Ramco Industries Limited

Plot No. A1,
BIADA Industrial Area
Opp.Mahathin Mai Temple
Bihiya - 802152
Dist. : Bhojpur (BIHAR)

Ref.:RIL/BIH/538/20-21/MoEF

Date: 23.10.2021

To

The Director,
Ministry of Env. and Forest, Climate Change
Ranchi Regional Office (ECZ),
Bungalow No. A-2, Shyamali Colony,
Ranchi-834 001

Sub: Half yearly compliance report for the period of April- 2021 to Sep- 2021.

Sir,

With reference to above we are submitting here with the half yearly compliance report of the Environment clearance condition including result of the monitored data for your kind information and record please.

Receipt of the same may kindly be acknowledged.

Yours Faithfully,

For, Ramco Industries Limited,

Pankaj Kumar
Asst.General Manager

CC: Monitoring Cell,MoEFCC, Delhi
CPCB, Calcutta.
BSPCB, Patna
File copy.

Encl:

1. Half Yearly compliance report.
2. Work place, Ambient & stack monitoring report, Quarterly.
3. Stack monitoring report, Monthly.
4. Ambient report weekly.
5. Green belt development of our site.
6. Medical Checkup & associated Picture.
7. Production Details.
8. CSR details.
9. Env. expanse detail.

COMPLIANCE STATUS OF MoFF CONDITIONS

Letter No F.No.J-11011/17/2010-IA II (I)

CONDITIONS	COMPLIANCE STATUS
A - Specific conditions	
i. The project proponent shall adhere to the prescribed BIS standards and law regarding use and handling of asbestos, safety of employee etc. Raw material like asbestos fiber and cement shall be transported in closed containers. Asbestos fiber shall be brought in palletized form in impermeable Bags and under compress condition.	We are following the BIS standards as mention below- IS-11450-For determination of airborne asbestos fibre concentration in work environment. IS-11451-For Safety and health requirements. IS-11769 & IS-11770-For asbestos cement product. IS-12078-For handling of asbestos fibre. IS-12081-For Pictorial warning signs & precautionary notices for asbestos & product containing asbestos. The Raw materials are transported in closed containers. Asbestos is brought in impermeable bags under compressed condition. The bags are handled with fork lift for loading and unloading and for feeding on the BOD machine. Safety gadgets are being used by the workers.
ii. Only Chrysotile white asbestos fiber shall be used. Blue asbestos shall not utilized as raw material in the manufacturing process.	We use only CHRYSOTILE Fibre as raw material in the manufacturing process and we do not use blue asbestos .
iii.There shall be no manual handling/opening of asbestos fiber bags. The company shall install fully automatic asbestos fiber debagging system before commissioning the unit.	There is no manual handling/opening of asbestos Fibre bags. Fibre is stored in polythene woven bags and de bagged in the automatic bag opening device (BOD) wherein the bags are automatically shredded. Thus no manual handling comes into picture due to installation of fully automatic asbestos Fibre debagging system.
iv.Fugitive emissions shall be controlled by brining cement in closed tankers, fly ash covered trucks and asbestos in impervious bags opening inside a closed mixer. Dust collectors shall be provided to Fibre mill, Bag opening device (BOD), Cement & Flyash silos to control emissions. Bag filters followed by wet washer shall be provided at automatic bag opening machine, bag shredder , fiber mill and to cement silo to collect the dust and recycle it into the process fugitive emissions generated from hopper of Jaw Crusher & Pulverizer shall be channelized through hood with proper suction arrangement, Bag filter and stack.	Cement & Flyash are bought in closed Bulker. Fibre bags are opened in fully automatic closed circuit area – called BOD (Bag Opening Device). Dust collectors with cyclone type are used in cement, flyash, fibre silo. In above circuit and pulverized the positive fugitive emission are recycled and used in RM. Heavy duty vacuum cleaner is being used in Fibre mill area. Cement and fly ash are storage in separate silos.
v. The company shall comply with total dust emission limit of 2mg/Nm3 as notified under the Environment (Protection) Act, 1986. Adequate measures shall be adopt to control the process emission and ensure	We comply with the stated emission standards. The details of Stack Monitoring record and Work place Fibre counting record is attached in **ANNEXURE –1.**

For RAMCO INDUSTRIES LTD.

that the stack emission of asbestos fiber shall not exceed the emission limit of 0.2 fiber/cc. Asbestos fiber in work zone environment shall be maintained with in 0.1fiber/cc.	
vi. Bags containing asbestos fiber shall be stored in enclosed area to avoid fugitive emissions of asbestos fiber from damaged bags, if any	The bags containing asbestos are stored in an enclosed asbestos fiber storage area of about 925 sq. m.
vii. Proper house keeping shall be maintained within the plant premises, process machinery, exhaust and ventilation systems shall be laid in accordance with factories act. Better house keeping practices shall be adopted for improvement of the environment within the work environment also. These includes ; a. All monitoring transfer points shall be connected to dust extraction system. b. Leakages or dust from machines and ducts shall be plugged. c. Floor shall be cleaned by vacuum cleaner only. d. Enclosed belt conveyer shall be used instead of manual transportation of asbestos within the premises.	We have complied with the said condition. Proper housekeeping facility with vacuum cleaning of the floor is provided in the plant area. We have a complete closed circuit manufacturing process with enclosed belt conveyer. The asbestos bags are being brought through conveyor to BOD.
viii. Area and stacks shall be undertaken by the project proponents, in addition, the Asbestos fibre count in the work zone area shall be monitor by an independent monitoring agency like;NIOS-ITRC/NCB or any other approved agency and report submitted to the Ministry's Regional Office at Bhubaneswar SPCB and CPCB.	We have our own laboratory set up for workplace. We are sending fibre count slide to the R & D center, Chennai with the Phase contrast Microscope Olympus BX-50, every month wise. In addition to that the Asbestos fibre count in the work zone and the stack are tested by a competent & approved third party monitoring agency (by J R Lab). The details of tested datas at our site by the third party is enclosed in **ANNEXURE –1**
ix .Total water requirement from ground water shall not exceed 80 cum/day . All the recommendations of the State Ground Water Deptt.,Govt. of Bihar shall be implemented in time bound manner.	We have a pond of holding capacity 2070 m3 for rain water harvesting. And we have three recharge pit in different angles to recharge ground water with rain. Daily monitoring is done for consumption of water and consumed as per limit 80cum/day.
x. After five years operation of plant, no ground water shall be used and only rain water shall be used.	We have received an order from MoEF order number 21-4/282/BR/IND/2017-103 Dated 22.01.2019 and got permission to continue abstraction of ground water.
xi. As reflected in the Environmental management plan, all the treated effluent shall be recycled and reused in the manufacturing process. No process water shall be discharged outside the premises and 'ZERO' discharge shall be maintained. All the domestic waste water shall be treated in septic tank followed by soak pit and used for green belt development.	We have complied the said condition. There is no discharge of process effluent and entire process water is recycled back into the system & It is ensured zero discharge. All waste water is used for green belt development through pond.
xii. The company shall ensure that the entire solid waste generated including process rejects, cement, fly ash, dust from bag filters and empty asbestos bag shall be recycled back in the manufacturing process. Process sludge shall be 100% recycled and reuse in	We have complied with the said condition. The entire Solid waste generated including process rejects, dust from bag filters and empty asbestos bags are recycled back in the manufacturing process.

For RAMCO INDUSTRIES LTD.

the process. Hazardous waste shall be ground in dust proof pulverizer with integrated bag filter and recycled back to the process. Asbestos fibres which can not be further recycled due to contamination of iron dust shall be stored in SDPE lined secured landfill.The disposal facilities for asbestos waste shall be in accordance with the Bureau of Indian Standard Code.	
xiii. The cut and damaged fibre bags shall immediately be repaired. Empty fibre bags will be shredded into fine particles in a bag shredder and recycled into the process, piling of AC sheets shall be done in wet condition only.	It is ensured that we get fibre bags with intact. Damages if any , would immediately be sealed before unloading at our site. There is no manual handling /opening of the fibre bags. The fibre bags are fed into a Bag opening device (BOD) wherein bags are automatically shredded.
xiv. The company shall obtain a certificate from the supplier of chrysotile fibre that it does not contain any toxic or trace metals. A copy of certificate shall be submitted to the Ministry of Environment and forest.	We receive certificates from the suppliers for every lot . Chemical analysis report of chrysotile fibre from supplier has been sent to MoEF. A copy of certificate is attached for your reference . **ANNEXURE –3**
xv. Regular medical examination of the workers and health monitoring of all the employees shall be carried out and if cases of asbestos are detected, necessary compensation shall be arranged under the existing laws. A competent occupations health physician shall be appointed to carry out medical surveillance. Occupational health of all the workers shall be monitored for lung function test , chest x-ray, sputum for acid-fast-bacilli (AFC) and asbestos body(AB) ,urine for sugar and albumen, bloat tests for TLC,DLC,ESR, Hb and records maintained for at least 40 years from the beginning of the employment or 15 years after the retirement or cessation of employment whichever is later. Occupational health surveillance shall be carried out as per the directives of the Hon'ble supreme court.	Medical examination of employees carried out by competent occupational health physician periodically for Sputum test, Lungs Function Test (PFT), bloat tests for TLC,DLC,ESR, Hb , Chest X Ray and general medical checkup. Pre-employment tests are carried out as per factory act and all records pertaining to health checkup are maintained as per IS : 11451 and factory act. The directive of Supreme court is followed strictly. All records are well maintained and available in office. A sample of medical report is attached for your reference. **ANNEXURE –4**
xvi. To educate the workers, all the work places where asbestos dust may cause hazard shall be clearly indicated as a dust exposure area through the use of display signs which identifies the hazard and the associated health effects.	We have provided display signs of Asbestos fibre for identifying the hazards and associated health effects, at various locations inside the factory. Picture attached for your reference. **ANNEXURE –5**
xvii. The company shall also undertake rain water harvesting measures and plan of action shall be submitted to the Ministry of Environment and forest within three months.	We made a pond with a size of 2070 m3 for a depth of 5 m for rain water harvesting system. Apart from these, we made three rain water recharge pit in tri angle position.
xviii. All the commitments made to the public during the public hearing / public consultation meeting held on 22nd Nov., 2010 shall be satisfactorily implemented and a separate budget for implementing the same should be allocated and information submitted to the Ministry's Regional Office at Bhubneswar .	Public hearing points are as follows: 1. Controlling emission from chimney – it is well controlled and time to time checked by third party. There is no coal based activity. 2. Implementing rain water harvesting: Rain water harvesting pond and recharge pit are made available.

For RAMCO INDUSTRIES LTD.

xix. Green belt shall be developed in at least 33% of plant area as per the CPCB guidelines in consultation with DFO.	An effective green belt area is developed in consultation with DFO as per CPCB guidelines. Our developed green belt area is 8 acres which is 40% of our total land area. The details of green belt development of our site are attached in **ANNEXURE – 6.**
xx. At least 5% of the total cost of the project should be ear marked towards the corporate social responsibility and item wise details along with time bound action plan should be prepared and submitted to the Ministry's Regional Office at Bhubneswar. Implementation of such programme should be ensured accordingly in a time bound manner.	Under Corporate Social Responsibilities an amount of Rs.82.36 Lacs expended till 31st September 2021.
xxi. The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such a fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	We have provided all necessary infrastructure and facilities to our construction labour within the site.
B GENERAL CONDITIONS	
i. The projects authorities must strictly adhere to the stipulations made by the Bihar Pollution control board and the state government .	We strictly adhere to the stipulations made by the Bihar Pollution Control Board and the State Government.
ii. No further expansion/modifications in the plant shall be carried out with out prior approval of the ministry of environment and forests.	No further expansion/ modifications in the plant will be carried out without prior approval of the Ministry of Environment and Forests.
iii. The gaseous emissions from various process unit shall conform to the load / mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The state board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	**Our Gaseous emission details** **Fibre dust emission fibre stack is 1.47 mg/Nm³ against 2.0 mg/Nm³** **SPM in cement stack is 34.3 µg/m³against 100 µg/m³** **SPM in DG set 38.8 µg/m³ against 75 µg/m³**
iv. At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM 10, SO2 and NOx are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including it's Regional Office at Bhubneswar and the SPCB /CPCB once in six months.	The ambient air quality at four places are monitored and copied with the stated condition. The report of Ambient Air Quality sampling is attached for your reference. **Annexure – 2**
v. Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st Dec., 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.	All our process water is 100% reused in our manufacturing process.

For RAMCO INDUSTRIES LTD.

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For RAMCO INDUSTRIES LTD.

vi. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (nighttime).	Noise levels in around the Plant area is well under the limit and it is measured by third party agency – M/s. Shiva Test House (Patna) quarterly at different five places in the factory premises as well as shop floor. A report is enclosed for your reference **ANNEXURE –2**
vii. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	All first aid facilities are available with all resources. One doctor and compounder is available. Half yearly health check up through the third party done .
viii. The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	We have complied with the said condition. Rain water harvesting pond of size 23x18x5 meter has been developed.
ix. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report further, the company must undertake socio economic development activities in the surrounding villages like community development programmes , educational programmes , drinking water supply and health care etc.	1. **Rs.10478** 20 No. Asbestos Sheet provided to Community Hall Shed, Englishpur village. 2. **Rs.50000** Corona Warrior - Nose Mask - 500, T Shirt - 200, Face Shield - 200 on 15/07/2021. 3. **Rs.15000** Approaching road to factory - Repairing by brick bats dt. 12/08/2021.
x.Requiste amount shall be earmarked towards capital cost and recurring cost / annum for environment pollution control measures to implement the conditions stipulated by the Ministry of environment and forest as well as the State Government. An implementation schedule for implementing all the condition stipulated herein shall be submitted to the Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purchase.	Environmental Expenses details are Capital Expenses :- **April 2021 to Sep- 2021 –Rs.0.00** Recurring Expenses :- **April-2021 to Sep- 2021 – Rs.625445**
xi. A copy of clearance letter shall be sent by the proponent to concerned Panchayat , Zila Parishad / Municipal Corporation , Urban Local Body and the Local NGO , If any , from whom suggestions/ Representations . If any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	We have complied with the said condition.
xii. The project proponent shall upload the status of compliance of the stipulated environment clearance condition, including results of monitor data on your website and shall update the same periodically. It shall simultaneously be sent to the Regional office of the MOEF at Bhubaneswar. The respective Zonal office of CPCB and the SPCB. The criteria pollutant levels namely : PM10 , SO2 , NOx , (ambient levels as well as stack emission) or critical sectoral parameters , indicated for the projects shall be monitored and	The status of complains of the environment clearance condition along with all data has been being uploaded on the website and the same is being send to MoEF Ranchi, CPCB Calcutta, Monitoring cell MoEF Delhi and BSPCB Patna. The relevant display board for critical parameters has been displayed near the main gate in the public domain.

For RAMCO INDUSTRIES LTD.

displayed at a convenient location near the main gate of the company in the public domain.	
xiii. The project proponent shall also submit Six Monthly report on the status of the compliance of the stipulated environmental condition including results of monitored data (both in hard copies as well as by e-mail) to the regional office of MOEF, the respective Zonal office of CPCB and the SPCB. The regional office of this ministry at Bhubaneswar /CPCB/SPCB shall monitor the stipulate condition.	The monitoring data is being sent to the office along with the compliance report for the period of Oct-2021 to March-2021.
xiv. The environmental statement for each financial year ending 31st March in Formed – V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the Website of the Company along with the status of compliance of environmental condition and shall also be sent to the respective Regional office of MOEF at Bhubaneswar by Email.	Already sent for the financial year 2020-21 . A receipt of BSPCB is attached for your reference. **ANNEXURE –7**
xv. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with SPCB and may also be seen at the Website of the Ministry of Environment and Forests at http://envfor.nic.in This shall be advertised within seven days from the date of the issue of the clearance letter , at least in two Local News Papers that are widely circulated in the region of which one shall be in the Vernacular language of the locality concerned and a copy of the same should be forwarded to the regional office at Bhubaneswar.	It is compiled and information given trough newspaper in the Vernacular language of the locality i.e. in Hindi.
xvi. Project authorities shall inform the regional office as well as the Ministry, the date of financial closer and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied & it was informed.

For RAMCO INDUSTRIES LTD.

Pankaj

(AUTHORISED SIGNATORY)

JR LABS

ENVIRONMENT & OCCUPATIONAL HEALTH SERVICES

Rated as 'No.1' Laboratory for Counting of Asbestos Fibre by Institute of Occupational Medicine, Edinburgh U.K., World Health Organization Collaborating Centre for Occupational Health.

19.10.2021

REPORT ON RESPIRABLE ASBESTOS FIBRE DUST CONCENTRATION

Project : **M/s. RAMCO INDUSTRIES Ltd.,**
PLOT NO.A-1, BIADA INDUSTRIAL AREA OPP. MAHATHIN MAI TEMPLE
AT & PO- BIHIYA, DT.- BHOJPUR, BIHAR, PIN- 802152

Sampler used : Samples collected by **Client** using Envirotech APM 800 – I & Envirotech APM 800 – II Personal Sampler

Analyzed under : Olympus make, Japan, B X 40 Phase Contrast Microscope

Flow rate : 1.0 L P M

Sampling Duration : 60 minutes each

Specifications : As per A I A - R T M 1 & IS : 11450 - Membrane Filter Method

PERMISSIBLE EXPOSURE LIMIT VALUE (PELV)
AS PER MoEF & P C B = 0.1 fibre per cc of air.

Sl. No.	Date of Sampling	Location	Condition	Dust Concentration **fibre /cc of air**	Remarks
1	01.09.2021	**Static** Fibre Godown	Fibre bags were stored properly. Torn bags are sealed. Different Grades of Fibre bags are stored in the Fibre Godown.	< 0.1 (0.096)	---
2	01.09.2021	**Personal** B O D – E R Mill	The worker carrying the Sampler was engaged in feeding of fibre bags through the Roller Conveyor. Fibre bags are shifted through conveyor from Fibre Godown to B O D. E R Mill and Dust Collector in operation.	< 0.1 (0.044)	---
3	01.09.2021	**Static** E R Mill – Hydro disintegrator	The Static sample is collected from near E R Mill – Hydro disintegrator during the production of F C C Sheets. E R Mill in Operation.	< 0.1 (0.068)	---

For J R LABS

Research Fibre Analyst

B-305 & 309, Vasudha Apartments, ☎ : 040-42300546, 27230750, 27230966

JR LABS

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Sampler used : Samples collected by **Client** using Envirotech APM 800 – II & Envirotech APM 800 – I Personal Sampler

Analyzed under : Olympus make, Japan, B X 40 Phase Contrast Microscope

Flow rate : 1.0 L P M

Sampling Duration : 60 minutes each

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Sl. No.	Date of Sampling	Location	Condition	Dust Concentration **fibre /cc of air**	Remarks
4	02.09.2021	**Personal** S F Drum - Cutter Off	The worker carrying the Sampler was cutting the Sheets at green stage on main Machine along with another worker.	< 0.1 (0.092)	---
5	02.09.2021	**Personal** Stripping	The worker carrying the Sampler was engaged in operation of Stripping Machine. The sample is collected during the production of F C C Sheets.	< 0.1 (0.084)	---
6	02.09.2021	**Personal** M G section - Moulding	The worker carrying the Sampler was making R1 & R2 types of moulded articles during the period of sampling. Semi wet process.	< 0.1 (0.072)	---

For J R LABS

Research Fibre Analyst

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Sampling Duration : 60 minutes each

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PERMISSIBLE EXPOSURE LIMIT VALUE (PELV)
AS PER MoEF & P C B = 0.1 fibre per cc of air.

Sl. No.	Date of Sampling	Location	Condition	Dust Concentration **fibre /cc of air**	Remarks
7	03.09.2021	**Personal** Salvaging Section	The worker carrying the Sampler was reclaiming the Sheets. F C C rejected Sheets were getting reclaimed. Wet process.	< 0.1 (0.048)	---
8	03.09.2021	**Personal** Ball Mill	The worker carrying the Sampler was engaged in operation of Ball Mill. Wet process.	< 0.1 (0.088)	---
9	03:09.2021	**Personal** Pulverizer	The worker carrying the Sampler was feeding broken F C C Sheets through the chute of Pulverizer.	< 0.1 (0.064)	---

For J R LABS

Research Fibre Analyst

B-305 & 309, Vasudha Apartments,

☎ : 040-42300546, 27230750, 27230966

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Flow rate : 1.0 L P M

Sampling Duration : 60 minutes each

Specifications : As per A I A - R T M 1 & IS : 11450 - Membrane Filter Method

PERMISSIBLE EXPOSURE LIMIT VALUE (PELV)
AS PER MoEF & P C B = 0.1 fibre per cc of air.

Sl. No.	Date of Sampling	Location	Condition	Dust Concentration fibre /cc of air	Remarks
10	04.09.2021	**Personal** Fork Lift Operator	The Fork Lift Operator carrying the Sampler was engaged in different work activities like; shifting of Sheets from Destacking area to Stock Yard during the period of sampling.	< 0.1 (0.080)	---
11	04.09.2021	**Personal** Q C Lab Assistant	The Q C Lab Assistant carrying the Sampler was engaged in different Lab activities during the period of sampling.	< 0.1 (0.076)	---

For J R LABS

Research Fibre Analyst

B-305 & 309, Vasudha Apartments, ☎ : 040-42300546, 27230750, 27230966

MICRO, SMALL & MEDIUM ENTERPRISES
सूक्ष्म, लघु एवं मध्यम उद्यम

☎ : 0612 – 2263538 / 2261438

SHIVA TEST HOUSE

122 – C, Aastha, Road No. 5 A
Patliputra Colony ; Patna – 800 013
E.mail : sthpatna1@yahoo.co.in

ISO 45001:2018

RECOGNISED AS ENVIRONMENTAL LABORATORY BY MoEFCC, GOVT. OF INDIA, UNDER ENVIRONMENT (PROTECTION) ACT 1986, DEPTT. OF INDUSTRY, FORESTS & ENVIRONMENT, GOVT. OF BIHAR AND BIHAR STATE POLLUTION CONTROL BOARD

TEST REPORT

Ref. No. *RIL/TR/21-22/147* Dt : *16.04.2021* Your Work Order No. *MANUAL/RIL/BIH* Dt : *02.04.2021*

[a] Name and address of the Customer	**RAMCO INDUSTRIES LTD. Plot No. A 1, BIADA Industrial Area Bihiya Bhojpur – 802 152**			
[b] Details of Sample	*Monitoring of Stack Emission*			
[c] Sample Collected by	SHIVA TEST HOUSE on *08.04.21*			
[d] Sampling Location	***Premises of Ramco Bihiya***			
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)			
[f] Sampling Environmental Condition	Temp. (^{0}C)	32	Humidity (%)	58
[g] Details of Sample Container (No. & Type of Container)	Thimble & Glass Impinger			
[h] Sample Quantity	1			
[i] Items required to be tested	As per contract			
[j] Whether any specific Method of Test has been suggested by the customer	No			
[k] Date of receiving the sample in Laboratory	*08.04.21*			
[l] Analysis Start Date / Analysis Completion Date	*09.04.21 / 10.04.21*			

Parameters	***Method of Test***	***Results***	
1. Stack Connected to		Cement / Fly Ash Circuit	
2. Stack No.		II	
3. Height of Stack (as reported)		15.0 m.	
4. Dia of Stack at Top (as reported)		0.4 m.	
5. Draft		Natural	
6. Material of Construction		M.S.	
7. Ambient Temperature, ^{0}C		18.0	
8. Flue Gas Temperature, ^{0}C		44.0	
9. Velocity, m/sec.	IS 11255 (Part-3)	5.4	
10. Volumetric Flow Rate (NM^3/hr.)		2295.32	
11. Sampling Point		5 m.	
		Concentration (mg / NM^3)	*Limit as per E (P) Rules Schedule I*
12. Particulate Matter (P.M.)	IS 11255 (Part-1)	**34.3**	*100.00 mg / NM^3*
13. Sulphur Dioxide (SO_2)	IS 11255 (Part-2)	**Not Detectable**	---
14. Oxides of Nitrogen (NO_2)	IS 11255 (Part-7)	**8.8**	---

SHIVA TEST HOUSE Patliputra Colony Patna 800013 122-C Astha Road No.-5A

Authorized Signatory

MICRO, SMALL & MEDIUM ENTERPRISES
सूक्ष्म, लघु एवं मध्यम उद्यम

☎ : 0612 – 2263538 / 2261438

SHIVA TEST HOUSE

122 – C, Aastha, Road No. 5 A
Patliputra Colony ; Patna – 800 013
E.mail : sthpatna1@yahoo.co.in

ISO 45001:2018

RECOGNISED AS ENVIRONMENTAL LABORATORY BY MoEFCC, GOVT. OF INDIA, UNDER ENVIRONMENT (PROTECTION) ACT 1986, DEPTT. OF INDUSTRY, FORESTS & ENVIRONMENT, GOVT. OF BIHAR AND BIHAR STATE POLLUTION CONTROL BOARD

TEST REPORT

Ref. No. *RIL/TR/21-22/148* Dt : *16.04.2021* Your Work Order No. *MANUAL/RIL/BIH* Dt : *02.04.2021*

[a] Name and address of the Customer	**RAMCO INDUSTRIES LTD. Plot No. A 1, BIADA Industrial Area Bihiya Bhojpur – 802 152**			
[b] Details of Sample	*Monitoring of Stack Emission*			
[c] Sample Collected by	SHIVA TEST HOUSE on *08.04.21*			
[d] Sampling Location	***Premises of Ramco Bihiya***			
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)			
[f] Sampling Environmental Condition	Temp. (^{0}C)	32	Humidity (%)	58
[g] Details of Sample Container (No. & Type of Container)	Thimble & Glass Impinger			
[h] Sample Quantity	1			
[i] Items required to be tested	As per contract			
[j] Whether any specific Method of Test has been suggested by the customer	No			
[k] Date of receiving the sample in Laboratory	*08.04.21*			
[l] Analysis Start Date / Analysis Completion Date	*09.04.21 / 10.04.21*			

Parameters	***Method of Test***	***Results***	
1. Stack Connected to		Pulveriser Plant	
2. Stack No.		I I I	
3. Height of Stack (as reported)		15.0 m.	
4. Dia of Stack at Top (as reported)		0.15 m.	
5. Draft		Natural	
6. Material of Construction		M.S.	
7. Ambient Temperature, ^{0}C		32.0	
8. Flue Gas Temperature, ^{0}C		48.0	
9. Velocity, m/sec.	IS 11255 (Part-3)	5.1	
10. Volumetric Flow Rate (NM^3/hr.)		301.05	
11. Sampling Point		5 m.	
		Concentration (mg / NM^3)	*Limit as per E (P) Rules Schedule I*
12. Particulate Matter (P.M.)	IS 11255 (Part-1)	**1.41**	*2.0 mg / NM^3*
13. Sulphur Dioxide (SO_2)	IS 11255 (Part-2)	**Not Detectable**	---
14. Oxides of Nitrogen (NOx)	IS 11255 (Part-7)	**8.8**	---

SHIVA TEST HOUSE Patliputra Colony Patna 800013 122-C Astha Road No.-5A

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SHIVA TEST HOUSE

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TEST REPORT

Ref. No. *RIL/TR/21-22/146* Dt : *16.04.2021* Your Work Order No. *MANUAL/RIL/BIH* Dt : *02.04.2021*

[a] Name and address of the Customer	**RAMCO INDUSTRIES LTD. Plot No. A 1, BIADA Industrial Area Bihiya Bhojpur – 802 152**			
[b] Details of Sample	*Monitoring of Stack Emission*			
[c] Sample Collected by	SHIVA TEST HOUSE on *08.04.21*			
[d] Sampling Location	***Premises of Ramco Bihiya***			
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)			
[f] Sampling Environmental Condition	Temp. (^{0}C)	32	Humidity (%)	58
[g] Details of Sample Container (No. & Type of Container)	Thimble & Glass Impinger			
[h] Sample Quantity	1			
[i] Items required to be tested	As per contract			
[j] Whether any specific Method of Test has been suggested by the customer	No			
[k] Date of receiving the sample in Laboratory	*08.04.21*			
[l] Analysis Start Date / Analysis Completion Date	*09.04.21 / 10.04.21*			

Parameters	***Method of Test***	***Results***	
1. Stack Connected to		Fibre Circuit	
2. Stack No.		I	
3. Height of Stack (as reported)		30.0 m.	
4. Dia of Stack at Top (as reported)		0.4 m.	
5. Draft		Natural	
6. Material of Construction		M.S.	
7. Ambient Temperature, ^{0}C		32.0	
8. Flue Gas Temperature, ^{0}C		43.0	
9. Velocity, m/sec.	IS 11255 (Part-3)	5.6	
10. Volumetric Flow Rate (NM^3/hr.)		2387.87	
11. Sampling Point		10 m.	
		Concentration (mg / NM^3)	*Limit as per E (P) Rules Schedule I*
12. Particulate Matter (P.M.)	IS 11255 (Part-1)	**1.47**	*2.0 mg / NM^3*
13. Sulphur Dioxide (SO_2)	IS 11255 (Part-2)	**Not Detectable**	---
14. Oxides of Nitrogen (NO_2)	IS 11255 (Part-7)	**Not Detectable**	---

SHIVA TEST HOUSE Patliputra Colony Patna 800013 122-C Astha Road No.-5A

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SHIVA TEST HOUSE

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TEST REPORT

Ref. No. *RIL/TR/21-22/149* Dt : *16.04.2021* Your Work Order No. *MANUAL/RIL/BIH* Dt : *02.04.2021*

[a] Name and address of the Customer	**RAMCO INDUSTRIES LTD.** **Plot No. A 1, BIADA Industrial Area** **Bihiya** **Bhojpur – 802 152**
[b] Details of Sample	*Monitoring of Stack Emission*
[c] Sample Collected by	SHIVA TEST HOUSE on *08.04.21*
[d] Sampling Location	***Premises of Ramco Bihiya***
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)
[f] Sampling Environmental Condition	Temp. (^{0}C) 32 Humidity (%) 58
[g] Details of Sample Container (No. & Type of Container)	Thimble & Glass Impinger
[h] Sample Quantity	1
[i] Items required to be tested	As per contract
[j] Whether any specific Method of Test has been suggested by the customer	No
[k] Date of receiving the sample in Laboratory	*08.04.21*
[l] Analysis Start Date / Analysis Completion Date	*09.04.21 / 10.04.21*

Parameters	***Method of Test***	***Results***	
1. Stack Connected to		DG Set 1010 KVA	
2. Stack No.		IV	
3. Height of Stack (as reported)		9.0 m.	
4. Dia of Stack at Top (as reported)		0.15 m.	
5. Draft		Natural	
6. Material of Construction		M.S.	
7. Ambient Temperature, ^{0}C		32.0	
8. Flue Gas Temperature, ^{0}C		174.0	
9. Velocity, m/sec.	IS 11255 (Part-3)	8.7	
10. Volumetric Flow Rate (NM^3/hr.)		368.79	
11. Sampling Point		3.5 m.	
		Concentration (mg / NM^3)	*Limit as per E (P) Rules Schedule I*
12. Particulate Matter (P.M.)	IS 11255 (Part-1)	**38.8**	*75.00 mg / NM^3*
13. Sulphur Dioxide (SO_2)	IS 11255 (Part-2)	**11.7**	*Not Specified*
14. Oxides of Nitrogen (NOx)	IS 11255 (Part-7)	**213.5**	*710.00 mg / NM^3*
15. NMHC (as C) (at 15% O_2)	CPCB	**17.0**	*100.00 mg / NM^3*
16. Carbon Monoxide as CO (at 15% O_2)	IS 13270 – 2003	**27.0**	*150.00 mg / NM^3*

SHIVA TEST HOUSE Patliputra Colony Patna 800013 122-C Astha Road No.-5A

Authorized Signatory

SAMA S.A. - Mineraçoes Associadas.
Em recuperação judicial

Nº: 000148200

LAUDO TÉCNICO DE AMIANTO BRANCO, CRISOTILA
WHITE CHRYSOTILE FIBER DATA SHEET

Para/To: RAMCO INDUSTRIES LTD
Attn.: Controle de Qualidade/Quality Assurance Department
Invoice Nr.: 0000173F21
Cód. Mat./Mat. Id.: 6D Ordem de Venda/Order Nr.: 82313

Número do lote/Lot number		210202G1
Quantidade/Quantity (t)		11,25
Quebec (oz)	1/2"	0,0
	4 mesh	1,6
	10 mesh	[illegible]
	Fundo/Pan	5,5
Turner Newall (%)	7 mesh	4,7
	14 mesh	9,5
	25 mesh	13,3
	50 mesh	9,5
	200 mesh	11,0
	-200 mesh	52,0
Indice Comprimento/Lenght Index		344
Lavagem/Wash Test (%)		52,0
Bauer Mcnett (%)	4 mesh	
	14 mesh	
	35 mesh	
	100 mesh	
	200 mesh	
	-200 mesh	
Rotap (%)	6 mesh	
	10 mesh	
	14 mesh	
	20 mesh	
	28 mesh	
	35 mesh	
	65 mesh	
	Fundo/Pan	
Blaine Dyckerhoff (cm^2/g)		
Umidade/Moisture (%)		2,1
Pedrisco/Grit (%)		0,01
Areia Grossa/Coarse Sand (%)		0,14
Areia Fina/Fine Sand (%)		0,49
Magnetita/Magnetite (%)		
Volume Úmido/Wet Volume (ml)		760
Filtração/Freeness (s)		
Feixe/Crudy (%)		
Densidade/Density (g/cm^3)		
Cor/Color (padrão/standard)		4,0
Unidade Resistência/Strenght Unit		85,6

Observação/Remark:

- Testes realizados conforme o "MANUAL DE TESTES DO AMIANTO CRISOTILA" publicado pela QAMA (Associação das Mineradoras de Amianto do Quebec), 3a edição de 1974, revisada em 1978.
- Tests performed according to "Chrysotile Asbestos Test Manual", a publication of QAMA (Quebec Asbestos Mining Association), 3rd edition 1974, revised 1978.