



# केन्द्रीय भंडारण निगम

(उपक्रम का सरकार भारत)

## Central Warehousing Corporation

(A Government of India Undertaking)



No. CWC/ AE-RO-BPL /Material Testing/2022-23/

Date:- 05.03.2023

To,  
Earth Material & Engineering Solution Laboratory,  
House No 4, Vidhya Sagar Dham, Bhanpur  
Bhopal (MP)

Sub:- Testing of Construction Material.....reg.

Sir,

Find enclosed here with following materials to be used in "Providing and laying VDC flooring in Godown No- 1-C at Central warehouse Pithampur (M.P)". You are requested to conduct test as mentioned below:-

S.No	Name of Material	No of Samples	Test Required
1	Stone aggregate 20 mm (Nominal Size)	2	Gradation, Deleterious material, Specific gravity, Crushing value, Aggregate Impact Value,
2	water	1	PH value, chlorides, sulphates, alkalinity test, acidity, suspended matter, organic & inorganic matter.
3	Coarse Sand	1	Gradation, Silt Content, Bulking of sand, organic impurities.
4	Cement	1	Physical and chemical properties.
5	TMT bar 6mm dia	1	All Physical & chemical properties

The testing charges bill will be paid by contractor of work M/s Mohan Singh Chouhan & report to be submitted to Assistant Engineer (C) Central Warehousing Corporation, Regional office at an early date.

Yours faithfully,

Encl:- as above



  
(Anil Kumar)  
Assistant Engineer (C)



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## TEST REPORT

Report No. :	EMES/1108/18	Date of Report :	14-03-23
Description of Sample		Sample Received Date :	06-03-23
Discipline :	Mechanical	Sample Testing Date :	08-03-23
Group :	Building Material	Testing Completed Date :	13-03-23
Sub Group :	Coarse Aggregate		
Nature of sample :	20 mm Nominal Size Aggregate		
Quantity :	1 Bag (25 kg Approx) Seal Paked		
Source of sample :	Sample supplied by the customer		
Name Of Work :	Providing and Laying VDC Flooring in Godown No.1 -C at Central Warehouse Pithampur M.P		
Letter Ref. No. :	CWC/AE-RO-BPL/Material Testing/2022-23		
Name of Agency :	M/s Mohan Singh Chouhan		
Issued To :	Assistant Engineer Central Warehousing Corporation		

### Test Data

Sr. No.	Parameters of Test		Test method	Test Value	Requirement as per IS: 383-2016
1	Sieve Analysis		IS:2386 (Part-1):1963	Table-01	
2	Impact Value		IS:2386 (Part-4):1963	15.23 %	Max 45 % For Concrete For Other Than Wearing &
3	Crushing Value		IS:2386 (Part-4):1963	17.08 %	Max 30 % For Wearing Surfaces
4	Specific Gravity		IS:2386 (Part-3):1963	2.61	2.1 to 3.2
5	Water Absorption		IS:2386 (Part-3):1963	1.3 %	Maximum 5%
6	All Deleterious Material	Finer than 75 µm	IS:2386 (Part-1):1963	0.56 %	Manufactured for Max. 1%
		Coal and lignite	IS:2386 (Part-2):1963	0.27 %	Manufactured for Max. 1%
		Clay & Lump	IS:2386 (Part-2):1963	0.27 %	Manufactured for Max. 1%
		Soft Fragments	IS:2386 (Part-2):1963	0.17 %	Manufactured for Max. 3%
	Total % of all Deleterious Material			1.27 %	2 % Max. for Manufactured

### Table-01 (Sieve Analysis )

	Sieve Size	Test Method	% Passing	Requirement as per IS: 383-2016, Table-7 (Clauses 6.1 and 6.2)
1	40 mm	IS:2386 (Part-1):1963	100.0 %	100
	20 mm		94.9 %	85-100
	10 mm		12.2 %	0-20
	4.75 mm		1.6 %	0-5

\*\*\*\*\* End of Report \*\*\*\*\*

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Tested By / Review By	QR Code	EMES LABORATORY Bhopal Authorized Signatory MR. A.S.PAWAR
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## TEST REPORT

Report No.	: EMES/1108/17	Page : 01 of 01
Description of Sample		Date of Report : 13-03-23
Discipline	: Mechanical	Sample Received Date : 06-03-23
Group	: Building Material	
Sub Group	: Coarse Aggregate	
Nature of sample	: 20 mm Nominal Size Aggregate	Sample Testing Date : 07-03-23
Quantity	: 1 Bag (25 kg Approx) Seal Paked	Testing Completed Date : 12-03-23
Source of sample	: Crusher	
Name Of Work	: Providing and Laying VDC Flooring in Godown No.1 -C at Central Warehouse Pithampur M.P	
Letter Ref. No.	: CWC/AE-RO-BPL/Material Testing/2022-23	
Name of Agency	: M/s Mohan Singh Chouhan	
Issued To	: Assistant Engineer Central Warehousing Corporation	

### Test Data

Sr. No.	Parameters of Test		Test method	Test Value	Requirement as per IS: 383-2016
1	Sieve Analysis		IS:2386 (Part-1):1963	Table-01	
2	Impact Value		IS:2386 (Part-4):1963	16.53 %	Max 45 % For Concrete For Other Than Wearing & Max 30 % For Wearing Surfaces
3	Crushing Value		IS:2386 (Part-4):1963	18.27 %	
4	Specific Gravity		IS:2386 (Part-3):1963	2.64	2.1 to 3.2
5	Water Absorption		IS:2386 (Part-3):1963	1.32 %	Maximum 5%
6	All Deleterious Material	Finer than 75 µm	IS:2386 (Part-1):1963	0.42 %	Manufactured for Max. 1%
		Coal and lignite	IS:2386 (Part-2):1963	0.12 %	Manufactured for Max. 1%
		Clay & Lump	IS:2386 (Part-2):1963	0.22 %	Manufactured for Max. 1%
		Soft Fragments	IS:2386 (Part-2):1963	0.12 %	Manufactured for Max. 3%
	Total % of all Deleterious Material			0.88 %	2 % Max. for Manufactured

### Table-01 (Sieve Analysis)

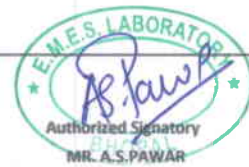
	Sieve Size	Test Method	% Passing	Requirement as per IS: 383-2016, Table-7 (Clauses 6.1 and 6.2)
1	40 mm	IS:2386 (Part-1):1963	100.0 %	100
	20 mm		95.3 %	85-100
	10 mm		14.2 %	0-20
	4.75 mm		2.9 %	0-5

\*\*\*\*\* End of Report \*\*\*\*\*

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Tested By / Review By	QR Code	Authorized Signatory MR. A.S.PAWAR
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## TEST REPORT

Report No. : EMES/1108/15	Page : 01 of 01 Date of Report : 13-03-23
<b>Description of Sample</b> Discipline : Mechanical Group : Building Material Sub Group : Fine Aggregate Nature of sample : River Sand Quantity : 1 Bag (25 kg Approx) Seal Paked Source of sample : Sample supplied by the customer Sample Received Date : 06-03-23 Sample Testing Date : 07-03-23 Testing Completed Date : 12-03-23	
Name Of Work : Providing and Laying VDC Flooring in Godown No.1 -C at Central Warehouse Pithampur M.P. Letter Ref. No. : CWC/AE-RO-BPL/Material Testing/2022-23 Name of Agency : M/s Mohan Singh Chouhan Issued To : Assistant Engineer Central Warehousing Corporation	

## Test Data

S.No.	Parameters of Test		Test method	Test Value	Requirement as per IS: 383-2016
1	Sieve Analysis		IS:2386(Part-1):1963	Table-01	Table in below
2	Fineness Modulus		IS:2386(Part-1):1963	1.93	-
3	Bulking of Sand		IS:2386(Part-3):1963	13.45 %	-
4	Silt Content		CPWD Sp.(vol-1) 2009	2.34 %	As per CPWD Specification Max. 8%
5	All Deleterious Material	Finer than 75 µm	IS:2386 (Part-1):1963	0.54 %	3 % Max. for Uncrushed
		Coal and lignite	IS:2386 (Part-2):1963	0.08 %	1 % Max. for Uncrushed
		Clay & Lump	IS:2386 (Part-2):1963	0.03 %	1 % Max. for Uncrushed
		Soft Fragments	IS:2386 (Part-2):1963	Nil	-
	Total % of all Deleterious Material			0.65 %	5 % Max. for Uncrushed
6	Organic Impurities		IS:2386 (Part-2):1963	1.08 %	5 % Max. for Uncrushed,

Table-01 (Sieve Analysis)

	Sieve Size		% of Passing	Zone-I	Zone-II	Zone-III	Zone-IV
1	10 mm	IS:2386(Part-1):1963	100.00	100	100	100	100
	4.75 mm		96.54	90 - 100	90 - 100	90 - 100	95 - 100
	2.36 mm		81.85	60 - 95	75 - 100	85 - 100	95 - 100
	1.18 mm		68.28	30 - 70	55 - 90	75 - 100	90 - 100
	600 mic.		42.39	15 - 34	35 - 59	60 - 79	80 - 100
	300 mic.		14.21	5 - 20	8 - 30	12 - 40	15 - 50
	150 mic.		3.29	0 - 10	0 - 10	0 - 10	0 - 15

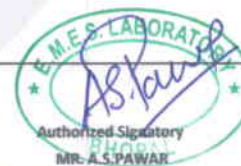
Sand conforming to Grading Zone - II

\*\*\*\*\* End of Report \*\*\*\*\*

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## TEST REPORT

Report No. : EMES/1108/16		Page : 01 of 01		
Description of Sample		Date of Report : 15-03-23		
Discipline : Chemical		Sample Received Date : 06-03-23		
Group : Water		Sample Testing Date : 07-03-23		
Nature of sample : Construction water		Testing Completed Date : 14-03-23		
Quantity of Sample : 1 litre				
Source of Sample : Boring				
Name Of Work : Providing and Laying VDC Flooring in Godown No.1 -C at Central Warehouse Pithampur M.P				
Letter Ref. No. : CWC/AE-RO-BPL/Material Testing/2022-23				
Name of Agency : M/s Mohan Singh Chouhan				
Issued To : Assistant Engineer Central Warehousing Corporation				
Test Data				
S. No.	Parameters of Test	Test method IS	Test Value	IS 456 : 2000 Requirement
1	Acidity (Neutralize 100 ml Sample of water using 0.02 N NaOH)	IS 3025 (Part -22):1986	2.87 ml	5 Max.
2	Alkalinity (Neutralize 100 ml Sample of water using 0.02N H <sub>2</sub> SO <sub>4</sub> )	IS 3025 (Part -23):1986	20.42 ml	25 Max.
3	Chloride	IS 3025 (Part -32):1988	56.32 mg/l	2000 Max.for Concrete not Containing Embedded steel and 500 mg/l for Reinforced concrete work
4	Inorganic solids	IS 3025 (Part -18):1984	278.0 mg/l	3000 Max.
5	Organic solids	IS 3025 (Part -18):1984	127.4 mg/l	200 Max.
6	Suspended solids	IS 3025 (Part 17) :1984	48.4 mg/l	2000 Max.
7	pH	IS 3025 (Part 11):1983	7.71	Not less than 6

\*\*\*\*\* End of Report \*\*\*\*\*

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## TEST REPORT

Page : 01 of 01

<b>Report No.</b>	: EMES/1108/14	<b>Date of Report</b>	: 18-03-23
<b>Description of Sample</b>		<b>Sample Received Date</b>	: 06-03-23
<b>Discipline</b>	: Mechanical	<b>Sample Testing Date</b>	: 07-03-23
<b>Group</b>	: Building Material	<b>Testing Completed Date</b>	: 17-03-23
<b>Nature of sample</b>	: Cement		
<b>Grade of Sample</b>	: PPC		
<b>Name of Manufacture</b>	: Ultratech		
<b>Quantity</b>	: 1 Bag. (50 kg approx) Seal Paked		
<b>Source of sample</b>	: Sample supplied by the customer		
<b>Name Of Work</b>	: Providing and Laying VDC Flooring in Godown No.1 -C at Central Warehouse Pithampur M.P		
<b>Letter Ref. No.</b>	: CWC/AE-RO-BPL/Material Testing/2022-23		
<b>Name of Agency</b>	: M/s Mohan Singh Chouhan		
<b>Issued To</b>	: Assistant Engineer Central Warehousing Corporation		

### Physical Test Data

S.No.	Parameters	Method of Test	Test-Value	Requirement as per IS:1489 (Part -1) - 2015
1	Standard Consistency	4031(Part-4) - 1988 (RA-2019)	30.5 %	---
2	Setting Time in minute			
a	Initial	4031(Part-5) - 1988 (RA-2019)	149 min	Minimum 30 min
b	Final	4031(Part-5) - 1988 (RA-2019)	273 min	Maximum 600 min.
3	Soundness ( Le-Chatelier)	4031(Part-3) - 1988 (RA-2019)	1.53 mm	Maximum 10 mm
4	Compressive Strength			
a	72 (± 1 hrs.)	4031 (Part-6) - 1988 (RA-2019)	18.93 MPa	Minimum 16 MPa.
b	168 (± 2 hrs.)	4031 (Part-6) - 1988 (RA-2019)	24.81 MPa	Minimum 22 MPa.
5	% of Fly Ash addition		24.64 %	15 - 35%

### Chemical Test Data

1	Insoluble Material (%by Mass)	IS: 4032 - 1985	27.65 %	{X + 4.0(100-X)/100}
2	Magnesia (%by Mass)	IS: 4032 - 1985	1.50 %	6.0 Maximum
3	Sulphuric Anhydride (%by Mass)	IS: 4032 - 1985	2.81 %	3.0 Maximum
4	Loss of Ignition (%by Mass)	IS: 4032 - 1985	2.30 %	5.0 Maximum
5	Total Chlorides (%by Mass)		0.06 %	0.10 Maximum

— End of Report —

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## TEST REPORT

<b>Report No.</b> : EMES/1108/13	<b>Date of Report</b> : 09-03-23
<b>Description of Sample</b>	
<b>Discipline</b> : Mechanical & Chemical	<b>Sample Received Date</b> : 06-03-23
<b>Group</b> : Building Material	
<b>Nature of sample</b> : TMT Bar	<b>Sample Testing Date</b> : 07-03-23
<b>Diameter Of Bar</b> : 6 mm <b>Grade</b> : Fe-500	<b>Testing Completed Date</b> : 08-03-23
<b>Name of Manufacture</b> : Moria	
<b>Source of sample</b> : Sample supplied by the customer	
<b>Name Of Work</b> : Providing and Laying VDC Flooring in Godown No.1 -C at Central Warehouse Pithampur M.P	
<b>Letter Ref. No.</b> : CWC/AE-RO-BPL/Material Testing/2022-23	
<b>Name of Agency</b> : M/s Mohan Singh Chouhan	
<b>Issued To</b> : Assistant Engineer Central Warehousing Corporation	

### MECHANICAL TEST RESULTS

S.No	Parameters of Test	Test Method	Test Result	Limit As Per IS 1786-2008 Grade : Fe-500
*	Diameter of Bar	-	6 mm	-
1	Weight Per Mtr.	IS: 1786:2008	0.221 kg/m.	0.204 - 0.222 kg
2	Cross-Section Area	IS: 1786:2008	28.15 mm <sup>2</sup>	-
3	Tensile Load	IS:1608 (Part-1) 2018	18.2 kN	-
4	Ultimate Tensile Strength	IS:1608 (Part-1) 2018	646.47 N/mm <sup>2</sup>	545(N/mm <sup>2</sup> ) (Min.)
5	Yield Load	IS:1608 (Part-1) 2018	15.2 kN	-
6	Yield Stress	IS:1608 (Part-1) 2018	539.91 N/mm <sup>2</sup>	500 (N/mm <sup>2</sup> ) (Min.)
7	Elongation	IS:1608 (Part-1) 2018	17.33 %	12.0 % (Min)
8	Stress Ratio	IS:1608 (Part-1) 2018	1.20	Greater Than or Equal to 1.08
9	Bend Test At 180 °	IS: 1599:2012	Satisfactory	No Transverse Crack
10	Re- Bend Test At 135 ° & 157.5 °	IS: 1786:2008	Satisfactory	No Fracture on Bend Portion

### CHEMICAL TEST RESULTS

1	Carbon, C	IS 228 (Part 1) 1987	0.214 %	0.30 Max.
2	Sulphur, S	IS 228 (Part 9) 1989	0.039 %	0.055 Max.
3	Phosphorus, P	IS 228 (Part 3) 1987	0.042 %	0.055 Max.
4	Sulphur + Phosphorus	IS:228 (P-9, P-3) 1987	0.081 %	0.105 Max.

----- End of Report -----

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