

University of Tennessee, Knoxville

TRACE: Tennessee Research and Creative Exchange

Faculty Publications and Other Works -- Civil & Environmental Engineering

Engineering -- Faculty Publications and Other Works

Influence of Flocculant on Flow Behavior and Undrained Shear Strength of Fine Coal Refuse

Angelica M. Palomino

Cyrus Jedari

Eric C. Drumm

Follow this and additional works at: https://trace.tennessee.edu/utk_civipubs

Part of the Civil Engineering Commons, Geological Engineering Commons, and the Geotechnical Engineering Commons

Data Set for "Influence of Flocculant on Flow Behavior and Undrained Shear Strength of Fine Coal Refuse"

Data set supports a manuscript submitted May 2020 for potential publication in a peer-reviewed journal **Authors:**

Dr. Cyrus Jedari

Dr. Angelica M. Palomino, Associate Professor Corresponding Author Department of Civil & Environmental Engineering Unviersity of Tennessee angel@utk.edu

Dr. Eric C. Drumm, Professor Department of Biosystems Engineering and Soil Science University of Tennessee

This research was part of a project funded by Office of Surface Mining Reclamation and Enforcement (OSMRE) of the U.S. Department of the Interior (Grant/Cooperative Agreement Number S15AC20024), whose support is gratefully acknowledged.

	Overburden pressure (kPa)	#Drops (N6)
	27.6	60
	41.4	85
As Received	55.2	105
FCR	68.9	106
	82.7	128
	110.3	209
	137.9	61
	110.3	53
FCR in	82.7	25
Distilled	68.9	45
Water	55.2	50
	41.4	24
	27.6	27
	137.9	55
	110.3	15
FCR in	82.7	24
Dispersant	55.2	25
	41.4	0
	27.6	16

	Moisture Content (%)	#Drops (N6)
	49.4	60
	45.4	85
As Received	42.1	105
FCR	40.3	106
	39.9	128
	38.8	209
	34.6	61
	35.5	53
FCR in	39.1	25
Distilled	39.9	45
Water	41.4	50
	42.4	24
	41.74	27
	32.7	55
	37.1	15
FCR in	33.0	24
Dispersant	35.1	25
	35.8	0
	37.73	16

	Overburden pressure (kPa)	Cu (kPa)
	27.6	2.97
	41.4	4.10
As-	55.2	5.01
Received	68.9	5.43
FCR	82.7	7.08
TCK	110.3	10.50
	137.9	13.54
	206.8	18.68
	206.8	11.45
	137.9	6.89
FCR in	110.3	5.03
Distilled	82.7	2.69
Water	68.9	3.69
water	55.2	4.10
	41.4	2.09
	27.6	1.68
	137.9	13.70
	110.3	5.77
FCR in	82.7	3.35
Dispersant	55.2	2.83
	41.4	1.21
	27.6	2.48

	Void Ratio (e)	Average Cu (kPa)
	1.09	3.0
	1.00	4.1
	0.93	5.0
As-Received	0.89	5.4
FCR	0.88	7.1
	0.86	10.5
	0.83	13.5
	0.75	18.7
	0.69	11.5
	0.77	6.9
FCR in	0.78	5.0
Distilled	0.86	2.7
Water	0.88	3.7
Water	0.92	4.1
	0.94	2.1
	0.92	1.7
	0.72	13.7
	0.82	5.8
FCR in	0.73	3.4
Dispersant	0.78	2.8
	0.79	1.2
	0.83	2.5

	Moisture Content (%)	Cu (kPa)
	49.4	3.0
	45.4	4.1
As-	42.1	5.0
Received	40.3	5.4
FCR	39.9	7.1
TON	38.8	10.5
	37.7	13.5
	33.8	18.7
	31.0	11.5
	34.6	6.9
FCR in	35.5	5.0
Distilled	39.1	2.7
Water	39.9	3.7
Water	41.4	4.1
	42.4	2.1
	41.7	1.7
	32.7	13.7
	37.1	5.8
FCR in	33.0	3.4
Disprsant	35.1	2.8
	35.8	1.2
	37.7	2.5

	Moisture Content (%)	Normalized Cu
	49.4	0.11
	45.4	0.10
As-	42.1	0.09
Received	40.3	0.08
FCR	39.9	0.09
. Cit	38.8	0.10
	37.7	0.10
	33.8	0.09
	31.0	0.06
	34.6	0.05
FCR in	35.5	0.05
Distilled	39.1	0.03
Water	39.9	0.05
Wate.	41.4	0.07
	42.4	0.05
	41.7	0.06
	32.7	0.10
	37.1	0.05
FCR in	33.0	0.04
Dispersant	35.1	0.05
	35.8	0.03
	37.7	0.09

	Average Cu (kPa)	Liquidity Index
	3.0	2.18
	4.1	1.83
As-	5.0	1.55
Received	5.4	1.39
FCR	7.1	1.36
ren	10.5	1.26
	13.5	1.16
	18.7	0.83
	11.5	0.61
FCR in Distilled Water	6.9	0.91
	5.0	0.98
	2.7	1.28
	3.7	1.35
	4.1	1.47
	2.1	1.56
	1.7	1.50
FCR in	13.7	1.24
	3.4	1.25
Dispersant	2.8	1.41
Dispersant	1.2	1.46
	2.5	1.60

	Average Cu (kPa)	#Drops (N6)
	3.0	60
	4.1	85
As-Received	5.0	105
FCR	5.4	106
	7.1	128
	10.5	209
	6.9	61
	5.0	53
FCR in	2.7	25
Distilled	3.7	45
Water	4.1	50
	2.1	24
	1.7	27
	6.9	61
	5.0	53
FCR in	2.7	25
Dispersant	3.7	45
Dispersant	4.1	50
	2.1	24
	1.7	27