

Our contribution to Green Building certificates - LEED



thyssenkrupp



The international market for green construction projects is growing steadily, together with an increasing trend for green building rating systems.

The reduction in energy consumption (linked to greenhouse gas emissions), the business benefits (including about 8% savings in operating costs and 7% increase in building asset value) and the health and well-being of occupants, are the most important reasons behind the sustainability-building certification trend.

Our commitment is to help make cities the best places to live with innovative and sustainable passenger transportation systems. For us, sustainability is not a buzzword limited to energy efficiency. It is holistic, encompassing a “zero accidents” goal for our employees and subcontractors, as well as building an equal opportunity culture in our industry.

Our approach builds on five essentials:

- **Safety:** This is the foundation for all our mobility solutions, as well as every action undertaken by our employees and subcontractors
- **Society:** Improving the quality of life of people around the world through our products and services

- **Employees:** We strive to empower our people in an environment of mutual trust and respect
- **Partners:** Whether with customers or suppliers – trust, transparency, mutual respect and shared benefits are the cornerstones of our relationships
- **Climate:** How can we reduce the carbon footprint along our supply chain? How can our products contribute to making buildings and cities more energy efficient? These are the questions that drive our self-reflection and answer the essential: How we can leave the world a better place?



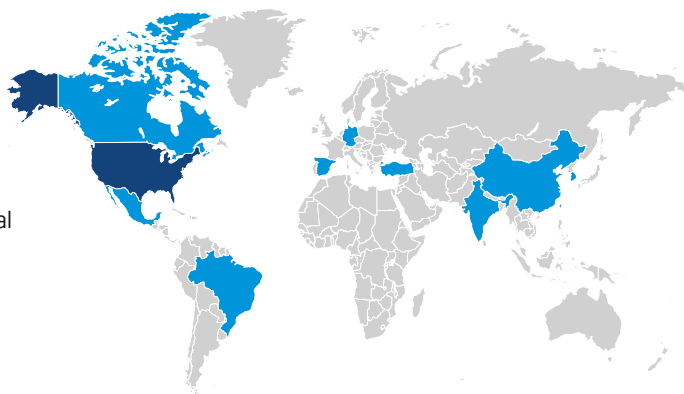
Our promise: Our elevators, escalators and moving walks contribute to greener and more sustainable buildings and help to achieve better performance in different green building rating systems.

The following pages serve as a guide to show you which categories our products contribute to earning points in, within the framework of LEED certification.

What is LEED?

LEED (Leadership in Energy and Environmental Design) is a rating system developed in the USA in 1993 by the USGBC. It promotes a whole-building approach to sustainability by recognizing performance in five key areas of human environmental health: sustainable site development, water efficiency, energy efficiency, materials selection and indoor environmental quality.

The Green Building Rating System is the internationally accepted benchmark for the design, construction and operation of high-performance green buildings.



■ Top 1 ■ Top 10

More than 47,000 certified activities* in more than 167 countries.

Close to 80% LEED certified projects are in the USA

* Data source: <http://www.gbiv.org/collections/14544>

LEED's rating systems.

LEED provides different rating systems according to building types and building phases:

- **BD+C, Building Design and Construction**
for new construction or major renovations.
- **ID+C, Interior Design and Construction**
for complete interior fit-out projects.
- **O+M, Building Operations and Maintenance**
for existing buildings that are undergoing improvement work or little to no construction.

- **ND, Neighborhood Development**
for new land development projects or redevelopment projects containing residential uses, non-residential uses or a mix.
- **Homes**
for single-family homes, low-rise multi-family (one to three stories) or mid-rise multi-family (four to six stories).
- **Cities and Communities**
For entire cities and sub-sections of a city.

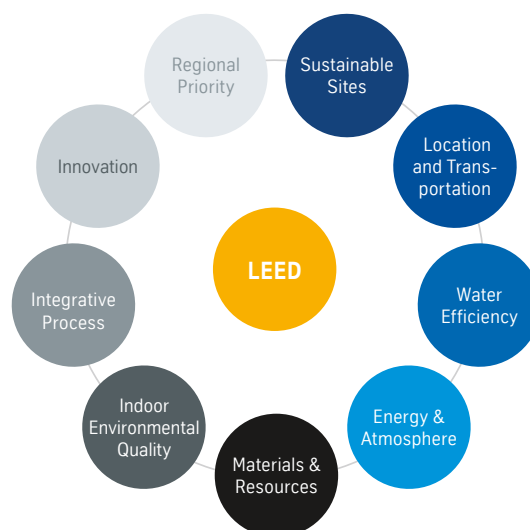
LEED's categories and performance rating.

Projects pursuing LEED certification earn points for various green building credit strategies across several categories.

Depending on the LEED certificate version and the chosen rating system, there are different numbers of points available. For example, under LEED v4.1 version and BD+C (Building Design and Construction) rating system there are over hundred possible credit points distributed across nine categories.

Based on the number of points achieved, a project earns one of the four LEED rating levels: Certified, Silver, Gold or Platinum.

Platinum:	80+ points
Gold:	60-79 points
Silver:	50-59 points
Certified:	40-49 points



LEED v4.1 categories overview

You can find further information here: www.usgbc.org/leed

LEED credits for elevators and escalators.

Energy and Atmosphere (EA).

(Up to 20 points)



Category	Assessment criteria and definition	Our product's contribution
Energy and Atmosphere (EA): Optimize energy performance	Building energy simulation Up to 20 points can be achieved when an energy Baseline Building Performance Model and Proposed Building Performance model are developed, taking into account any component that affects the energy consumption of the building according to the ASHRAE 90.1-2016 standard. To reduce the environmental and economic harm of excessive energy use by achieving a minimum level of energy efficiency for the building and its systems.	Your project team can help you determine proposed energy savings over a baseline that can be added to your project's energy model. Our elevators and escalators feature state-of-the-art highly efficient synchronous machines along with energy-saving features and controller options to provide outstanding low-energy consumption performance. As a result, they achieved the highest energy-efficient rating for elevators (Class A acc. to ISO 25745-5) and escalators (Class A+++ acc. ISO 25745-3). Elevators and escalators energy efficiency is particularly relevant in highrise buildings. For this type of building, we offer smart systems like TWIN, with 20-45% less energy consumption compared with traditional double-deck elevator configurations.

Materials and Resources (MR).

(Up to 5 points)



Category	Assessment criteria and definition	Our product's contribution
Materials and Resources (MR): Building product disclosure and optimization	Environmental Product Declarations One point is achieved when there is a minimum set of permanently installed products from different manufacturers with Environmental Product Declarations (EPDs). Encourage the use of products and materials with publicly available, critically reviewed life cycle assessments, conforming to ISO 14044 and which have at least cradle-to-gate scope.	We achieved the first-ever EPD® for an elevator, registered and published in the International EPD® System in 2017. Since 2017, most of our elevator systems, e.g. synergy and evolution, have obtained EPDs, according to the Product Category Rules of the International EPD® system. Our escalators and moving walks can contribute based on their LCA (Life Cycle Assessment) reports, which include third party critical review. Our factories in Germany and Spain produce most of our elevators and escalators, as well as their components. We are close to our markets in terms of logistics (in- and outbound) and transportation, contributing in this way to reduce our carbon footprint.
	Sourcing of Raw Materials Up to two points can be achieved by using products sourced from different manufacturers that meet some responsible sourcing and extraction criteria. 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.	thyssenkrupp AG provides continuous and fully integrated reporting (from its five business areas, including Elevator Technology) on its sustainability performance in our annual report, applying the international standards of the Global Reporting Initiative (GRI) and the UN Global Compact. Please visit: https://www.thyssenkrupp.com/en/company/sustainability/integrated-reporting/ From 2020, as stand alone company thyssenkrupp Elevator will continue providing independent sustainability report.
	Material Ingredients Up to two points can be achieved when there is a minimum set of permanently installed products from different manufacturers that use any of the defined programs to demonstrate the chemical inventory of the product. Encourage the use of products and materials for which life cycle information is available, and reward teams for selecting products from companies that have inventoried chemical ingredients.	We can develop Health Product Declarations and Cradle-to-Cradle Material Health certifications on request for specific projects. These certifications fulfill both the Disclosure and Optimization Material Ingredient criteria.

Additional credits.

Credits	Assesment criteria and definition	Our product's contribution
Pilot credit: Integrative Analysis of Building Materials	To encourage the use of products and materials for which life cycle information is available and which have environmentally, economically and socially preferable life cycle impacts.	Alongside the EPDs and, on request, for specific projects, we can develop several certificates for materials transparency (HPD and Cradle-to-Cradle) that can count toward the required three products for this credit.
Innovation	Encourage projects to achieve exceptional or innovation performance above the requirements set by the LEED rating system.	We can offer you multiple comprehensive strategies with proven quantitative benefits outside of LEED's current credits.

Sustainable Sites (SS) and Water Efficiency (WE) categories specifically do not apply to elevators or escalators. Our mobility solutions could contribute in other categories like Innovation in Operations (IO) and Indoor Environmental Quality (IEQ), although these are not specific to elevators and escalators. Consult your thyssenkrupp Elevator project team for more information.

LEED references with our products.

1

BBVA Headquarters
Madrid, Spain
Architect: Herzog &
de Meuron
LEED Gold certificate

74 elevators
9 high speed elevators



2

Euskalduna
Conference Center
Bilbao, Spain
Architect: Federico
Soriano, IDOM
LEED O+M certified,
existing buildings

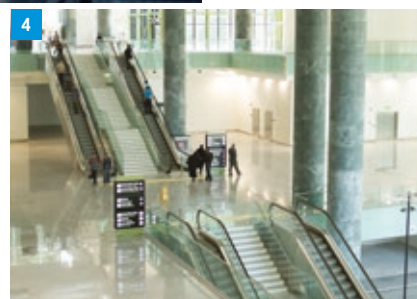
3 elevators
5 escalators



3

Urban Scape
Stockholm, Sweden
Architect: Studio
Stockholm
LEED Gold certificate

53 elevators
27 escalators
15 platform lifts



4

Izmir Airport
Istanbul, Turkey
LEED Silver certificate

38 elevators
32 escalators
19 moving walks

About us.

thyssenkrupp Elevator designs and delivers innovative passenger transportation solutions that make cities the best ever places to live.

thyssenkrupp Elevator has over 50,000 highly qualified employees. They develop, manufacture, install, maintain and modernize:

- Passenger and freight elevators
- Escalators and moving walks
- Passenger boarding bridges
- Stair and platform lifts

Our pioneering systems transport people safely and efficiently in many of the world's landmark buildings – from major airports, train stations and shopping malls to the largest office towers and most luxurious hotels, where some of them achieved a Green Building Certificate. We also provide tailored service solutions to customers in more than 100 countries, ensuring sustainable

working for all our products.

We are committed to achieving the highest standards in all our processes and operations with regard to health, safety, environmental protection and the responsible use of energy and resources. Therefore, most of our operations are certified in accordance with the following international standards:

- Lift Directive 2014/33/EU, Annex VI, Module E: Quality Assurance for Safety Components
- Lift Directive 2014/33/EU, Annex XI, Module H1: Full Quality Assurance for Lifts
- EN ISO 9001: Quality Management System
- EN ISO 14001: Environmental Management System
- EN ISO 50001: Energy Management Systems
- ISO 45001: Occupational Health and Safety Management System

Contact

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The information in this document is generic, for specific project consult your thyssenkrupp Elevator project team.