TEC1.5

Ease of cleaning building components

Objective

Our objective is to implement structural and technical measures to reduce the cost and effort required for cleaning.

Benefits

The issue of how a building structure can be cleaned has a significant effect on the costs and environmental impact of a building during its use. Surfaces that can be easily cleaned require less cleaning agents and result in lower cleaning costs.

Contribution to overriding sustainability goals

No direct contribution to Sustainable Development Goals (SDGs) of United Nations (UN) or to German Sustainability Strategy.

Outlook

This criterion does not currently address the ease of maintenance of the building structure. If suitable evaluation methods are available, these will be addressed in the criterion.

Share of total score

	SHARE	WEIGHTING FACTOR
Office **Education** **Residential** **Hotel** **Assembly buildings**	1.3%	2
Consumer market **Shopping centre** **Department stores**	1.4%	2
Logistics **Production**		

DGNB System – New buildings criteria set
VERSION 2020 INTERNATIONAL

Technical quality
TEC1.5 / EASE OF CLEANING BUILDING
COMPONENTS
EVALUATION

EVALUATION

The type and scope of structural and technical measures implemented to improve the ease of cleaning of the building are evaluated using a total of seven indicators. The feasibility of and the reduction in the cost and effort required for cleaning of the façade are represented by indicators 1 and 2. Indicator 3 evaluates the ease of cleaning of floor coverings and enables alternative measures to be recognised via the innovation area. Increased ease of cleaning as a result of dirt traps, an unobstructed floor plan and durable, easily accessible surfaces is evaluated via indicators 4 to 6. The creation of a concept to ensure ease of cleaning is acknowledged via indicator 7. A maximum of 100 points can be awarded.

NO.	INDICATOR	POINTS
1	**Accessibility of the exterior glass surfaces**	
1.1	**Feasibility of façade cleaning**	**Max. 15**
	▪ Façade cleaning is possible using aids (exterior glass surface proportion in %; 1% ≙ 0.1 point).	(+) 0–10
	▪ Cleaning is possible without aids (exterior glass surface proportion in %; 1% ≙ 0.15 point).	(+) 0–15
2	**Exterior and interior components**	
2.1	**Cost and effort required to clean exterior components**	**5**
	Measures have been implemented to reduce the cost and effort required for cleaning the exterior façade.	
2.2	**Cost and effort required to clean interior components**	**5**
	Measures have been implemented to reduce the cost and effort required for cleaning the interior components (e.g. glazed separating walls, parapets, railings). This also includes measures to make cleaning unnecessary.	
3	**Floor covering**	
3.1	**Ease of cleaning**	**Max. 20**

Office   Education   Consumer market   Shopping centre   Residential   Hotel   Logistics
Production   Assembly buildings

	POINTS
▪ Partially (only circulation areas are patterned, mottled or structured)	10
▪ Fully (patterned, mottled or structured).	15
▪ The selected floor covering verifiably results in reduced life cycle costs for cleaning.	+5

Department stores   **Max. 20**

	POINTS
▪ At least 50% of the floor covering of sales areas is tolerant to slight contamination.	10
▪ At least 80% of the floor covering of sales areas is tolerant to slight contamination.	15
▪ The selected floor covering verifiably results in reduced life cycle costs for cleaning.	+5

DGNB System – New buildings criteria set
VERSION 2020 INTERNATIONAL

Technical quality
TEC1.5 / EASE OF CLEANING BUILDING
COMPONENTS
EVALUATION

3.2 **INNOVATION AREA**   **As in 3.1**

Improvements to the ease of cleaning of the floor covering via innovative solutions.

4 **Dirt trap** at building entrances

4.1 **Dirt trap** at building entrances **I**

Office	Education	Consumer market	Shopping centre	Department stores	Hotel

Logistics	Assembly buildings	Production	Residential

■ There are dirt traps at every main entrance.   **5**

4.2 **Dirt trap** at building entrances **II**

Office	Education	Consumer market	Shopping centre	Department stores	Hotel	**5–10**

Logistics	Production	Assembly buildings

■ All dirt traps comply with the three-step principle (approx. 2.4 m).   5
■ All dirt traps comply with the five-step principle (approx. 4 m).   10

Residential	**5–10**

■ All dirt traps comply with the two-step principle (approx. 1.6 m).   5
■ All dirt traps comply with the five-step principle (approx. 4 m).   10

5 **Unobstructed floor plan**

5.1 **Obstacle prevention**

Office	Education	Consumer market	Shopping centre	Department stores	Hotel	**Max. 20**

Logistics	Production	Assembly buildings

■ Radiators at a suitable height (ground clearance ≥ 15 cm).   2.5
■ No radiators.   5

■ Railing supports for staircases/balustrades, if any, are attached laterally (no   +5
support points on the steps/floor).
■ WCs and sinks are attached to the walls.   +2.5
■ Separating walls for booths are designed without support points on the floor or   +2.5
as separating walls with a wall/floor connection wherever possible.
■ Freestanding supports are positioned at a distance of at least 20 cm from the   +5
surrounding components (for this point, 10% of all supports can be ignored for
the evaluation).
■ Lighting is integrated into the ceiling and does not need to be cleaned.   +2.5
■ Closets are available and can be used in place of shelves and cabinets.   +2.5

Residential	**Max. 20**

■ Radiators at a suitable height (ground clearance ≥ 15 cm).   2.5
■ No radiators.   5

■ Railing supports for staircases/balustrades, if any, are attached laterally (no   +5
support points on the steps/floor).
■ WCs and sinks are attached to the walls.   +5
■ Freestanding supports are positioned at a distance of at least 20 cm from the   +5
surrounding components (for this point, 10% of all supports can be ignored for
the evaluation).

6 Surfaces

6.1 Surfaces that are frequently used and difficult to access **10**

Measures have been implemented to make surfaces that are frequently used (work surfaces, handles, doorknobs, light switches, lift buttons, etc.) easier to clean and thereby to improve hygiene, and to make surfaces that are difficult to access (hanging lights, solar radiation protection, shelves, cabinets, ledges, corners) easier to clean.

7 Concept to ensure ease of cleaning

7.1 Consideration in the planning process **5**

Potential and necessary measures for ensuring ease of cleaning are taken into account in the planning process.

7.2 Cleaning concept **5**

A detailed concept to ensure ease of cleaning is available.

SUSTAINABILITY REPORTING AND SYNERGIES

Sustainability reporting

The following aspects can be used for communication as key performance indicators (KPI):

NO.	KEY PERFORMANCE INDICATORS (KPIS)	UNIT
KPI 1	Proportion of exterior glass surfaces that can be cleaned without aids	[%]
KPI 2	Proportion of floor coverings (interior) with high tolerance to contamination	[%]

Synergies with DGNB system applications

■ **DGNB INTERIORS:** The results of indicators 1 to 5 can to some extent be incorporated into the checklist for criterion PRO1.1, indicator 1 of the interiors scheme (version 2017). Indicator 7 corresponds to the content of criterion PRO8.1.

DGNB RENOVATED BUILDINGS: Indicators 1 to 5 largely correspond to criterion PRO1.5, indicators 2 and 3 in the renovated buildings scheme (application NBV15).

DGNB System – New buildings criteria set
VERSION 2020 INTERNATIONAL

Technical quality
TEC1.5 / EASE OF CLEANING BUILDING
COMPONENTS
APPENDIX

APPENDIX A – DETAILED DESCRIPTION

I. Relevance

The issue of how a building structure can be cleaned has a significant effect on the costs and environmental impact of a building during its use. Surfaces that can be easily cleaned require less cleaning agents and result in lower cleaning costs.

The objective must therefore be to keep operating expenses for cleaning as low as possible while ensuring a long material lifespan.

II. Additional explanation

Building structures that are cleaned according to schedule and that enable cleaning measures to be carried out easily are evaluated positively.

III. Method

Indicator 1: Accessibility of the exterior glass surfaces

This indicator evaluates how easily the exterior glass surfaces can be cleaned. The surfaces to be considered include windows and façade surfaces as well as PV systems. Exterior glass surfaces that can be cleaned without the use of aids are more highly evaluated due to the lower expected cleaning costs. This is generally the case for window casements that can be opened inwards, or where the distance from the top of the standing surface to the top of the glass surface is approximately 4 m.

Points can also be awarded for façade surfaces that can be cleaned using technical aids, such as a telescopic pole from the fixed base or through a façade inspection and maintenance conveyor a cleaning bridge. The use of cherry pickers or climbing harnesses is not permitted here.

The proportion percentage of the total area must be rounded up or down to the nearest whole percentage point in accordance with the rules for commercial rounding of figures.

Indicator 2: Exterior and interior components

This indicator evaluates whether measures are implemented on the exterior façade or on the interior components for reducing the cost and effort required for cleaning.

Solutions that use alternative structural and technical solutions for easier cleaning or that eliminate the need to carry out cleaning are evaluated positively. Measures can be applied here that, for example, reduce the use of cleaning agents, shorten the duration of the cleaning process or increase the intervals between cleaning processes.

Implementation of structural measures against dirt (e.g. functioning drip edges or eaves) or the creation of dirt-repellent surface properties (e.g. lotus effect) is evaluated positively.

DGNB System – New buildings criteria set
VERSION 2020 INTERNATIONAL

Technical quality
TEC1.5 / EASE OF CLEANING BUILDING
COMPONENTS
APPENDIX

Indicator 3: Floor covering

This indicator evaluates whether the floor covering is tolerant to slight contamination.

- Tolerant: Patterned, mottled or structured.
- Partially tolerant: Only circulation areas are patterned, mottled or structured.
- Not tolerant: Not patterned, mottled or structured.

If the floor covering cannot be clearly assigned to one of these categories, the worst evaluation must be selected in each case. The overall evaluation is carried out on an area-weighted basis, and all circulation areas and 80% of the usable area must be included. However, it is possible to address large sub-areas differently depending on the type and colour of the floor covering.

In addition, demonstrable positive effects on the life cycle costs as a result of appropriate selection of the floor covering (e.g. lower cleaning frequency due to the floor covering selected or the use of carpet tiles) are evaluated positively.

Indicator 4: Dirt trap at building entrances

This indicator evaluates whether a sufficiently long dirt trap is in place at the main entrances.

Dirt traps include grating or suitable plastic or natural fibre mats (if sufficiently protected against moisture when situated outside) in front of and directly behind the entrance door.

It must be ensured that adequate dirt traps are in place in front of and/or behind all main entrances. This concerns both the main and the secondary uses of the building. Staff access, delivery access and secondary access routes do not need to meet these specifications.

If no other option is available due to structural constraints, the dirt trap can then also be installed in the interior of the building (as a structural measure if possible).

If it is not possible to implement the required length of dirt trap as a structural measure, non-structural systems can also be recognised if their positioning and maintenance is included in the service agreement for the FM service provider.

Indicator 5: Unobstructed floor plan

This indicator evaluates whether the room layout and fittings have been implemented with the fewest possible obstructions.

Individual components are evaluated in terms of their ease of cleaning.

If there are no bannisters or freestanding supports, the points for this indicator can be awarded in full.

Indicator 6: Surfaces

The implementation of measures to make surfaces that are frequently used (work surfaces, handles, doorknobs, light switches, lift buttons, etc.) and surfaces that are difficult to access (hanging lights, sun protection, shelves, cabinets, ledges, corners) easier to clean is evaluated positively.

DGNB System – New buildings criteria set
VERSION 2020 INTERNATIONAL

Technical quality
TEC1.5 / EASE OF CLEANING BUILDING
COMPONENTS
APPENDIX

Indicator 7: Concept for ensuring ease of cleaning

Cleaning costs have a significant impact on the operation costs. Appropriate planning to increase the ease of cleaning enables these costs to be significantly reduced, the quality of the use and management of the building to be improved and the longevity of systems and constructions to be ensured.

Ease of cleaning has already been shaped and determined in the planning phase.

A detailed plan for ensuring ease of cleaning takes into account, among other things, the selection of suitable material, system and design solutions, the accessibility of components that require frequent cleaning and the availability of appropriate utility connections and storage rooms.

IV. Usage-specific description

Residential

Indicator 3: Floor covering

The area reference specified in the "Method" section is not used in this scheme. The floor coverings in communal areas (circulation areas such as entrance areas, corridors and stairways outside of the residential units) must be taken into account.

DGNB System – New buildings criteria set
VERSION 2020 INTERNATIONAL

Technical quality
TEC1.5 / EASE OF CLEANING BUILDING
COMPONENTS
APPENDIX

APPENDIX B – DOCUMENTATION

I. Required documentation

Examples of possible documentation include the following items. The documentation submitted for the evaluation of individual indicators should comprehensively and clearly demonstrate compliance with the relevant requirements

Indicator 1: Accessibility of the exterior glass surfaces

- Formulated cleaning concept.
- Representation of the accessibility of the window surfaces, e.g. via photo documentation.
- List of the exterior glass surfaces, broken down by cost and effort required for cleaning.
- Calculation of the resulting evaluation points awarded.
- Product data sheets indicating the type of surface protection.

Indicator 2: Exterior and interior components

- List of the exterior components and documentation of the solutions used to reduce the cost and effort required for cleaning.
- List of the interior components and documentation of the solutions used to reduce the cost and effort required for cleaning.

Indicator 3: Floor covering

- List and evaluation of the floor coverings installed with regard to their tolerance to contamination
- Specification/documentation of the lifetime of the floor covering

Indicator 4: Dirt trap at building entrances

- Representation of the dirt traps using floor plans with dimension specifications.

Indicator 5: Unobstructed floor plan

- Representation via floor plans/photo documentation/manufacturer documentation

Indicator 6: Surfaces

- Short written justification for the levels selected.
- Appropriate documentation, e.g. via excerpts from the floor plans and photo documentation.
- List of areas with classification of the floor covering and the surfaces.

Indicator 7: Concept for ensuring ease of cleaning

- Confirmation by the building owner regarding the submission of a concept to ensure ease of cleaning.

APPENDIX C – LITERATURE

I. Version

Change log based on version 2020

PAGE	EXPLANATION	DATE
all	General and evaluation: scheme "assembly buildings" has been added	16.09.2021
525	Shares of total score have been corrected	16.09.2021

II. Literature

Fundamental sources chosen from the available lists of substances and material data:

- Nachhaltiges Bauen [Sustainable building] guide. German Federal Ministry of Transport, Building and Urban Development (BMVBS). April 2013
- Sustainable Development Goals icons, United Nations/globalgoals.org