



GreenPro EcoLabelling Assessment Report

Berger Paints India Ltd. – ETICS Division

Kolkata

September 2019

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Purpose

The assessment docket submitted by Berger Paints India Ltd. for GreenPro Ecolabelling of their "ETICS (External Thermal Insulation and Composite Systems) Products", was evaluated according to guidelines laid down in GreenPro Ecolabelling standard for Insulation Materials – Version-1. The preliminary assessment of the docket is as follows:

Credit Modules for Evaluation

The report is organized into eight credit modules as defined by GreenPro rating standards for evaluation – Product Design, Product Performance, Raw Materials, Manufacturing Process, Waste Management, Life Cycle Approach, Product Stewardship and Innovation.

Mandatory Requirements

Mandatory requirements must be achieved and should be addressed immediately by the team.

Credit Points

The credit points are based on achievement of the intent of the individual credit modules.

- The maximum achievable credit points are 100.
- A product will be 'GreenPro EcoLabelled' if it achieves 50 or more credit points in the evaluation.

An assessment of whether the credit is achieved, pending, or not achieved is made and a narrative describes the basis for the assessment.

Attempted

The applicant has applied for achieving the credit points and provided the documentation as per the credit requirements.

Achieved

The documentation of these credits is complete, and the points which are considered as achieved are designated as 'CA' (Credit Achievement). These credits will be finally awarded during the final review.

Not Achieved

13

The applicant has applied for a point in a particular credit, but has misinterpreted the credit intent or cannot substantiate meeting the requirements. The product has not demonstrated achievement of these credits.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Eligibility

The following Insulation Products manufactured by Berger Paints India Ltd. qualifies for GreenPro – Green Product Ecolabelling.

- Berger ETICS with mineral wool
- Berger ETICS with XPS Board
- Berger ETICS with EPS Board

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Executive Summary

Berger Paints India Ltd. has applied for GreenPro – Green Product Ecolabelling for their Insulation offerings. CII appreciates the vision of the leadership for enhancing the 'Green' performance of their products.

With focused efforts in research and innovation, Berger Paints India Ltd. Has developed ETICS (External Thermal Insulation & Composite System) with a U-value (thermal transmittance value) of **0.252 W/m^{2 0}K**, which enhances the thermal performance of the buildings. The products meets the thermal performance requirements as per GreenPro Ecolabelling standards. The system utilizes recycled content to the tune of 55% by weight in the final installation.

The products are environment friendly, do not have presence of flame retardants or ozone depleting substances. The products were also found to have significant acoustical performance and are non-combustible in nature.

The plant team has demonstrated significant reduction in specific energy consumption. The plant team has covered 100% area under rain water harvesting. The plant has zero liquid discharge system in place and utilizes 100% of input water.

The plant team has demonstrated significant reduction in specific waste generated and have a system in place for hazardous waste handling.

CII-Green Products & Services Council congratulates the plant team for their excellent green initiatives towards enhancing the green performance of their products and the manufacturing process.

It is suggested to eliminate PVC corner bead with a sustainable alternative completely as PVC is not a sustainable or eco-friendly material.

The plant may explore the possibility of utilizing on-site renewable energy for street lighting, utilities etc. and procurement of renewable energy through grid.

Berger Paints India Ltd. may explore the possibility of carrying out LCA studies for their ETICS solutions to identify areas for reducing the associated environmental impacts.

Basis the documents shared and the site visit to manufacturing plant, the Insulation Products developed by Berger Paints India Ltd., meet the requirements of GreenPro Ecolabelling standard.

CII- Green Products and Services Council is glad to award 'GreenPro' Ecolabel for the following product manufactured by Berger Paints India Ltd.

- Berger ETICS with mineral wool
- Berger ETICS with XPS Board
- Berger ETICS with EPS Board

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Introduction

Berger ETICS is a composite insulation system that is installed on-site with key components manufactured in their VVN plant and few others sourced externally. ETICS system has the following components in the final installation:

- Berger Adhesive
- Insulation Board (Mineral Wool, EPS, XPS)
- PVC Corner bead
- Mechanical Fixing
- Glass Fibre Mess for strengthening and crack protection
- Base Coat (Berger Homeshield)
- Berger Primer
- Finishing coat Berger Top Coat

In the above, the insulation layer and Glass fiber mess are the externally sourced components while the other components are developed and are manufactured in-house at their VVN plant. So the data pertaining to Management and Manufacturing were considered for Berger Paints India Ltd. and their VVN plant. Details specific to product were considered for the final installation and other relevant lab test certificated from NABL accredited laboratory.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**



Product Design

Possible credit points - 5

Requirements

- Eco-Vision statement
- Strategies adopted, resource allocation, stake holder engagement, Implemented measures & Impacts
 - At the design stage
 - At the manufacturing stage

Credits	Criteria	Credit Points
	Product Design	
Credit 1.1	it 1.1 Eco - Vision statement	
	Strategies adopted, resource allocation, stake holder engagement, Implemented measures & Impacts	
	- At design stage of the product	
	- At manufacturing stage of the product	2

Review

Berger Paints India Ltd. is committed to continually improve their environmental performance. To achieve and consolidate the improvements, sound environmental management systems are installed and integrated into the system.

Berger Paints is committed to exercise control over their waste generation and optimise the resource utilisation through usage of recycled materials in their processes and reusing of waste.

Berger Paints is incorporating methods and techniques related to pollution reduction and prevention as a means of minimising the impact on the environment.

Some of the strategies and measures adopted by Berger Paints to achieve the company's eco-vision include:

- Imparting environmental training to all the employees and create awareness amongst various stakeholders
- o Continual improvement in VOC reduction
- o Go Green approach in the manufacturing by 100% reuse of treated water
- Use of non-hazardous raw material
- o Recycling the hazardous waste by using it as a fuel

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

- o Low carbon foot print by using cleaner energy such as CNG
- o Implementing rain water harvesting project in the plant

Berger Paints has in house quality assurance department to ensure that quality products reach the customers.

Berger Paints is ISO 9001: 2015 certified manufacturing unit and the validity of the same is until November 2019.

Berger Paints gains 5 points as part of this credit.

Technical Advice

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Not Achieved
Achieved
Attempted

25 **25 0**

Product Performance

Possible credit points - 25

Requirement

a. Carryout thermal conductivity test at 20 degree Celsius as per ASTM C1363-11: Standard Test Method for Thermal Performance of Building Materials.

Credits	Criteria	Credit Points
	Product Performance	
Credit 2.1	Thermal Transmittance – U value in W/m ²⁰ K	
	U Value = 2.5	4
	U Value – 2.25 ≤ U < 2.5	6
	U Value – 2.0 ≤ U < 2.25	8
	U Value – 1.75 ≤ U < 2.0	10
	U Value – 1.50 ≤ U < 1.75	12
	U Value – 1.25 ≤ U < 1.50	14
	U Value – 1.0 ≤ U < 1.25	16
	U Value – 0.75 ≤ U < 1.0	19
	U Value – 0.5 ≤ U < 0.75	22
	U Value – U < 0.5	25

Preliminary review

The plant team has carried out the thermal conductivity tests as per the specified standard for all the ETICS systems in an NABL accredited laboratory and submitted the test certificates. The test certificates indicate a thermal transmittance value of **0.252 W/m^{2 0}K**.

Based on the test reports submitted by the plant team for thermal conductivity for the insulation products, the products meet the insulation requirements as per the standard. As per the credit table, considering the average score, the product range gains 25 credit points.

Technical advice:

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Raw Material

Possible credit points - 25

Mandatory Requirement

The product shall not contain hazardous substances such as Tin, Lead, Mercury, Cadmium or Chromium.

Preliminary review

Berger Paints has shared the declaration that no heavy metals are used in the products. It is noted that the toxic or hazardous chemicals are absent (or present in minimal quantities) as prescribed by the standard. There is no use of flame retardants and no biologically active products have been used as raw material. The products are safe to be used under human contact.

This meets the mandatory requirement. CII congratulates Berger Paints for excellent efforts and ensuring that the heavy metal content in the products is minimal.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**



15 0 Recycled content

Possible credit points - 15

Requirement

Utilization of recycled content in manufacturing of insulation materials for more than 20% by weight will gain credit points as mentioned below.

	Criteria	Credit Points
	Raw Material	
Credit 3.1	Recycled content	
	Recycled content of 20%	3
	Recycled content > 20%≤ 25%	5
	Recycled content > 25%≤ 30%	7
	Recycled content > 30%≤ 35%	9
	Recycled content > 35%≤ 40%	11
	Recycled content > 40%≤ 45%	13
	Recycled content > 45%≤50%	15

Preliminary review

Berger Paints encourages usage of recycled content in their products. The final installation of ETICS system consists of eight layers. They are:

- Adhesive
- Insulation Board (Mineral Wool, EPS, XPS)
- PVC Corner bead
- Mechanical Fixing
- Glass Fibre Mess for strengthening and crack protection
- Base Coat (Berger Homeshield)
- Primer
- Finishing coat

In the mentioned components, insulation boards used constitute for the major part of the final installation by weight and have recycled materials which is more than 50%.

As per the credit table, since the recycled material is > 50% (By weight), the product gains all 15 points as a part of this credit.

Technical advice

Although it is used in minimal quantity, it is suggested to eliminate PVC with sustainable alternative completely.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Not Achieved Attempted Achieved

Elimination of prohibited flame retardants

Requirements

	Criteria	Credit Points
Raw Material		
Credit 3.2	Credit 3.2 Elimination of prohibited flame retardants	
	Proper disposal of flame retardants	2
	Total elimination of flame retardants	5

Preliminary review

Berger Paints has declared for absence of any flame retardants in their products.

The declaration was cross checked during the site inspection and was confirmed.

On the basis of the declaration provided, the product gains 5 credit points under this category.

Technical advice

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019



5 5 0

Elimination of ozone depleting and global warming substances

Possible Credit Points - 5

Requirements

	Criteria	Credit Points
	Raw Material	
	Elimination of Ozone depleting & Global	Г
Credit 3.3	warming substances	5

Preliminary review

Berger Paints has provided declaration for elimination of ozone depleting & global warming substances as per the specified standards.

Berger Paints thermal insulation products do not contain any gases that have Global Warming Potential (GWP) or Ozone Depletion Potential (ODP).

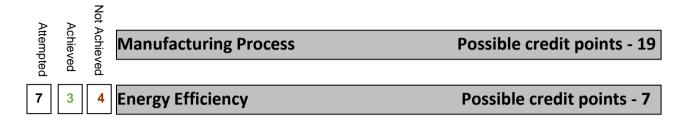
The product gains 5 credit points under this category.

Technical advice

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**



Requirements

- a. Details of annual production, energy consumption & specific energy consumption for the preceding 3 years
- b. Details of National Benchmark & International Benchmark data with comparisons
- c. Details of implementation of energy efficiency improvement measures with actual benefits achieved

Credits	Criteria	Credit Points
4	Manufacturing Process	
Credit 4.1	Energy Efficiency	7
	Implementing energy saving projects	2
	Reduction in specific energy consumption ≥ 5%	1
	Reduction in specific energy consumption ≥ 10%	2
	Reduction in specific energy consumption ≥ 15%	3
	Reduction in specific energy consumption ≥ 20%	5
	(OR)	
	Benchmarking	
	National benchmarking – Among top 5 companies	3
	International benchmarking – Among top 10 companies	5

Preliminary review

The specific energy consumption details provided by the plant team were reviewed. Various energy conservation measures have been implemented in the past few years.

The plant team has carried out various initiatives for reducing the SEC such as:

- Emulsion feeding tank to run on STAR system instead of DELTA
- Using hot water tank system at emulsion production

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

 Replacing 2000 Kg IBR boiler with 850 Kg steam boiler for better efficiency and process improvement

SI.No	Year	Annual Electrical	Annual Production in	Specific Energy
		Energy Consumption	Tons	Consumption kWh/T
1	2015-16	1014721	27842	36.45
2	2016-17	955220	25964	36.79
3	2017-18	839842	25208	33.32

Based on the details provided, it was observed that the reduction in specific energy consumption over the last 3 years is 8.5%

The product gains 3 points as part of this credit.

Technical advice:

The plant team can further explore the opportunities for reducing the specific energy consumption by carrying out detailed energy audit at least once in 3 years and implementing energy saving measures.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Not Achieved
Achieved
Attempted

7 4 3

Water efficiency

Possible credit points - 7

Requirements

- a. Details of annual water consumption & Specific water consumption for 3 years
- b. Details of National Benchmark & International Benchmark data with comparisons
- c. Rain water harvesting system installed and quantity of water harvested annually
- d. Details of the beyond the fence initiatives and the benefits

Credits	Criteria	Credit Points			
	Manufacturing Process				
Credit 4.2	Credit 4.2 Water Efficiency Reduction in specific water consumption				
	Reduction in specific water consumption ≥ 5%	1			
	Reduction in specific water consumption ≥ 10%	2			
	Reduction in specific water consumption ≥ 15%				
	Reduction in specific water consumption ≥ 20%				
Benchmarking					
	Among top 5 units National level				
	Among top 5 units International Level				
	Rain water Harvesting - Harvest 95% rainwater run-off from Roof & Non Roof areas				
	Beyond the fence initiatives	1			

Preliminary review

The specific water consumption details provided by the plant team were reviewed. Various water conservation measures have been implemented in the past few years.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Sl.No	Year	Total water consumption (cubic meters)	Total Production (in Tons)	Specific Water Consumption Cu.m/T
1	2015-16	7420	27842	0.267
2	2016-17	6740	25964	0.260
3	2017-18	6670	25208	0.265

Based on the details provided, it was observed that the reduction in specific water consumption over the last 3 years was found to be 0.7% and hence the products do not gain any points as part of this credit.

The plant team has made the facility as a zero liquid discharge facility where all the water used in the process and other requirements is treated and used for gardening and low grade paint manufacturing.

Rain water harvesting initiatives have been taken up by the plant for the whole facility and meet the criteria for awarding the credits.

Berger Paints has engaged with local community in implementing various activities such as organizing campaigns on plantation as well as implementing rain water harvesting projects to increase ground water level and initiatives for providing drinking water to the people of local community.

The product gains 4 points as part of this credit.

Technical advice

Nil.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Not Achieved
Achieved
Attempted

0 0 5

Renewable Energy

Possible credit points - 5

Requirements

- a. Details of installation of onsite and offsite renewable power generating sources including the technology, installed capacity and location with photographs of installations.
- b. Details of total power consumption in the manufacturing facility and renewable power produced in kWh

Credits	Criteria	Credit Points
	Manufacturing Process	
Credit 4.3	Renewable Energy	
	On-site and Off-site renewable energy generation (Both electrical & thermal)	
	≥ 2.5% < 5% substitution	1
	≥ 5% < 7.5% substitution	2
	≥ 7.5% < 10% substitution	3
	≥ 10% < 12.5% substitution	5
	≥ 12.5% substitution	7

Preliminary review

The plant team does not have any on-site or off-site renewable energy procurement.

Technical advice

With conventional sources of energy fast depleting it is a compulsion for all industries to look for alternate sources of energy. The company is advised to:

- 1. Initiate utilization of renewable energy at small scale by installing solar powered lamps campus lighting, solar water heaters etc.
- 2. Later explore the possibility of investment in renewable power generation sources such as wind or solar and utilize renewable power for the manufacturing process.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Achieved
Attempted

8 2 6

Waste Utilization & Disposal

Possible credit points - 8

Mandatory requirements

Compliance to local regulations on solid, liquid and gaseous wastes discharged from the manufacturing location.

Requirements

- a. Details of waste Generated and their quantity by weight or volume
- b. Details of utilization of the wastes and the process of utilization
- c. Details of the wastes handed over to Approved Common Hazardous Wastes Treatment Storage and Disposal Facility (TSDF)

5	Waste Management	
Mandatory Requirement*	Solid, Liquid and Gaseous Wastes : Compliance to local regulations	
Credit 5.1	Waste Utilisation & Disposal	
	Non Hazardous waste	
	10% reduction in disposal of waste per unit of production	1
	15% reduction in disposal of waste per unit of production	2
	20% reduction in disposal of waste per unit of production	3
	25% reduction in disposal of waste per unit of production	4
	Hazardous Waste	
	> 5%reduction in waste going to landfill	1
	> 10%reduction in waste going to landfill	2
	> 15%reduction in waste going to landfill	3
	> 20%reduction in waste going to landfill	4

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Preliminary review

The local environmental compliances are meet by the plant. The plant team monitors the waste generated at the unit level.

Sl.No	Year	Specific Non-Hazardous Waste Disposed
1	2016	0.000758
2	2017	0.000751
3	2018	0.000742

Sl.No	Year	Specific Hazardous Waste
		Disposed
1	2016	0.000864
2	2017	0.000865
3	2018	0.000816

The above data indicates the specific waste disposed in the last 3 years. The specific non-hazardous waste disposed has been reduced by about 2.1% in the last 3 years and that of specific hazardous waste is reduced by 5.57%. Few of the measures implemented by the plant team to reduce the waste include:

- Best from waste- Low grade paint from ETP sludge
- Bio compost from garden waste/ leaf and waste food
- Recycling of wash solvent in Primers
- Auto, close loop filtration of Emulsion
- Brick manufacturing from process waste

CII congratulates the plant team for this excellent effort.

Basis the data provided by the plant team, the products gain 2 points as part of this credit.

Technical advice

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Not Achieved
Achieved
Attempted

0 0 10

Life Cycle Assessment

Possible credit points - 10

Requirements

- a. LCA study report with the details of the study conducted and impact analysis
- b. Details of the measures implemented based on the impact analysis of LCA study and the benefits achieved

Credits	Criteria	Credit Points
	Life Cycle Approach	
Credit 6.1	Life Cycle Analysis	4
	Measures taken & Quantification of benefits achieved	
	- Implementation of at least one initiative	1
	- 2% impact reduction	2
	- 4% impact reduction	3
	- 6% impact reduction	4
	- 8% impact reduction	5
	- 10% impact reduction	6

Preliminary review

Berger Paints has not carried out life cycle assessment of their products.

Hence the product do not gain any point as a part of this credit.

Technical advice

Life Cycle Assessment helps the product manufacturer to identify the opportunities to reduce the environment impact in the entire life cycle of the product. During the process, LCA also guides the manufacturers to reduce resource consumption at every stage of the life cycle right from the selection of materials, product manufacturing, product performance and end of life management etc. hence, we recommend to Carryout Life Cycle Assessment for product and explore the opportunities for improvement.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Not Achieved
Achieved
Attempted

2 2 0

Product Stewardship

Possible credit points - 2

Requirements

- a. Details of the stake holders' specific awareness or information dissemination programmes about the Green Products, its features and their roles to reap the intended benefits
- b. Estimation of % of stake holders covered

7.1	Product Stewardship	2
Credit 7.1	Education	
	> 10% of people involved in handling the products after dispatch and users	1
	> 20% of people involved in handling the products after dispatch and users	2

Preliminary review

As a part of extended producer responsibility, Berger Paints has conducted training programs for staff on manufacturing as well as safety aspects and applications.

The workers are trained for on-site work and installation procedures of the ETICS system.

About 75% of the employees and other stakeholders are involved in the training programs conducted.

Since this meets the requirement of the credit, the product gains 2 point as part of this credit.

Technical advice

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Not Achieved
Achieved
Attempted

1 1 0

Quality Management

Possible credit points - 1

Requirements

7.2	Product Stewardship	1	
Credit 7.2	Extended Producer Responsibility : Institute a	1	
Credit 7.2	system for quality management	1	

Preliminary review

Berger Paints Limited has established a dedicated lab for quality assurance and control at their manufacturing unit. The plant is ISO 9001: Quality Management System (QMS) certified plant and rigorously demonstrating the compliance of QMS at every stride. In order to mitigate the rejections after dispatch, the plant team conducts detailed analysis on customer complaints and identified the cause for rejections.

The products gain **1 point** as part of quality management system.

Technical advice

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 20/09/2019

Not Achieved
Achieved
Attempted

5 5 0 Innovation

Possible credits points - 5

Requirements

- a. Details of the innovative measures highlighting the Intent and the measured Impacts
- b. Copy of the certificates for the details of Eco-labels, Awards & accolades obtained

Credits	Criteria	Credit Points
8	Innovation	
Credit 8.1	Innovation: Each innovative measure implemented at any stage of Life cycle will gain 1 Credit Point	4
Credit 8.2	Other Credentials, Awards and Accolades	1

Preliminary review

The innovative measures highlighted by the plant team were reviewed.

- ETICS system can be used for taller building
- Higher impact resistance of 60 joules force due to usage of upgraded glass fibre and texture
- Fire resistance of Class 1 with no smoke and droplet
- The manufacturing process generates no hazardous waste and does not incorporate any usage of chemicals, adhesives, flame retardants, global warming or ozone depletion substances.
- Using waste to manufacture bricks as a part of waste to wealth initiative.

Company Name: Berger Paints India Ltd.

Products applied for Ecolabelling: Insulation System

Review date: 2**0/09/2019**

Awards and recognition:

- National Occupational Health and Safety Award from Indian Chamber of Commerce
 2019
- Annual Greentech Safety Award from Greentech Foundation 2018
- "Asia Pacific Award on Environment management 3R (Reduction, Reuse and Recycle)" from Ministry of the Environment of the Government of Japan (MOEJ) and the United Nations Centre for Regional Development (UNCRD) – 2018
- Best HR Practices in organization from Quality Circle Forum of India 2017
- Quality Project Award from Quality Circle Forum of India 2017 and 2018
- National Energy Conservation Award from Government of India 2016 and 2017
- Industrial Relation Award from Federation of Gujarat Industries 2013
- Certificate of appriciation for Accident free manhours from Gujarat Safety Council –
 2012, 2013 and 2014

Basis the data provided by the plant team, the products gain 5 points under the innovation category.

Technical advice