Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

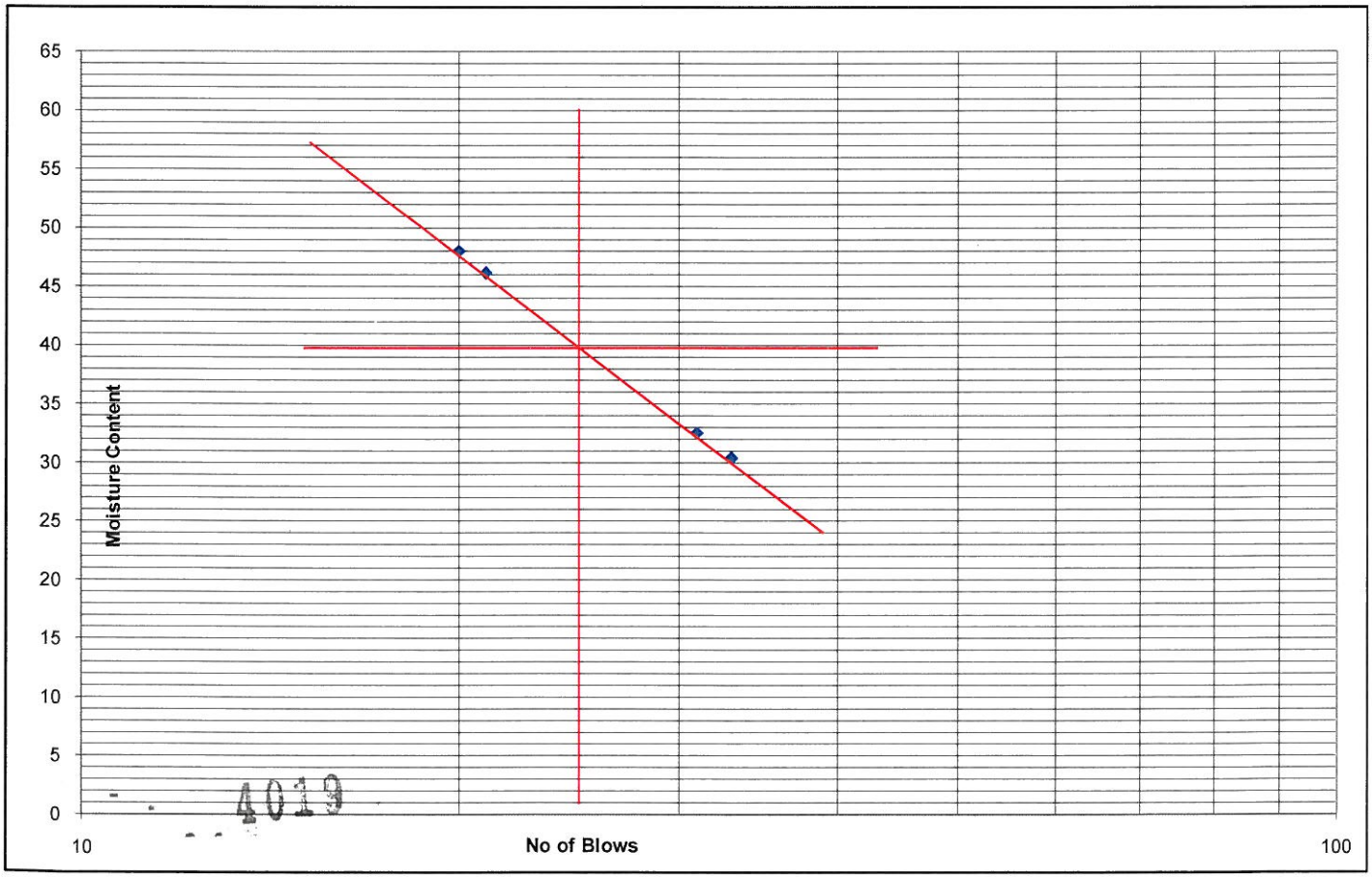
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	27.0m	Tested by	:	D.Mohanty

Number of Blows	33	31	21	20	Plastic Limit	
Container No.	A13	A14	A15	A16	A17	A18
Container Weight (gm) (W1)	30.74	36.34	35.26	32.28	30.76	32.29
Container + Wt. of wet soil (gm) (W2)	92.96	106.08	110.39	115.12	92.64	91.26
Wt of Container + Wt. of oven dry soil (gm) (W3)	78.46	88.96	86.67	88.24	82.48	81.93
Wt. Of water (gm) (W2-W1)-(W3-W1)	14.49	17.12	23.72	26.87	10.16	9.33
Wt. of oven dry soil (gm) (W3-W1)	47.72	52.62	51.41	55.96	51.72	49.64
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**30.37**	**32.53**	**46.13**	**48.02**	**19.64**	**18.79**

Result Summary

Liquid Limit (WL)	41	%
Plastic Limit (Wp)	19	%
Plasticity Index (Ip)	22	%



Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

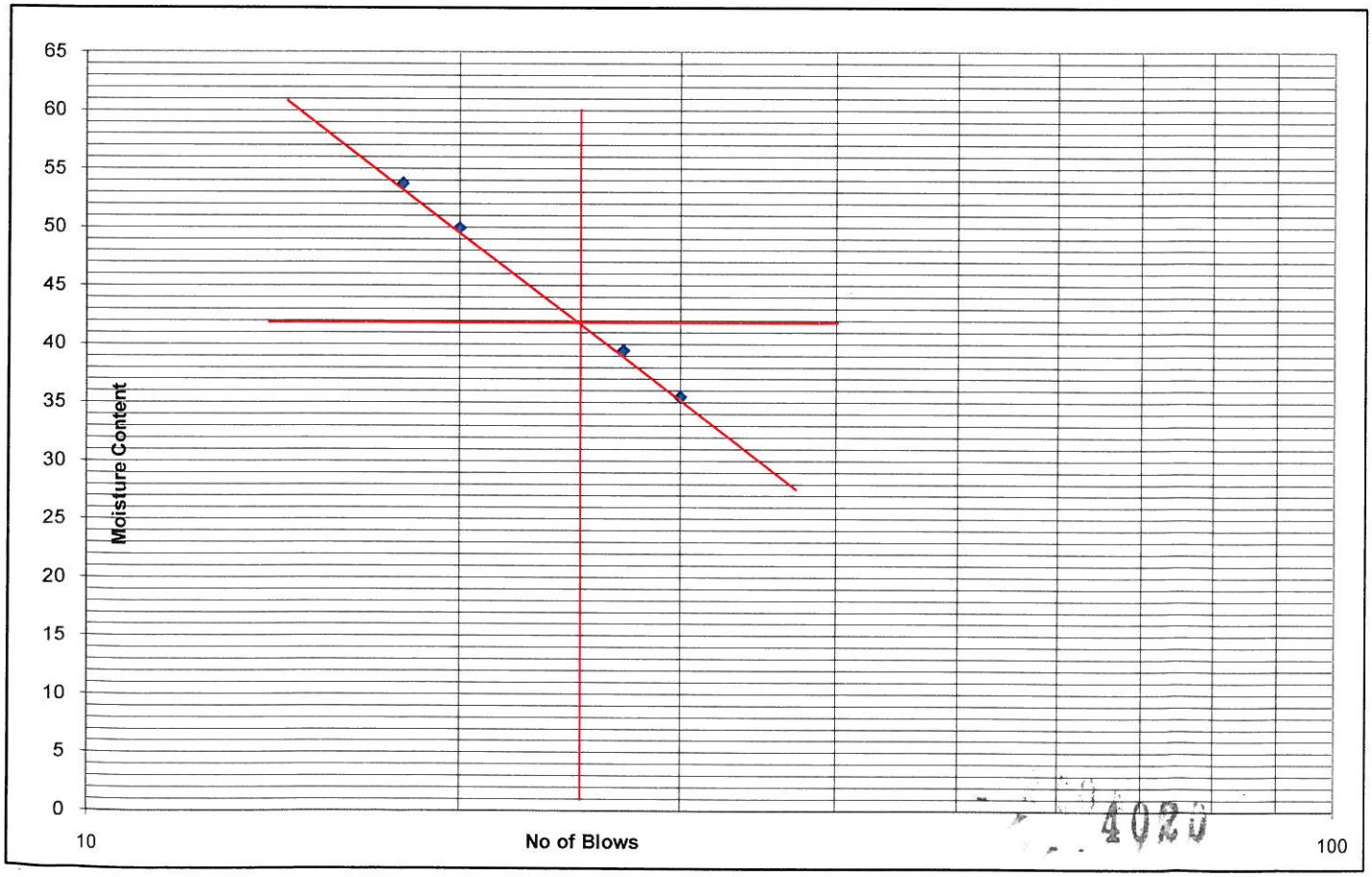
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	30.0m	Tested by	:	D.Mohanty

Number of Blows	30	27	20	18	Plastic Limit	
Container No.	C1	C2	C3	C4	C5	C6
Container Weight (gm) (W1)	33.6	34.2	36.7	32.65	31.26	30.12
Container + Wt. of wet soil (gm) (W2)	94.41	110.61	111.77	118.11	93.56	92.25
Wt of Container + Wt. of oven dry soil (gm) (W3)	78.49	88.99	86.78	88.25	82.57	82.08
Wt. Of water (gm) (W2-W1)-(W3-W1)	15.92	21.62	24.99	29.86	10.99	10.17
Wt. of oven dry soil (gm) (W3-W1)	44.89	54.79	50.08	55.60	51.31	51.96
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**35.46**	**39.46**	**49.91**	**53.70**	**21.42**	**19.57**

Result Summary

Liquid Limit (WL)	42	%
Plastic Limit (Wp)	20	%
Plasticity Index (Ip)	22	%



Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

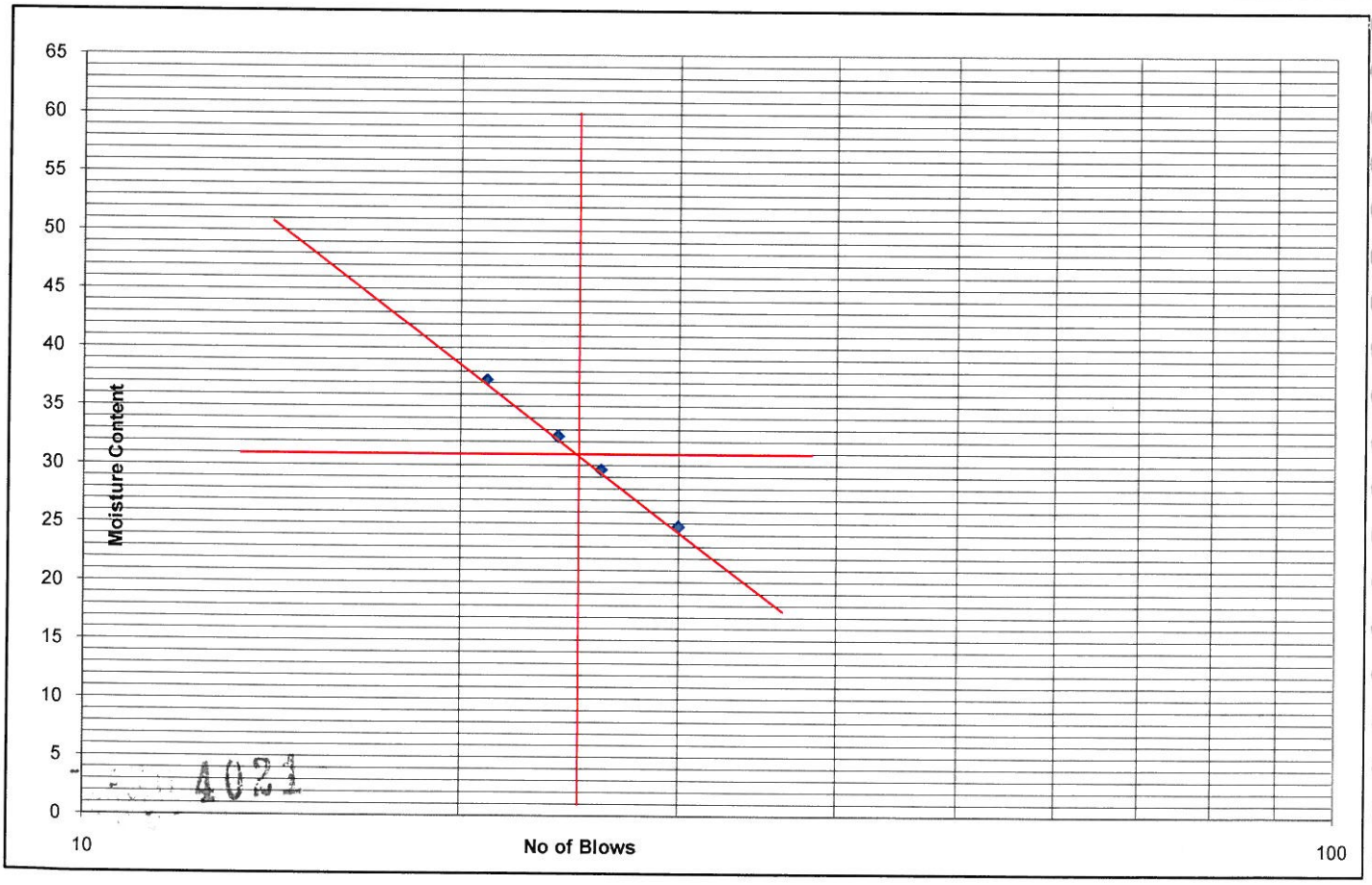
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	34.5m	Tested by	:	D.Mohanty

Number of Blows	30	26	24	21	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)	89.32	105.88	105.03	107.15	91.05	90.82
Wt of Container + Wt. of oven dry soil (gm) (W3)	78.72	89.31	86.95	88.76	82.92	82.17
Wt. Of water (gm) (W2-W1)-(W3-W1)	10.61	16.57	18.08	18.39	8.13	8.65
Wt. of oven dry soil (gm) (W3-W1)	42.89	55.95	55.75	49.34	48.06	51.41
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**24.73**	**29.62**	**32.43**	**37.28**	**16.91**	**16.82**

Result Summary

Liquid Limit (WL)	31	%
Plastic Limit (Wp)	17	%
Plasticity Index (Ip)	14	%



Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

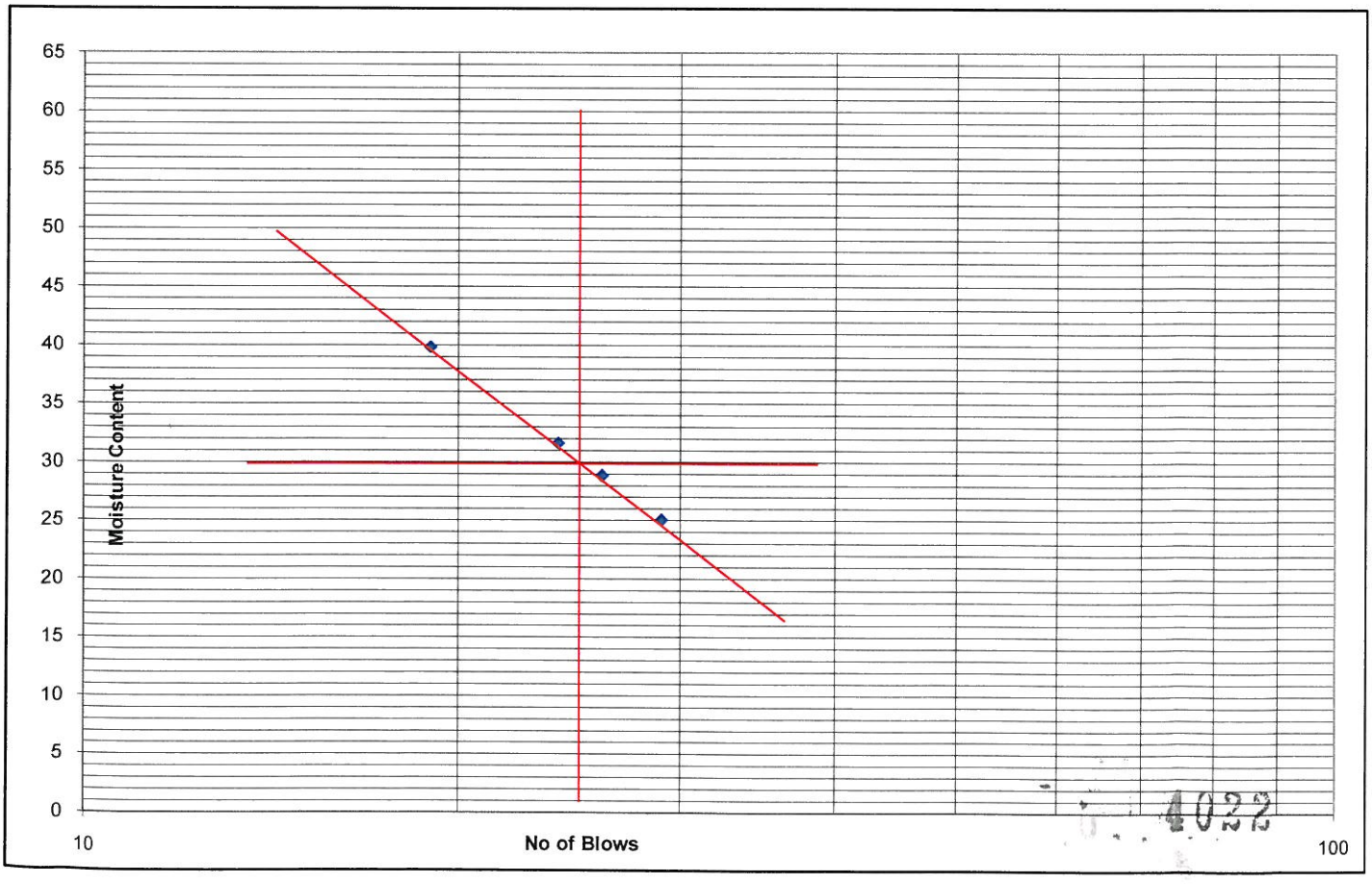
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	39.0m	Tested by	:	D.Mohanty

Number of Blows	29	26	24	19	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)	88.81	104.64	102.04	112.27	90.02	89.08
Wt of Container + Wt. of oven dry soil (gm) (W3)	78.74	89.55	87.00	88.98	82.84	82.12
Wt. Of water (gm) (W2-W1)-(W3-W1)	10.07	15.09	15.04	23.29	7.18	6.97
Wt. of oven dry soil (gm) (W3-W1)	40.22	52.33	47.57	58.48	45.24	46.57
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**25.04**	**28.84**	**31.62**	**39.83**	**15.88**	**14.96**

Result Summary

Liquid Limit (WL)	30	%
Plastic Limit (Wp)	15	%
Plasticity Index (Ip)	15	%



Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

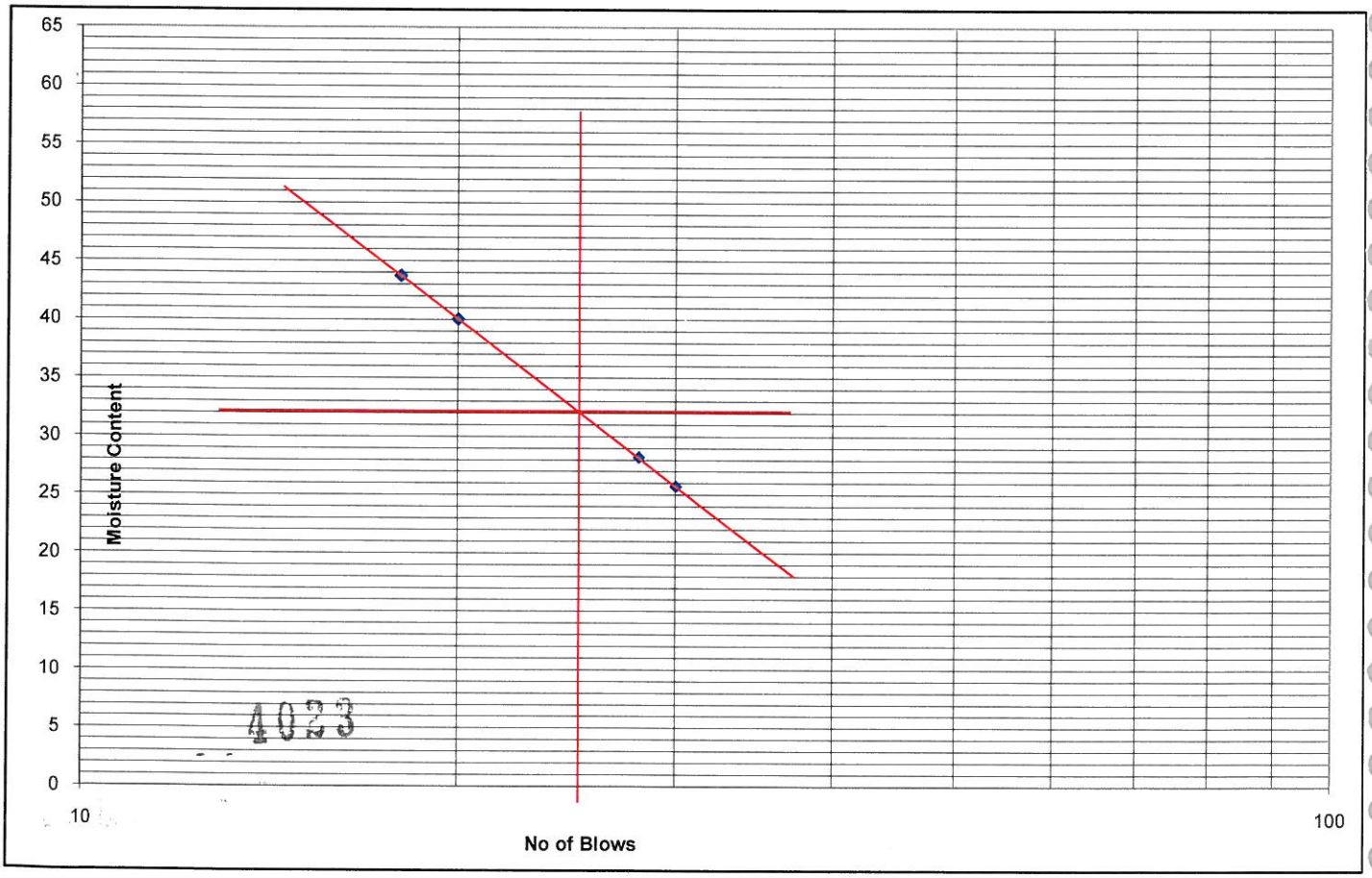
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	42.0m	Tested by	:	D.Mohanty

Number of Blows	30	28	20	18	Plastic Limit	
Container No.	C13	C14	C15	C16	C17	C18
Container Weight (gm) (W1)	39.64	36.34	33.14	32.28	30.76	32.24
Container + Wt. of wet soil (gm) (W2)	88.81	105.11	108.68	113.95	91.67	90.55
Wt of Container + Wt. of oven dry soil (gm) (W3)	78.74	89.97	87.09	89.11	82.81	82.14
Wt. Of water (gm) (W2-W1)-(W3-W1)	10.07	15.14	21.59	24.84	8.86	8.41
Wt. of oven dry soil (gm) (W3-W1)	39.10	53.63	53.95	56.83	52.05	49.90
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**25.76**	**28.24**	**40.02**	**43.72**	**17.02**	**16.86**

Result Summary

Liquid Limit (WL)	32	%
Plastic Limit (Wp)	17	%
Plasticity Index (Ip)	15	%



Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

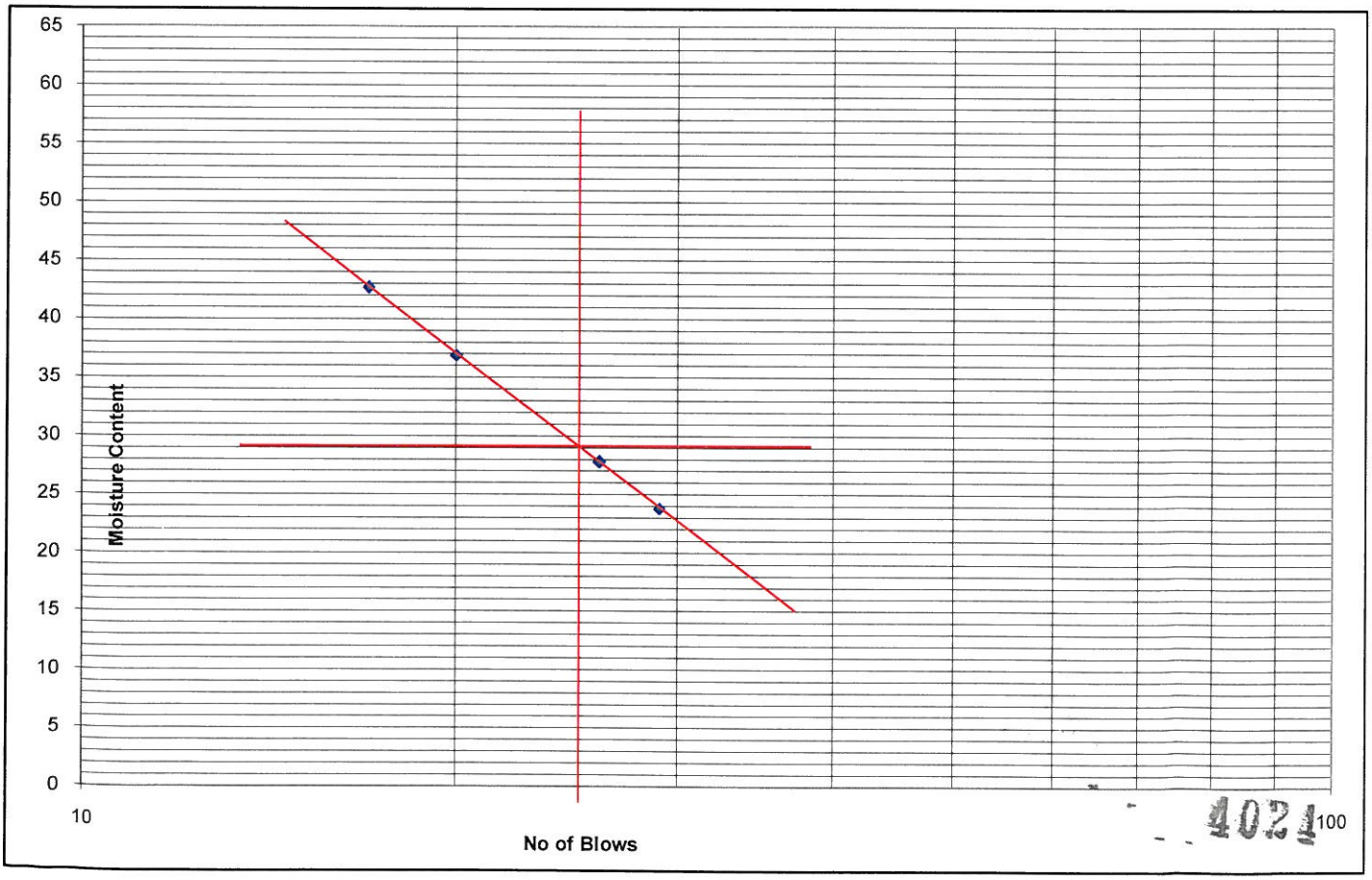
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	45.0m	Tested by	:	D.Mohanty

Number of Blows	29	26	20	17	Plastic Limit	
Container No.	C7	C8	C9	C10	C11	C12
Container Weight (gm) (W1)	32.58	37.21	33.14	35.42	31.85	36.97
Container + Wt. of wet soil (gm) (W2)	89.91	104.89	107.05	112.34	89.71	87.63
Wt of Container + Wt. of oven dry soil (gm) (W3)	78.89	90.18	87.15	89.35	81.75	80.68
Wt. Of water (gm) (W2-W1)-(W3-W1)	11.03	14.71	19.90	22.99	7.96	6.95
Wt. of oven dry soil (gm) (W3-W1)	46.31	52.97	54.01	53.93	49.90	43.71
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**23.81**	**27.78**	**36.85**	**42.64**	**15.96**	**15.89**

Result Summary

Liquid Limit (WL)	29	%
Plastic Limit (Wp)	16	%
Plasticity Index (Ip)	13	%



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Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

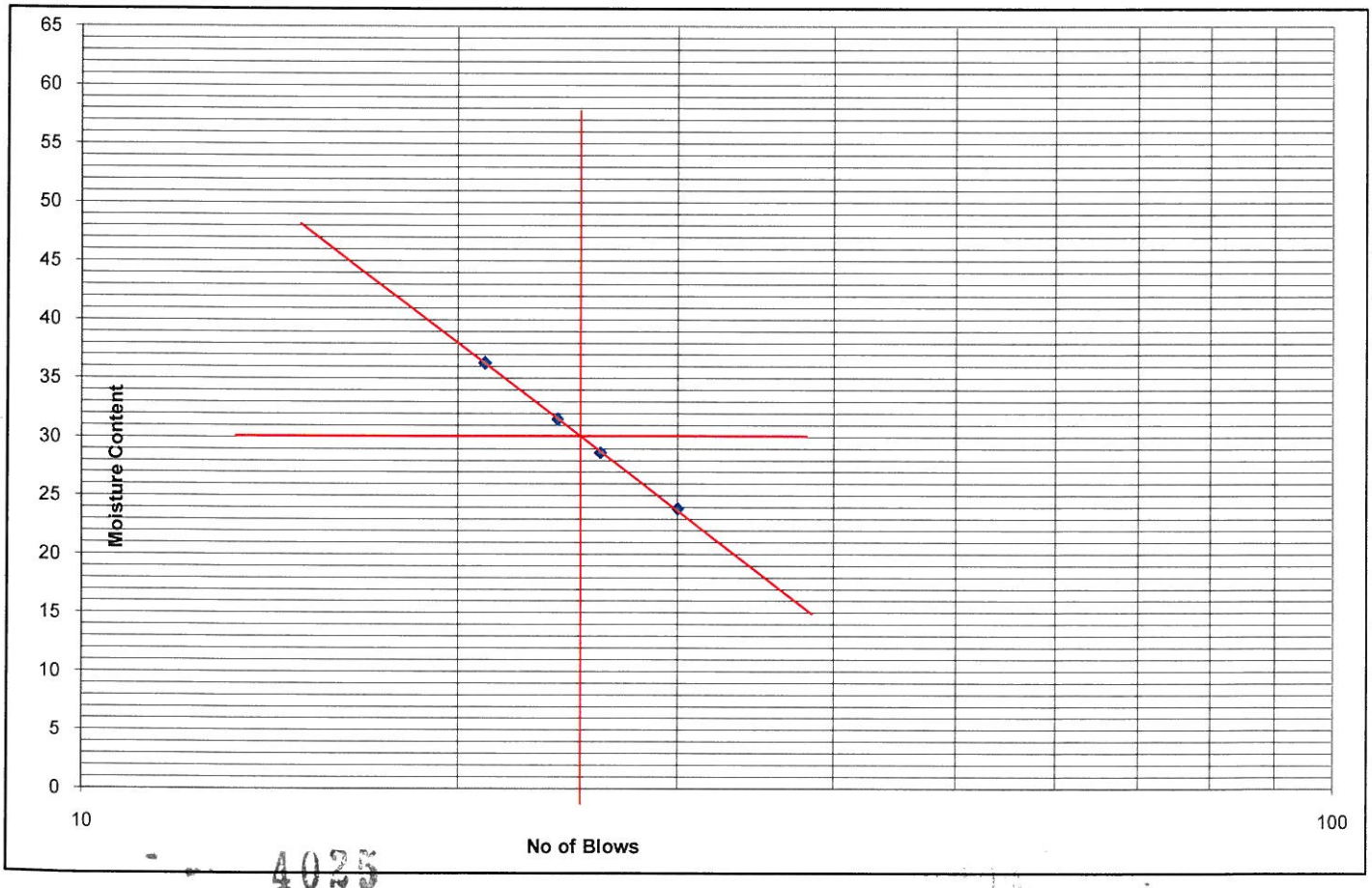
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	48.0m	Tested by	:	D.Mohanty

Number of Blows	30	26	24	21	Plastic Limit	
Container No.	C19	C20	C21	C22	C23	C24
Container Weight (gm) (W1)	37.88	34.61	35.8	32.51	35.83	33.36
Container + Wt. of wet soil (gm) (W2)	88.90	106.45	103.30	110.14	89.75	88.19
Wt of Container + Wt. of oven dry soil (gm) (W3)	79.06	90.45	87.14	89.46	81.78	80.78
Wt. Of water (gm) (W2-W1)-(W3-W1)	9.84	16.00	16.16	20.68	7.97	7.40
Wt. of oven dry soil (gm) (W3-W1)	41.18	55.84	51.34	56.95	45.95	47.42
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**23.89**	**28.66**	**31.48**	**36.31**	**17.34**	**15.61**

Result Summary

Liquid Limit (WL)	30	%
Plastic Limit (Wp)	16	%
Plasticity Index (Ip)	14	%



4025

Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO

N 3/91, IRC Village, Bhubaneswar

DETERMINATION OF LIQUID LIMIT AND PLASTIC LIMIT

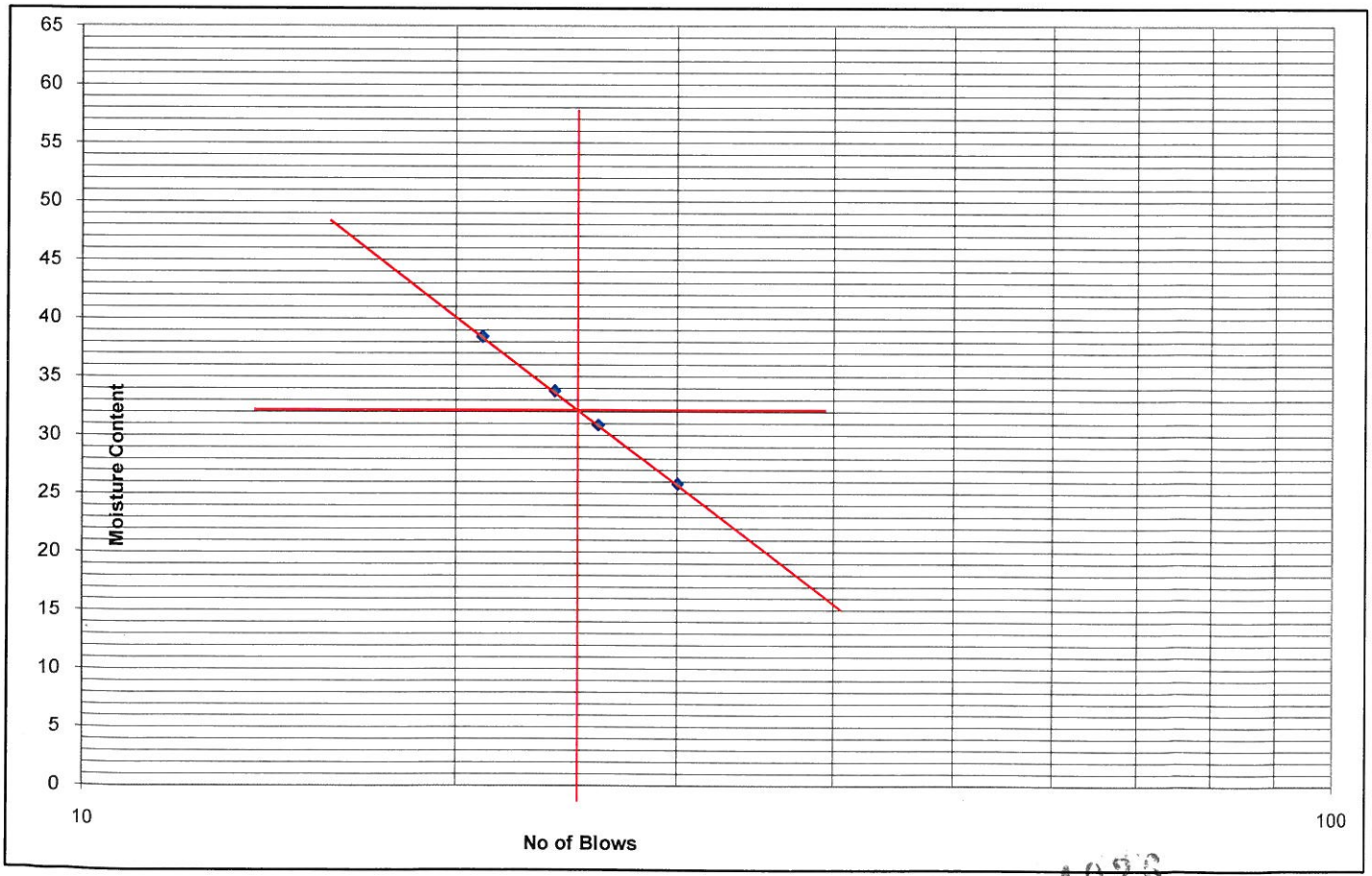
IS : 2720 (Part -5)

Client	:	DFCC			
Project Name	:	G.I For 3 Nos. Important Bridges			
Type of Sample	:	SPT	Date Of Testing	:	12.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	50.0m	Tested by	:	D.Mohanty

Number of Blows	30	26	24	21	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)	92.00	106.57	105.59	111.87	89.37	88.73
Wt of Container + Wt. of oven dry soil (gm) (W3)	79.43	90.41	87.14	89.58	81.91	80.80
Wt. Of water (gm) (W2-W1)-(W3-W1)	12.57	16.16	18.45	22.30	7.46	7.93
Wt. of oven dry soil (gm) (W3-W1)	48.63	52.33	54.67	58.02	44.18	49.81
Moisture Content (%)= [(W2-W1)-(W3-W1)]/(W3-W1) X 100	**25.84**	**30.89**	**33.76**	**38.43**	**16.89**	**15.92**

Result Summary

Liquid Limit (WL)	32	%
Plastic Limit (Wp)	16	%
Plasticity Index (Ip)	16	%



4026

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	:	10.10.12
Type of Sample	:	UDS	Tested by	:	K.C.Sahoo
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	10.5m	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	11.5	1.50	15	12	50%
2	10	11.0	1.00	10		
3	10	11.0	1.00	10		

Remarks:

Lab Manager

Checked By:

4027

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	:	10.10.12
Type of Sample	:	SPT	Tested by	:	K.C.Sahoo
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	12.0m	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	12.0	2.00	20	14	50%
2	10	11.5	1.50	15		
3	10	10.7	0.70	7		

Remarks:

Lab Manager

Checked By:

4028

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	:	10.10.12	
Type of Sample	: UDS	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 13.5m	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	13	50%
2	10	11.5	1.50	15		
3	10	10.5	0.50	5		

Remarks:

Lab Manager

Checked By:

4029

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	:	10.10.12
Type of Sample	:	UDS	Tested by	:	K.C.Sahoo
Location	:	BH-6(Markanda 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	13.5	3.50	35	26	50%
2	10	12.3	2.30	23		
3	10	12.0	2.00	20		

Remarks:

Lab Manager

Checked By:

4030

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	:	10.10.12	
Type of Sample	: SPT	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 18.0m	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	13.0	3.00	30	25	50%
2	10	12.5	2.50	25		
3	10	12.0	2.00	20		

Remarks:

Lab Manager

Checked By:

4031

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	:	10.10.12	
Type of Sample	: UDS	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 19.5m	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	14.0	4.00	40	26	50%
2	10	12.3	2.30	23		
3	10	11.5	1.50	15		

Remarks:

Lab Manager

Checked By:

4032

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	:	10.10.12
Type of Sample	:	SPT	Tested by	:	K.C.Sahoo
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	21.0m	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	13.5	3.50	35	27	50%
2	10	12.5	2.50	25		
3	10	12.0	2.00	20		

Remarks:

Lab Manager

Checked By:

4033

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	:	10.10.12	
Type of Sample	: UDS	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 22.5m	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	13.5	3.50	35	26	50%
2	10	12.8	2.80	28		
3	10	11.5	1.50	15		

Remarks:

Lab Manager

Checked By:

4031

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	:	10.10.12
Type of Sample	:	UDS	Tested by	:	K.C.Sahoo
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	25.5m	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	13.0	3.00	30	24	50%
2	10	12.5	2.50	25		
3	10	11.7	1.70	17		

Remarks:

Lab Manager

Checked By:

4035

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	:	10.10.12	
Type of Sample	: SPT	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 27.0m	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	13.0	3.00	30	26	50%
2	10	12.5	2.50	25		
3	10	12.3	2.30	23		

Remarks:

Lab Manager

Checked By:

4036

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	:	10.10.12
Type of Sample	: SPT	Tested by	:	K.C.Sahoo
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	: 30.0m	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	13.5	3.50	35	27	50%
2	10	12.5	2.50	25		
3	10	12.0	2.00	20		

Remarks:

Lab Manager

Checked By:

4037

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	:	10.10.12	
Type of Sample	: SPT	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda 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	11.2	1.20	12	9	50%
2	10	11.0	1.00	10		
3	10	10.5	0.50	5		

Remarks:

Lab Manager

Checked By:

4038

Arki Techno Consultants (India) Pvt.Ltd

ARKITECHNO 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	:	10.10.12
Type of Sample	:	SPT	Tested by	:	K.C.Sahoo
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	39.0m	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	11.5	1.50	15	8	50%
2	10	10.5	0.50	5		
3	10	10.5	0.50	5		

Remarks:

Lab Manager

Checked By:

4039

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	:	10.10.12	
Type of Sample	: SPT	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 42.0m	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	11.5	1.50	15	10	50%
2	10	11.0	1.00	10		
3	10	10.5	0.50	5		

Remarks:

Lab Manager

Checked By:

4040

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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 : SPT

Location : BH-6(Markanda River-Saharanpur)

Depth : 45.0m

Date Of Testing : 10.10.12

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	9	50%
2	10	10.7	0.70	7		
3	10	10.5	0.50	5		

Remarks:

Lab Manager

Checked By:

4041

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	:	10.10.12	
Type of Sample	: SPT	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 48.0m	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	11.0	1.00	10	8	50%
2	10	11.0	1.00	10		
3	10	10.5	0.50	5		

Remarks:

Lab Manager

Checked By:

4042

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	:	10.10.12	
Type of Sample	: SPT	Tested by	:	K.C.Sahoo	
Location	: BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das	
Depth	: 50.0m	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	11.0	1.00	10	10	50%
2	10	11.0	1.00	10		
3	10	11.0	1.00	10		

Remarks:

Lab Manager

Checked By:

4043

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	1.5m	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	37.81	
3	Weight of bottle with soil and water W3 in gm	136.38	
4	Weight of bottle full of water W4 in gm	132.46	
5	Weight of dry soil (W2-W1)in gm	6.29	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.37	
7	Specific Gravity G = (5) / (6)	2.65	

Lab Manager

Checked By

4044

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	:	10.10.12
Location	:	BH-6(Markanda 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	133.26	
5	Weight of dry soil (W2-W1)in gm	5.30	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.01	
7	Specific Gravity G = (5) / (6)	2.64	

Lab Manager

Checked By

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	4.5m	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	37.82	
3	Weight of bottle with soil and water W3 in gm	135.75	
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	2.38	
7	Specific Gravity G = (5) / (6)	2.65	

Lab Manager

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4046

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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	:	10.10.12
Location	:	BH-6(Markanda 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	137.50	
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	2.69	
7	Specific Gravity G = (5) / (6)	2.64	

Lab Manager

Checked By

4047

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	7.5m	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	36.75	
3	Weight of bottle with soil and water W3 in gm	136.94	
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)	2.65	

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	38.26	
3	Weight of bottle with soil and water W3 in gm	137.83	
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	2.53	
7	Specific Gravity G = (5) / (6)	2.66	

Lab Manager

Checked By

4049

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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	12.0m	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	37.93	
3	Weight of bottle with soil and water W3 in gm	136.58	
4	Weight of bottle full of water W4 in gm	132.57	
5	Weight of dry soil (W2-W1)in gm	6.41	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.40	
7	Specific Gravity G = (5) / (6)	2.67	

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	13.5m	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	38.52	
3	Weight of bottle with soil and water W3 in gm	135.73	
4	Weight of bottle full of water W4 in gm	131.36	
5	Weight of dry soil (W2-W1)in gm	7.00	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.63	
7	Specific Gravity G = (5) / (6)	2.66	

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Lab Manager

Checked By

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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	:	10.10.12
Location	:	BH-6(Markanda 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	135.82	
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	2.67	
7	Specific Gravity G = (5) / (6)	2.67	

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Lab Manager

Checked By

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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	:	10.10.12
Location	:	BH-6(Markanda 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	136.81	
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	2.38	
7	Specific Gravity G = (5) / (6)	2.67	

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Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	

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Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	21.0m	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	37.69	
3	Weight of bottle with soil and water W3 in gm	135.87	
4	Weight of bottle full of water W4 in gm	132.01	
5	Weight of dry soil (W2-W1)in gm	6.17	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.31	
7	Specific Gravity G = (5) / (6)	2.67	

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Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	37.90	
3	Weight of bottle with soil and water W3 in gm	137.53	
4	Weight of bottle full of water W4 in gm	133.53	
5	Weight of dry soil (W2-W1)in gm	6.38	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.38	
7	Specific Gravity G = (5) / (6)	2.68	

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Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	36.88	
3	Weight of bottle with soil and water W3 in gm	136.97	
4	Weight of bottle full of water W4 in gm	133.62	
5	Weight of dry soil (W2-W1)in gm	5.36	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.01	
7	Specific Gravity G = (5) / (6)	2.67	

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Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	37.12	
3	Weight of bottle with soil and water W3 in gm	137.01	
4	Weight of bottle full of water W4 in gm	133.51	
5	Weight of dry soil (W2-W1)in gm	5.60	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.11	
7	Specific Gravity G = (5) / (6)	2.66	

4058

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	36.58	
3	Weight of bottle with soil and water W3 in gm	137.20	
4	Weight of bottle full of water W4 in gm	134.03	
5	Weight of dry soil (W2-W1)in gm	5.06	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	1.90	
7	Specific Gravity G = (5) / (6)	2.67	

4059

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	37.24	
3	Weight of bottle with soil and water W3 in gm	136.81	
4	Weight of bottle full of water W4 in gm	133.27	
5	Weight of dry soil (W2-W1)in gm	5.72	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.18	
7	Specific Gravity G = (5) / (6)	2.63	

4060

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	39.0m	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	36.61	
3	Weight of bottle with soil and water W3 in gm	136.91	
4	Weight of bottle full of water W4 in gm	133.75	
5	Weight of dry soil (W2-W1)in gm	5.09	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	1.93	
7	Specific Gravity G = (5) / (6)	2.64	

4091

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	42.0m	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	36.27	
3	Weight of bottle with soil and water W3 in gm	136.91	
4	Weight of bottle full of water W4 in gm	133.96	
5	Weight of dry soil (W2-W1)in gm	4.75	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	1.80	
7	Specific Gravity G = (5) / (6)	2.64	

4062

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda 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	37.46	
3	Weight of bottle with soil and water W3 in gm	137.90	
4	Weight of bottle full of water W4 in gm	134.20	
5	Weight of dry soil (W2-W1)in gm	5.94	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	2.24	
7	Specific Gravity G = (5) / (6)	2.65	

4063

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	48.0m	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	36.53	
3	Weight of bottle with soil and water W3 in gm	137.23	
4	Weight of bottle full of water W4 in gm	134.12	
5	Weight of dry soil (W2-W1)in gm	5.01	
6	Weight of equal volume of water(W2 - W1) - (W3 - W4) in gm	1.90	
7	Specific Gravity G = (5) / (6)	2.64	

4064

Lab Manager

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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	:	10.10.12
Location	:	BH-6(Markanda River-Saharanpur)	Sampled by	:	T.K.Das
Depth	:	50.0m	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	136.67	
4	Weight of bottle full of water W4 in gm	133.37	
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	

4065

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ARKI TECHNO CONSULTANTS (I) PVT. LTD.

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-6(Markanda 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-6(Markanda River-Saharanpur)	1.5	SPT	10.10.12	62.34	3.8	7	79.39	206.83	190.57	128.23	16.26	12.68	1.82	1.62
2		3.0	SPT	10.10.12	61.82	3.8	7	79.39	207.10	191.46	129.64	15.65	12.07	1.83	1.63
3		4.5	SPT	10.10.12	60.71	3.8	7	79.39	207.58	191.90	131.19	15.68	11.95	1.85	1.65
4		6.0	SPT	10.10.12	63.49	3.8	7	79.39	211.16	196.31	132.82	14.85	11.18	1.86	1.67
5		7.5	SPT	10.10.12	60.77	3.8	7	79.39	206.85	190.89	130.12	15.95	12.26	1.84	1.64
6		10.5	UDS	10.10.12	64.84	3.8	7	79.39	216.47	192.88	128.04	23.60	18.43	1.91	1.61
7		12.0	SPT	10.10.12	65.31	3.8	7	79.39	219.33	194.77	129.46	24.56	18.97	1.94	1.63
8		13.5	UDS	10.10.12	60.5	3.8	7	79.39	216.90	190.82	130.32	26.08	20.01	1.97	1.64
9		16.5	UDS	10.10.12	61.31	3.8	7	79.39	216.12	190.57	129.26	25.55	19.77	1.95	1.63
10		18.0	SPT	10.10.12	62.29	3.8	7	79.39	218.69	192.17	129.88	26.52	20.42	1.97	1.64
11		19.5	UDS	10.10.12	63.12	3.8	7	79.39	220.31	193.43	130.31	26.88	20.63	1.98	1.64
12		21.0	SPT	10.10.12	62.74	3.8	7	79.39	216.76	191.76	129.01	25.00	19.38	1.94	1.63
13		22.5	UDS	10.10.12	60.85	3.8	7	79.39	225.98	196.70	135.85	29.28	21.55	2.08	1.71
14		25.5	UDS	10.10.12	64.79	3.8	7	79.39	229.13	199.46	134.67	29.67	22.03	2.07	1.70
15		27.0	SPT	10.10.12	63.44	3.8	7	79.39	229.37	201.24	137.80	28.12	20.41	2.09	1.74
16		30.0	SPT	10.10.12	61.26	3.8	7	79.39	226.39	197.24	135.98	29.15	21.44	2.08	1.71
17		34.5	SPT	10.10.12	63.02	3.8	7	79.39	234.50	209.32	146.30	25.18	17.21	2.16	1.84
18		39.0	SPT	10.10.12	62.05	3.8	7	79.39	232.74	207.99	145.94	24.75	16.96	2.15	1.84
19		42.0	SPT	10.10.12	63.71	3.8	7	79.39	235.99	211.28	147.57	24.70	16.74	2.17	1.86
20		45.0	SPT	10.10.12	60.84	3.8	7	79.39	234.70	208.80	147.96	25.91	17.51	2.19	1.86
21		48.0	SPT	10.10.12	61.29	3.8	7	79.39	232.77	207.08	145.79	25.69	17.62	2.16	1.84
22		50.0	SPT	10.10.12	60.77	3.8	7	79.39	230.66	206.04	145.27	24.62	16.95	2.14	1.83

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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	4.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 53.26

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	23.88	23.88	23.88	76.12
0.425	20.37	20.37	44.25	55.75
0.075	9.02	9.02	53.27	46.73
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 53.27 **Silt and clay %** 46.73

Remarks :-

4067

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	6.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 51.92

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	23.10	23.10	23.10	76.90
0.425	21.19	21.19	44.29	55.71
0.075	7.64	7.64	51.93	48.07
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 51.93 **Silt and clay %** 48.07

Remarks :-

4068

Lab Manager Checked By

Arki Techno Consultants (India) Pvt. Ltd

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	9.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.63

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	0.76	0.76	0.76	99.24
0.425	0.61	0.61	1.37	98.63
0.075	0.27	0.27	1.64	98.36
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.64 **Silt and clay %** 98.36

Remarks :-

4069

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	10.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.39

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	0.65	0.65	0.65	99.35
0.425	0.57	0.57	1.22	98.78
0.075	0.17	0.17	1.39	98.61
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.39 **Silt and clay %** 98.61

Remarks :-

4070

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Arki Techno Consultants (India) Pvt. Ltd

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	13.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.47

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	0.72	0.72	0.72	99.28
0.425	0.54	0.54	1.26	98.74
0.075	0.21	0.21	1.47	98.53
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.47 **Silt and clay %** 98.53

Remarks :-

4071

Lab Manager

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	16.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 79.56

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	36.76	36.76	36.76	63.24
0.425	30.13	30.13	66.89	33.11
0.075	12.67	12.67	79.56	20.44
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 79.56 **Silt and clay %** 20.44

Remarks :-

4072

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	18.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.89

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	0.86	0.86	0.86	99.14
0.425	0.73	0.73	1.59	98.41
0.075	0.30	0.30	1.89	98.11
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.89 **Silt and clay %** 98.11

Remarks :-

4073

Lab Manager

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	19.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.04

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	0.49	0.49	0.49	99.51
0.425	0.38	0.38	0.87	99.13
0.075	0.17	0.17	1.04	98.96
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.04 **Silt and clay %** 98.96

Remarks :-

4074

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	21.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.32

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	0.62	0.62	0.62	99.38
0.425	0.53	0.53	1.15	98.85
0.075	0.17	0.17	1.32	98.68
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.32 **Silt and clay %** 98.68

Remarks :-

4073

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	22.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.74

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	0.79	0.79	0.79	99.21
0.425	0.67	0.67	1.46	98.54
0.075	0.29	0.29	1.75	98.25
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.75 **Silt and clay %** 98.25

Remarks :-

4076

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	25.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.67

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	0.76	0.76	0.76	99.24
0.425	0.67	0.67	1.43	98.57
0.075	0.25	0.25	1.68	98.32
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.68 **Silt and clay %** 98.32

Remarks :-

4077

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	28.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.37

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	0.62	0.62	0.62	99.38
0.425	0.51	0.51	1.13	98.87
0.075	0.24	0.24	1.37	98.63
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.37 **Silt and clay %** 98.63

Remarks :-

4078

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	30.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 32.85

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	15.70	15.70	15.70	84.30
0.425	11.83	11.83	27.53	72.47
0.075	5.32	5.32	32.85	67.15
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 32.85 **Silt and clay %** 67.15

Remarks :-

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	31.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 34.26

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	16.04	16.04	16.04	83.96
0.425	12.96	12.96	29.00	71.00
0.075	5.27	5.27	34.27	65.73
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 34.27 **Silt and clay %** 65.73

Remarks :-

4080

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	33.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 34.81

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	18.80	18.80	18.80	81.20
0.425	11.13	11.13	29.93	70.07
0.075	4.88	4.88	34.81	65.19
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 34.81 **Silt and clay %** 65.19

Remarks :-

4081

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	36.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 35.12

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	17.31	17.31	17.31	82.69
0.425	12.83	12.83	30.14	69.86
0.075	4.98	4.98	35.12	64.88
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 35.12 **Silt and clay %** 64.88

Remarks :-

4082

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	37.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 32.70

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	16.53	16.53	16.53	83.47
0.425	12.07	12.07	28.60	71.40
0.075	4.10	4.10	32.70	67.30
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 32.70 **Silt and clay %** 67.30

Remarks :-

4083

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	40.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 1.42

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	0.67	0.67	0.67	99.33
0.425	0.55	0.55	1.22	98.78
0.075	0.20	0.20	1.42	98.58
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 1.42 **Silt and clay %** 98.58

Remarks :-

4084

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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	46.5m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 16.53

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	8.23	8.23	8.23	91.77
0.425	6.34	6.34	14.57	85.43
0.075	1.96	1.96	16.53	83.47
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 16.53 **Silt and clay %** 83.47

Remarks :-

4085

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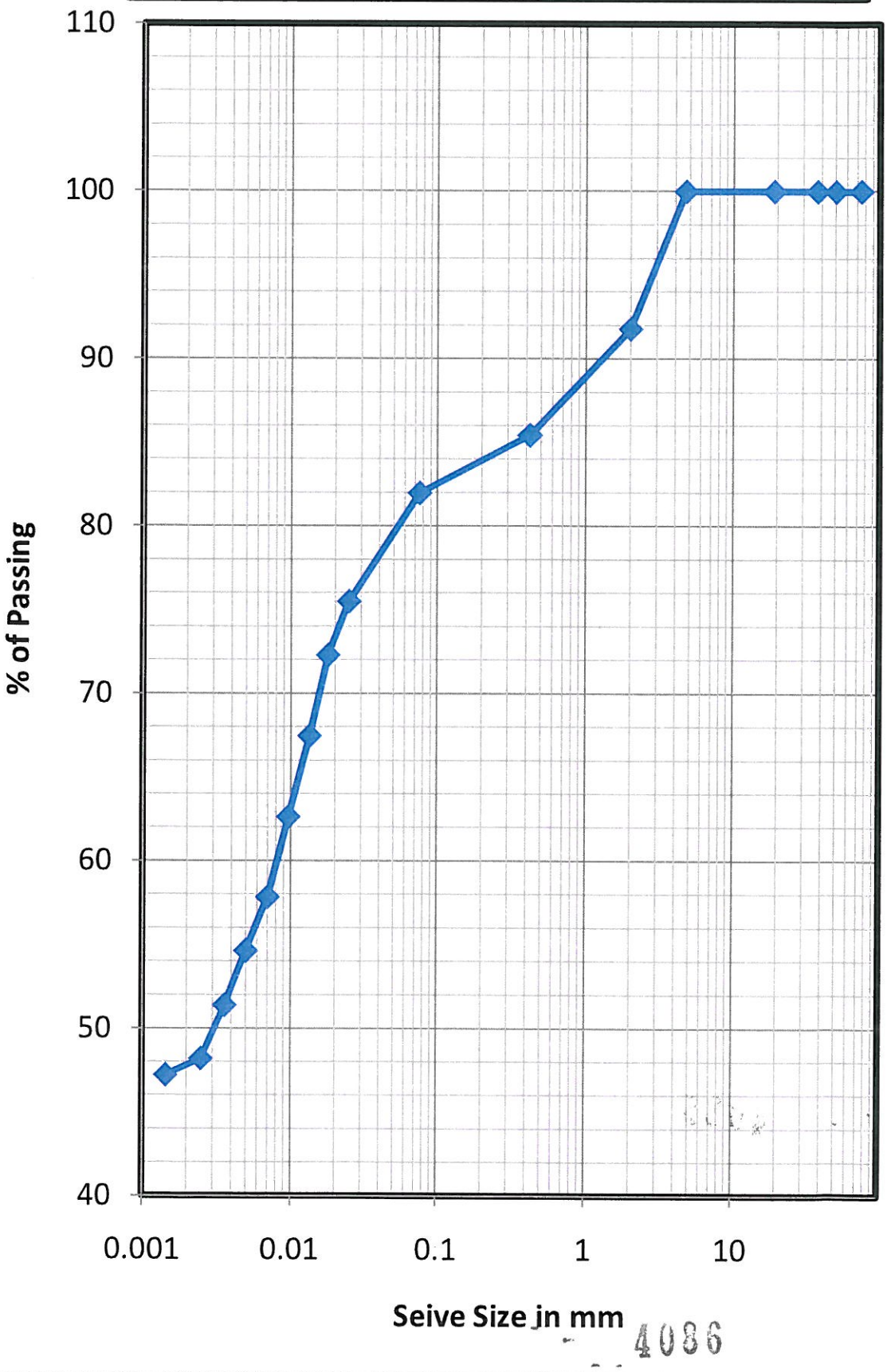
Grain Size Distribution Curve
BH-7,D-46.5m



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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	:	04.10.12
Location	:	BH-7(Markanda River-Saharanpur)	Sampled by	:	T. K. Das
Depth	:	48.0m	Tested by	:	K.C.Sahoo

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

Weight of oven dried sample after washing (gm) :- 17.17

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	8.47	8.47	8.47	91.53
0.425	6.34	6.34	14.81	85.19
0.075	2.37	2.37	17.18	82.82
Total	100.00			

Gravel Content (%)= **0.00**

Sand Content (%) = 17.18 **Silt and clay %** 82.82

Remarks :-

4037

Lab Manager Checked By