

ARE YOU AWARE (62 rev 0)

Subject - Building Research Establishment Environmental Assessment Method (BREEAM)

LEIA is frequently asked what is BREEAM, does it relate to lifts and other vertical transportation products, who has to comply, are platform and stair lifts included etc? This document will give you the basics and how it relates to lifts and other vertical transportation products.

BREEAM sets the standard for best practice in sustainable building design, construction and operation and has become one of the most comprehensive and widely recognised measures of a building's environmental performance.

A BREEAM assessment uses recognised measures of performance, which are set against established benchmarks, to evaluate a building's specification, design, construction and use. The measures used represent a broad range of categories and criteria from energy to ecology. They include aspects related to energy and water use, the internal environment (health and well-being), pollution, transport, materials, waste, ecology and management processes.

A number of tools have been developed to assist building designers in determining if they are providing a green building solution and how green the solution really is. The tools take the form of preliminary design assessment tools that can be used by a designer. The tools ask a number of questions and award credits depending on the answer. The credits are totalled and depending on the number reached a BREEAM rating is awarded to the design.

The assessment considers items such as water used during construction, insulation value of materials used, quantity of recycled material and so on.

Depending on the credits achieved a classification is given as follows.

- <30 = Unclassified
- ≥30 = Pass
- ≥45 = Good
- ≥55 = Very good
- ≥70 = Excellent
- ≥85 = Outstanding

Designers are driven to look at all aspects of their design and this includes vertical transportation products where used.

There are assessment tools covering Offices, Courts, Educational, Industrial, Retail, Multi residential and Data centre type premises.

In the case of Offices, Courts, Educational, Industrial, Retail, and Data centre type premises exemption is given for simple platform/wheelchair lifts and ramps.

With the exception of Multi residential premises the BREEAM 2008 version does not apply to buildings that are installing simple platform/wheelchair lift or electronic ramps. If the lift forms an integral part of the building i.e. there is a lift shaft, then it must be assessed.

For lifts and escalators a maximum of 2 credits can be awarded based on the following.

First credit

1. An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and *counterbalancing ratio* on the basis of anticipated passenger demand.
2. The energy consumption for at least two types of lift or lift strategy 'fit for purpose' has been estimated and the system with the lowest energy consumption specified.

Second credit

3. The first credit is achieved.
4. Of the following energy-efficient features, the three that offer the greatest potential energy saving are specified:
 - a. The lifts operate in a stand-by mode during off-peak and idle periods. For example the power side of the lift controller and other auxiliary equipment such as lift car lighting and ventilation fan switch off when the lift is not in motion.
 - b. Where lift motors use a drive controller capable of variable-speed, variable-voltage, variable-frequency control of the drive motor.
 - c. The lift has a regenerative unit so that energy generated by the lift (due to running up empty and down full) is returned back to the grid or used elsewhere on site.
 - d. The lift car uses energy-efficient lighting and display lighting (>60 Lumens/watt or fittings that consume less than 5W e.g. LEDS).

Applicable building works

BREEAM is intended to be used with works where the building regulations apply such as New Build, Refurbishment, Extensions to Existing buildings, Shell only and/or Fit Out only.

To obtain the credits evidence of compliance is required. The following show the evidence required in relation to vertical transportation products.

Schedule of Evidence Required

Design Stage Post Construction Stage

1-2 A copy of the relevant report or documentation detailing the analysis undertaken and findings/recommendations.

A copy of the lift specification.

The evidence required at this stage is the same as that outlined at the design stage. A copy of the lift specification **OR** a Formal letter from the lift manufacturer/supplier confirming that the lift to be installed on the project meets the relevant criteria for the number of credits sought.

Additional Information

Relevant definitions

Counterbalancing ratio: Lifts use a counterweight to balance the weight of the car plus a proportion of the maximum weight of the passengers; this reduces the size of the drive motor required for the lift. Lowering the counterbalancing ratio means a smaller motor and controlling drive unit are required, thus saving energy.

ISO Draft standard CD25745-1 *Energy performance of lifts, escalators and moving walks – Part 1*

Energy and conformance

It has been estimated that between 5-15% of a building's total energy consumption can be attributed to the operation of lifts and 58% of the energy consumption of lifts is attributable to stand-by mode.

A Working Group of an International Standards Organisation's Technical Committee is developing a draft standard for the Energy performance of lifts, escalators and moving walkways. This draft standard outlines proposed procedures to be used when making energy measurements of lifts, escalator and moving walkways.

Counter balancing ratio requirement

Lifts will have a specified maximum load and as such the counterbalancing ratio will be set accordingly (generally the counterbalance ratio used is 50%).

Provided the type and number of lifts specified, and therefore maximum lift load, is based on an appropriate analysis of transport/lift demand for the building, then the counterbalancing ratio can be considered optimised for the purposes of compliance with BREEAM, without necessarily requiring further deviation of the ratio from that specified.

Escalators and travelling walkways

Assessment Criteria

The following demonstrates compliance

Where each escalator and/or horizontal travelling walkway complies with **EITHER** of the following:

- a. Is fitted with a load sensing device that synchronizes motor output to passenger demand through a variable speed drive. **OR**
- b. Is fitted with a passenger sensing device for automated operation, so the escalator operates in stand-by mode when there is no passenger demand.

Schedule of Evidence Required

Design Stage Post Construction Stage

A copy of the specification and manufacturer's technical literature confirming:

- No. and type of escalators specified
- Escalator control strategy.
- Escalator manufacturer's/supplier's technical literature.
- Assessor's building/site inspection and photographic evidence confirming:
- Installation of compliant escalators.

Copies of BREEAM tools can be downloaded having set up a pass word and log credentials from <http://www.breeam.org/>