

# LEED®

## Leadership in Energy and Environmental Design



This document briefly explains the LEED® programme and how Sonae Arauco wood-based products can help you obtain LEED® Credits.

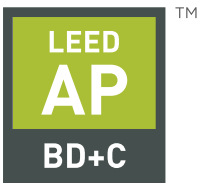
LEED® is an internationally recognized green building programme. Is a voluntary, consensus-based, market driven programme that provides third-party verification of green buildings.

From individual buildings and homes, to entire neighborhoods and communities, LEED® is transforming the way built environments

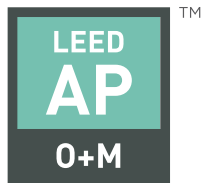
are designed, constructed and operated. Comprehensive and flexible, LEED® addresses the entire lifecycle of a building.

Developed by the U.S Green Building Council (USGBC), LEED® provides building owners and operators the tools they need to access their buildings performance while providing healthy indoor spaces for buildings occupants.

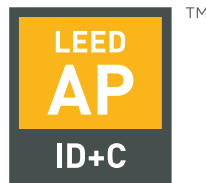
There are five rating systems that address multiple project types:



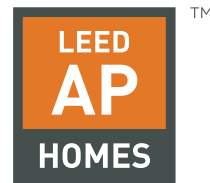
Building Design and Construction



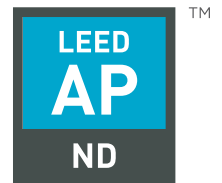
Building Operations and Maintenance



Interior Design and Construction



Homes



Neighbourhood Development

Each rating system is made up of a combination of credit categories.

Within each of the credit categories, there are specific prerequisites projects must satisfy and a variety of credits projects can pursue to earn points.



Location and Transportation



Sustainable Sites



Water Efficiency



Energy and Atmosphere



Materials and Resources



Indoor Environmental Quality

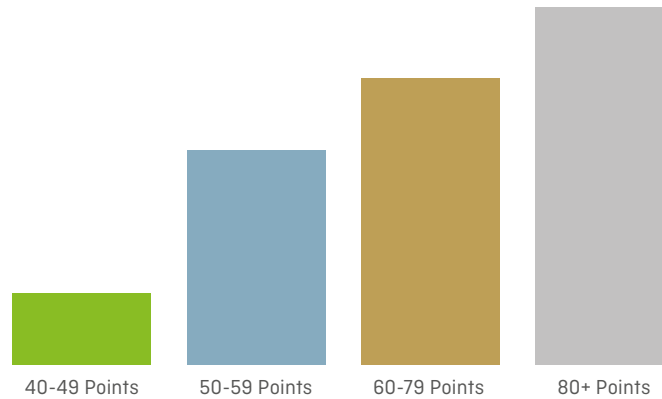


Innovation



Regional Priority Credits

The number of points the project earns determines its level of LEED® certification:



It is important to note that the LEED® aims buildings certification and not materials.

Sonae Arauco's products will not be subject to certification on but will contribute positively to the score of LEED® projects.



## MATERIAL AND RESOURCES (MR)

### MR Credit: Building product disclosure and optimization

#### ENVIRONMENTAL PRODUCT DECLARATIONS\*

BD&C  
**1-2 points**

**This credit applies to**

- New Construction (1-2 points)
- Core & Shell (1-2 points)
- Schools (1-2 points)
- Retail (1-2 points)
- Data Centers (1-2 points)
- Warehouses & Distribution Centers (1-2 points)
- Hospitality (1-2 points)
- Healthcare (1-2 points)

#### SOURCING OF RAW MATERIALS\*

BD&C  
**1-2 points**

**This credit applies to**

- New Construction (1-2 points)
- Core & Shell (1-2 points)
- Schools (1-2 points)
- Retail (1-2 points)
- Data Centers (1-2 points)
- Warehouses & Distribution Centers (1-2 points)
- Hospitality (1-2 points)
- Healthcare (1-2 points)

#### MATERIAL INGREDIENTS \*

BD&C  
**1-2 points**

**This credit applies to**

- New Construction (1-2 points)
- Core & Shell (1-2 points)
- Schools (1-2 points)
- Retail (1-2 points)
- Data Centers (1-2 points)
- Warehouses & Distribution Centers (1-2 points)
- Hospitality (1-2 points)
- Healthcare (1-2 points)

**(\*) Regional Materials**

For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost.



## BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION

### Environmental Product Declarations

Credit | Up to 2 points

#### Intent

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products from manufacturers who have verified improved environmental life-cycle impacts.

#### Requirements

Achieve one or more of the options below, for a maximum of 2 points.

- Option 1 - Environmental product declaration (EPD) (1 point) and / or
- Option 2 - Multi-attribute optimization (1 point)



## BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION

### Sourcing of Raw Materials

Credit | Up to 2 points

#### Intent

To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

#### Requirements

- Option 1 - Raw material source and extraction reporting (1 point) and / or
- Option 2 - Leadership extraction practices (1 point)

Use products that meet at least one of the responsible extraction criteria below for at least 25%, by cost, of the total value of permanently installed building products in the project.

#### Wood-based products

Wood-based products must be certified by the Forest Stewardship Council® or USGBC-approved equivalent. Products meeting Wood-based products criteria are valued at 100% of their cost for the purposes of credit achievement calculation.

#### Recycled content

Recycled content is the sum of postconsumer recycled content plus one-half the preconsumer recycled content, based on cost. Products meeting recycled content criteria are valued at 100% of their cost for the purposes of credit achievement calculation.

For credit achievement calculation, products sourced (extracted, manufactured, and purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost.

For credit achievement calculation, the base contributing cost of individual products compliant with multiple responsible extraction criteria is not permitted to exceed 100% its total actual cost (before regional multipliers) and double counting of single product components compliant with multiple responsible extraction criteria is not permitted and in no case is a product permitted to contribute more than 200% of its total actual cost.



## BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION

### Material Ingredients

Credit | Up to 2 points

#### Intent

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

#### Requirements

Achieve one or more of the options below, for a maximum of 2 points.

- Option 1 - Material Ingredient Reporting (1 point) and / or
- Option 2 - Material Ingredient Optimization (1 point) and / or
- Option 3 - Product Manufacturer Supply Chain Optimization (1 point)



## INDOOR ENVIRONMENTAL QUALITY

### EQ Credit: Low-emitting materials

Credit | Up to 3 points

#### BD&C

#### 1–3 points

#### This credit applies to

- New Construction (1–3 points)
- Core & Shell (1–3 points)
- Schools (1–3 points)
- Retail (1–3 points)
- Data Centers (1–3 points)
- Warehouses & Distribution Centers (1–3 points)
- Hospitality (1–3 points)
- Healthcare (1–3 points)

#### Intent

To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

#### Requirements

This credit includes requirements for product manufacturing as well as project teams. It covers volatile organic compound (VOC) emissions into indoor air and the VOC content of materials, as well as the testing methods by which indoor VOC emissions are determined. Different materials must meet different requirements to be considered compliant for this credit.

#### Wood based materials Evaluation

Wood-based (PB and MDF), as defined by CARB - California Air Resources Board, must be documented to have low formaldehyde emissions that meet the CARB ATCM for formaldehyde requirements for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins.

For projects outside the U.S., composite wood must be documented not to exceed a concentration limit of 0.05 ppm of formaldehyde as tested by EN-717-1:2004 (other options available), either in conjunction with AgBB or with Belgian or French legislation on VOC emission class labeling.

## SONAE ARAUCO MATERIALS

								
REQUIREMENTS	PB PB FR	OSB	MFC	MF MDF	Coloured MDF	WV PB	WV MDF	MDF MDF FR
<b>ENVIRONMENTAL PRODUCT DECLARATIONS</b> Wood products available with EPD	●	●	●	●	●	●	●	●
<b>RECYCLED CONTENT</b> Use materials with recycled content, such that the sum of postconsumer content constitutes at least 10% or 20%, based on the total cost of the materials in the project	●		●			●		
<b>CERTIFIED WOOD</b> Wood products available with FSC - Forest Stewardship Council® Certification	●	●	●	●	●	●	●	●
<b>LOW-EMISSION MATERIALS</b> Very low formaldehyde emission and/or CARB/ NAF certified	● NAF	●			● NAF			● NAF
<b>REACH OPTIMIZATION</b> End-use products and materials that do not contain substances that meet the REACH criteria for substances of high concern	●	●	●	●	●	●	●	●
<b>REGIONAL MATERIALS</b> Use building materials or products that have been sourced (extracted, manufactured and purchased) within 100 miles (160 km) of the project site	●	●	●	●	●	●	●	●

**LEGEND: abbreviation | definition**

● Credits | ● Positive contribution

- PB - Particleboard
- OSB - Oriented strand board
- MFC - Melamine faced particleboard
- MF MDF - Melamine faced MDF
- Coloured MDF - Pigmented free formaldehyde MDF, raw or surfaced
- WV PB - Wood veneer faced particleboard
- WV MDF - Wood veneer faced
- MDF MDF - Medium density fiberboard