



**INTRODUCING AXION
INNOVATIVE PRODUCTS
FOR ROAD AND BUILDING
CONSTRUCTION**

ABOUT US

Axion Nigeria, a subsidiary of Axion Canada is the leader in the development, distribution and application of organic liquid monomer formulations for the global road and building construction industries.

Axion Technologies' products, initially developed by the U.S. military for swiftly deploying airstrips during the Gulf War, have transitioned to commercial use, maintaining their military-grade standards



25yrs

We have been in operation for 25 years, and over 20 years in Africa.



We have presence in over 75 countries in the world.

99%

In Nigeria, our products have been tested and approved by local and federal authorities, and we have all the required certifications for building and road construction.

Our Vision & Mission

Our vision is to be a Leading, Cutting-edge and Innovative Engineering Company, supplying the building/Civil Engineering industry (governments, real estate developers, oil & gas sector) with efficient and cost-effective construction materials for buildings and roads.

Our Mission is to continuously provide our customers with high quality, cost-effective, efficient and environmental-friendly products to solve problems facing the global building and construction industry.



Our Products



- AXION SOLID BASE STABILIZER (SBS)
- AXION BITUMEN BOOSTER (PMB)
- AXION TUFFCRETE ORGANIC POLYMER
- AXION TUFFCRETE CEMENT
- AXION TOTAL-CRETE CEMENT
- HYDROSHIELD POLYMERIZED SCREEDING BOND
- AXTRA QUICK FIX ASPHALTIC CONCRETE LIQUID BINDER (COLD ASPHALT)



WE PROVIDE ENVIRONMENTAL FRIENDLY CONSTRUCTION TECHNOLOGIES

- Road Base Stabilizer and Polymer Modified Bitumen.
- 100% Waterproof Concrete Technology.
- Engineered Precast and Specialized Concrete Products.
- Our products are made of high quality innovative road and building construction materials which ensure durable and cost effective construction.

Axion Solid Base Stabilizer (SBS)

This is a powerful molecular binding agent used in soil stabilization and earth-work installation. It does not require coarse aggregate as it merely strengthens and improves the natural soil enabling it to achieve load bearing capacities that meet and exceeds international compaction requirements. The Axion Solid Base Stabilizer results in approximately 60% cost savings in construction and maintenance costs.

PRODUCT FEATURES/ ADVANTAGES:

- Strengthens and improves the natural soil enabling it to achieve higher load bearing capacity
- Eliminates the cost of removing and replacing the topsoil .
- Eliminates the use of expensive aggregate plus the cost of compacting it.
- Simply stabilizes the natural soil to achieve CBR levels of up to 200%



Axion Bitumen Booster Refiner (PMB)

Bitumen is the preferred glue that holds aggregate together in road construction, the higher the quality of the glue, the greater adhesiveness. Axion Bitumen Booster (PMB) increases the bitumen by 30% and the asphalt by 20% while stabilizing and improving the elasticity from 6% to 79% over a wide range of temperature that allows the asphalt to withstand temperatures ranging between -22°C to $+82^{\circ}\text{C}$. The benefit of this is that the thickness of Asphalt can be reduced from the standard 6cm to 3cm, producing the same strength and yielding cost savings in the construction.

PRODUCT FEATURES/ ADVANTAGES:

- Eliminates Hair Line Cracks
- Increases Bitumen Volume by over 30%
- 350% Increase in The Asphalt Layers' Life Expectancy
- Solution to Rutting problem as it reduces it by up to 84.8%
- Water Resistant
- Reduces Execution Time
- 100°C Effective Range



Axion Tuffcrete Liquid Polymer

This is a chemical resistant formulation that offers high tensile strength, with great adhesion to essential construction materials (Steel, Traditional Concrete etc.) yielding roads with a load-bearing capacity of 4,000 tons per square meter. Axion Tuffcrete Liquid polymer provides cost saving of about 30% compared to conventional concrete and is 100% waterproof, fireproof, anti-fungal, damp-proof and prevents capillary actions.

PRODUCT USES:

- Used as a concrete ad-mixture for waterproofing and improving the tensile strength of concrete
- Casting of slabs, roof decks, concrete floors, swimming pools, water treatment tanks, swage tanks, etc.
- Improvement of all concrete works
- Plastering, Block moulding and Tiling
- Crack resistant concrete

PRODUCT FEATURES/ ADVANTAGES:

- Waterproof & Fireproof
- Longer Life Expectancy
- Neutralizes Salinity in Sea Water (Salt Resistant)
- More Load Bearing Capacity
- Save on Steel Reinforcement Costs
- Asphalt Layers Can Be Added To It
- Not Affected By Oil And Fuel Spillage
- Repair Old Damaged Concrete
- Flexibility



AXTRA QUICK FIX

Asphaltic Concrete Liquid Binder (Cold Asphalt)

Axion introduces Axtra Quick Fix Asphaltic Concrete Liquid Binder (Cold Asphalt), a revolutionary technology designed for the construction of long-lasting and stable roads. This innovative product is used as a super binder in making cold asphalt for patching of pot holes. It can also be used in stabilization of all types of soil.

PRODUCT FEATURES/ ADVANTAGES:

- It does not require construction professionals or expensive contractors to implement.
- Creates job opportunities for youths just after a day's training.
- It does not require any special material or design to make an asphaltic concrete Road.
- Must not use expensive construction equipment (asphalt Plant) for mixing.
- Hot Asphalts are quite hazardous and requires lots of workers and machineries to implement.
- It is cost effective



Total-Crete /Tuffcrete Cement & Hydroshield Polymerized Screeding Bond Combo

This product combination is a chemical formulation specially designed for tiling and screeding. It is 100% water proof and does not require the addition of any other product (Tile Gum, Cement or Top Bond) for its application

Axion Total-crete cement & Hydroshield Polymerized Screeding Bond combo can also be used for All-in-one Screed Plastering, Water Proofing, Antifungal, Crack Proof, Fireproof, Foundation protection(DPC), Swimming Pools, Outside Decks, Tile Gum, Grouting, Damp Treatments, etc.

PRODUCT FEATURES/ ADVANTAGES:

- 100% Waterproof, Damp-proof & Anti-Fungi
- Longer Life Expectancy
- Does not require any other products for its application (Tile Gum, Cement, or Top Bond)
- Covers an area of over 30square meters per bag
- Saves cost



Exterior Screeding



Interior Screeding

Axion Elastomeric Liquid Rubber

Axion Liquid Rubber is a polymer modified elastomeric emulsion specifically formulated to be applied by brush, roller or specially designed spray equipment. Liquid Rubber is a cold applied single component product designed for a wide range of protective coating applications. The product technology used in AE Liquid Rubber provides a solvent-free, quick-setting coating that produces the ultimate seamless waterproof membrane with excellent strength and flexibility. AE Liquid Rubber is an environmentally friendly waterproofing product that can be applied indoors and outdoors with no special protective equipment.

PRODUCT FEATURES/ ADVANTAGES:

- Non-toxic
- VOC and solvent free
- Easy to use and repair
- Odorless and non-flammable
- Excellent adhesion
- Good chemical resistance
- Extremely strong and flexible
- Water based
- Suitable for interior or exterior use
- Permanently flexible



Axion Elastomeric Liquid Rubber

PRODUCT USES:

- Used as a protective coating to prevent water ingress and corrosion damage
- It can be used for corrosion protection of ferrous materials
- AELR is effective for noise and vibration reduction
- AELR can be applied to roofs, tanks, troughs, retaining walls, planter boxes, slabs, wet areas and decks.
- It can be used in painting and protection of block walls without the need for plastering before placing aluminum composite panels.



Solid Base Stabilizer (SBS) Test Result



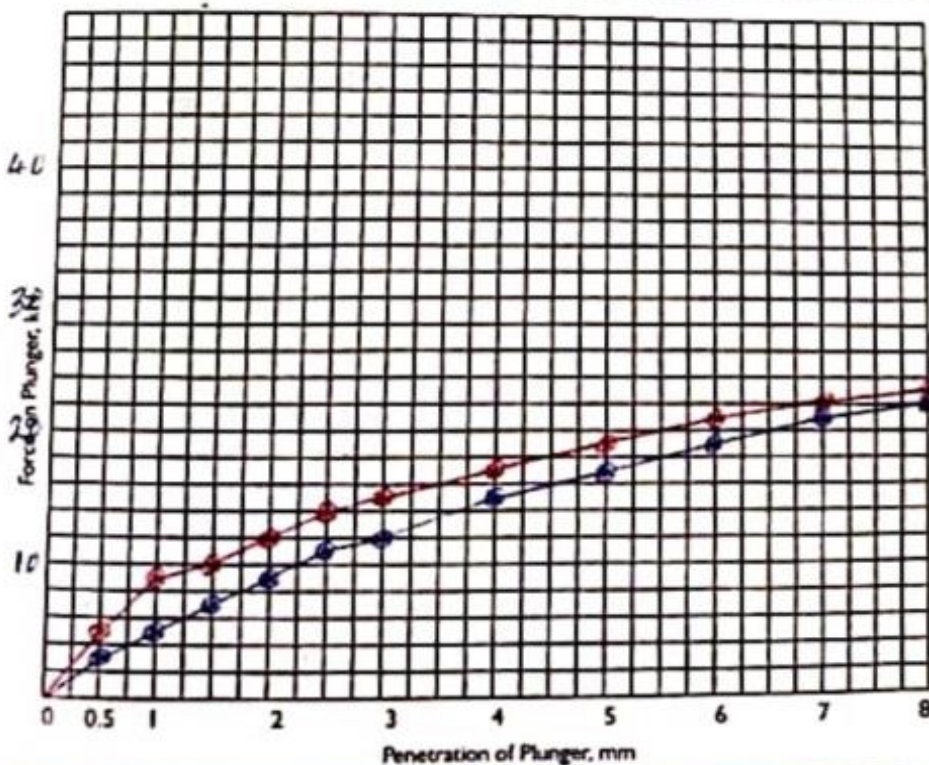
CALIFORNIA BEARING RATIO TEST

Project Watermark Site Location _____
 Chapter _____ Boring No. _____ Sample No. _____
 Description of Soil Stabilized material with Axion Stabilizer
 Test Performed by _____ Date of Test 31-5-2013

TEST DATA

Density Determination		Moisture Content		Proctor Information	
Mold No.	11	Can No.	47 69	Method	
Wt. of Wet Soil + mould (g)	12507	Wt. of Soil + Can	95.1 95.4	O.M.C.	
Wt. of Mould (g)	5686	Wt. of Dry Soil + Can	86.8 87.1	HDD	
Wt. of wet sample (g)	4821	Wt. of Water	8.3 8.3		
Volume of Mould (cm ³)	2302	Wt. of Can	36.1 36.3	P.R.F.	0.222
Wet Density (g/cm ³)	2.09	Wt. of Dry sample	50.8 50.8	Piston Area	19.4
Moisture Content %	16.3	Moisture content	16.3 16.3		
Dry Density (g/dm ³)	1.80				

Penetration mm.		0.5	1	1.5	2	2.5	3	4	5	6	7	8
Top	Dial Reading	13.9	22.4	31.2	40.0	49.8	59.6	66.1	76.4	84.6	92.5	99.6
	Force KN	3.00	4.97	6.53	8.55	11.1	12.3	14.7	17.0	18.8	20.9	22.1
Bottom	Dial Reading	21.3	38.4	45.6	55.0	63.5	68.9	77.4	85.5	92.4	98.0	105.0
	Force KN	4.79	8.52	10.1	12.2	14.1	15.3	17.2	19.0	20.5	21.9	23.3



Expansion After Soak	
Initial Reading	
Final Reading	
Expansion	
Expansion After Soak %	

Period of Soaking

Results	
Moist. Cont. before Soaking %	
Moist. Cont. after Soaking %	
Dry Density g/cm ³	
Expansion after Soaking %	
C.B.R. @ 2.5 mm	93.8 106.5
C.B.R. @ 5.0 mm	85.2 95.2
Ave C.B.R.	106.5

6/13

Date

ADS

Tested by

Checked by

Client Rep.

Solid Base Stabilizer (SBS) Test Result by Dantata & Sawoe Construction Company

TYPE OF MARTERIAL	SAMPLED AT	LL	PI	SIEVE 200	Soil Class	CBR UNSOAKED		% Increased	CBR UNSOAKED AFTER 7 DAYS(with Stabiliser)
						WITHOUT STABILISER	WITH STABILISER		
BASE COURSE	BORROW PIT	28	6.6	18	A-2	88.7	104.5	15.8	
FILL MATERIAL	SITE	30.2	11.7	30.6	A-2	11	42.1	31.1	109.7

- Two types of materials were tested to determine the effect of Base stabiliser in CBR. One is base and the other is fill quality.
- CBR of these materials were determined in Unsoaked condition since the intended usage of the materials are for Base layer.
- As shown in the table above, the CBR value of the base material without Stabiliser already met the required CBR value of base course which is min of 80% whilst the Fill material has 11% only.
- After treating both materials with Base Stabiliser with a dosage of 1liters Stabiliser to 300liters of water, CBR value increased by 16% to 31%.
- Manufacturer gave instruction that material treated with stabiliser must be tested for CBR at 28days in unsoaked condition which we deemed too long that's why we come up testing it after 7days

Note:

- 1.) No doubt that there is positive effect in CBR after treating the materials with Base stabiliser, even achieving more than 80% CBR after 7 days in unsoaked condition. However, testing CBR after 7days in unsoaked condition is not part of Nigerian Specification unless it is required by Engrs or recommended by the manufacturer with written approval of Engr representative



Axion Bitumen Booster (ABB) Test Result



Construction * Materials * Technologies
Geotechnical, Environmental, & Materials Engineering/Testing/Research

CMT ID: AE 448

Patrick O'keke, Esq.

Axion Global Engineering Ltd/

Federal ministry of works,

Mabuchi, Abuja. Nigeria

Project Info: Rheological property determination of different blends of PG 64-22 with given polymers

Gentlemen,

CMT Engineering Laboratories was requested to perform a binder design utilizing Axion Bitumen Booster (P) and (L). The intent was to design a binder with a top end PG grading on 64 minimum, an elastic recovery of 50% minimum and to pass a Hamburg Rutting test on 10mm maximum. An unmodified binder was selected from a local supplier to begin this process, please reference the test data for the material performance.

Test Required:

1. Prepare Polymer Modified Blends of Unmodified PG 64-22 with Axion Bitumen Booster (P) and (L) in following proportions;
 - A. PG 64-22 + 3% Axion Bitumen Booster (P)
 - B. PG 64-22 + 3% Axion Bitumen Booster (P) + 0.25% Axion Bitumen Booster (L)
 - C. PG 64-22 + 3% Axion Bitumen Booster (P) + 0.50% Axion Bitumen Booster (L)
2. Perform DSR Original (AASHTO T 315) on PG 64-22 and three Polymer modified blends
3. Perform Elastic Recovery (AASHTO T301) on RTFO Aged Residues (AASHTO T 240)

TEST	Temp	Method	SPECIFICATION	REPORT	RESULT
<u>ORIGINAL BINDER</u>					
<u>BASE ASPHALT PG 64-22</u>					
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	64 ⁰ C	T315	Min. 1.0 kPa	1.25	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	70 ⁰ C	T315	Min. 1.0 kPa	0.592	Fail
Tc (High) Original = 65.8⁰ C					
<u>PG 64-22 + 3% AXION BITUMEN BOOSTER (P)</u>					
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	64 ⁰ C	T315	Min. 1.0 kPa	3.17	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	70 ⁰ C	T315	Min. 1.0 kPa	1.64	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	76 ⁰ C	T315	Min. 1.0 kPa	0.887	Fail
Tc (High) Original = 74.8⁰ C					
<u>PG 64-22 + 3% AXION BITUMEN BOOSTER (P) + 0.25% AXION BITUMEN BOOSTER (L)</u>					

Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	64 ⁰ C	T315	Min. 1.0 kPa	3.89	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	70 ⁰ C	T315	Min. 1.0 kPa	2.09	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	76 ⁰ C	T315	Min. 1.0 kPa	1.16	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	82 ⁰ C	T315	Min. 1.0 kPa	0.676	Fail

Tc (High) Original = 77.7⁰ C

PG 64-22 + 3% AXION BITUMEN BOOSTER (P) + 0.5% AXION BITUMEN BOOSTER (L)

Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	64 ⁰ C	T315	Min. 1.0 kPa	4.77	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	70 ⁰ C	T315	Min. 1.0 kPa	2.60	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	76 ⁰ C	T315	Min. 1.0 kPa	1.46	Pass
Dynamic Shear, $G^*/\sin \delta$, 10 rad/sec	82 ⁰ C	T315	Min. 1.0 kPa	0.843	Fail

Tc (High) Original = 80.1⁰ C

ROLLING THIN FILM OVEN(T240)

BASE ASPHALT PG 64-22

Elastic Recovery, %	25 ⁰ C	T301	6.0
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PG 64-22 + 3% AXION BITUMEN BOOSTER (P)

Elastic Recovery, %	25 ⁰ C	T301	75.0
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PG 64-22 + 3% AXION BITUMEN BOOSTER (P) + 0.25% AXION BITUMEN BOOSTER (L)

Elastic Recovery, %	25 ⁰ C	T301	79.0
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PG 64-22 + 3% AXION BITUMEN BOOSTER (P) + 0.5% AXION BITUMEN BOOSTER (L)

Elastic Recovery, %	25 ⁰ C	T301	79.0
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REPORT AND ANALYSIS:

1. Based on Original DSR,
 - a) PG 64-22 is graded at PG 64-XX. The True Grade is 65.8⁰C
 - b) PG 64-22 + 3% Axion Bitumen Booster (P) is graded at PG 70-XX. The true grade is 74.8⁰C
 - c) PG 64-22 + 3% Axion Bitumen Booster (P) + 0.25% Axion Bitumen Booster (L) is graded at PG 76-XX. The true grade is 77.7⁰C
 - d) PG 64-22 + 3% Axion Bitumen Booster (P) + 0.50% Axion Bitumen Booster (L) is grade at PG 76-XX. The true grade is 80.1⁰C.

The finished blend was delivered to the laboratory to be blended into asphalt for Hamburg testing, the following is an outline of the material properties:

A local aggregate was selected that has failed the Hamburg test in the past, this aggregate was chosen because we wanted to avoid an asphalt mixture which would have passed without any modification.

The following is an outline of the asphalt properties as tested:

Blender Content	=5.3% by wt. of mix	
RAP Content	=None	
Air Void Content	=7.3%	Pass
Average Rutting Depth	=3.10mm	Pass

Gradation	
Screen	Percent Passing
3/4"	100
1/2"	99
3/8"	82
#4	48
#8	34
#16	17
#30	11
#50	9.1
#100	7.7
#200	5.3

If you have any questions, please don't hesitate to contact me.

Sincerely



Douglas Wolf
President

Axion Tuffcrete Cube Compression Test Result



LAFARGE READY MIX NIGERIA CUBE COMPRESSION TEST REPORT

(Method:BS EN 12390-2000)

Project: Trail mix	
Client:	Site:
Contractor:	Location:
Date of Pour: 11-Feb-21	
Mix No.: Black Axion Powder	Mix Grade: C30
Placing Method	Cube curing
☐ Pump	☐ Curing agent
☐ Chute	☒ Water cured
☐ Bucket	☐ Dry cured
☐ Others	☐ Others

SLUMP (mm):

7 Days AREA (mm²):22500

Mark on cubes	Date of Testing	Age (Days)	Size of cube(mm)	Weight (Kg)	Density (Kg/m ³)	Load (KN)	Strength (N/mm ²)
1	18-Feb-21	7	150x150x150	8.15	2415	418.5	18.6
2	18-Feb-21	7	150x150x150				
3	18-Feb-21	7	150x150x150				
Average			150x150x150	8.15	2415	418.5	18.6

28 Days

Mark on cubes	Date of Testing	Age (Days)	Size of cube(mm)	Weight (Kg)	Density (Kg/m ³)	Load (KN)	Strength (N/mm ²)
4	11-Mar-21	28	150x150x150	8.23	2439	738.0	32.8
5	11-Mar-21	28	150x150x150				
6	11-Mar-21	28	150x150x150				
Average			150x150x150	8.23	2439	738.0	32.8

Cube Cast by:
Mr Ogunjobi

Concrete Cube Compression Test Report - EN 12390:3

Customer Name	AXION
Project Name	TM 1 (PLANT)
Project Address	DANGOTE RIFINERY ROAD

Mix Code		Commercial Name	C28/35-S1-22mm		
Cast Date	April 5, 2024	Structural Member	ROAD PAVEMENT		
Identity No		Slump (mm)	45-60	Flow (mm)	N/A
Sampling Location	HITEC REFINERY	Spot Sample		Composite Sample	
Curing Method	Water Immersion				

Sample Number	Testing Date	Age (Days)	Cube Size (mm)	Weight (kg)	Density (kg/m3)	Load (KN)	Strength (N/mm2)
PT 56455	12-Apr-24	7	150x150x150	8.300	2459	527.59	23.5
PT 56456	12-Apr-24		150x150x150	8.270	2450	640.68	28.5
PT 56457	12-Apr-24		150x150x150	8.330	2468	594.65	26.5
Average				8.30	2459	587.64	26.2

Sample Number	Testing Date	Age (Days)	Cube Size (mm)	Weight (kg)	Density (kg/m3)	Load (KN)	Strength (N/mm2)
PT 56458	3-May-24	28	150x150x150	8.190	2427	798.31	35.5
PT 56459	3-May-24		150x150x150	8.250	2444	884.75	39.5
PT 56460	3-May-24		150x150x150	8.200	2430	859.32	38.0
Average				8.21	2434	847.46	37.67

Tested By:	<div style="border: 1px solid black; padding: 5px; text-align: center;"> LAFARGE TM 1 (PLANT) HITEC RIFINERY ROAD  Signature </div>		Date
	Name		

Concrete Cube Compression Test Report - EN 12390:3

Customer Name	AXION
Project Name	TM 3 (BABY MIXER, WITH AXION PRODUCT)
Project Address	DANGOTE RIFINERY ROAD

Mix Code		Commercial Name	C28/35-S1-22mm		
Cast Date	April 6, 2024	Structural Member	ROAD PAVEMENT		
Identity No		Slump (mm)	50	Flow (mm)	N/A
Sampling Location	HITEC REFINERY	Spot Sample		Composite Sample	
Curing Method	Water Immersion				

Sample Number	Testing Date	Age (Days)	Cube Size (mm)	Weight (kg)	Density (kg/m3)	Load (KN)	Strength (N/mm2)
PT 56455	13-Apr-24	7	150x150x150	8.330	2468	777.92	34.5
PT 56456	13-Apr-24		150x150x150	8.300	2459	859.32	38.0
PT 56457	13-Apr-24		150x150x150	8.420	2495	920.52	41.0
Average				8.35	2474	852.59	37.8

Sample Number	Testing Date	Age (Days)	Cube Size (mm)	Weight (kg)	Density (kg/m3)	Load (KN)	Strength (N/mm2)
PT 56458	4-May-24	28	150x150x150	8.490	2516	1031	46.0
PT 56459	4-May-24		150x150x150	8.380	2483	1062.6	47.0
PT 56460	4-May-24		150x150x150	8.290	2456	1041.6	46.5
Average				8.39	2485	1045.07	46.50

Tested By:			
	Name	Signature: _____	Date



Request no: AXION AS
Client: Axion Africa
Del-Del International Building
Material Market Abuja
Ojoanrin Romeka

Date reported: 10-05-2024

Project: DANGOTE FERTILIZER TO ELEKO JUNCTION

Attention: Axion Africa

Compressive Strength of Concrete Cubes [TMH1 - D1, D3, ASTM C293]

Date Reported:	06-04-2024	Structure /	CROP
Date in Water:	07-04-2024	Desert:	
Cubes Made By:		Location:	REFINERY SECTION 1 LABORATORY
Cubes Tested By:		Concrete Supplier:	MIXERAT LABORATORY
Specified Strength (MPa):	C35	Delivery Note No:	
Specified Slump:	80 mm	Truck Reg. Number:	
Measured Slump:	40 mm	Environmental Condition:	SUNNY AND HOT
Engineer's Specifications:		Curing Tank Temp:	25°C
Balance Number:		Press Serial No:	
		Correction Factor:	1.000

7 Day Compressive Strength

Lab Number	Cube Mark	Date Cast	Date Tested	Age Days	Break Pattern	Flatness	Mass	Apparent Density	Dimension		Load	Compressive Strength
									Length	Width		
A	1	06-04-2024	13-04-2024	7	A		8211	2433	150.00	150.00	859	38.2
B	2	06-04-2024	13-04-2024	7	A		8175	2422	150.00	150.00	840	37.3
C	3	06-04-2024	13-04-2024	7	A		8130	2408	150.00	150.00	845	37.5
Average									150.00	150.00	848 kN	38.0 MPa
Standard Deviation									0.0	0.0	10.2	0.5

28 Day Compressive Strength

Lab Number	Cube Mark	Date Cast	Date Tested	Age Days	Break Pattern	Flatness	Mass	Apparent Density	Dimension		Load	Compressive Strength
									Length	Width		
D	4	06-04-2024	04-05-2024	28	A		8194	2428	150.00	150.00	1021	45.4
E	5	06-04-2024	04-05-2024	28	A		8205	2431	150.00	150.00	995	44.2
F	6	06-04-2024	04-05-2024	28	A		8189	2420	150.00	150.00	997	44.3
Average									150.00	150.00	1004 kN	45.0 MPa
Standard Deviation									0.0	0.0	14.4	0.6

Standard breaking patterns



Unusual breaking patterns



Deviation from test method:

Remarks and notes: CROP MIX DONE WITH AXION AFRICA LIQUID POLYMER ADDED

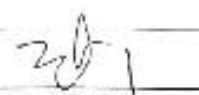
The samples were subjected to analysis according to (EN 12390-1) (BS) (ASTM) (TMH5)

The test results reported relate to the sample tested.

Further use of the above information is no the responsibility or liability of Hitech Construction.

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Report compiled by: Christian Jordan


Signature
Christian Jordan
Ground / Field Manager

Axion Tuffcrete Water Penetration Test Result

AXION TRIAL MIX					
ITB BAR-BEACH					
DATE : 20-4-2024					
CUBE No	3	3			
	WATER PENETRATION (mm)				
	18.23	22.90			
	20.95	16.04			
	17.11	15.42			
	15.53	13.61			
	17.43	10.55			
	16.46	9.81			
AVERAGE	17.62	14.72	0	0	

FEDERAL MINISTRY OF WORKS
MATERIALS, GEOTECHNICS & QUALITY CONTROL
15, AWOLOWO ROAD, IKOYI, LAGOS STATE

TEST SHEET FOR COMPRESSION TEST ON CONCRETE CUBES				REF NO:			
DATE OF CASTING : 04/06/24				DESTINATION: OFFICE(Abuja)			
WHERE USED: TRIAL MIX(NON – CHEMICAL)							
SAMPLE NO: DATE OF DELIVERY: 02/07/24 MIXING TIME: TIME CUBE MADE:				DATE IN WATER: 05/06/24 DATE OUT OF WATER: 02/07/24 AGE OF CUBE: 28 DAYS			
DETAILS OF MIX:							
METHOD OF CURING: DIMENSION IN WATER							
CONCRETE CLASS: C-35			PSI =		N/MM ² : 35.2 N/MM ²		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> _____ Cubes made by </div> <div style="text-align: center;"> <u>ADESHOLA I</u> Officer Completing Test </div> <div style="text-align: center;"> _____ Client </div> </div>							
TEST RESULTS							
Mark on Cubes	Date of testing	Age of Testing	Size of Cube(mm)	Weight of cubes (kg)	Density kg/m ³	Crushed at KN	Strength N/mm ²
1	02/06/24	28 DAYS	150X150X150mm	8.26	2.477	800	35.6
2				8.25	2.444	810	36.0
3				8.67	2.569	766	34.0
AVERAGE STRENGTH : 35.2 N/MM ²				MINIMUM STRENGTH : 34.0 N/MM ²			
<div style="display: flex; justify-content: space-between; align-items: center; margin-top: 50px;"> <div style="text-align: center;"> _____ Approved by </div> <div style="text-align: center;"> SATISFACTORY </div> <div style="text-align: center;"> _____ Client </div> </div>							

FEDERAL MINISTRY OF WORKS
MATERIALS, GEOTECHNICS & QUALITY CONTROL
15, AWOLOWO ROAD, IKOYI, LAGOS STATE

TEST SHEET FOR COMPRESSION TEST ON CONCRETE CUBES				REF NO:			
DATE OF CASTING : 30/05/24				CONTRACTOR: AXION AFRICA			
DETAILS: TRIAL MIX (WITH CHEMICAL).							
SAMPLE NO:				DATE IN WATER: 31/05/24			
DATE OF DELIVERY: 13/06/24				DATE OUT OF WATER: 13/06/24			
MIXING TIME:				AGE OF CUBE: 14 DAYS			
TIME CUBE MADE:							
DETAILS OF MIX:							
METHOD OF CURING: COMPLETE IMMERSION IN WATER							
CONCRETE CLASS: C-35			PSI =		N/MM ² : 37.6N/MM ²		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> _____ Cubes made by </div> <div style="text-align: center;"> <u>ADESHOLA J</u> Officer Completing Test </div> <div style="text-align: center;"> _____ Client </div> </div>							
TEST RESULTS							
Mark on Cubes	Date of testing	Age of Testing	Size of Cube(mm)	Weight of cubes (kg)	Density kg/m ³	Crushed at KN	Strength N/mm ²
1	13/06/24	14 DAYS	150X150X150mm	8.68	2.572	830	36.9
2				8.15	2.415	807	35.9
3				8.02	2.316	900	40.0
AVERAGE STRENGTH : 37.6 N/MM ²				MINIMUM STRENGTH : 35.9N/MM ²			
<div style="display: flex; justify-content: space-between; align-items: center; margin-top: 50px;"> <div style="text-align: center;"> _____ Approved by </div> <div style="text-align: center;"> SATISFACTORY </div> <div style="text-align: center;"> _____ Client </div> </div>							

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SUMMARY TABLE
CONCRETE GRADE 35(Mix ratio 1:1:5:3)

TRIAL MIX (WITH CHEMICAL)	AVERAGE STRENGTH(N/MM ²)	TRIAL MIX (NON-CHEMICAL)	AVERAGE STRENGTH(N/MM ²)
3 DAYS(14.0N/MM ²)	31.9N/MM ²	3 DAYS(14.0N/MM ²)	24.0N/MM ²
7 DAYS(22.75N/MM ²)	36.0N/MM ²	7 DAYS(22.75N/MM ²)	28.2N/MM ²
14 DAYS(31.5N/MM ²)	37.6N/MM ²	14 DAYS(31.5N/MM ²)	30.7N/MM ²
28 DAYS(35N/MM ²)	43.2N/MM ²	28 DAYS(35N/MM ²)	35.2N/MM ²
SLUMP(10-60)mm	20mm	SLUMP(10-60)mm	20mm

Axion Products Approval by Federal Ministry of Works

THIS DAY MONDAY OCTOBER 20, 2014

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FEDERAL MINISTRY OF WORKS

COMMUNIQUE OF THE 21ST NATIONAL COUNCIL ON WORKS HELD AT THE DELTA STATE GOVERNMENT EVENT CENTRE, ASABA, DELTA STATE FROM OCTOBER 12 TO 17, 2014

- (20) Council approved the use of stabilizers and bitumen booster already being implemented by the Federal Ministry of Works as a means of improving the durability of road pavement, as well as reducing cost of road construction in the country.
- (21) Council directed Ministries in charge of roads to collaborate with universities and Research centres towards utilization of research findings as well as to consciously refer to the office of the Surveyor General of the Federation and State Surveyor-General for permanent data, being the repository for such data.

The 21st Meeting of the National Council on Works with the theme "Funding Road Development in Nigeria: A Panacea for Economic Transformation" was held at the Delta State Government Event Centre, Asaba, Delta State, from Sunday 12th to Friday 17th October, 2014. The meeting was declared open by His Excellency, the Deputy Governor of Delta State, Prof. Amos Utanna (SAN) on behalf of His Excellency, Dr. Emmanuel Ewela Uduaghan CON, Executive Governor of Delta State.

Meeting of the Technical Committees, as well as a meeting of the Permanent Secretaries preceded the Council Meeting which was presided over by Arc. Mike Oziegbe Onolemenem, CON.

Present at the Council meetings were distinguished members of the National Assembly led by the Chairman, House Committee on Works, Hon. Oguweli Ozoanigbachi; the Honourable Minister of Works, Arc. Mike Oziegbe Onolemenem, CON; Permanent Secretary, Federal Ministry of Works, Dr. A. K. Muhammad, CON; Honourable Commissioners of Works and their Permanent Secretaries from the 36 States of the Federation. Others were the Directors in the Federal Ministry of Works, Directors/Officials of other Federal and State Ministries, Departments and Agencies (MDAs), as well as Stakeholders in the Road Sector.

(17) Council noted that the Contractor-Finance Model of funding road infrastructure has not been fully developed in the country and urged the use of this model for road projects and directed for the review of the provisions of the Construction Policy to promote greater participation of indigenous contractors in the road sector in line with the Local Content Policy.

(18) Council recognised the importance of data to planning for road development, and accordingly adopted the creation of Road Asset Management System (RAMS) as a tool for project planning, budgeting and prioritization.

(19) Council recognized tolling of roads and bridges as a viable source of funding Road Development and noted that the Federal Ministry of Works had already carried out series of sensitization workshops to elicit stakeholders buy-in.

(20) Council approved the use of stabilizers and bitumen booster already being implemented by the Federal Ministry of Works as a means of improving the durability of road pavement, as well as reducing cost of road construction in the country.

(21) Council directed Ministries in charge of roads to collaborate with Universities and Research Centres towards utilization of research findings, as well as to consciously refer to the Office of the Surveyor General of the Federation and State Surveyors-General for pertinent data, being the repository for such data.

MEMO NO. NCW(2014)DEL/17

**USE OF STABILIZERS TO IMPROVE THE QUALITY AND COST OF
ROADS**

In pursuance to the improvement of the quality of federal road network, the federal ministry of works in collaboration with the Universities, Research Institutions and Consultants have tested and approved a number of Stabilizers to be incorporated in road construction. Some of these materials were successful in the stabilization of Black Cotton soil and other troublesome subgrade materials.

The tested materials :

- i. Axion Soil Stabilizer/Axion Bitumen Booster,

Prayer

Council is invited to note the importance of the new stabilizers for road works as it improves the quality and cost road work: and approve the use of these Stabilizers for road construction in projects executed by the ministry of works in Nigeria.

THANK YOU!

CONTACT INFORMATION

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