

**Remarks:**

Lab Manager

Checked By:

4420

# Arki Techno Consultants (India) Pvt.Ltd

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 8.0m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 10.0 | 0.00 | 0 | 3 | 50% |
| 2 | 10 | 10.0 | 0.00 | 0 | | |
| 3 | 10 | 10.9 | 0.90 | 9 | | |

**Remarks:**

Lab Manager

Checked By:

4421

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 10.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.0 | 1.00 | 10 | 5 | 50% |
| 2 | 10 | 10.5 | 0.50 | 5 | | |
| 3 | 10 | 10.0 | 0.00 | 0 | | |

**Remarks:**

Lab Manager

Checked By:

4422

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 13.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.0 | 1.00 | 10 | 5 | 50% |
| 2 | 10 | 10.0 | 0.00 | 0 | | |
| 3 | 10 | 10.5 | 0.50 | 5 | | |

**Remarks:**

Lab Manager

Checked By:

4423

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | Date Of Testing | : | 20.09.12 |
| Type of Sample | : | UDS | Tested by | : | K.C Sahoo |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 16.5m | Weight of Sample | : | 10gm |

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 12.0 | 2.00 | 20 | 15 | 50% |
| 2 | 10 | 11.0 | 1.00 | 10 | | |
| 3 | 10 | 11.5 | 1.50 | 15 | | |

**Remarks:**

Lab Manager

Checked By:

4431

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 19.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.0 | 1.00 | 10 | 17 | 50% |
| 2 | 10 | 12.0 | 2.00 | 20 | | |
| 3 | 10 | 12.0 | 2.00 | 20 | | |

**Remarks:**

Lab Manager

Checked By:

4425

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 22.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 12.0 | 2.00 | 20 | 15 | 50% |
| 2 | 10 | 11.0 | 1.00 | 10 | | |
| 3 | 10 | 11.5 | 1.50 | 15 | | |

**Remarks:**

Lab Manager

Checked By:

4426

# Arki Techno Consultants (India) Pvt.Ltd

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 25.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.0 | 1.00 | 10 | 16 | 50% |
| 2 | 10 | 11.5 | 1.50 | 15 | | |
| 3 | 10 | 12.3 | 2.30 | 23 | | |

**Remarks:**

Lab Manager

Checked By:

4427

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 28.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.5 | 1.50 | 15 | 18 | 50% |
| 2 | 10 | 11.9 | 1.90 | 19 | | |
| 3 | 10 | 12.0 | 2.00 | 20 | | |

**Remarks:**

Lab Manager

Checked By:

4428

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-2(Tangri River-Saharanpur)

Depth : 31.5m

Date Of Testing : 20.09.12

Tested by : K.C Sahoo

Sampled by : T. K. Das

Weight of Sample : 10gm

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.5 | 1.50 | 15 | 17 | 50% |
| 2 | 10 | 11.5 | 1.50 | 15 | | |
| 3 | 10 | 12.1 | 2.10 | 21 | | |

**Remarks:**

Lab Manager

Checked By:

4429

# Arki Techno Consultants (India) Pvt.Ltd

## N 3/91, IRC Village, Bhubaneswar

### DIFFERENTIAL FREE SWELL INDEX OF SOIL (D.F.S.)

### AS PER IS: 2720 (PART - 40)

| | | | | | |
|---|---|---|---|---|---|
| Client | : DFCC | | | | |
| Project Name | : G.I For 3 Nos. Important Bridges | Date Of Testing | : | 20.09.12 | |
| Type of Sample | : UDS | Tested by | : | K.C Sahoo | |
| Location | : BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das | |
| Depth | : 34.5m | Weight of Sample | : | 10gm | |

| SAMPLE NO. | VOLUME IN KEROSIN OIL Vk | VOLUME IN WATER Vd | SWELL (Vd-Vk) | SWELL INDEX = (Vd-Vk)/ (Vk)*100 (%) | AVERAGE SWELL % | SPECIFIC LIMIT |
|---|---|---|---|---|---|---|
| 1 | 10 | 11.8 | 1.80 | 18 | 16 | 50% |
| 2 | 10 | 10.5 | 0.50 | 5 | | |
| 3 | 10 | 12.5 | 2.50 | 25 | | |

**Remarks:**

Lab Manager

Checked By:

4430

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 3.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 36.82 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.55 | |
| 4 | Weight of bottle full of water W4 in gm | 133.25 | |
| 5 | Weight of dry soil (W2-W1)in gm | 5.30 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.00 | |
| 7 | Specific Gravity G = (5) / (6) | 2.65 | |

Lab Manager

Checked By

4431

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 5.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.82 | |
| 3 | Weight of bottle with soil and water W3 in gm | 135.76 | |
| 4 | Weight of bottle full of water W4 in gm | 131.83 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.30 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.37 | |
| 7 | Specific Gravity G = (5) / (6) | 2.66 | |

Lab Manager

Checked By

4432

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 6.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.63 | |
| 3 | Weight of bottle with soil and water W3 in gm | 137.52 | |
| 4 | Weight of bottle full of water W4 in gm | 133.08 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.11 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.67 | |
| 7 | Specific Gravity G = (5) / (6) | 2.66 | |

Lab Manager

Checked By

4433

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 8.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 36.75 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.95 | |
| 4 | Weight of bottle full of water W4 in gm | 133.69 | |
| 5 | Weight of dry soil (W2-W1)in gm | 5.23 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 1.97 | |
| 7 | Specific Gravity G = (5) / (6) | 2.66 | |

Lab Manager

Checked By

4434

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 9.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.26 | |
| 3 | Weight of bottle with soil and water W3 in gm | 137.84 | |
| 4 | Weight of bottle full of water W4 in gm | 133.62 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.74 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.52 | |
| 7 | Specific Gravity G = (5) / (6) | 2.67 | |

Lab Manager

Checked By

4435

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 10.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.93 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.58 | |
| 4 | Weight of bottle full of water W4 in gm | 132.58 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.41 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.41 | |
| 7 | Specific Gravity G = (5) / (6) | 2.66 | |

Lab Manager

Checked By

4436

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 15.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.52 | |
| 3 | Weight of bottle with soil and water W3 in gm | 135.73 | |
| 4 | Weight of bottle full of water W4 in gm | 131.35 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.00 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.62 | |
| 7 | Specific Gravity G = (5) / (6) | 2.67 | |

Lab Manager

Checked By

4437

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 16.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.66 | |
| 3 | Weight of bottle with soil and water W3 in gm | 135.84 | |
| 4 | Weight of bottle full of water W4 in gm | 131.35 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.14 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.65 | |
| 7 | Specific Gravity G = (5) / (6) | 2.69 | |

Lab Manager

Checked By

4438

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 18.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.88 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.83 | |
| 4 | Weight of bottle full of water W4 in gm | 132.83 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.36 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.36 | |
| 7 | Specific Gravity G = (5) / (6) | 2.69 | |

Lab Manager

Checked By

4439

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 19.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.83 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.27 | |
| 4 | Weight of bottle full of water W4 in gm | 131.69 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.31 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.73 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4440

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 22.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.69 | |
| 3 | Weight of bottle with soil and water W3 in gm | 135.87 | |
| 4 | Weight of bottle full of water W4 in gm | 131.99 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.17 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.29 | |
| 7 | Specific Gravity G = (5) / (6) | 2.69 | |

Lab Manager

Checked By

4441

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 24.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.76 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.55 | |
| 4 | Weight of bottle full of water W4 in gm | 132.01 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.24 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.70 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4442

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 25.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.96 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.24 | |
| 4 | Weight of bottle full of water W4 in gm | 132.20 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.44 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.40 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4443

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 27.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.62 | |
| 3 | Weight of bottle with soil and water W3 in gm | 135.79 | |
| 4 | Weight of bottle full of water W4 in gm | 131.35 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.10 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.66 | |
| 7 | Specific Gravity G = (5) / (6) | 2.67 | |

Lab Manager

Checked By

4441

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 28.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.68 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.75 | |
| 4 | Weight of bottle full of water W4 in gm | 132.89 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.16 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.30 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4445

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 30.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.53 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.81 | |
| 4 | Weight of bottle full of water W4 in gm | 132.42 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.01 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.62 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4446

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 31.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.94 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.35 | |
| 4 | Weight of bottle full of water W4 in gm | 131.70 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.42 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.77 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4447

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 33.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.92 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.75 | |
| 4 | Weight of bottle full of water W4 in gm | 132.73 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.40 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.38 | |
| 7 | Specific Gravity G = (5) / (6) | 2.69 | |

Lab Manager

Checked By

4448

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 34.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.53 | |
| 3 | Weight of bottle with soil and water W3 in gm | 137.23 | |
| 4 | Weight of bottle full of water W4 in gm | 132.83 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.01 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.61 | |
| 7 | Specific Gravity G = (5) / (6) | 2.69 | |

Lab Manager

Checked By

4449

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 43.5m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 37.53 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.73 | |
| 4 | Weight of bottle full of water W4 in gm | 132.96 | |
| 5 | Weight of dry soil (W2-W1)in gm | 6.01 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.24 | |
| 7 | Specific Gravity G = (5) / (6) | 2.68 | |

Lab Manager

Checked By

4450

# Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## DETERMINATION OF SPECIFIC GRAVITY BY DENSITY BOTTLE METHOD AS PER IS : 2386 (Part -2)

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date Of Testing | : | 20.09.12 |
| Location | : | BH-2(Tangri River-Saharanpur) | Sampled by | : | T. K. Das |
| Depth | : | 45.0m | Tested by | : | K.C Sahoo |

| Sl. No. | Observations | 1 | Remarks |
|---|---|---|---|
| 1 | Weight of density bottle W1 in gm | 31.52 | |
| 2 | Weight of bottle with dry soil in W2 gm | 38.57 | |
| 3 | Weight of bottle with soil and water W3 in gm | 136.38 | |
| 4 | Weight of bottle full of water W4 in gm | 131.95 | |
| 5 | Weight of dry soil (W2-W1)in gm | 7.05 | |
| 6 | Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm | 2.62 | |
| 7 | Specific Gravity G = (5) / (6) | 2.69 | |

Lab Manager

Checked By

4451

# ARKI TECHNO CONSULTANTS (I) PVT. LTD.

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## DETERMINATION OF BULK DENSITY & MOISTURE CONTENT OF SOIL SAMPLE

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Location : BH-2(Tangri River-Saharanpur)

| Sl No. | BH No. | Depth in m | Type of Sample | Date of Testing | Weight of Container in gm | Diameter of Sample in cm | Length of Sample in cm | Volume of Sample in cc | Weight of Container + Wet Soil in gm | Weight of Container + Dry soil in gm | Weight of Dry soil in gm | Weight of water in gm | Moisture Content in % | Bulk Density in gm/cc | Dry Density in gm/cc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BH-2 (Tangri River-Saharanpur) | 3.00 | SPT | 20.09.12 | 63.52 | 3.8 | 7 | 79.39 | 208.01 | 192.94 | 129.42 | 15.07 | 11.64 | 1.82 | 1.63 |
| 2 | | 5.00 | UDS | 20.09.12 | 62.83 | 3.8 | 7 | 79.39 | 225.58 | 197.95 | 135.12 | 27.63 | 20.45 | 2.05 | 1.70 |
| 3 | | 9.00 | SPT | 20.09.12 | 62.58 | 3.8 | 7 | 79.39 | 220.57 | 192.97 | 130.39 | 27.59 | 21.16 | 1.99 | 1.64 |
| 4 | | 10.50 | UDS | 20.09.12 | 63.49 | 3.8 | 7 | 79.39 | 227.03 | 200.33 | 136.84 | 26.70 | 19.51 | 2.06 | 1.72 |
| 5 | | 15.00 | SPT | 20.09.12 | 64.73 | 3.8 | 7 | 79.39 | 222.72 | 193.16 | 128.43 | 29.55 | 23.01 | 1.99 | 1.62 |
| 6 | | 16.50 | UDS | 20.09.12 | 62.44 | 3.8 | 7 | 79.39 | 221.22 | 192.42 | 129.98 | 28.80 | 22.16 | 2.00 | 1.64 |
| 7 | | 18.00 | SPT | 20.09.12 | 64.50 | 3.8 | 7 | 79.39 | 224.87 | 194.44 | 129.94 | 30.43 | 23.42 | 2.02 | 1.64 |
| 8 | | 19.50 | UDS | 20.09.12 | 63.55 | 3.8 | 7 | 79.39 | 225.51 | 196.61 | 133.06 | 28.90 | 21.72 | 2.04 | 1.68 |
| 9 | | 22.50 | UDS | 20.09.12 | 62.71 | 3.8 | 7 | 79.39 | 220.70 | 191.89 | 129.18 | 28.81 | 22.30 | 1.99 | 1.63 |
| 10 | | 24.00 | SPT | 20.09.12 | 62.83 | 3.8 | 7 | 79.39 | 230.34 | 197.08 | 134.25 | 33.27 | 24.78 | 2.11 | 1.69 |
| 11 | | 25.50 | UDS | 20.09.12 | 61.43 | 3.8 | 7 | 79.39 | 224.97 | 197.41 | 135.98 | 27.56 | 20.27 | 2.06 | 1.71 |
| 12 | | 27.00 | SPT | 20.09.12 | 62.22 | 3.8 | 7 | 79.39 | 221.79 | 193.21 | 130.99 | 28.58 | 21.82 | 2.01 | 1.65 |
| 13 | | 31.50 | UDS | 20.09.12 | 62.48 | 3.8 | 7 | 79.39 | 226.82 | 196.31 | 133.83 | 30.51 | 22.80 | 2.07 | 1.69 |
| 14 | | 33.00 | SPT | 20.09.12 | 63.27 | 3.8 | 7 | 79.39 | 234.75 | 201.66 | 138.39 | 33.09 | 23.91 | 2.16 | 1.74 |
| 15 | | 43.50 | SPT | 20.09.12 | 60.35 | 3.8 | 7 | 79.39 | 234.21 | 202.93 | 142.58 | 31.28 | 21.94 | 2.19 | 1.80 |
| 16 | | 45.00 | SPT | 20.09.12 | 62.73 | 3.8 | 7 | 79.39 | 237.39 | 205.81 | 143.08 | 31.58 | 22.07 | 2.20 | 1.80 |

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 1.5m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 62.04

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 30.43 | 30.43 | 30.43 | 69.57 |
| 0.425 | 22.64 | 22.64 | 53.07 | 46.93 |
| 0.075 | 8.97 | 8.97 | 62.04 | 37.96 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 62.04 **Silt and clay %** 37.96

**Remarks :-**

Lab Manager

4453

Checked By

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 3.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 45.51

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 22.48 | 22.48 | 22.48 | 77.52 |
| 0.425 | 17.24 | 17.24 | 39.72 | 60.28 |
| 0.075 | 5.79 | 5.79 | 45.51 | 54.49 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 45.51 **Silt and clay %** 54.49

**Remarks :-**

Lab Manager Checked By

4451

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 6.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.14

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.08 | 0.08 | 0.08 | 99.92 |
| 0.425 | 0.05 | 0.05 | 0.13 | 99.87 |
| 0.075 | 0.01 | 0.01 | 0.14 | 99.86 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.14 **Silt and clay %** 99.86

**Remarks :-**

Lab Manager

Checked By

TA - 4455

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 7.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 5.61

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 2.95 | 2.95 | 2.95 | 97.05 |
| 0.425 | 2.27 | 2.27 | 5.22 | 94.78 |
| 0.075 | 0.39 | 0.39 | 5.61 | 94.39 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

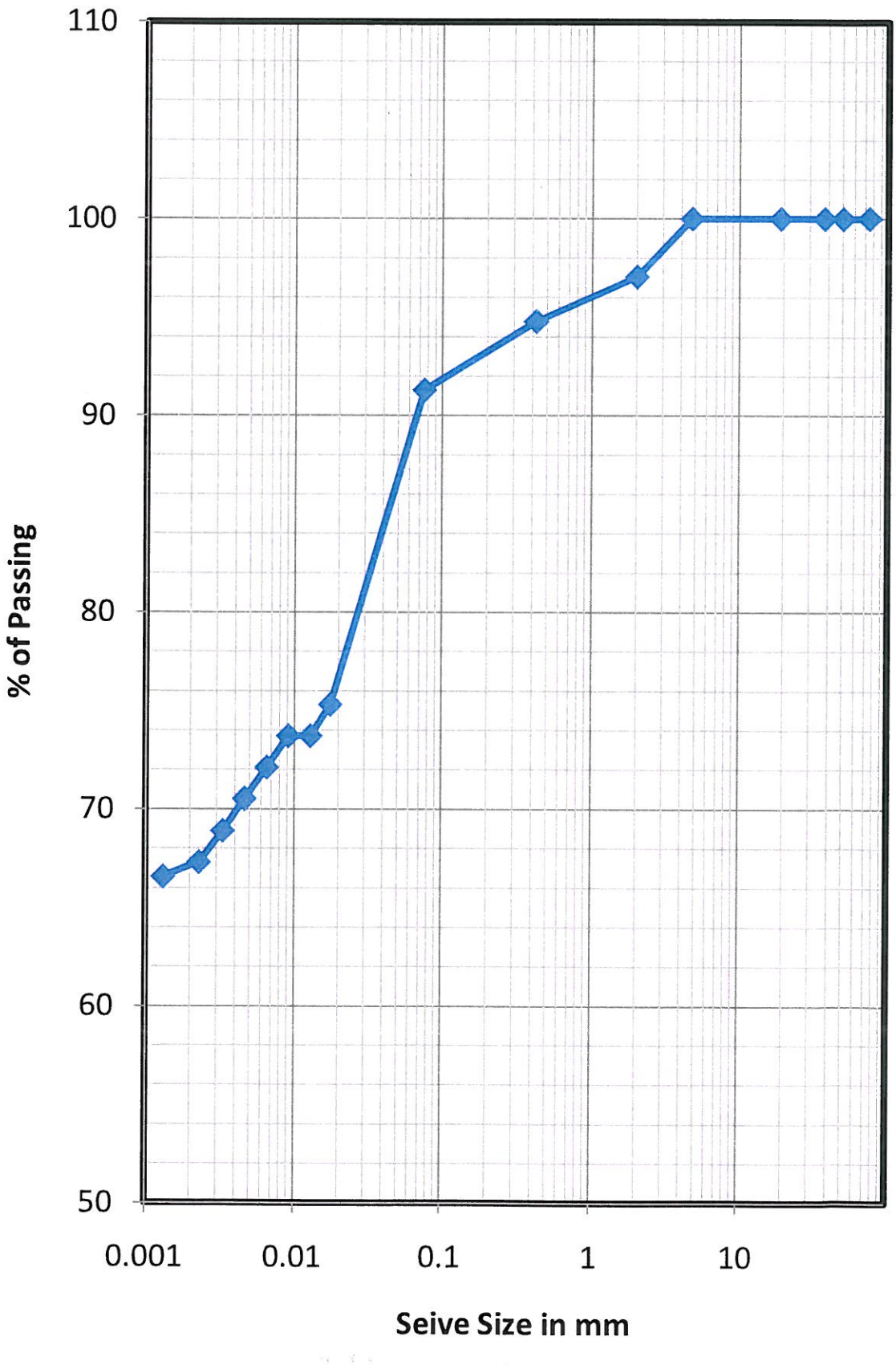
**Sand Content (% ) =** 5.61 **Silt and clay %** 94.39

**Remarks :-**

Lab Manager Checked By

4456

# Grain Size Distribution Curve
# BH-3, D-7.0m



# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 9.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.12

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.07 | 0.07 | 0.07 | 99.93 |
| 0.425 | 0.04 | 0.04 | 0.11 | 99.89 |
| 0.075 | 0.01 | 0.01 | 0.12 | 99.88 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.12 **Silt and clay %** 99.88

**Remarks :-**

Lab Manager Checked By

4456

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 10.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 4.89

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 2.53 | 2.53 | 2.53 | 97.47 |
| 0.425 | 1.79 | 1.79 | 4.32 | 95.68 |
| 0.075 | 0.57 | 0.57 | 4.89 | 95.11 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

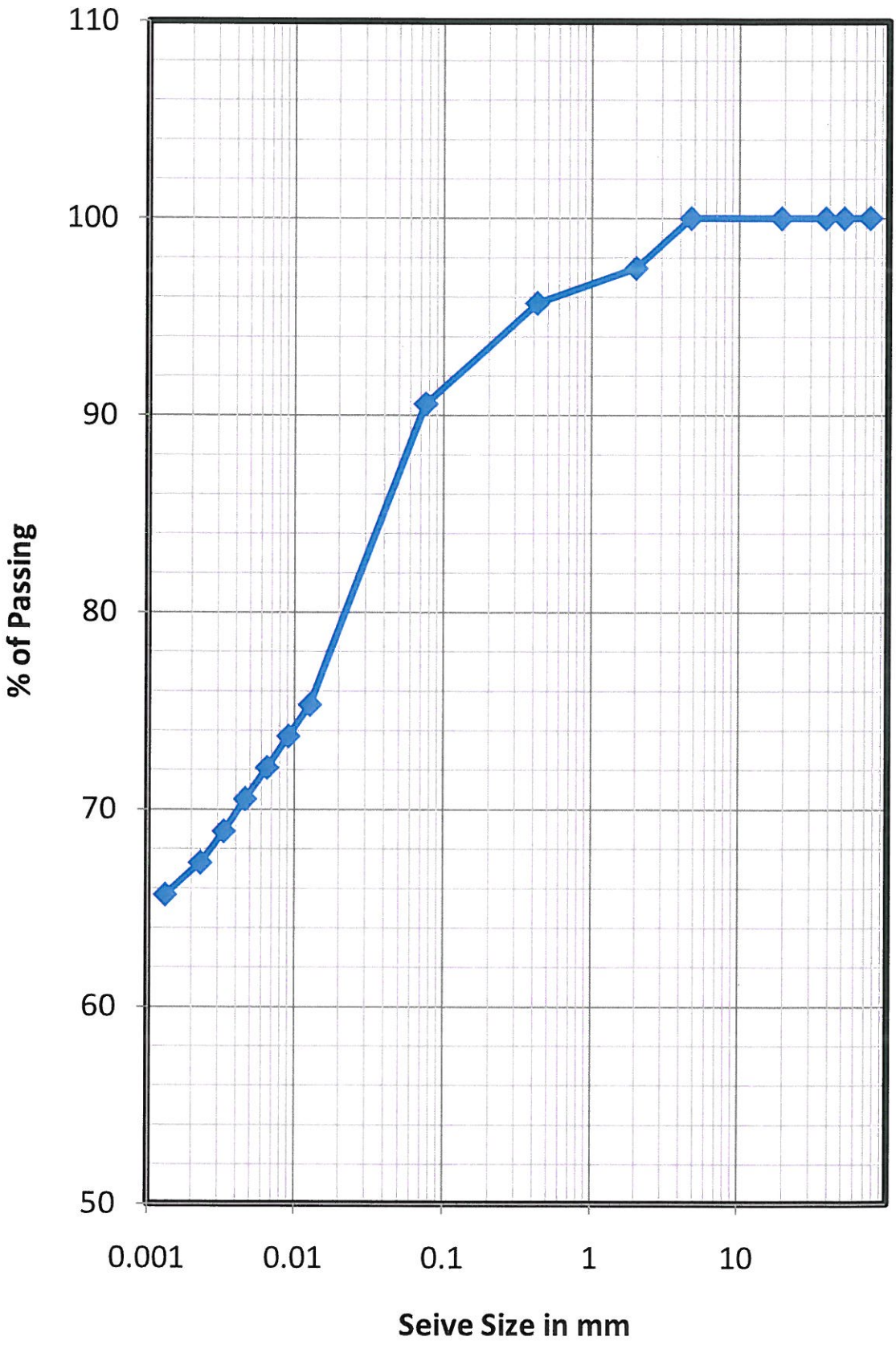
**Sand Content (% ) =** 4.89 **Silt and clay %** 95.11

**Remarks :-**

Lab Manager Checked By

4459

# Grain Size Distribution Curve
# BH-3, D-10.0m




4460

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 12.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 5.61

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 3.07 | 3.07 | 3.07 | 96.93 |
| 0.425 | 1.92 | 1.92 | 4.99 | 95.01 |
| 0.075 | 0.62 | 0.62 | 5.61 | 94.39 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

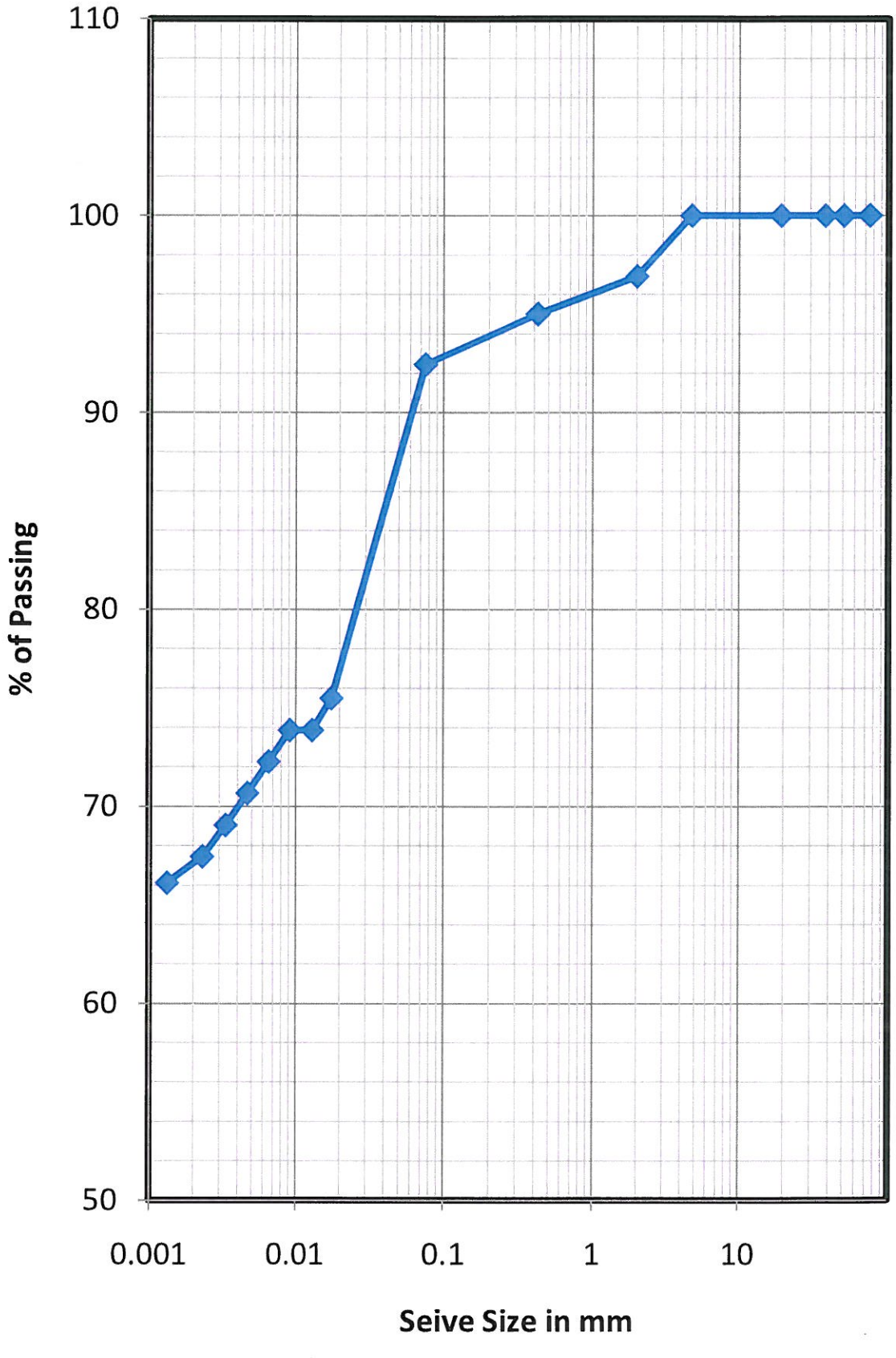
**Sand Content (% ) =** 5.61 **Silt and clay %** 94.39

**Remarks :-**

Lab Manager Checked By

4461

# Grain Size Distribution Curve
# BH-3, D-12.0m




4468

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 13.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 6.01

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 3.01 | 3.01 | 3.01 | 96.99 |
| 0.425 | 2.31 | 2.31 | 5.32 | 94.68 |
| 0.075 | 0.69 | 0.69 | 6.01 | 93.99 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

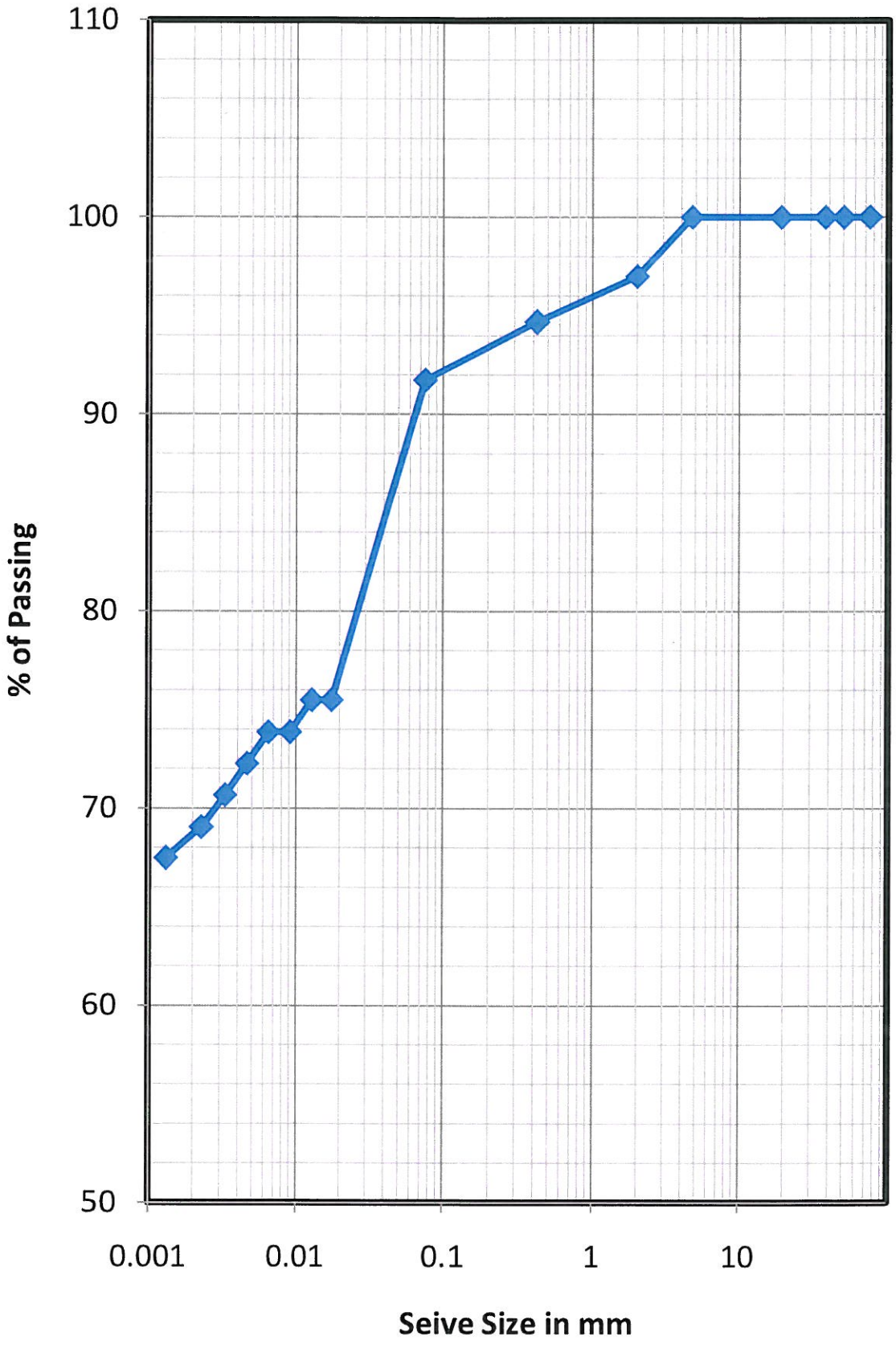
**Sand Content (% ) =** 6.01 **Silt and clay %** 93.99

**Remarks :-**

Lab Manager Checked By

SOIL - 4463

# Grain Size Distribution Curve
# BH-3, D-13.0m




4464

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 18.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 4.76

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 2.37 | 2.37 | 2.37 | 97.63 |
| 0.425 | 1.89 | 1.89 | 4.26 | 95.74 |
| 0.075 | 0.50 | 0.50 | 4.76 | 95.24 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

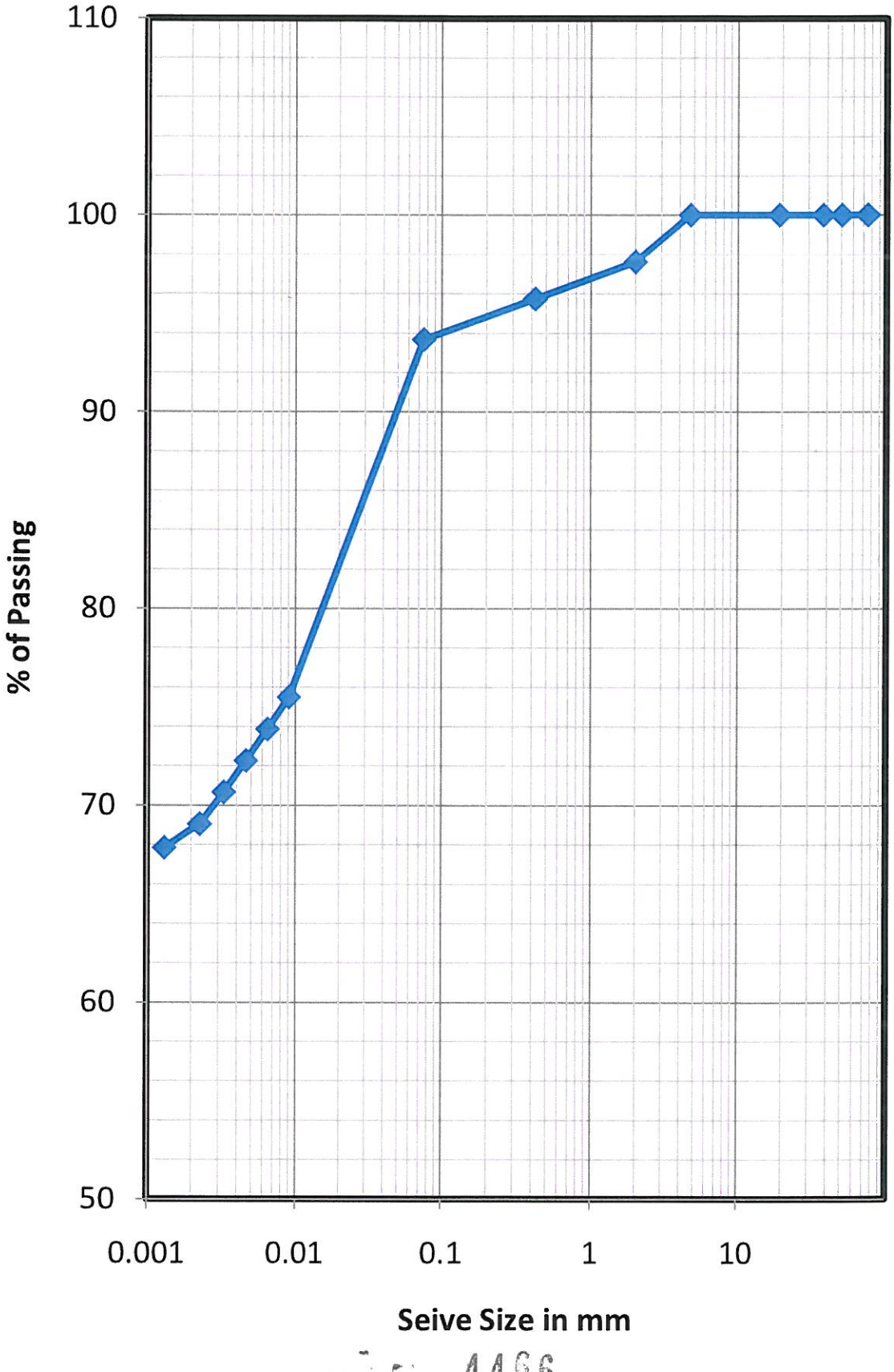
**Sand Content (% ) =** 4.76 **Silt and clay %** 95.24

**Remarks :-**

Lab Manager

Checked By

# Grain Size Distribution Curve
# BH-3, D-18.0m




4466

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 19.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 5.24

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 2.62 | 2.62 | 2.62 | 97.38 |
| 0.425 | 2.04 | 2.04 | 4.66 | 95.34 |
| 0.075 | 0.58 | 0.58 | 5.24 | 94.76 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

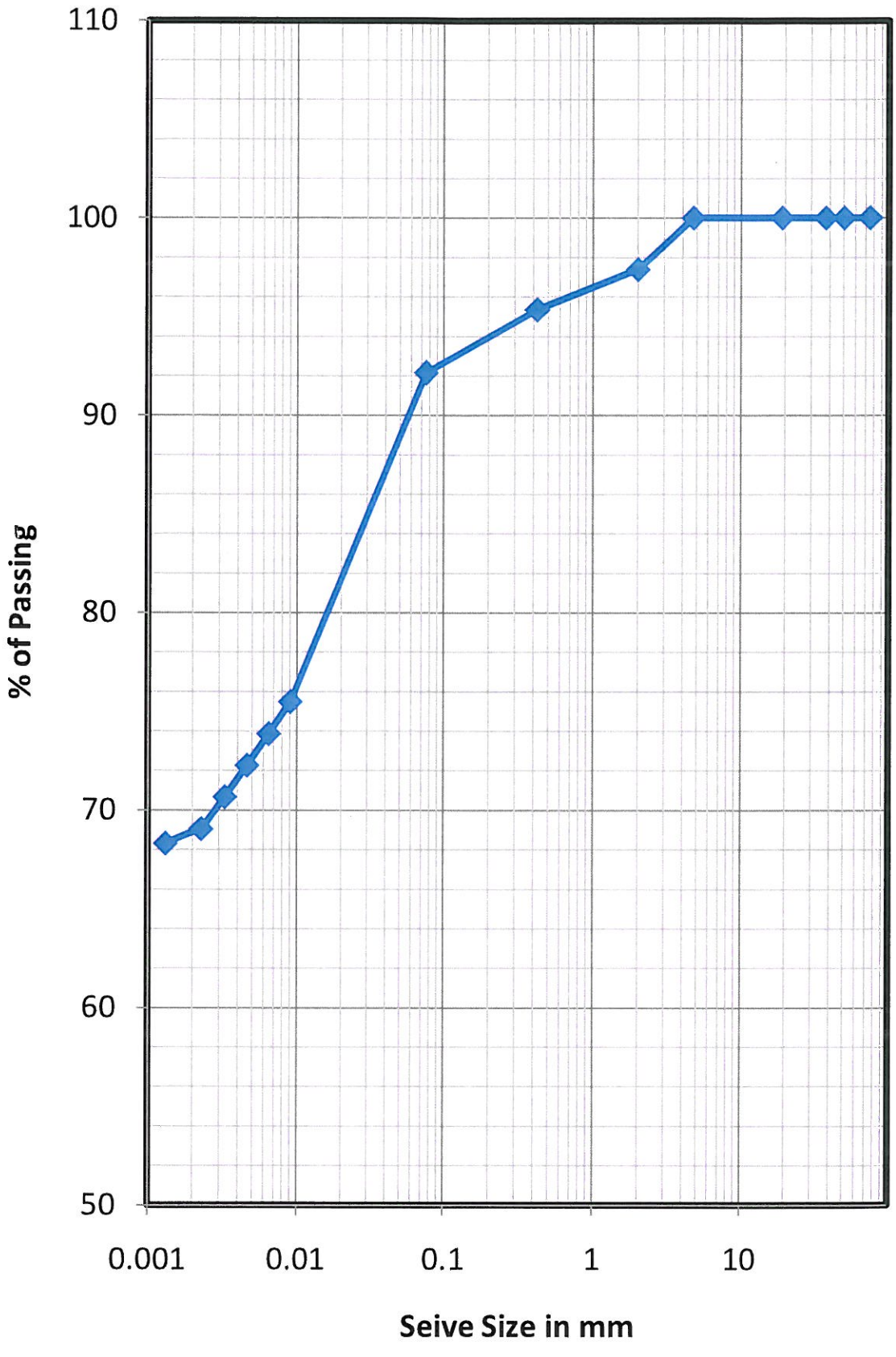
**Sand Content (% ) =** 5.24 **Silt and clay %** 94.76

**Remarks :-**

Lab Manager Checked By

4467

# Grain Size Distribution Curve
# BH-3, D-19.0m




4463

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 21.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 2.86

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 1.72 | 1.72 | 1.72 | 98.28 |
| 0.425 | 1.01 | 1.01 | 2.73 | 97.27 |
| 0.075 | 0.14 | 0.14 | 2.87 | 97.13 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 2.87 **Silt and clay %** 97.13

**Remarks :-**

Lab Manager Checked By

4469

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 22.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.93

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.45 | 0.45 | 0.45 | 99.55 |
| 0.425 | 0.39 | 0.39 | 0.84 | 99.16 |
| 0.075 | 0.09 | 0.09 | 0.93 | 99.07 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

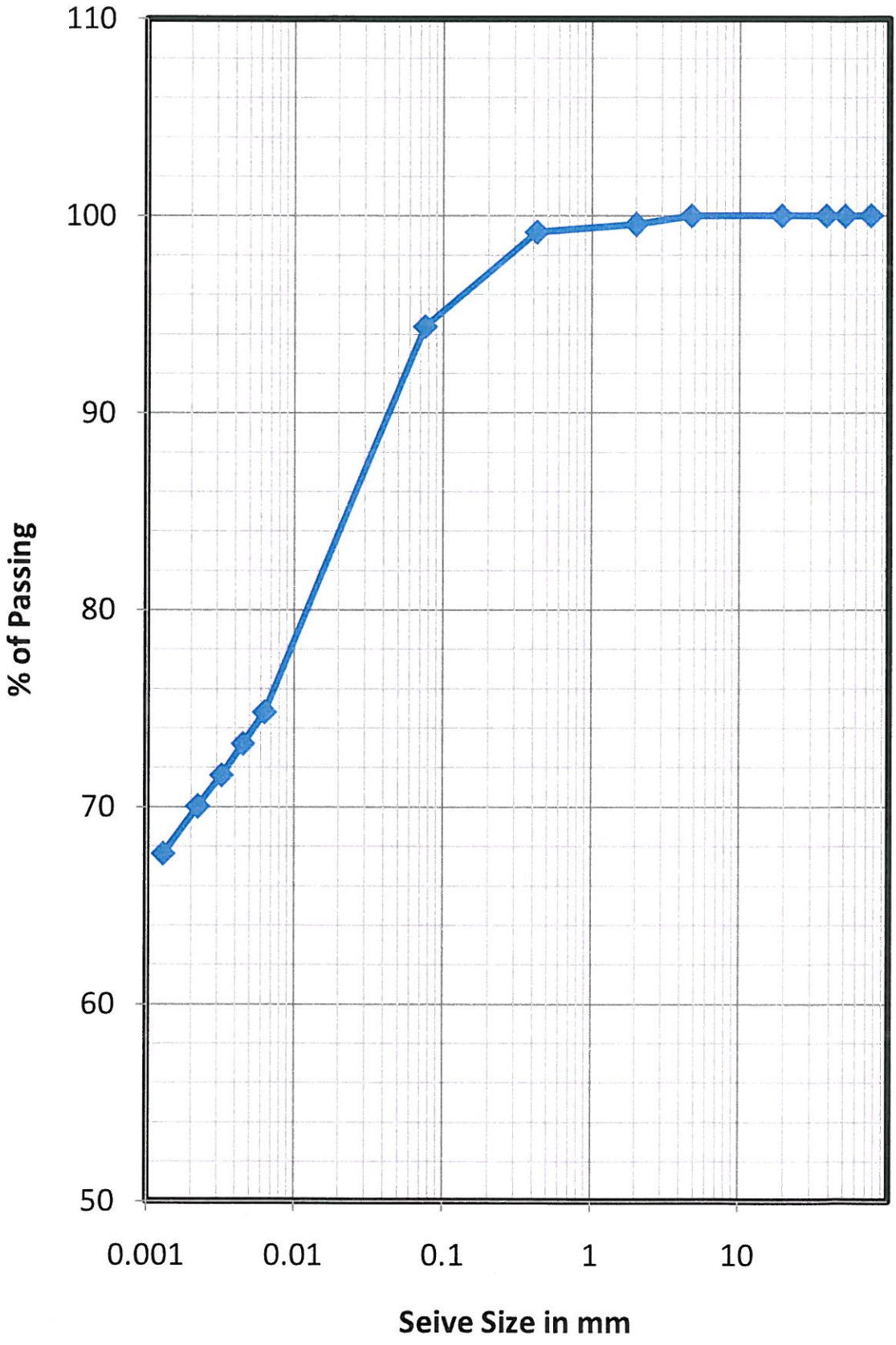
**Sand Content (% ) =** 0.93 **Silt and clay %** 99.07

**Remarks :-**

Lab Manager Checked By

4470

# Grain Size Distribution Curve
# BH-3, D-22.0m




4471

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 25.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.76

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.37 | 0.37 | 0.37 | 99.63 |
| 0.425 | 0.32 | 0.32 | 0.69 | 99.31 |
| 0.075 | 0.07 | 0.07 | 0.76 | 99.24 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.76 **Silt and clay %** 99.24

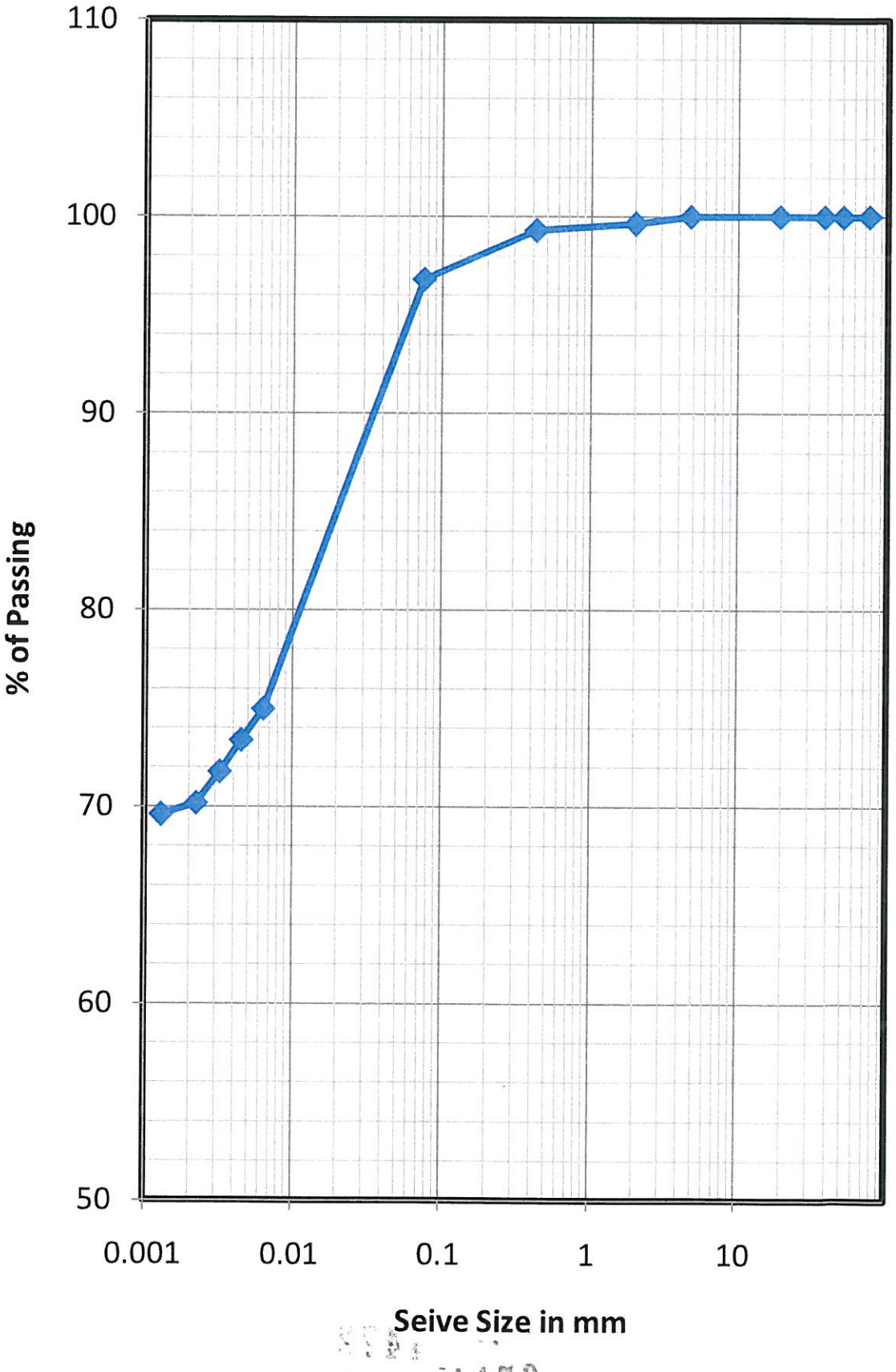
**Remarks :-**

Lab Manager

4472

Checked By

# Grain Size Distribution Curve
# BH-3, D-25.0m




4473

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 27.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.51

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.27 | 0.27 | 0.27 | 99.73 |
| 0.425 | 0.20 | 0.20 | 0.47 | 99.53 |
| 0.075 | 0.04 | 0.04 | 0.51 | 99.49 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.51 **Silt and clay %** 99.49

**Remarks :-**

Lab Manager Checked By

4471

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 28.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.97

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.48 | 0.48 | 0.48 | 99.52 |
| 0.425 | 0.39 | 0.39 | 0.87 | 99.13 |
| 0.075 | 0.10 | 0.10 | 0.97 | 99.03 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

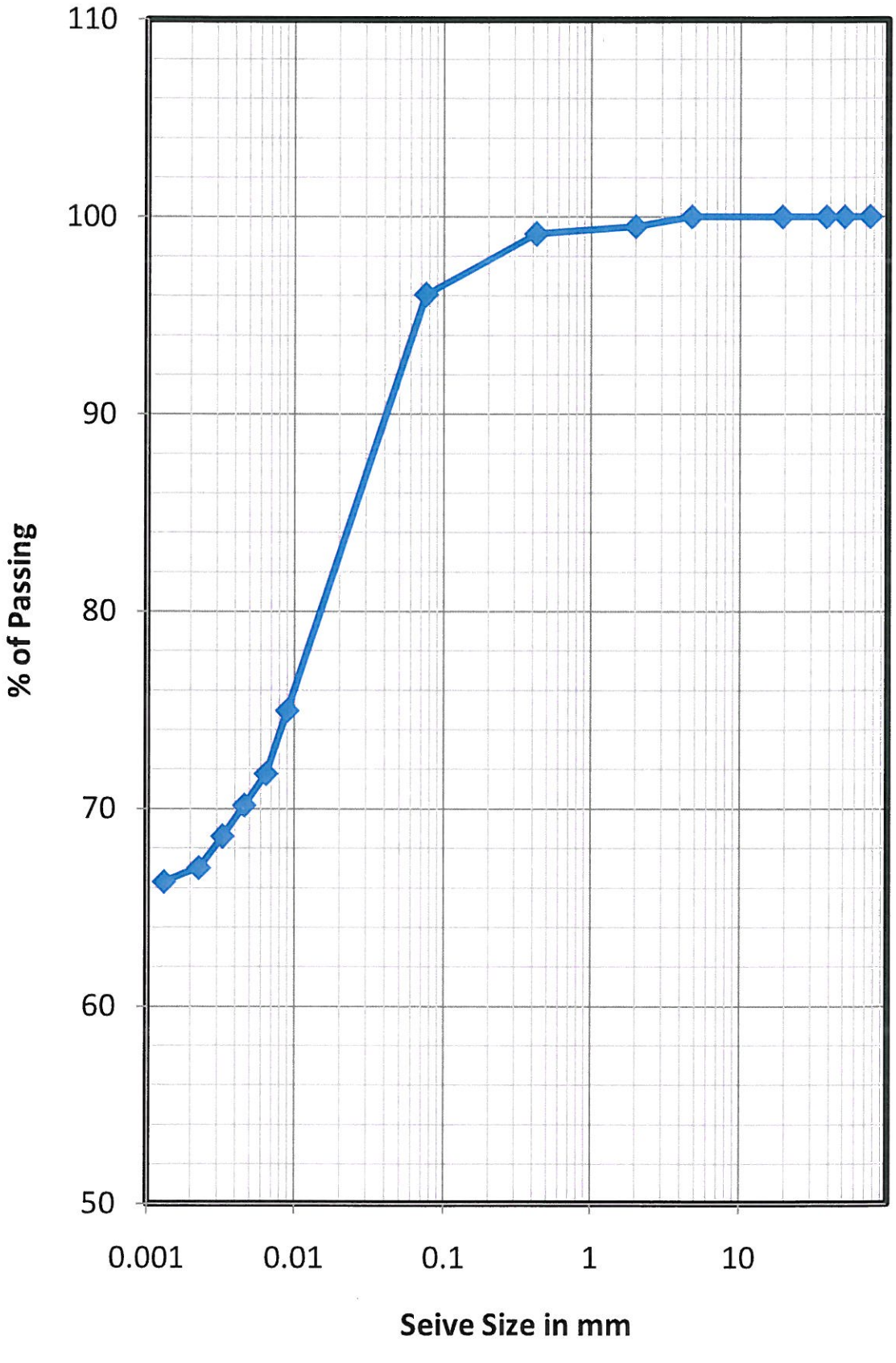
**Sand Content (% ) =** 0.97 **Silt and clay %** 99.03

**Remarks :-**

Lab Manager Checked By

4475

# Grain Size Distribution Curve
# BH-3, D-28.0m




4476

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

## N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 30.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 5.40

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 2.51 | 2.51 | 2.51 | 97.49 |
| 0.425 | 2.13 | 2.13 | 4.64 | 95.36 |
| 0.075 | 0.76 | 0.76 | 5.40 | 94.60 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 5.40 **Silt and clay %** 94.60

**Remarks :-**

Lab Manager Checked By

4477

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | UDS | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 31.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 1.07

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.54 | 0.54 | 0.54 | 99.46 |
| 0.425 | 0.43 | 0.43 | 0.97 | 99.03 |
| 0.075 | 0.10 | 0.10 | 1.07 | 98.93 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

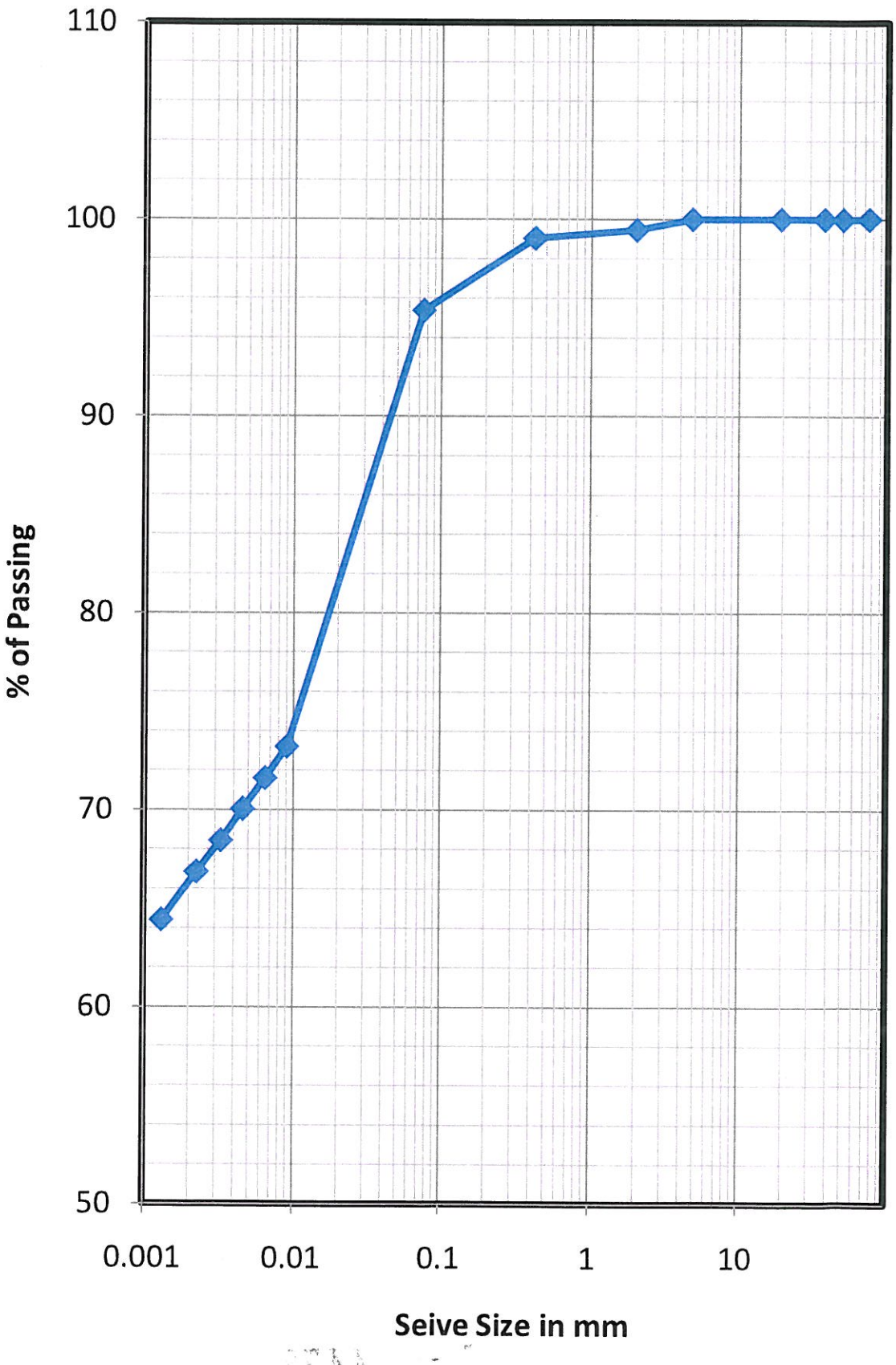
**Sand Content (% ) =** 1.07 **Silt and clay %** 98.93

**Remarks :-**

Lab Manager Checked By

4478

# Grain Size Distribution Curve
# BH-3, D-31.0m



# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 36.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.79

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.38 | 0.38 | 0.38 | 99.62 |
| 0.425 | 0.33 | 0.33 | 0.71 | 99.29 |
| 0.075 | 0.08 | 0.08 | 0.79 | 99.21 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.79 **Silt and clay %** 99.21

**Remarks :-**

Lab Manager Checked By

4480

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 39.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.18

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.10 | 0.10 | 0.10 | 99.90 |
| 0.425 | 0.08 | 0.08 | 0.18 | 99.82 |
| 0.075 | 0.01 | 0.01 | 0.19 | 99.81 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.19 **Silt and clay %** 99.81

**Remarks :-**

Lab Manager Checked By

4481

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO CONSULTANTS (INDIA) PVT. LTD.

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 45.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.65

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.31 | 0.31 | 0.31 | 99.69 |
| 0.425 | 0.27 | 0.27 | 0.58 | 99.42 |
| 0.075 | 0.07 | 0.07 | 0.65 | 99.35 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

**Sand Content (% ) =** 0.65 **Silt and clay %** 99.35

**Remarks :-**

Lab Manager

4492

Checked By

# Arki Techno Consultants (India ) Pvt. Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL AS PER IS 2720 ( P- 4 )

| | | | | | |
|---|---|---|---|---|---|
| Client | : | DFCC | | | |
| Project Name | : | G.I For 3 Nos. Important Bridges | | | |
| Type of Sample | : | SPT | Date of Testing | : | 17.09.12 |
| Location | : | BH-3(Tangri River-Ambala) | Sampled by | : | T. K. Das |
| Depth | : | 50.0m | Tested by | : | D.Mohanty |

Weight of oven dried sample before washing (gm) :- 100.00

Weight of oven dried sample after washing (gm) :- 0.34

| Sieve Size mm | Individual Weight Retained in gm. | Individual Wt. Retained In % | Cummulative Wt Retained In % | Cummulative Wt Passing In % |
|---|---|---|---|---|
| 75 | 0 | 0.00 | 0.00 | 100.00 |
| 50 | 0 | 0.00 | 0.00 | 100.00 |
| 37.5 | 0 | 0.00 | 0.00 | 100.00 |
| 19 | 0 | 0.00 | 0.00 | 100.00 |
| 4.75 | 0.00 | 0.00 | 0.00 | 100.00 |
| 2.00 | 0.18 | 0.18 | 0.18 | 99.82 |
| 0.425 | 0.13 | 0.13 | 0.31 | 99.69 |
| 0.075 | 0.03 | 0.03 | 0.34 | 99.66 |
| Total | 100.00 | | | |

**Gravel Content (%)=** **0.00**

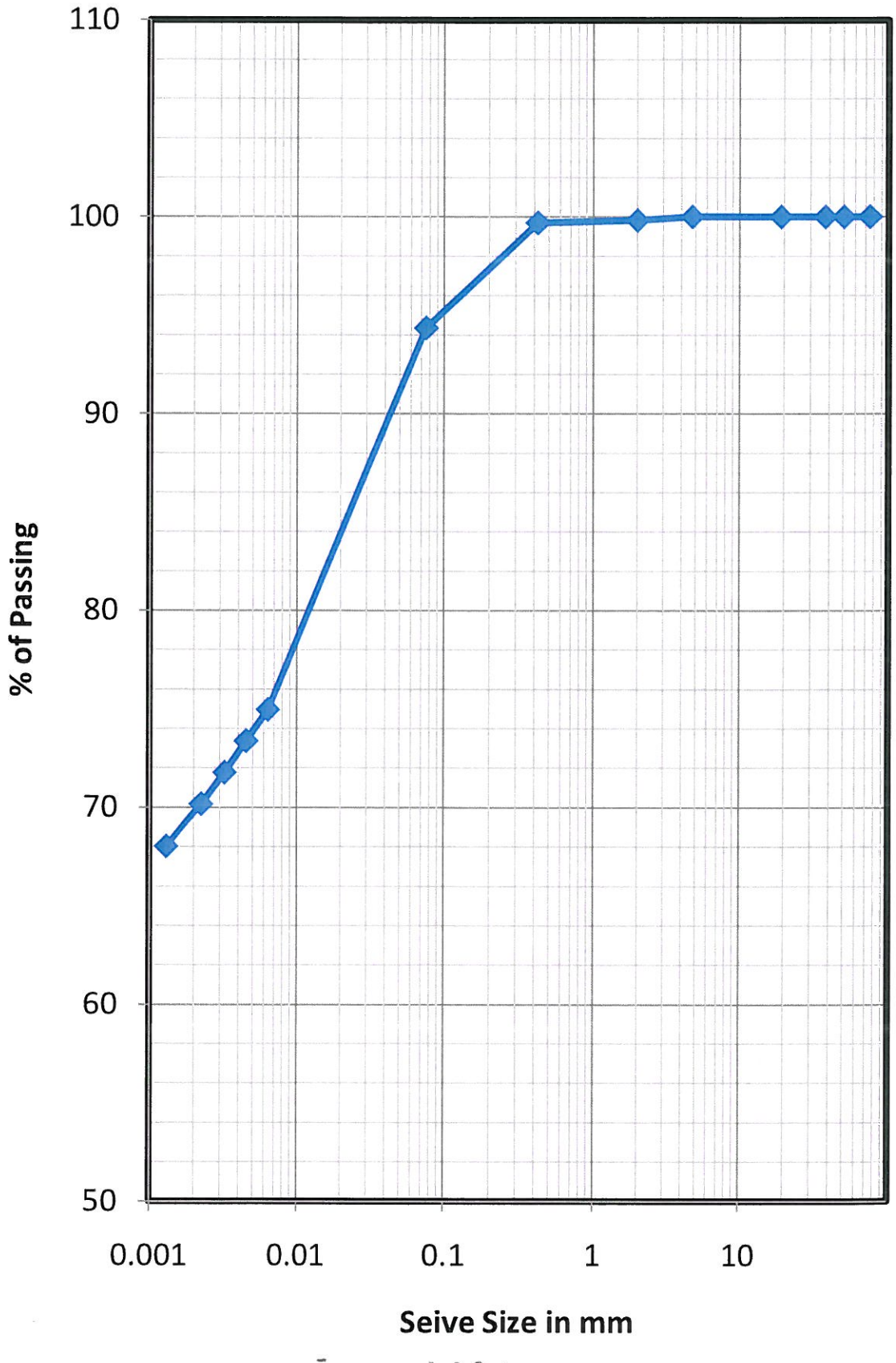
**Sand Content (% ) =** 0.34 **Silt and clay %** 99.66

**Remarks :-**

Lab Manager Checked By

4483

# Grain Size Distribution Curve
# BH-3, D-50.0m




4484

# ARKI TECHNO CONSULTANTS (INDIA) PVT LTD

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

## GRAIN SIZE ANALYSIS OF SOIL - HYDROMETER METHOD

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Type of Sample : UDS

Location : BH-3(Tangri River-Ambala)

Sampled by : T.K.Das

Depth : 7.0m

Date of Testing : 18.09.12

Tested by : D,Mohanty

| | | | |
|---|---|---|---|
| (I) | Percentage of 75 micron passing (from sieve analysis) | | 94.39 |
| (II) | Mass of dry soil passing 2mm sieve taken (gm) | | 50 |
| (III) | Mass of dry soil retained on 75micron sieve (gm) | | 2.8 |
| (IV) | Mass of dry soil passing 75 micron Wh (gm) | | 47.2 |
| (V) | Specific gravity of soil grains, Gs | | 2.66 |
| (VI) | Top Meniscus reading on hydrometer stem | | 2.0 |
| (VII) | Bottom meniscus reading on hydrometer stem | | 2.5 |
| (VIII) | Meniscuss correction, Cm = + [ (VII) - (VI) ] | | 0.5 |
| a | Hydrometer No | 1 | |
| | Volume of Hydrometer V (cm3) | 50 | |
| | Height of bulb (h) in cm | 16.5 | |
| b | Sedimentation Jar No | 1 | |
| | Cross sectional area of jar (A) in cm2 | 35.714 | |

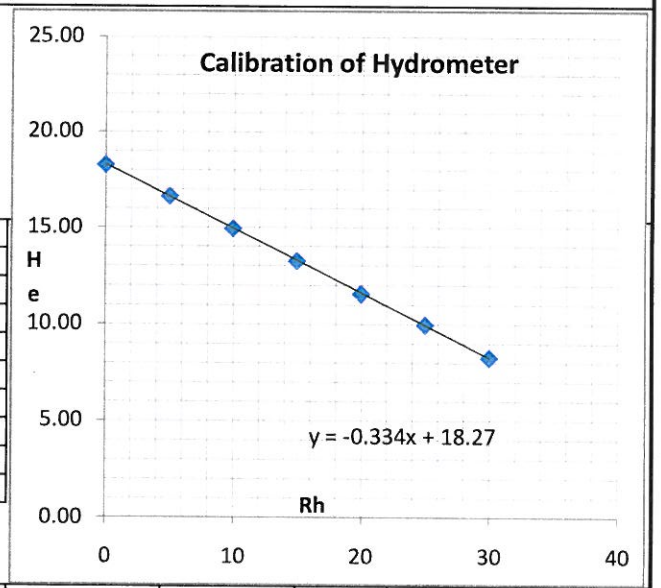
**CALIBRATION OF HYDROMETER**

| (Rh) | H (cm) | He (cm) |
|---|---|---|
| 30 | 0.7 | 8.25 |
| 25 | 2.4 | 9.95 |
| 20 | 4.0 | 11.55 |
| 15 | 5.7 | 13.25 |
| 10 | 7.4 | 14.95 |
| 5 | 9.1 | 16.65 |
| 0 | 10.7 | 18.25 |
| -5 | 12.4 | 19.95 |

Rh = hydrometer Reading

H = height corresponding to Rh

He = Effective height = H + 0.5*(h -V/A)




| Time | Elapsed Time (min) | Hydrometer Reading (Rh) | Temperature (o C) | Composite Correction +/- C | Effective depth h (cm) | Rc1 = Rh + Cm | Sqrt ( h/t) | Viscosity (gm/cm2) | Factor M | Particle 'C' (cm) (8) x (10) | Rc2 = Rh + C (3) + (5) | Factor N | % Finner w.r.t Wd F (12) x (13) | % Finner w.r.t total mass (14) x (I)/100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 10.30 | 0.5 | 27.38 | 29 | -2.0 | 9.13 | 27.88 | 0.552 | 0.000008341 | 0.012277647 | 0.00677131 | 25.38 | 3.395 | 86.17 | 81.34 |
| | 1 | 27.00 | 29 | -2.0 | 9.25 | 27.50 | 0.393 | 0.000008341 | 0.012277647 | 0.00482122 | 25.00 | 3.395 | 84.88 | 80.12 |
| | 2 | 26.50 | 29 | -2.0 | 9.42 | 27.00 | 0.280 | 0.000008341 | 0.012277647 | 0.00343975 | 24.50 | 3.395 | 83.18 | 78.52 |
| | 4 | 26.00 | 29 | -2.0 | 9.59 | 26.50 | 0.200 | 0.000008341 | 0.012277647 | 0.00245374 | 24.00 | 3.395 | 81.49 | 76.92 |
| | 8 | 25.50 | 29 | -2.0 | 9.75 | 26.00 | 0.143 | 0.000008341 | 0.012277647 | 0.00175010 | 23.50 | 3.395 | 79.79 | 75.31 |
| | 15 | 25.00 | 29 | -2.0 | 9.92 | 25.50 | 0.105 | 0.000008341 | 0.012277647 | 0.00128899 | 23.00 | 3.395 | 78.09 | 73.71 |
| | 30 | 25.00 | 29 | -2.0 | 9.92 | 25.50 | 0.074 | 0.000008341 | 0.012277647 | 0.00091145 | 23.00 | 3.395 | 78.09 | 73.71 |
| | 60 | 24.50 | 29 | -2.0 | 10.09 | 25.00 | 0.053 | 0.000008341 | 0.012277647 | 0.00064990 | 22.50 | 3.395 | 76.39 | 72.11 |
| | 120 | 24.00 | 29 | -2.0 | 10.25 | 24.50 | 0.038 | 0.000008341 | 0.012277647 | 0.00046334 | 22.00 | 3.395 | 74.70 | 70.51 |
| | 240 | 23.50 | 29 | -2.0 | 10.42 | 24.00 | 0.027 | 0.000008341 | 0.012277647 | 0.00033028 | 21.50 | 3.395 | 73.00 | 68.90 |
| | 480 | 23.00 | 32 | -2.0 | 10.59 | 23.50 | 0.019 | 0.000007821 | 0.011888750 | 0.00022795 | 21.00 | 3.395 | 71.30 | 67.30 |
| | 1440 | 22.77 | 32 | -2.0 | 10.66 | 23.27 | 0.011 | 0.000007821 | 0.011888750 | 0.000132082 | 20.77 | 3.395 | 70.53 | 66.57 |

Lab Manager

Checked By

# ARKI TECHNO CONSULTANTS (INDIA) PVT LTD

ARKITECHNO

**N 3/91, IRC Village, Bhubaneswar**

## GRAIN SIZE ANALYSIS OF SOIL - HYDROMETER METHOD

Client : DFCC

Project Name : G.I For 3 Nos. Important Bridges

Depth : 10.0m

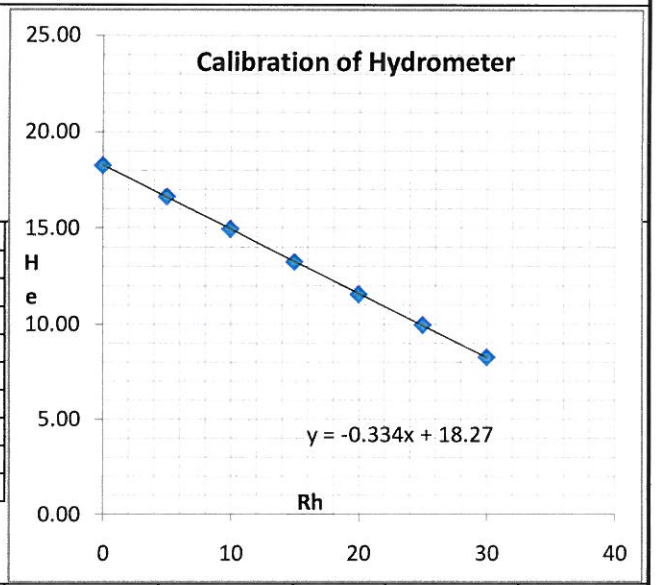
Type of Sample : UDS

Date of Testing : 18.09.12

Location : BH-3(Tangri River-Ambala)

Tested by : D,Mohanty

Sampled by : T.K.Das




| | | | |
|---|---|---|---|
| (I) | Percentage of 75 micron passing (from sieve analysis) | | 95.11 |
| (II) | Mass of dry soil passing 2mm sieve taken (gm) | | 50 |
| (III) | Mass of dry soil retained on 75micron sieve (gm) | | 2.4 |
| (IV) | Mass of dry soil passing 75 micron Wh (gm) | | 47.6 |
| (V) | Specific gravity of soil grains, Gs | | 2.66 |
| (VI) | Top Meniscus reading on hydrometer stem | | 2.0 |
| (VII) | Bottom meniscus reading on hydrometer stem | | 2.5 |
| (VIII) | Meniscuss correction, Cm = + [ (VII) - (VI) ] | | 0.5 |
| a | Hydrometer No | 1 | |
| | Volume of Hydrometer V (cm3) | 50 | |
| | Height of bulb (h) in cm | 16.5 | |
| b | Sedimentation Jar No | 1 | |
| | Cross sectional area of jar (A) in cm2 | 35.714 | |

| CALIBRATION OF HYDROMETER | | |
|---|---|---|
| (Rh) | H (cm) | He (cm) |
| 30 | 0.7 | 8.25 |
| 25 | 2.4 | 9.95 |
| 20 | 4.0 | 11.55 |
| 15 | 5.7 | 13.25 |
| 10 | 7.4 | 14.95 |
| 5 | 9.1 | 16.65 |
| 0 | 10.7 | 18.25 |
| -5 | 12.4 | 19.95 |

Rh = hydrometer Reading

H = height corresponding to Rh

He = Effective height = H + 0.5*(h -V/A)

| Time | Elapsed Time (min) | Hydrometer Reading (Rh) | Temperature (o C) | Composite Correction +/- C | Effective depth h (cm) | Rc1 = Rh + Cm | Sqrt ( h/t) | Viscosity (gm/cm2) | Factor M | Particle 'C' (cm) (8) x (10) | Rc2 = Rh + C (3) + (5) | Factor N | % Finner w.r.t Wd F (12) x (13) | % Finner w.r.t total mass (14) x (I)/100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 10.30 | 0.5 | 28.04 | 29 | -2.0 | 8.90 | 28.54 | 0.545 | 0.000008341 | 0.012277647 | 0.00668902 | 26.04 | 3.370 | 87.74 | 83.45 |
| | 1 | 27.50 | 29 | -2.0 | 9.09 | 28.00 | 0.389 | 0.000008341 | 0.012277647 | 0.00477751 | 25.50 | 3.370 | 85.92 | 81.72 |
| | 2 | 27.00 | 29 | -2.0 | 9.25 | 27.50 | 0.278 | 0.000008341 | 0.012277647 | 0.00340912 | 25.00 | 3.370 | 84.24 | 80.12 |
| | 4 | 26.50 | 29 | -2.0 | 9.42 | 27.00 | 0.198 | 0.000008341 | 0.012277647 | 0.00243227 | 24.50 | 3.370 | 82.56 | 78.52 |
| | 8 | 26.00 | 29 | -2.0 | 9.59 | 26.50 | 0.141 | 0.000008341 | 0.012277647 | 0.00173505 | 24.00 | 3.370 | 80.87 | 76.92 |
| | 15 | 25.50 | 29 | -2.0 | 9.75 | 26.00 | 0.104 | 0.000008341 | 0.012277647 | 0.00127809 | 23.50 | 3.370 | 79.19 | 75.31 |
| | 30 | 25.00 | 29 | -2.0 | 9.92 | 25.50 | 0.074 | 0.000008341 | 0.012277647 | 0.00091145 | 23.00 | 3.370 | 77.50 | 73.71 |
| | 60 | 24.50 | 29 | -2.0 | 10.09 | 25.00 | 0.053 | 0.000008341 | 0.012277647 | 0.00064990 | 22.50 | 3.370 | 75.82 | 72.11 |
| | 120 | 24.00 | 29 | -2.0 | 10.25 | 24.50 | 0.038 | 0.000008341 | 0.012277647 | 0.00046334 | 22.00 | 3.370 | 74.13 | 70.51 |
| | 240 | 23.50 | 29 | -2.0 | 10.42 | 24.00 | 0.027 | 0.000008341 | 0.012277647 | 0.00033028 | 21.50 | 3.370 | 72.45 | 68.90 |
| | 480 | 23.00 | 32 | -2.0 | 10.59 | 23.50 | 0.019 | 0.000007821 | 0.011888750 | 0.00022795 | 21.00 | 3.370 | 70.76 | 67.30 |
| | 1440 | 22.49 | 32 | -2.0 | 10.76 | 22.99 | 0.011 | 0.000007821 | 0.011888750 | 0.000132655 | 20.49 | 3.370 | 69.06 | 65.68 |

Lab Manager

Checked By