



Confederation of Indian Industry

# **GreenPro Certification Standard for Cement**

## **Version – 1.0**

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## **1. Introduction**

The construction industry is one of the fastest growing sectors in India contributing significantly to the economic growth. At the same time, the rapid growth of the sector poses a host of challenges for preserving the environment and health of occupants. The Green Building Movement spearheaded by the Indian Green Building Council (IGBC) has enabled the construction industry to incorporate Green Building concepts for the enhanced economic, health and environment performance of buildings.

Thus far, the Council has been instrumental in enabling 3.18 Billion sq.ft. of green buildings in the country. The Green Building market growth has created demand for Green products & services. The demand is expected to grow exponentially in the future.

Against this background, CII-Sohrabji Godrej Green Business Centre (CII-Godrej GBC) has launched the **Green Products and Services Council** with the support of all the stakeholders including product manufacturers, standard developers, architects, Green building developers, conformity agencies etc.

**The key objective of the council is to facilitate Green product market transformation in India through 'Green Product Certification'.**

The initial focus of the council will be on Green building products and related technologies. Over a period of time, the council will expand its focus to other areas such as Industrial products, consumer items, services etc.

### **Why GreenPro Certification?**

The GreenPro Certification is a tool for facilitating Green Product market transformation in the country. The GreenPro Certification is expected to:

1. Enable green building projects in selecting the right product and equipment
2. Increase the market demand for the Green products
3. Put a system in place for a product to be called 'green'

## 2. **GreenPro Certification – Life Cycle Approach**

The Green Products Rating adopts a holistic approach based on the 'Life Cycle' of the product. The rating system encourages the product manufacturers to implement measures that would result in environmental, health and wellbeing benefits at the following stages of the life cycle of the products.

1. Product Design
2. Raw materials
3. Manufacturing Process
4. Product Performance during use
5. Disposal / Recycling



## 3. **Benefits**

GreenPro certification benefits both the product manufacturers and the users. The benefits are both tangible and intangible.

### For Product Manufacturers

Some of the benefits of GreenPro Certification for the product manufacturers are highlighted below:

1. GreenPro Certification differentiates the Green product from the competition
2. Increases the market reach out with credible and precise information on the Green features of the products
3. Enables Green product Innovation
4. Increases resources conservation through enhanced energy efficiency, water efficiency, use of renewable energy, minimization waste etc., during the manufacturing process and hence increase in profitability
5. Acts as a driver for achieving environment excellence
6. Complements National & International Green Building Certification systems

### For Users

Use of rated Green products leads to significant tangible and intangible benefits for the end users.

Some of the benefits for the users are highlighted as below:

1. Time and effort in carrying out due diligence in selecting a green product is saved
2. The user is assured of the performance of the product and equipment
3. Ensures Toxic and hazardous substances free products which in turn decrease “health and wellbeing” risks of the users
4. Improved product performance during use to reduce resource consumption and environmental impacts
5. Recognition and credits for achieving national and international Certification for the buildings

## ***4. National Priorities addressed in Certification***

GreenPro Certification addresses the following which are priorities of the Government at the National level:

### *Water:*

Water is a major concern in most part of the country. Implementation of water efficiency measures and “zero Liquid Discharge” are being encouraged to address the water related issues.

### *Land:*

Availability of land and increase in land pollution are major areas of concern. The Certification system demands for increased recycling of material after use which would result in reduction in landfills and hence reduction in land pollution.

### *Energy Efficiency:*

The Certification system encourages the product manufacturers to adopt energy efficiency improvement measures and reduce their energy consumption which is in line with the National Mission on Enhanced Energy Efficiency. This also addresses

### *Renewable Energy:*

The Certification advocates compliance with Renewable Purchase Obligation (RPO) and encourages product manufacturers to invest in renewable power generation. This is in line with Government of India's objective of increasing the contribution of renewable power sources.

A combination of improving energy efficiency and the use of renewable energy leads to support the government's efforts on Climate Change issues.

## **5. Development of GreenPro Certification Standards**

GreenPro Certification applies product specific '**Certification Standards**' for evaluating the products. The Certification standards are developed with the support of respective product committees formed under the aegis of Green products and services council.

The product committee involves all major stake holders related to the respective product category including product manufacturers, standard setters, conformity agencies, architects, users *et al.* The product committee is led by an expert who is also an unbiased specifier.

### **5.1 Features of GreenPro Certification**

The Certification system follows prescriptive as well as performance based approach for evaluating a product. The Certification calls for demonstration of product performance through testing as per specified standards and implementation of measures at every stage of the Life Cycle of the product, leading to clearly measurable environmental benefits.

The Certification system evaluates green features for products based on various performance parameters grouped under the following Credit Modules.

- 1. Product Design:** The Certification necessitates the manufacturer to demonstrate its top management commitment towards environmental performance improvement of the product.
- 2. Product Performance:** The required performance parameters of the product need to be demonstrated through product testing as per the specified standards.
- 3. Raw Materials:** The Certification demands for efforts to bring down the use of virgin materials through recycling and elimination of toxic and hazardous content in the input materials for product manufacturing.
- 4. Manufacturing Process:** The green product Certification recognizes the efforts taken by the product manufacturer to reduce the resource consumption during the manufacturing process

5. **Waste Management:** The Certification calls for efforts to minimize the wastes or safer disposal of the wastes generated during manufacturing process **Life Cycle Approach:** The Certification encourages the product manufacturer to carry out Life cycle analysis for the products and implement measures based on the impact analysis.
6. **Product Stewardship:** The Certification recognizes the measures implemented by the product manufacturers to reduce environmental and health impacts in product transportation, use and recycling / product disposal
7. **Innovation:** The Certification recognizes the innovative measures implemented by the product manufacturers which had resulted in substantial reduction in environment impact exceeding the threshold level specified in the Certification standard.

The approach and the Credit Modules for evaluation of products remain by and large the same for all the product categories. However, the credits as part of the individual Credit Modules and the weightage will vary depending upon the product categories and their significance.

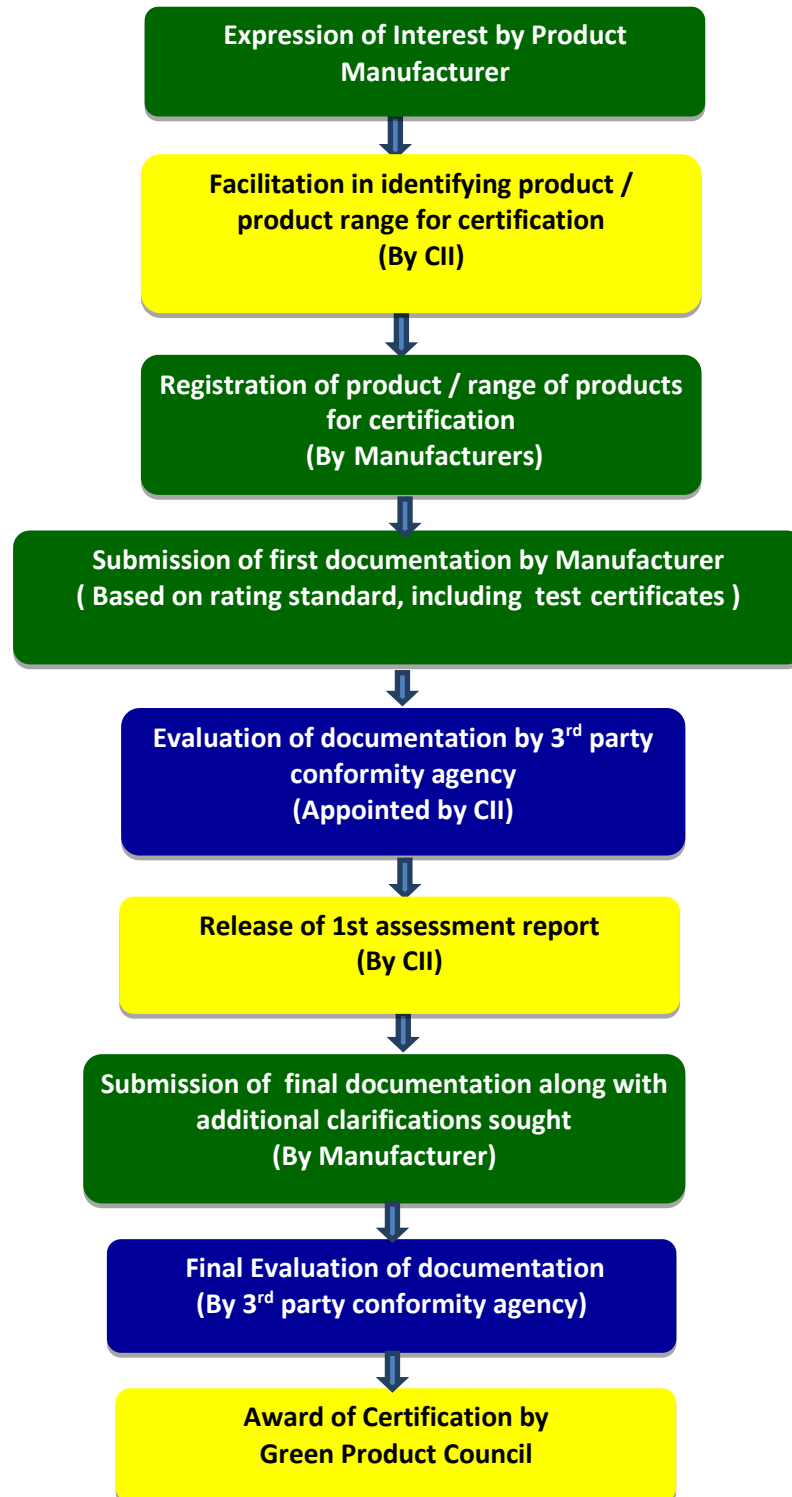
**A Product needs to comply with certain specified mandatory requirements. The mandatory requirements will vary depending upon the product category.**

The threshold limit of all the credits is 100. The product manufacturers can apply for the Credits depending upon the applicability and gain credit points for the Certification.



## 6. Methodology of Certification

The step by step methodology for the Certification is mentioned below.



## 6.1 Product testing

The Green Product Certification calls for testing of select product parameters for the award of Certification. The product parameters will vary depending upon product categories. Wherever testing of the products is specified, the Certification system also specifies the testing standards and the requirements.

The product manufacturers can carry out the product testing in any of the Laboratories accredited by the **National Accreditation Board for Testing and Calibration Laboratories (NABL)** according to the specified standards and produce the test certificates with the test results for further evaluation.

If the product testing has been already carried out in an NABL accredited laboratory owned by the product manufacturer, the product manufacturer has to submit the details of the test procedures & methodology for verification.

If the product testing needs to be carried out outside the country, the laboratory should have been accredited by the accrediting agency recognized by the Government of the respective country or an accrediting agency which is a member of international bodies such as International Laboratory Accreditation Co-operation (ILAC), Asia Pacific Laboratory Accreditation Co-operation (APLAC) etc.

## 6.1 Evaluation by 3rd party Conformity Agency

The document submitted by the product manufacturer will be evaluated by a 3<sup>rd</sup> party conformity agency appointed by CII-Godrej GBC.

Conformity agency is a competent 3<sup>rd</sup> party agency for carrying out product conformity assessment for various products which would involve Product testing, inspection, factory audits and documentary review.

## 7. *Green product Certification*

A product will be certified depending upon the number of credit points achieved based on the evaluation of 3<sup>rd</sup> party conformity agency.

**The maximum achievable credit points are 100. A product will be certified as 'Green Product' if it achieves 50 or more credit points in the evaluation.**

## ***8. Validity of the Certification***

GreenPro Certification is valid for 2 years from the date of award of the Certification for the product / product range.

At the end of the validity period, the product manufacturer needs to apply for the renewal of the Green product Certification.

Before the end of the validity period, the product manufacturer can attempt for higher level of Certification after implementing sufficient measures for gaining credit points. However, the attempt can be made only after a year from the date of award of the product Certification.

## ***9. Fee for Green product Certification***

The fee details are available on website [www.greenbusinesscentre.com](http://www.greenbusinesscentre.com). The fee details can also be obtained through the contact details mentioned in the manual.

## ***10. Updation of the Standard***

GreenPro Certification Standard for Cement is the result of Green Product and Services council's efforts towards facilitating market transformation in Green Building Products. The council's endeavor is to periodically update the standard and raise the bar.

The updating of the standard will be taken up with the support of the product committee on consensus basis. Updates or addenda will be incorporated and formally communicated to the applicants.

## Summary of Credits & Points Distribution

<b>'GreenPro - Green Product Certification</b>		
<b>Cement</b>		
<b>Credits</b>	<b>Criteria</b>	<b>Credit Points</b>
<b>1</b>	<b>Product Design</b>	
<b>Credit 1.1</b>	<i>Eco - Vision</i>	1
	<i>Strategies adopted, resource allocation, stake holder engagement, Implemented measures &amp; Impacts</i>	
	<i>- At design stage of the product</i>	2
	<i>- At manufacturing stage of the product</i>	2
	<i>Sub Total</i>	<b>5</b>
<b>2</b>	<b>Raw Materials and Additives</b>	
<b>2.1</b>	<b>Raw Materials</b>	
<b>Credit 2.1.1</b>	<b>Reduce Environmental impact due to Quarrying</b>	
<b>Mandatory requirements</b>	<ol style="list-style-type: none"> <li>1. Compliance to concerned SPCB and CPCB norms to minimize the adverse effects due to noise, Vibration, dust and discharge of effluents</li> <li>2. Demonstrate community engagement on addressing environment impact</li> </ol>	
	<i>Projects implemented / Demonstration of efforts towards:</i>	
	<i>a. Enhancement of Mines life</i>	1
	<i>b. Top soil conservation (Overburden management)</i>	1
	<i>c. Water table management</i>	
	<i>Hydrological survey and improvement in water table by 5-10%</i>	1
	<i>d. Restoration of spent mines</i>	1
	<i>e. Green Belt development and Bio-diversity</i>	1
	<b>(OR)</b>	
	<i>Efforts taken to minimize the environment impact due to transportation of raw materials</i>	5
<b>Credit 2.1.2</b>	<b>Utilization of alternate Raw materials</b>	
	<i>Use of alternate raw materials <math>\geq</math> 1%</i>	1
	<i>Use of alternate raw materials <math>\geq</math> 2%</i>	2
	<i>Use of alternate raw materials <math>\geq</math> 3%</i>	3
	<i>Use of alternate raw materials <math>\geq</math> 4%</i>	4
	<i>Use of alternate raw materials <math>\geq</math> 5%</i>	5
<b>Credit 2.1.3</b>	<b>Optimization of Raw mix*</b>	
	<i>Demonstration of efforts and system in place</i>	1
	<i>reduction in high quality lime stone consumption <math>\geq</math> 2 %</i>	2
	<i>reduction in high quality lime stone consumption <math>\geq</math> 3 %</i>	3

	<i>reduction in high quality lime stone consumption <math>\geq</math> 4 %</i>	<i>4</i>
	<i>reduction in high quality lime stone consumption <math>\geq</math> 5 %</i>	<i>5</i>
	<i>*Reduction for the past 3 years will be considered</i>	
<i>Sub Total</i>		<b>15</b>
<b>2.2</b>	<b>Additives</b>	
<b>Mandatory requirement</b>	<b>Portland Pozzalona Cement (PPC)</b> Minimum addition of industrial waste (Flyash) - 25%	
	<b>Portland Slag Cement</b> Minimum addition of industrial waste (Slag) - 40%	
	<i>Portland Pozzalona Cement (PPC)</i>	
	<i>Fly ash content <math>\leq</math> 26 %</i>	<i>3</i>
	<i>Fly ash content <math>\leq</math> 27 %</i>	<i>6</i>
	<i>Fly ash content <math>\leq</math> 28 %</i>	<i>9</i>
	<i>Fly ash content <math>\leq</math> 29 %</i>	<i>12</i>
	<i>Fly ash content <math>\leq</math> 30 %</i>	<i>15</i>
	<i>Fly ash content <math>\leq</math> 31 %</i>	<i>18</i>
	<i>Fly ash content <math>\leq</math> 32 %</i>	<i>21</i>
	<i>Fly ash content <math>\leq</math> 33 %</i>	<i>24</i>
	<i>Fly ash content <math>\leq</math> 34 %</i>	<i>27</i>
	<i>Fly ash content <math>\leq</math> 35 %</i>	<i>30</i>
	<i>Portland Slag Cement (PSC)</i>	
	<i>Slag content <math>\leq</math> 43 %</i>	<i>3</i>
	<i>Slag content <math>\leq</math> 46 %</i>	<i>6</i>
	<i>Slag content <math>\leq</math> 49 %</i>	<i>9</i>
	<i>Slag content <math>\leq</math> 52 %</i>	<i>12</i>
	<i>Slag content <math>\leq</math> 55 %</i>	<i>15</i>
	<i>Slag content <math>\leq</math> 58 %</i>	<i>18</i>
	<i>Slag content <math>\leq</math> 61 %</i>	<i>21</i>
	<i>Slag content <math>\leq</math> 64 %</i>	<i>24</i>
	<i>Slag content <math>\leq</math> 67 %</i>	<i>27</i>
	<i>Slag content <math>\leq</math> 70 %</i>	<i>30</i>
<i>Sub Total</i>		<b>30</b>

<b>3</b>	<b>CO<sub>2</sub> Emission per tonne of cement</b>	
<b>Mandatory Requirement</b>	<i>Estimate CO<sub>2</sub> emission per tonne of cement as per CO<sub>2</sub> accounting and reporting standard for cement industry by WRI-WBCSD Cement sustainability initiative</i>	
	<i>Maximum allowed CO<sub>2</sub> emission / tonne of PSC</i>	
	• Scope -1 & 2 emissions based on onsite power generation-	560 kg CO <sub>2</sub> /MT
	• Scope – 1 & 2 emissions based on Grid power -	520 kg CO <sub>2</sub> /MT
	<i>Maximum allowed CO<sub>2</sub> emission / tonne of PPC</i>	
	• Scope -1 & 2 emissions based on onsite power generation-	770 kg CO <sub>2</sub> /MT
	• Scope – 1 & 2 emissions based on Grid power -	730 kg CO <sub>2</sub> /MT
	<i>Reduction in CO<sub>2</sub> emission ≥ 2%</i>	2
	<i>Reduction in CO<sub>2</sub> emission ≥ 4%</i>	4
	<i>Reduction in CO<sub>2</sub> emission ≥ 6%</i>	6
	<i>Reduction in CO<sub>2</sub> emission ≥ 8%</i>	8
	<i>Reduction in CO<sub>2</sub> emission ≥ 10%</i>	10
<i>Sub Total</i>		<b>10</b>
<b>4</b>	<b>Manufacturing Process</b>	
<b>Credit 4.1</b>	<b><i>Energy Efficiency</i></b>	<b>5</b>
	<i>Reduction in specific energy consumption ≥ 3%</i>	1
	<i>Reduction in specific energy consumption ≥ 6%</i>	2
	<i>Reduction in specific energy consumption ≥ 9%</i>	3
	<i>Reduction in specific energy consumption ≥ 12%</i>	4
	<i>Reduction in specific energy consumption ≥ 15%</i>	5
<b>(OR)</b>		
	<b><i>Benchmarking</i></b>	
	<i>National Benchmarking – Among top 5 Companies</i>	3
	<i>International Benchmarking – Among top 10 Companies</i>	5
<b>Credit 4.2</b>	<b><i>Use of Alternate Fuel</i></b>	<b>7</b>
	<i>% of thermal substitution ≥ 1%</i>	1
	<i>% of thermal substitution ≥ 2%</i>	2
	<i>% of thermal substitution ≥ 3%</i>	3
	<i>% of thermal substitution ≥ 4%</i>	5
	<i>% of thermal substitution ≥ 5%</i>	7
<b>Credit 4.3</b>	<b><i>Water Efficiency</i></b>	<b>3</b>
	<b><i>Reduction in specific water consumption</i></b>	
	<i>Reduction in specific water consumption ≥ 5%</i>	1
	<i>Rain water Harvesting - Harvest 95% rainwater run-off from Roof &amp; Non Roof areas and mining areas</i>	1
	<i>Beyond the fence initiatives</i>	1
<b>Credit 4.4</b>	<b><i>Renewable Energy</i></b>	<b>5</b>

	<i>On-site renewable energy generation (Both electrical &amp; thermal)</i>	
	$\geq 1.0\% \leq 2.0\%$ substitution	1
	$> 2\%$ substitution	2
	<i>Off-site Renewable Power</i>	
	$\geq 5\%$ substitution	1
	$\geq 10\%$ substitution	3
	$\geq 15\%$ substitution	5
	<i>Sub Total</i>	<b>20</b>
	<b>Credit 3.0 and 4.0 (OR)</b>	
	<b>GreenCo Platinum / Gold</b>	<b>30</b>
	<b>GreenCo Silver</b>	<b>20</b>
	<b>GreenCo Bronze</b>	<b>10</b>
<b>5</b>	<b>Life Cycle Approach</b>	
<b>Credit 5.1</b>	<i>Life Cycle Analysis</i>	4
	<i>Measures taken &amp; Quantification of benefits achieved</i>	
	- 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
	<i>Sub Total</i>	<b>10</b>
<b>6</b>	<b>Product Stewardship</b>	
<b>Credit 6.1</b>	<i>Education</i>	
	$> 10\%$ of people involved in handling the product after despatch and users	1
	$> 20\%$ of people involved in handling the product after despatch and users	1
<b>Credit 6.2</b>	<i>Quality management system after dispatch of the product</i>	1
<b>Credit 6.3</b>	<i>Extended Producer Responsibility</i>	
	<i>Mechanism in place for product take-back for recycling</i>	1
	<i>Reduction in product take back</i>	1
	<i>Sub Total</i>	<b>5</b>

<b>7</b>	<b>Innovation</b>	
<b>Credit 7.1</b>	<i>Innovations</i>	<b>4</b>
	<i>Up to 4 innovative measures implemented at any stage of life cycle will gain 1 credit point</i>	
<b>Credit 7.2</b>	<i>Other Ecolabels, Credentials, Awards and Accolades related to Green Cement</i>	<b>1</b>
<i>Sub Total</i>		<b>5</b>
<b>Total Points</b>		<b>100</b>



**GREENPRO CERTIFICATION STANDARD  
FOR CEMENT**

## **Mandatory Requirement**

For a product to be taken up for GreenPro certification, the manufacturer shall comply with the applicable acts & rules related to environment and health & safety (demonstrated, for example, by providing copies of:

- (a) Valid consent to operate under the water (Prevention & Control of pollution) Act & Air (Prevention & Control of pollution) Act
- (b) Valid authorization under the hazardous waste (management, handling & trans boundary movement) rules
- (c) Factory license under the Factories Act
- (d) Valid licenses under the Petroleum Act, gas cylinder rules, static & mobile pressure vessels rules, explosives Act
- (e) Providing data to demonstrate continued compliance with the requirements of (a) to (d)

## 1.0 Product Design

### Eco-Vision

**Points: 5**

#### Intent:

To design the product holistically considering all the environmental attributes, so as to minimize associated impacts

#### Award of points:

Provide the details of the Eco Vision to action as per the following for achieving excellence in design of the products that would result in environmental, health & wellbeing benefits.

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

Credits	Criteria	Credit Points
	<b>Product Design</b>	
<b>Credit 1.1</b>	<i>Eco - Vision statement</i>	1
	<i>Strategies adopted, resource allocation, stake holder engagement, Implemented measures &amp; Impacts</i>	
	<i>- At design stage of the product</i>	2
	<i>- At manufacturing stage of the product</i>	2

#### Exemplary Performance:

This credit is not eligible for exemplary performance under Innovation Credit.

**Documentation Required:**

1. Eco Vision statement
2. Strategies adopted at design & manufacturing stage to achieve eco vision

For Eg:

- a. Resource allocation for improving the design of the product & manufacturing of the product
  - b. Employees and stakeholders engaged
3. Details of measures implemented at design stage and manufacturing stage of product with quantification of benefits

## 2.0 Raw Materials & Additives

### Credit 2.1.1: Reduce Environmental impact due to Quarrying      Points: 5

#### Intent:

Minimize the environmental impact during quarrying of minerals and initiate implementation of measures for restoration of the land after the life of the quarry

#### Mandatory requirement

- Compliance to concerned SPCB and CPCB norms to minimize the adverse effects due to noise, Vibration, dust and discharges of effluents
- Demonstrate community engagement on addressing environment impact

#### Award of points:

Points under this criterion would be awarded on the basis of the demonstration of reduction of environmental impact due to mining as stated below:

2.1	Raw Materials	
Credit 2.1.1	<b>Reduce Environmental impact due to Quarrying</b>	
	<i>Projects implemented / Demonstration of efforts towards:</i>	
	<i>a. Enhancement of Mines life</i>	1
	<i>b. Top soil conservation (Overburden management)</i>	1
	<i>c. Water table management</i>	
	<ul style="list-style-type: none"> <li>• <i>Hydrological survey and improvement in water table by 5-10%</i></li> </ul>	1
	<i>d. Restoration of spent mines</i>	1
	<i>e. Green Belt development and Bio-diversity</i>	1
	<b>(OR)</b>	
	<i>Efforts taken to minimize the environment impact due to transportation of raw materials</i>	5

#### Exemplary Performance:

This credit is not eligible for exemplary performance under Innovation Credit.

**Documentation Required:**

- Annual environment audit report / statement submitted to PCB
  - Details of the projects implemented for enhancement of mines life and top soil conservation.
  - Hydrological survey report for water table management
  - Documentary evidences such as study reports, photo graphs for restoration of spent mines and Green Belt development.
- (OR)
- In case of import of raw materials, provide the details of the projects implemented and the efforts taken to minimize emission reduction due to transportation.

## Credit 2.1.2: Utilization of alternate Raw materials

Points: 5

### Intent:

To minimize the natural mineral resource consumption and reduce the environmental impact associated with mining

### Award of points:

Under this credit the manufacturing facility is encouraged to use alternate raw materials apart from fly ash and slag.

An example of alternate raw material would be marble slurry, slag, run off mine, bottom ash, lignite ash etc.

2.1	Raw Materials	
Credit 2.1.2	<b>Utilisation of alternate Raw materials</b>	
	<i>Use of alternate raw materials <math>\geq</math> 1%</i>	1
	<i>Use of alternate raw materials <math>\geq</math> 2%</i>	2
	<i>Use of alternate raw materials <math>\geq</math> 3%</i>	3
	<i>Use of alternate raw materials <math>\geq</math> 4%</i>	4
	<i>Use of alternate raw materials <math>\geq</math> 5%</i>	5

### Exemplary Performance:

This credit is eligible for exemplary performance. If the quantity of alternate raw material utilized exceeds the threshold limits, additional one credit point will be allocated as part of the innovation credit.

### Documentation Required:

- Chemical analysis of alternate raw materials
- Details of quantity of alternate raw materials utilized year wise for the past 3 years.

**Credit 2.1.3: Optimization of Raw mix****Points: 5****Intent:**

To optimize the raw mix to minimize the use of high quality lime stone thereby reduce the associated environmental impacts.

**Award of points:**

The manufacturing facility is required to demonstrate efforts taken to optimize the raw mix and trend of reduction in high quality lime stone consumption reduction for the past 3 years

2.1	Raw Materials	
<b>Credit 2.1.3</b>	<b><i>Optimization of Raw mix</i></b>	
	<i>Demonstration of efforts and system in place</i>	1
	<i>reduction in high quality lime stone consumption <math>\geq 2\%</math></i>	2
	<i>reduction in high quality lime stone consumption <math>\geq 3\%</math></i>	3
	<i>reduction in high quality lime stone consumption <math>\geq 4\%</math></i>	4
	<i>reduction in high quality lime stone consumption <math>\geq 5\%</math></i>	5

**Exemplary Performance:**

This credit is eligible for exemplary performance. If the % reduction in high quality lime stone consumption reduction exceeds the threshold limits, additional one credit point will be allocated as part of the innovation credit.

**Documentation Required:**

- Chemical analysis report of high quality lime stone used by the plant
- Details of projects implemented for minimizing high quality lime stone consumption.
- Documentary evidence for % reduction in high quality lime stone consumption



**Credit 2.2: Additives**  
**30**

**Points:**

**Intent:**

Increase the quantity of additives addition in the final cement product and thereby reduce natural resource consumption such as minerals and fuels

**Mandatory Requirement**

The minimum quantity of additives to be added in the final product are specified as below:

Portland Pozzalona Cement (PPC)

- Minimum addition of industrial waste (Flyash) - 25%

Portland Slag Cement

- Minimum addition of industrial waste (Slag) - 40%

**Award of points:**

2.2	Additives	
	<i>Portland Pozzalona Cement (PPC)</i>	
	<i>Flyash content ≤ 26 %</i>	3
	<i>Flyash content ≤ 27 %</i>	6
	<i>Flyash content ≤ 28 %</i>	9
	<i>Flyash content ≤ 29 %</i>	12
	<i>Flyash content ≤ 30 %</i>	15
	<i>Flyash content ≤ 31 %</i>	18
	<i>Flyash content ≤ 32 %</i>	21
	<i>Flyash content ≤ 33 %</i>	24
	<i>Flyash content ≤ 34 %</i>	27
	<i>Flyash content ≤ 35 %</i>	30
	<i>Portland Slag Cement (PSC)</i>	
	<i>Slag content ≤ 43 %</i>	3
	<i>Slag content ≤ 46 %</i>	6
	<i>Slag content ≤ 49 %</i>	9
	<i>Slag content ≤ 52 %</i>	12
	<i>Slag content ≤ 55 %</i>	15
	<i>Slag content ≤ 58 %</i>	18
	<i>Slag content ≤ 61 %</i>	21
	<i>Slag content ≤ 64 %</i>	24
	<i>Slag content ≤ 67 %</i>	27

	<i>Slag content <math>\leq</math> 70 %</i>	30
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**Exemplary Performance:**

This credit is not eligible for exemplary performance under Innovation Credit.

**Documentation Required:**

- Details of quantity of cement production and the quantity of additives purchased.

### 3.0 CO<sub>2</sub> Emission per tonne of Cement

**Points: 10**

**Intent:**

To reduce CO<sub>2</sub> emissions per tonne of cement produced and thereby reduce the associated environmental impacts.

**Mandatory Requirement**

Estimate CO<sub>2</sub> emission per tonne of cement as per CO<sub>2</sub> accounting and reporting standard for cement industry by WRI-WBCSD Cement sustainability initiative

Maximum allowed CO<sub>2</sub> emission / tonne of PSC - kg/ tonne of cement

- Scope -1 & 2 emissions based on onsite power generation- 560 kg CO<sub>2</sub>/MT
- Scope – 1 & 2 emissions based on Grid power - 520 kg CO<sub>2</sub>/MT

Maximum allowed CO<sub>2</sub> emission / tonne of PPC - kg/tonne of cement

- Scope -1 & 2 emissions based on onsite power generation- 770 kg CO<sub>2</sub> /MT
- Scope – 1 & 2 emissions based on Grid power - 730 kg CO<sub>2</sub>/MT

**Award of points:**

The award of points would be based on the reduction of emission per tonne of cement as shown below:

3	CO <sub>2</sub> Emission per tonne of cement	
	<i>Reduction in CO<sub>2</sub> emission ≥ 2%</i>	2
	<i>Reduction in CO<sub>2</sub> emission ≥ 4%</i>	4
	<i>Reduction in CO<sub>2</sub> emission ≥ 6%</i>	6
	<i>Reduction in CO<sub>2</sub> emission ≥ 8%</i>	8
	<i>Reduction in CO<sub>2</sub> emission ≥ 10%</i>	10

**Exemplary Performance:**

This credit is eligible for exemplary performance. If the % reduction in CO<sub>2</sub> emission exceeds the threshold limits, additional one credit point will be allocated as part of the innovation credit.

**Documentation Required:**

- Carbon foot print report for the past 3 years as per as per CO<sub>2</sub> accounting and reporting standard for cement industry by WRI-WBCSD Cement sustainability initiative.

## 4.0 Manufacturing Process

### Credit 4.1: Energy Efficiency

**Points: 5**

#### Intent:

Enhance energy efficiency in the manufacturing process of the product, to reduce environmental impacts.

#### Award of points:

Establish specific consumption of the plant and monitor on a continuous basis. Eg: specific electrical energy consumption in KWh / Tonne of cement produced and specific thermal energy consumption in Kcal/Tonne of cement produced.

Implement projects for improving energy efficiency in the process, various equipment and recovery waste heat for improving internal power generation and reducing the specific energy consumption of the plant.

Carryout benchmarking at national and international level.

4	Manufacturing Process	
Credit 4.1	<b>Energy Efficiency</b>	<b>5</b>
	<i>Reduction in specific energy consumption <math>\geq</math> 3%</i>	1
	<i>Reduction in specific energy consumption <math>\geq</math> 6%</i>	2
	<i>Reduction in specific energy consumption <math>\geq</math> 9%</i>	3
	<i>Reduction in specific energy consumption <math>\geq</math> 12%</i>	4
	<i>Reduction in specific energy consumption <math>\geq</math> 15%</i>	5
<b>(OR)</b>		
	<b>Benchmarking</b>	
	<i>National Benchmarking – Among top 5 Companies</i>	3
	<i>International Benchmarking – Among top 10 Companies</i>	5

#### Exemplary Performance:

This credit is eligible for exemplary performance under Innovation Credit, provided, the measures implemented for reducing the energy consumption have exceeded the specified threshold limits

**Documentation Required:**

- Details of annual production, energy consumption & specific energy consumption for the preceding 2 years, Form 1 ( Energy Return) submitted to BEE
- Details of National Benchmark & International Benchmark data with comparisons
- Details of implementation of energy efficiency improvement measures with actual benefits achieved

**Note:**

Manufacturing units which are in operation for less than 2 years need to demonstrate a system in place for specific energy consumption monitoring and provide the Benchmarking details as highlighted in point no: 2.

**Credit 4.2: Use of Alternate Fuel****Points: 7****Intent:**

Encourage use of Industrial/municipal/agriculture wastes as alternate fuel to reduce the consumption of natural resources and reduce emissions.

**Award of points:**

Estimate the use of alternate fuel as % of thermal energy substitution for the fossil fuel.

The award of points for the use of alternate fuel would be based as below:

<b>4</b>	<b>Manufacturing Process</b>	
<b>Credit 4.2</b>	<b><i>Use of Alternate Fuel</i></b>	<b>7</b>
	<i>% of thermal substitution <math>\geq</math> 1%</i>	1
	<i>% of thermal substitution <math>\geq</math> 2%</i>	2
	<i>% of thermal substitution <math>\geq</math> 3%</i>	3
	<i>% of thermal substitution <math>\geq</math> 4%</i>	5
	<i>% of thermal substitution <math>\geq</math> 5%</i>	7

**Exemplary Performance:**

This credit is eligible for exemplary performance under Innovation Credit, provided, the % of thermal substitution exceeds the threshold limits specified as part of the credit.

**Documentation Required:**

- Details of quantity of alternate fuel used for the past 2 years and the fuel analysis.
- Documentation for the % of thermal substitution ( Return submitted to PCB / BEE, Third party / analysis of waste material used)

**Credit 4.3: Water Efficiency****Points: 3****Intent:**

Incorporate water efficiency measures in the manufacturing process to reduce potable water consumption and implement measures to benefit the society at large.

**Award of points:**

Implement water efficient measures & technologies and recycle\* waste water generated from the plant to reduce the fresh water consumption.

Harvest or Capture minimum of 95% of rain water runoff from roof & non roof areas of the manufacturing facility

Implement measures for improving the availability of portable water beyond the fence for the benefit of the local community

4	Manufacturing Process	
<b>Credit 4.3</b>	<b><i>Water Efficiency</i></b>	<b>3</b>
	<b><i>Reduction in fresh water consumption</i></b>	
	<i>Reduction in fresh water consumption <math>\geq</math> 5%</i>	1
	<i>Rain water Harvesting - Harvest 95% rainwater run-off from Roof &amp; Non Roof areas and mining areas</i>	1
	<i>Beyond the fence initiatives</i>	1

\*- Recycling of water can be factored into the reduction in specific water consumption

**Exemplary Performance:**

This credit is eligible for exemplary performance under Innovation, if the facility achieves the status of “Zero effluent Discharge”

(OR)

The measures taken exceed the threshold mentioned in the compliance options.

**Documentation Required:**

- Details of annual water consumption & fresh water consumption for past 2 years
- Details of National Benchmark & International Benchmark data with comparisons
- Rain water harvesting system installed and quantity of water harvested annually

- Details of the beyond the fence initiatives and the benefits

**Note:**

Manufacturing units which are in operation for less than 2 years need to demonstrate a system in place for fresh water consumption monitoring and provide the Benchmarking details as highlighted in point no: 2.



**Credit 4.4: Renewable Power****Points: 5****Intent:**

Encourage the use of on-site & off site renewable energy sources to reduce the dependence on fossil fuels and their associated environmental impacts.

**Award of points:**

Install on-site & off-site renewable energy system to reduce dependence on fossil fuels.

<b>4</b>	<b>Manufacturing Process</b>	
<b>Credit 4.4</b>	<b>Renewable Energy</b>	<b>5</b>
	<i>On-site renewable energy generation (Both electrical &amp; thermal)</i>	
	$\geq 1.0\% \leq 2.0\%$ substitution	1
	$> 2\%$ substitution	2
	<i>Off-site Renewable Power</i>	
	$\geq 5\%$ substitution	1
	$\geq 10\%$ substitution	3
	$\geq 15\%$ substitution	5

A company is eligible for claiming the allotted points to the threshold level of 5 Credits if they have done exceedingly in either on-site or Off site renewable energy generation.

**Exemplary Performance:**

This credit is eligible for exemplary performance under Innovation Credit, if the contribution from the renewable energy sources is more than 40% of the annual energy requirement of the manufacturing facility

**Documentation Required:**

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

## 5.0 Life Cycle Approach

### Credit 5.1 Life Cycle Analysis 10

**Points:**

**Intent:**

Identify environmental impact at every stage of the life cycle of the product and initiate measures to reduce such impacts

**Award of points:**

Carry out Life cycle analysis of the product for the boundary conditions of Cradle to Cardle. i.e From the raw material sourcing to recycling / disposal of the manufactured products.

The product manufacturer can carry out the life cycle analysis with the support of external service provider or with internal expertise using a LCA software tool. Based on the Life Cycle impact analysis, implement measures for reducing the environmental impacts.

5	Life Cycle Approach	
Credit 5.1	<i>Life Cycle Analysis</i>	4
	<i>Measures taken &amp; Quantification of benefits achieved</i>	
	<i>- Implementation of at least one initiative</i>	1
	<i>- 2% impact reduction</i>	2
	<i>- 4% impact reduction</i>	3
	<i>- 6% impact reduction</i>	4
	<i>- 8% impact reduction</i>	5
	<i>- 10% impact reduction</i>	6

**Exemplary Performance:**

This credit is eligible for exemplary performance if the implemented measure is innovative and addresses any of the measure that has not been covered as part of the Certification system

**Documentation Required:**

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

## 6.0 Product Stewardship

Product stewardship advocates that all those involved in the Life Cycle of product share responsibility for reducing its health and environmental impacts with producers bearing the primary responsibility.

In the Green Product Certification, Product Stewardship credit focuses on the following:

1. Education for the Stake holders on Green Products for reaping the intended benefits fully
2. Quality management system for minimizing the rejection rate after product dispatch
3. Extended producer responsibility increasing the recycling or safer disposal

The credit points are allotted for the focus areas as applicable for the individual product categories.

In case of Green Cement all the three aspects such as education of stake holders, Quality management system after dispatch of products and extended producer responsibility are considered.

**Credit 6.1: Education****Points: 2****Intent:**

Educate those involved in handling the product at every stage post-dispatch, so as to reap the intended environmental benefits of the green product fully.

**Award of points:**

Companies to develop and implement stake holder specific awareness and information sharing programmes for reaping the benefits of Green products at every stage after dispatch of the product.

<b>Credits</b>	<b>Criteria</b>	<b>Credit Points</b>
<b>6</b>	<b>Product Stewardship</b>	
<b>Credit 6.1</b>	<i>Education</i>	
	<i>&gt; 10% of people involved in handling the product after dispatch and users</i>	1
	<i>&gt; 20% of people involved in handling the product after dispatch and users</i>	1

**Exemplary Performance:**

This credit is not eligible for exemplary performance under innovation criteria.

**Documentation Required:**

- 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
- Estimation of % of stake holders covered

**Credit 6.2: Quality management system after dispatch of the product****Points:****1****Intent:**

Intent of quality management system is to reduce rejection & waste during dispatch & storage

**Award of points:**

Establish a quality management system for monitoring the quality of the product after dispatch till the use.

6	Product Stewardship	
Credit 6.2	<i>Quality management system after dispatch of the product</i>	1

**Documentation Required:**

- Details of in place to oversee the quality of the product during distribution up to the user end.

## 6.3 Extended Producer Responsibility

### Points: 2

#### Intent

To encourage manufacturers to institute a mechanism for product take-back for recycling or safe disposal at the end of useful life.

#### Compliance options:

The company is encouraged to have a mechanism for product take back which would involve:

- ❖ Collection
- ❖ Environmentally sound treatment of collected product
- ❖ Use of product & materials in the form of reuse or recycling

The company has to employ an environmentally friendly procedure or method to disposed off products that cannot be reused or recycled. The disposal method to comply with the Law of the country

Credits	Criteria	Credit Points
	<b>Product Stewardship</b>	
<b>Credit 7.3</b>	<i>Extended Producer Responsibility : Institute a system for product take-back for recycling or safe disposal</i>	1
	<i>Reduction in product take back</i>	1

#### Exemplary Performance:

This credit is not eligible for exemplary performance under innovation criteria.

#### Documentation Required:

1. Details of the mechanism in place for product take back
2. Quantity of reduction in product take back.

## 7.0 Innovation

### Credit 7.1 Product Innovation

**Points: 5**

#### Intent:

Recognize initiatives that are not addressed in this Certification system but have a profound impact in protecting the environment.

#### Award of points:

- As part of the credit, the product manufacturer can apply for four innovative measures. If the implemented measures meet any one of the following criteria mentioned below can be considered as an innovative measure.
  - Any environmental measure not covered in the Certification but addressed by the manufacturer
  - Any measure surpassing the credit threshold of any of the credits included as part of this Certification
- Receipt of Eco labels, Awards & accolades

The points for innovative measures are as follows:

Credits	Criteria	Credit Points
<b>7</b>	<b>Innovation</b>	
<b>Credit 7.1</b>	<i>Innovation : Each innovative measure implemented at any stage of Life cycle will gain 1 Credit Point</i>	4
	<i>Other Credentials, Awards and Accolades</i>	1

#### Documentation Required:

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