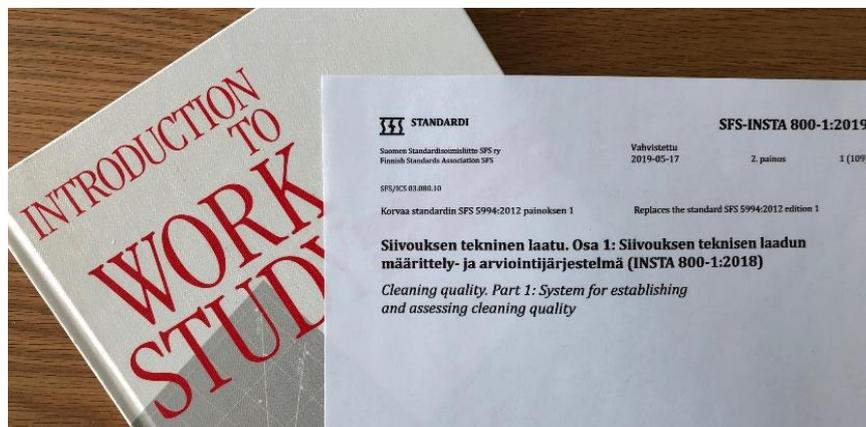




# Cleaning based on INSTA 800 quality levels

## Factors affecting cleaning time



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## Preface

This report presents the results of time measurements to determine how dirtiness and the desired level of cleanliness affect cleaning time.

Time measurements were made in five standard rooms: office, toilet, classroom, corridor, and staircase. Office room measurements were conducted in both hard and textile floor rooms. Over 800 time measurements were made in Estonia, Finland, Latvia and Sweden to compile this report.

As a result, the measurements not only highlighted the effects of soiling and desired quality level on cleaning time, but also revealed the importance of understanding the core of the standard, identifying dirt, and the value of cleaning expertise.

The obtained data can be used as the basis for analysing how much raising the quality level increases the cost of cleaning, because work costs make up the biggest share of cleaning costs.

The measurements also revealed factors that can reduce cleaning costs from both the customer and supplier perspective.

The report has been compiled as part of the project “Cost Effective, Need Based Cleaning – INSTA 800”.

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# 1 PRINCIPLES OF THE INSTA 800 STANDARD

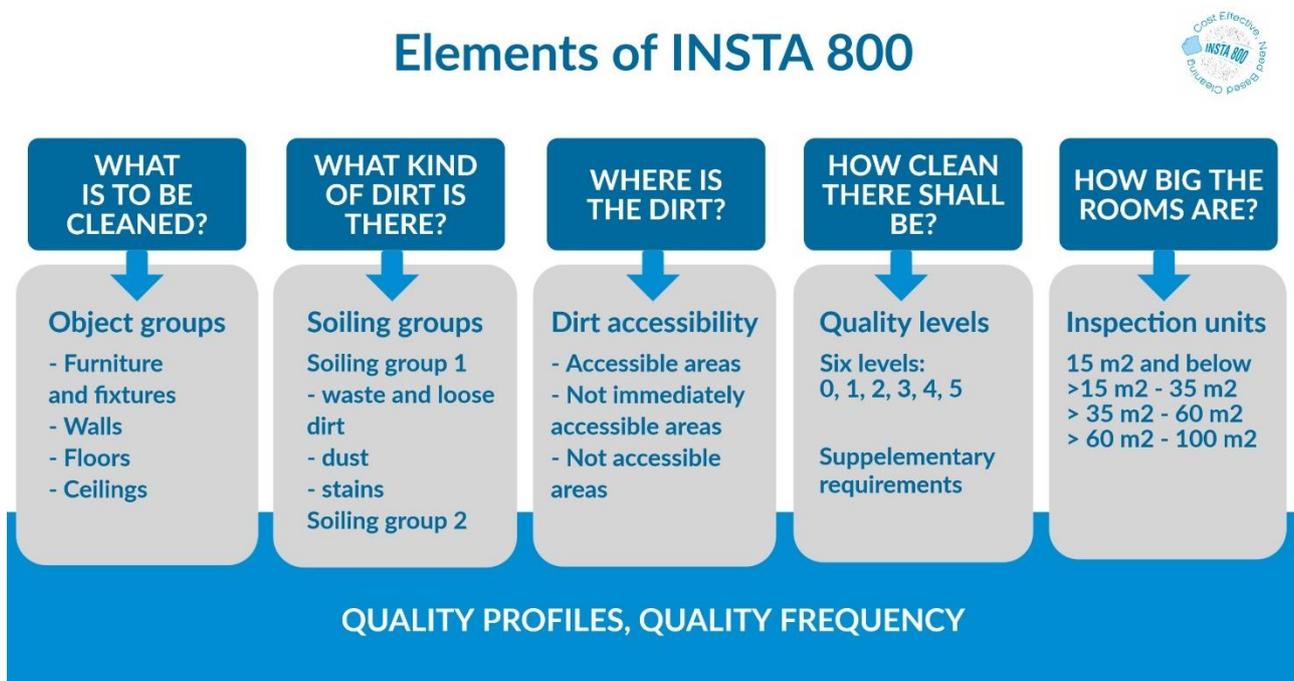
The INSTA 800 standard describes a system to specify the desired quality of cleaning and to inspect it.

The standard was created by the Nordic countries in the year 2000 in Denmark and the updated fourth version of the standard was published in 2018. The standard has been translated into seven languages (English, Norwegian, Swedish, Finnish, Icelandic, Estonian, Latvian).

The standard can be used in many ways, e.g.:

- to specify a required quality profile after cleaning;
- to inspect the cleaning quality achieved;
- to assess the soiling level before cleaning and the rate of re-soiling;
- to test cleaning activities necessary to achieve a set level of quality; and
- to find out the most effective cleaning methods in each situation.

Figure 1. Elements needed to be defined in INSTA 800.



The INSTA 800 standard is based on three types of basic data which shall be specified.

Firstly, the buyer of cleaning services shall define the extent of cleaning; are all four object groups included in cleaning service contract, or only some of them. The object groups are floors, furniture and fixtures, walls, and ceilings.

Secondly, the required cleaning quality that the customer wants to experience visually must be defined. Quality levels are specified at object group level. Quality levels specify the amount and type of soiling in both accessible and not immediately accessible areas that can acceptably be left behind after cleaning. The amount of soiling depends on the room size. The standard specifies six quality levels (0, 1, 2, 3, 4, 5) with the exact numbers of tolerable accumulations of soiling in four room size categories.

Quality profiles consist of the desired quality levels in every object group to be cleaned. The quality profile of the room determines how much dirt there can be in the room after cleaning in each object

group. In INSTA 800, it is possible to define different quality levels for each object group and separately in soiling groups 1 and 2. If needed, supplementary requirements can be added in each profile.

Thirdly, quality frequency shall be defined. Quality frequency indicates how often a given set of quality requirements shall be met.

When using the standard, cleaning of rooms and quality inspections are based on the quality profiles defined by the buyer.

Figure 2. INSTA 800 makes it possible to plan need-based quality profiles for different room types.

| Profile                               | A  |   |   |   |   | B |   |   |   |   | C |   |   |   |   | D |   |   |   |   |
|---------------------------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                                       | 1  | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| <b>Floors</b>                         |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |  |   |   | X |   |   |   | X |   |   |   |   |   | X |   |   |   | X |   |   |
| Surface soiling                       |  |   | X |   |   |   |   | X |   |   |   |   | X |   |   |   |   |   | X |   |
| <b>Furniture and fixtures</b>         |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |  |   |   | X |   |   |   | X |   |   |   |   |   | X |   |   |   |   | X |   |
| Surface soiling                       |  |   |   | X |   |   |   | X |   |   |   |   |   | X |   |   |   |   | X |   |
| <b>Walls</b>                          |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |  |   | X |   |   |   |   | X |   |   |   |   |   | X |   |   |   |   | X |   |
| Surface soiling                       |  |   | X |   |   |   |   | X |   |   |   |   |   | X |   |   |   |   | X |   |
| <b>Ceilings</b>                       |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |  |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |
| Surface soiling                       |  |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |
| Supplementary requirements            | No soiling allowed on frequently touched surfaces. |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

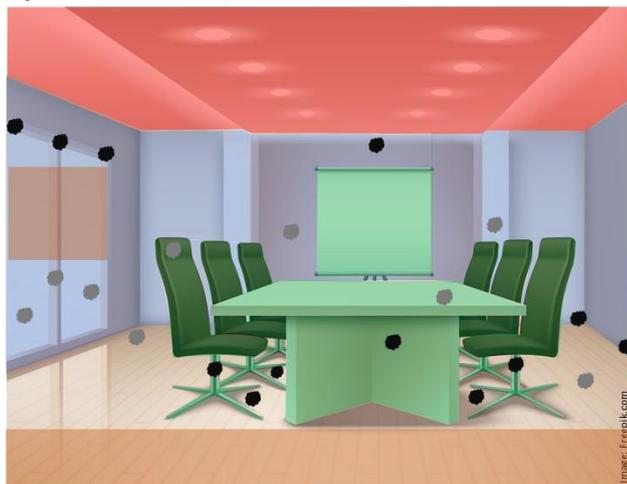
As an example, Figure 3 shows what the quality profile A means, i.e., the amount of soiling that can be left behind after cleaning in a 14 m<sup>2</sup> meeting room.

Figure 3. Example of INSTA profile in practise.

| Profile                               | A  |   |   |   |   | Accepted max. amount of soiling after cleaning |
|---------------------------------------|--|---|---|---|---|--|
|                                       | 1  | 2 | 3 | 4 | 5 |  |
| <b>Floors</b>                         |  |   |   |   |   |  |
| Waste and loose dirt, dust and stains |  |   | X |   |   | ● A = 2<br>● NA = 2 - 3                        |
| Surface soiling                       |  |   | X |   |   | ■ 10 - 25 %                                    |
| <b>Furniture and fixtures</b>         |  |   |   |   |   |  |
| Waste and loose dirt, dust and stains |  |   | X |   |   | ● A = 2<br>● NA = 2 - 3                        |
| Surface soiling                       |  |   | X |   |   | 0 %  |
| <b>Walls</b>                          |  |   |   |   |   |  |
| Waste and loose dirt, dust and stains |  |   | X |   |   | ● A = 3 - 5<br>● NA = 4 - 6                    |
| Surface soiling                       |  |   | X |   |   | ■ 0 - 10 %                                     |
| <b>Ceilings</b>                       |  |   |   |   |   |  |
| Waste and loose dirt, dust and stains |  |   |   |   |   |  |
| Surface soiling                       |  |   |   |   |   |  |
| Supplementary requirements            | No soiling allowed on frequently touched surfaces. |   |   |   |   |  |

**These object groups are cleaned:**

- Furniture and fixtures
- Walls
- Floor
- Dirt on accessible area
- Dirt on not immediately accessible area



Service providers are given the competence to decide on the appropriate cleaning methods and how to use them correctly. By focusing on the soiling, they can allot the cleaning to those objects that need it most.

## 2 FACTORS AFFECTING CLEANING TIME

The cleaning time depends on several factors (see Fig. 4). Decisions about the factors that affect the cleaning time are made at many different stages.

Some factors related to cleaning time are decided already in building design, such as choices of surface materials and furnishing, and they are not very easy to change later.

Some factors depend on the customer, such as the required quality level after cleaning, quality frequency, object groups to be cleaned, measures taken to prevent soiling, obstacles which make cleaning difficult, and property maintenance.

The cleaning provider can influence cleaning time in many ways, even though the prevailing circumstances must be taken into account. The starting point is to choose the most efficient tools and cleaning methods for the amount and type of soiling. This requires adequate know-how and skills from the cleaning organisation itself, as well as supervisors and cleaners.

Figure 4. Factors affecting cleaning time.



Work studies made in Finland since the 1970s show how cleaning time depends on the amount of soiling and furnishing in a room, the type of cleaning equipment and its working width, and the cleaning method (Fig. 5). However, the time standards do not indicate the quality level after cleaning or the room type.

Figure 5. Examples of time standard depending on cleaning methods and tools.

| FURNISHING<br>% of floor<br>surface | Method                                 | DIRTINESS          |                   |                    |                   |                    |                   |
|-------------------------------------|--|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
|                                     |  | Slightly dirty     |                   | Quite dirty        |                   | Extremely<br>dirty |                   |
|                                     |  | min/m <sup>2</sup> | m <sup>2</sup> /h | min/m <sup>2</sup> | m <sup>2</sup> /h | min/m <sup>2</sup> | m <sup>2</sup> /h |
| < 10%                               | Damp mopping, mop 50 cm                | 0.052              | 1,154             | 0.066              | 909               |                    |                   |
|                                     | Moist mopping, mop 50 cm               | 0.069              | 869               | 0.071              | 845               |                    |                   |
|                                     | Damp mopping, mop 75 cm                | 0.040              | 1,500             | 0.060              | 1,000             | 0.080              | 750               |
|                                     | Damp mopping, friction mop, 40 cm      | 0.085              | 706               |                    |                   |                    |                   |
|                                     | Scrubber drier, working width 50–53 cm | 0.052              | 1,154             | 0.067              | 896               |                    |                   |
| 10–20%                              | Damp mopping, mop 50 cm                | 0.064              | 938               | 0.076              | 789               |                    |                   |
|                                     | Moist mopping, mop 50 cm               | 0.076              | 789               | 0.085              | 706               |                    |                   |
|                                     | Damp mopping, mop 75 cm                | 0.050              | 1,200             | 0.070              | 857               | 0.090              | 667               |
|                                     | Damp mopping, friction mop, 40 cm      | 0.119              | 504               |                    |                   |                    |                   |
|                                     | Scrubber drier, working width 50–53 cm | 0.055              | 1,091             | 0.072              | 833               |                    |                   |
| 20–50%                              | Damp mopping, mop 50 cm                | 0.076              | 789               | 0.092              | 652               |                    |                   |
|                                     | Moist mopping, mop 50 cm               | 0.087              | 690               | 0.090              | 667               |                    |                   |
|                                     | Damp mopping, mop 75 cm                | 0.081              | 741               | 0.089              | 674               | 0.102              | 588               |
|                                     | Damp mopping, friction mop, 40 cm      | 0.124              | 484               |                    |                   |                    |                   |
| > 50%                               | Damp mopping, mop 50 cm                | 0.090              | 667               | 0.115              | 522               |                    |                   |
|                                     | Moist mopping, mop 50 cm               | 0.095              | 632               | 0.106              | 566               |                    |                   |
|                                     | Damp mopping, mop 75 cm                | -                  |                   | -                  |                   |                    |                   |
|                                     | Damp mopping, friction mop, 40 cm      | 0.135              | 444               |                    |                   |                    |                   |

In some countries, cleaning capacities per hour are set. Capacities depend, e.g. on the floor material and the type of premises.

Some examples from Sweden (Städbranschen Sverige. Nyckeltal för Städbranschen):

The efficiency of cleaning

- an office room 220–375 m<sup>2</sup> per hour;
- a classroom 250–450 m<sup>2</sup> per hour;
- a toilet 40–50 m<sup>2</sup> per hour;
- a corridor in an office building with textile floor 450–550 m<sup>2</sup> per hour and in a school with plastic floor 500–600 m<sup>2</sup> per hour; and
- stairs 240–300 m<sup>2</sup> per hour.

### 3 HOW TIME MEASUREMENTS WERE CARRIED OUT

The aim of the project was to get indicative results on how dirtiness affects cleaning time when achieving different quality levels. Five room types were selected for measurements: office room, classroom, toilet, staircase, and corridor.

All measurements were made in real-life situations. The time was measured from quality levels 0–4 before cleaning to quality levels 3–5 after cleaning, except staircases only to quality levels 3 and 4.

| Time/m <sup>2</sup> , time/room |                              |      |      |
|---------------------------------|------------------------------|------|------|
| Quality level before cleaning   | Quality level after cleaning |      |      |
|                                 | 3                            | 4    | 5    |
| 0                               | Time                         | Time | Time |
| 1                               | Time                         | Time | Time |
| 2                               | Time                         | Time | Time |
| 3                               |                              | Time | Time |
| 4                               |                              |      | Time |

#### 3.1 Quality profiles

The project group defined quality profiles after cleaning (see Fig. 6). Because all measurements were made in real-life situations and in defined test rooms, it was not possible to set or inspect the quality levels for surface soiling reliably. Therefore, quality profiles were set only for soiling group 1.

Figure 6. Set quality profiles after cleaning.

| Profile                               | A |   |   |   |   | B |   |   |   |   | C |   |   |   |   |
|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                                       | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| <b>Floors</b>                         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |   |   | x |   |   |   |   |   | x |   |   |   |   |   | x |
| Surface soiling                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Furniture and fixtures</b>         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |   |   | x |   |   |   |   |   | x |   |   |   |   |   | x |
| Surface soiling                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Walls</b>                          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |   |   | x |   |   |   |   |   | x |   |   |   |   |   | x |
| Surface soiling                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Ceilings</b>                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Waste and loose dirt, dust and stains |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Surface soiling                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Supplementary requirements</b>     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

## 3.2 Standardisation of variables

To reliably measure cleaning time, factors other than those related to soiling and quality level were standardised as far as possible. Introduction to Work Study, published by the International Labour Organization ILO in 1992, was used as guidance.

Time measurements of each room type were carried out in only one country. Toilets, classrooms, and office rooms with hard floors were inspected in Estonia, office rooms with textile floors in Sweden, staircases in Latvia and corridors in Finland. The studies were performed in several parallel rooms. The rooms of each room type were in general around the same size and had the same surface materials and amount of furniture. Frequently touched surfaces and obstacles to cleaning were documented.

The cleaning equipment was also standardised. Vileda Professional equipment was used, and every country decided which type of equipment was used for each wiping and mopping method. If cleaning machines were needed, machines available on the premises were used.

To avoid work tempo from affecting cleaning time, the principle was that only one qualified cleaner cleaned each room type. Due to the long testing period caused by the pandemic situation, this was not possible when measuring cleaning times in offices and classrooms.

The test period was from March 2021 to March 2022. Due to the Covid-19 situation, the rooms were used only occasionally, which prolonged the testing period. The low use of the rooms also meant that in some cases the rooms had to be soiled to achieve a certain degree of dirt before cleaning. In the case of corridors, the situation was the opposite: the floor had to be pre-mopped to get quality levels higher than 0 before cleaning.

In some cases, the measurements had to also be suspended because of the cleaner got Covid-19.

For documentations of rooms, tools, and qualifications of cleaners, see Annex 1.

## 3.3 Cleaning of rooms

Room cleaning was planned after the quality inspection before cleaning and was based on INSTA 800 standard quality levels. The cleaner was instructed to clean in the most optimal way to achieve the targeted quality level. This meant paying attention to variations in the quantity and quality of dirt on different surfaces.

Examples of how cleaning was instructed to be changed at different soiling and quality levels:

- changing the method, e.g. from damp to moist wiping or mopping;
- changing how thoroughly the surfaces were cleaned;
- changing the tool, e.g. from one type of mop to another or from manual tool to machine; and
- leaving visibly clean surfaces uncleaned.

The measurements were conducted during the Covid-19 pandemic, so all frequently touched surfaces were cleaned every time even though visible dirt was not detected.

Periodical cleaning tasks were involved in cleaning. In some cases, the time needed for them was added to cleaning times so that the cleaning programmes corresponded to the real situation.

## 3.4 Measuring time

Time measuring started when all tools needed were ready and the cleaner was ready to start cleaning, e.g. the cleaner with a damp or moist microfibre cloth outside the room. Measuring of time was stopped once the room had been cleaned, e.g. when the dustpan had been emptied into the garbage bag. Avista Time or a stopwatch was used, and cleaning time was documented in an Excel table as minutes spent.

To get each average time, at least twelve repetitions were made in all rooms, except in classrooms because of lack of use of the classrooms.

Rate of working (work tempo) was not assessed because in most cases there was only one cleaner performing the cleaning.

### 3.5 Quality inspections

The quality level of each room was inspected before cleaning and straight after cleaning. Accumulations of soiling were inspected visually and recorded to the Avista Time software. The reports produced by the software were used to analyse the results.

Inspections were done according to the INSTA 800 standard.

Inspections were made by INSTA 800 qualified persons, see Annex 1.

### 3.6 Analysing the results

To find out how soiling and set quality requirements affect cleaning time, average time of twelve repetitions was calculated. The results were analysed statistically by calculating p-values to find out if the results were significant.

A p-value, or probability value, is a number describing how likely it is that the data would have occurred by random chance. A p-value of less than 0.05 is considered to give evidence that the results are statistically significant.

## 4 RESULTS AND FINDINGS

The measurements indicate that there is time dependence on the amount of soiling and quality level. In these measurements, this was more obvious in corridors and stairs than in other room types where the amount and types of soiling on furniture and fixtures caused variation in the cleaning needed. It was also noted how much obstacles hindering cleaning affected cleaning time.

**Figure 7. For example, wires, large amounts of items on tables and floors slow down the cleaning process.**



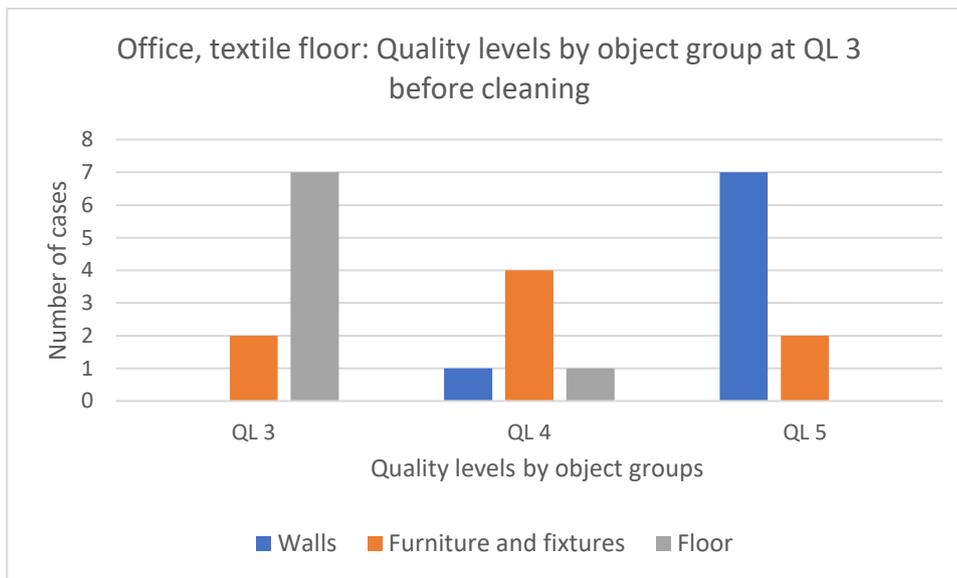
Apart from that, the measurement process brought up many issues that could be exploited in professional cleaning.

## 4.1 Soiling of object groups before cleaning

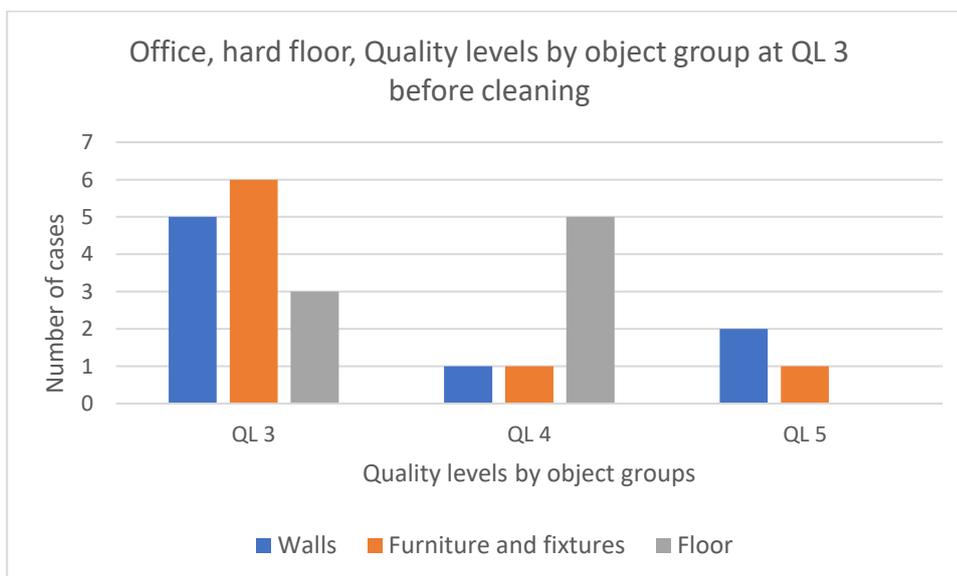
It is typical that the quality levels of different object groups before cleaning are not the same in a room. This was also the case in these measurements.

In offices with textile floors, the common quality level before cleaning was 3. The figure shows that in most cases the quality level of the floor was 3, but the quality level of the walls was in most cases 5. The quality frequency of offices was once a week.

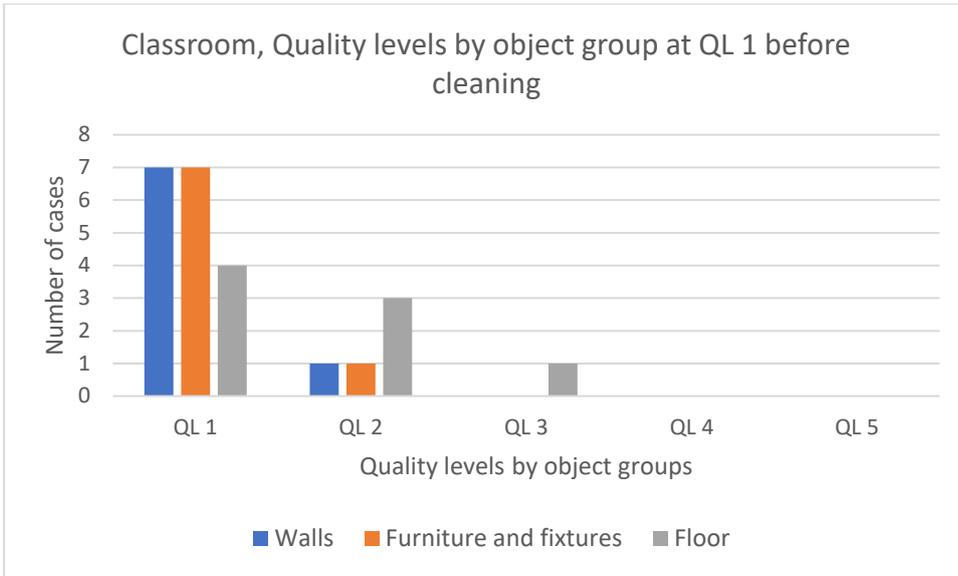
**Figures 8. Quality level of object groups before cleaning in different room types.**



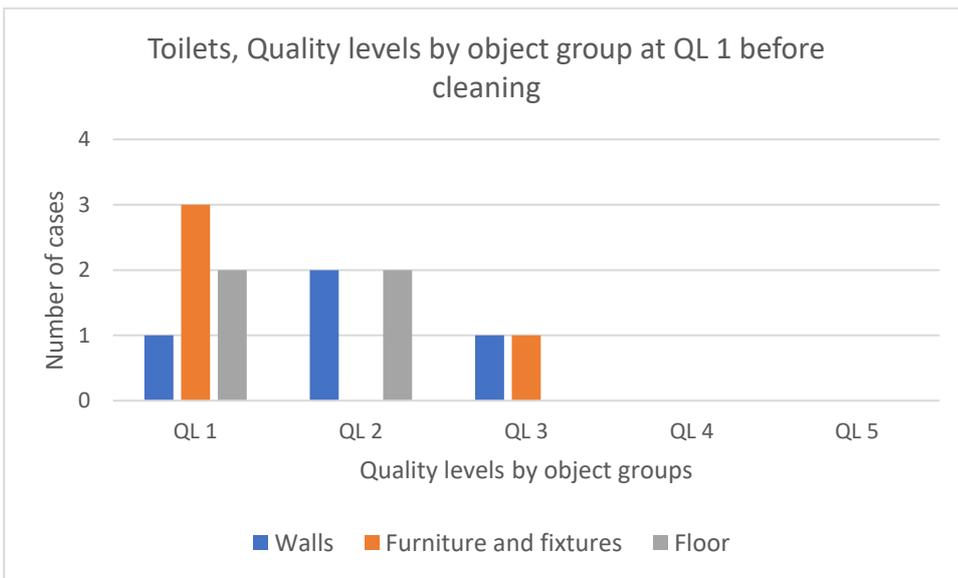
In offices with hard floors at quality level 3 before cleaning, the results show that the dirtiest object group would most likely be walls or furniture and fixtures.



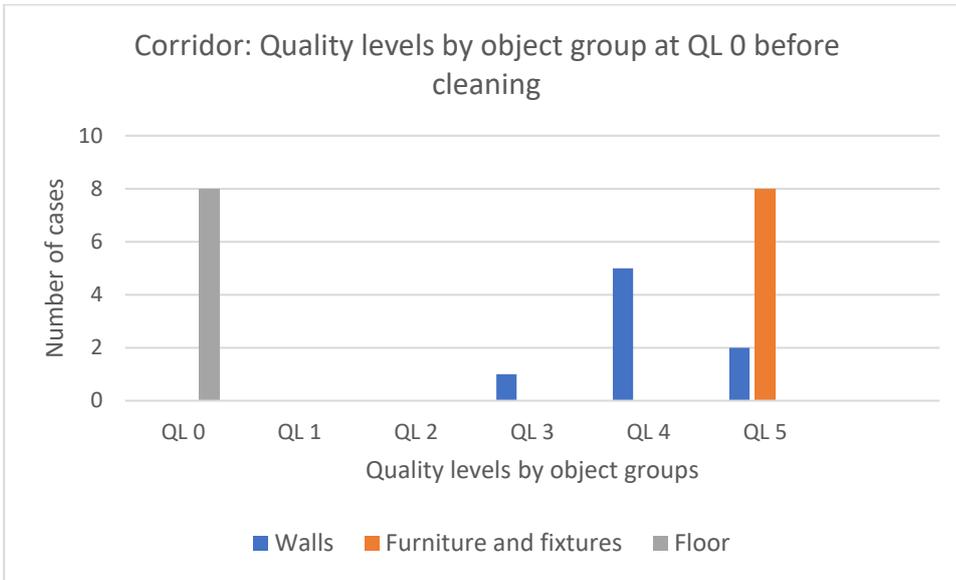
In classrooms at quality level 1 before cleaning, the dirtiest object groups were most likely walls or furniture and fixtures.



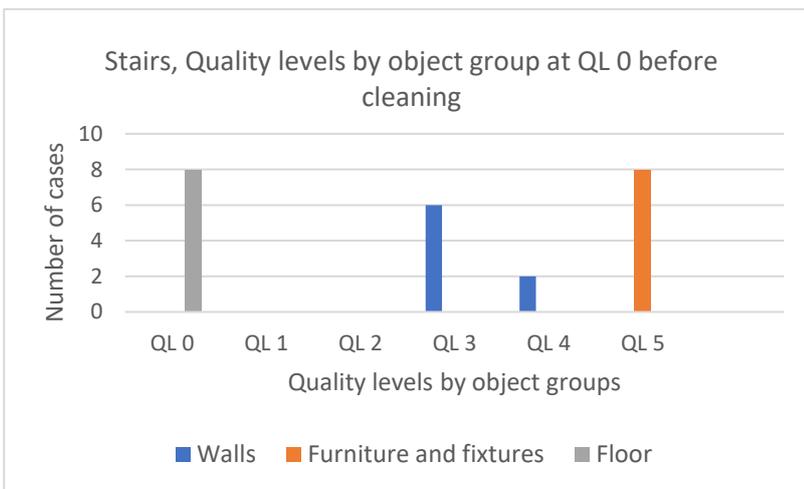
In toilets at quality level 1 before cleaning, the dirtiest object groups were most likely furniture and fixtures or floors.



In corridors, the quality level before cleaning was always 0. In all cases the quality level of the floor was 0, and the quality level of the furniture and fixtures was 5.



In stairs at quality level 0 before cleaning, the quality level of the floor was 0, but the quality level of the furniture and fixtures was in all cases 5.



**LESSONS FOR THE SERVICE BUYER:** It is useful to know the common quality levels before cleaning to define the most appropriate quality level after cleaning for each object group.

If there are only a few pieces of furniture in a room, the quality level should be high enough to achieve the desired result in cleaning.

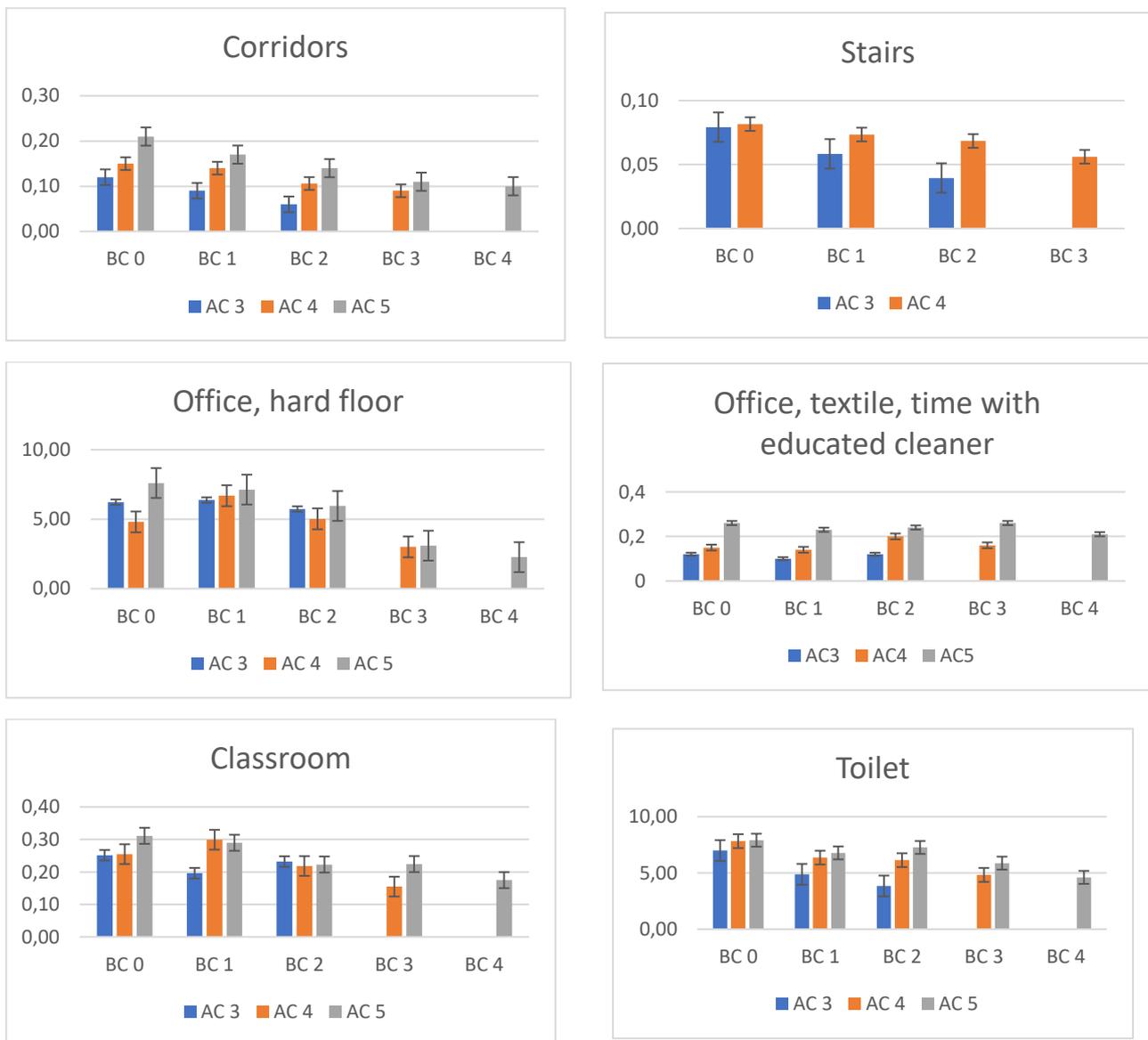
It is also possible to add supplementary requirements to quality profiles. However, in that case it is good to keep in mind that if supplementary requirements are not reached, it will cause the rejection of the room as such.

## 4.2 Effect of the amount of dirt

The results on how the amount of dirt affected cleaning time varied. Time dependence on dirt was clearer in stairs and corridors than in other room types. In those room types, p-values were also more often under 0.05 and the results could be considered as statistically significant.

In the figures below, the results are shown in min/m<sup>2</sup>, except for office rooms with hard floors and toilets, where the results are in min/room. This is because the amount of furniture was the same, but there were some differences in floor area.

**Figure 9. Time dependence on the amount of dirt before cleaning (BC) at different quality levels after cleaning (AC). The numbers refer to quality levels in the INSTA standard. Times are shown in min/m<sup>2</sup>, except for offices with hard floors and toilets in min/room.**



**LESSONS FOR THE SERVICE BUYER:** It is wise to prevent soiling as effectively as possible. This means, e.g. high performance scrapers and door mats at entrances and rubbish bins in the right places to reduce soiling. In cases of surface soiling, it is necessary to evaluate reasons for it and make sure surface soiling is not caused by the wrong cleaning methods.

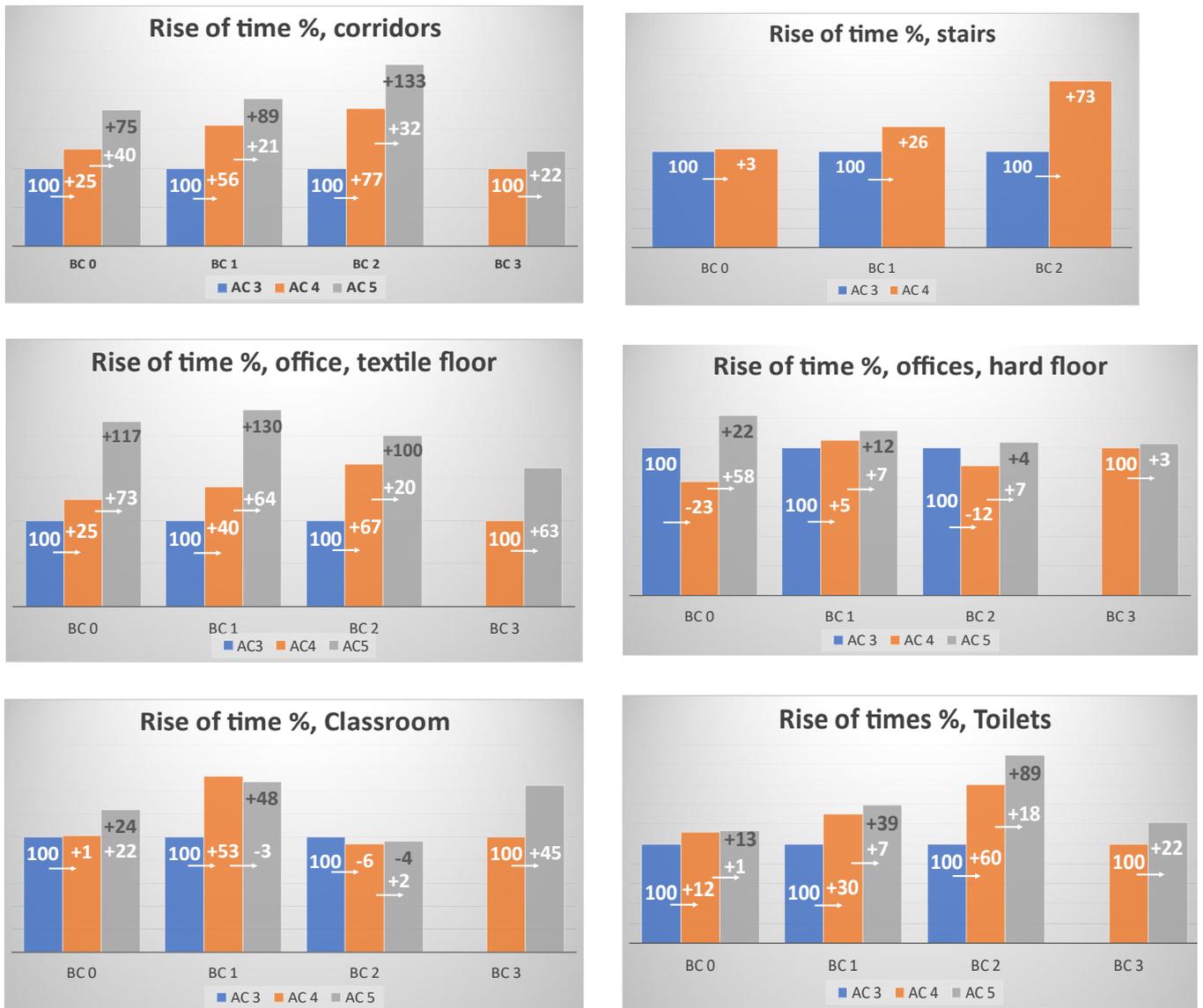
**LESSONS FOR THE SERVICE PROVIDER:** The amount of soiling affects cleaning time, which should be noted in the price of the cleaning service.

### 4.3 Effect of the quality level

The results show a rise in cleaning times with some exceptions if the set quality level rises. The figures below show the rise compared to quality level 3 after cleaning and when the quality level rises by one.

The time rise is quite consistent in corridors, stairs, office rooms with textile floors, and toilets. In office rooms with hard floors and classrooms, the time differences are partly inconsistent. The reason may be that it was not possible for only one cleaner to clean the room. Also, the type of soiling and its placement may have affected the results. Waste, loose dirt and stains are all calculated in soiling group 1 but very different cleaning methods are needed to remove them. Offices also had a lot of obstacles, boxes on the floor and items on tables, which made cleaning difficult.

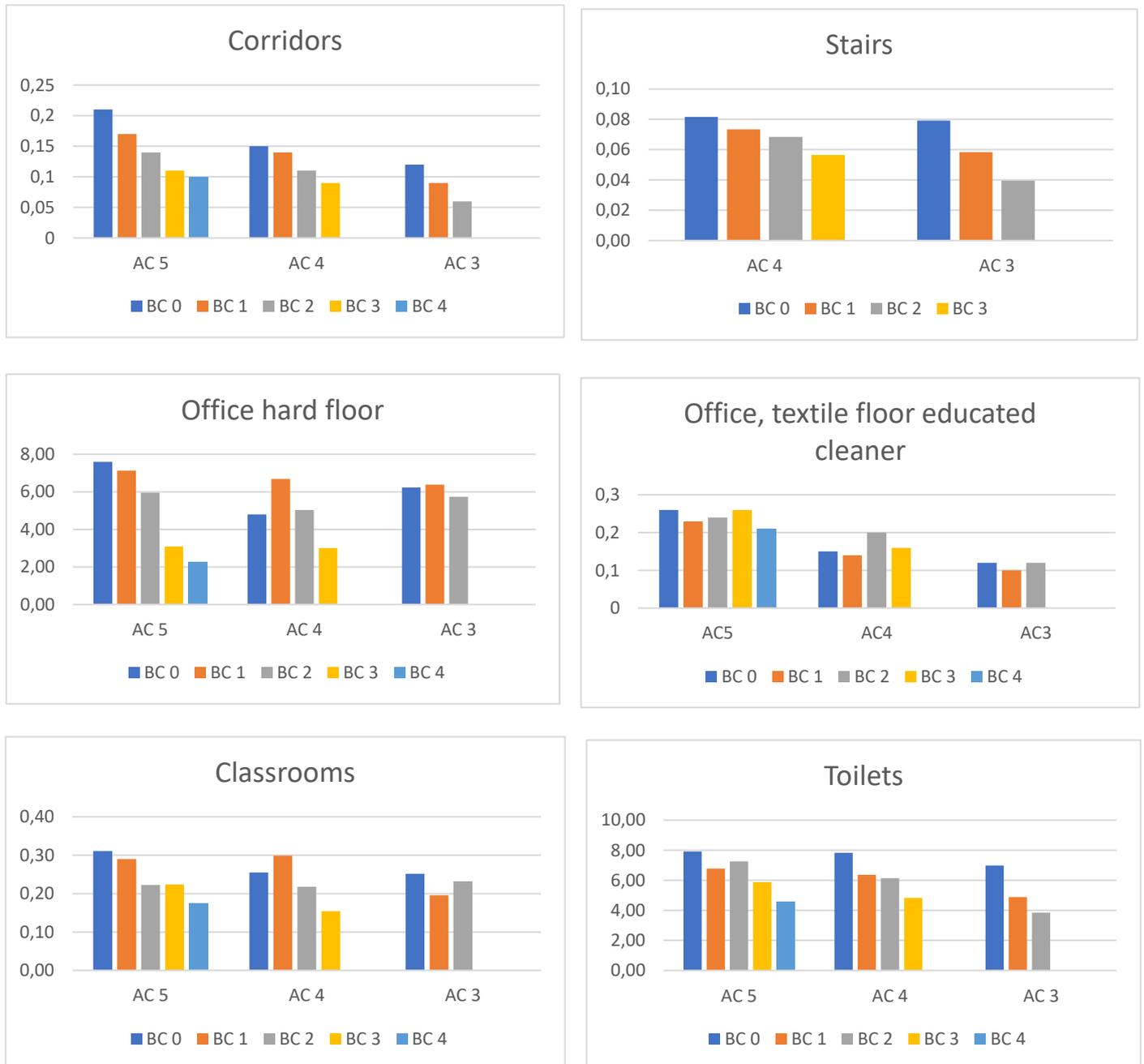
**Figure 10. Rise of time as percentages in different room types and at different soiling levels before cleaning (BC) and quality levels after cleaning (AC).** The number after BC and AC refers to INSTA 800 standard quality levels. Percentages in white font represent the rise as the quality level increases by one. Percentages in black font represent the rise compared to quality level 3 after cleaning.



**LESSONS FOR THE SERVICE BUYER:** It is important to define a need-based quality profile for each room type, not too low, but more importantly, not too high. Labour costs make up around 80–90% of cleaning costs. Too high a quality level will cause unnecessary costs.

**LESSONS FOR THE SERVICE PROVIDER:** Identifying dirt is crucial in optimising cleaning efforts.

**Figure 11.** The effect of set quality level in different soiling situations is show in the figures below. Times are shown in min/m<sup>2</sup>, except for offices with hard floors and toilets in min/room.



## 4.4 Cleaning capacities

Cleaning capacities were counted in m<sup>2</sup>/hour in different soiling and target quality level situations. The range of capacities was large in all room types, clearly showing the impact of the soiling level and targeted quality level.

For example, in corridors the range of cleaning capacity was 290–925 m<sup>2</sup>/hour. The efficiency was the lowest when the quality level before cleaning was 0 and the targeted quality level after cleaning was 5. Cleaning capacity of 925 m<sup>2</sup>/hour was achieved when the quality level before cleaning was 2 and the targeted quality level after cleaning was 3. The Swedish average of corridor cleaning (500–600 m<sup>2</sup>/hour) is within these efficiency figures.

The capacities (m<sup>2</sup>/hour) in the real-life test conditions and according to the time measurements made were as follows:

Corridor: 290–925 (Swedish average 500–600)

Stairs: 750–1,500 (Swedish average 240–300)

Office, hard floor: 80–240 (Swedish average 220–375)

Office, textile floor: 190–600 (Swedish average?)

Classroom: 195–400 (Swedish average 250–450)

Toilet: 20–65 (Swedish average 40–50)

**LESSONS:** Cleaning capacities vary a lot. It is difficult to give a general cleaning time for different room types. When we now produce key figures based on how dirty it is before cleaning and how clean it should be afterwards, the range becomes large depending on the choice of quality levels. This should be taken into account when calculating cleaning times and making offers.

Note! The above numbers are connected to certain conditions and should not be used as a basis for calculating cleaning time in other situations.

## 5 OTHER FINDINGS

During the time measurements, a lot of other findings were noticed. They are all well-known in theory but still happening in real-life situations.

### Cleaning backlog

There shall not be cleaning backlog at the beginning of a contract period. Otherwise, it is impossible for the service provider to achieve the set quality requirements.

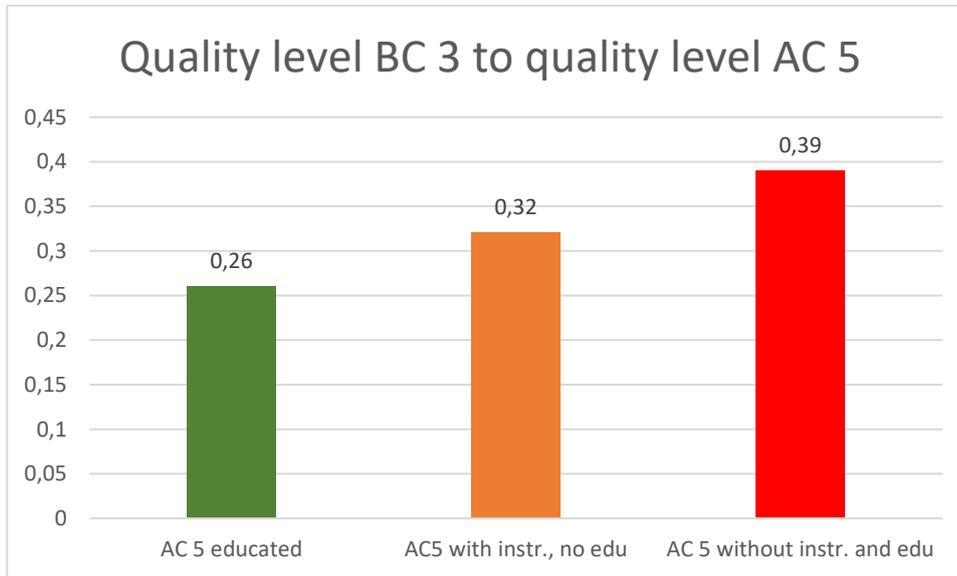
**LESSONS FOR THE SERVICE BUYER** Quality inspection shall be done at the beginning of the contract period to ensure that the quality levels on the premises correspond to the quality profiles defined in the contract.

If a cleaning backlog exists, the quality profiles shall be achieved before or immediately after the beginning of the new contract period, e.g. by thorough cleaning. This is also the requirement of the INSTA 800 standard (chapter 9).

## Know-how and skills matter

When the cleaner manages Insta 800's quality specifications and has the sufficient competence, the agreed cleaning quality is reached in a much shorter time.

**Figure 12.** An example of the impact of know-how and skills on cleaning efficiency when the cleaner has both cleaning and INSTA education, only instruction to the INSTA standard, and without INSTA instruction and cleaning education.



**LESSONS FOR THE SERVICE BUYER** In the call for tenders, also specify the Insta qualifications required from cleaners.

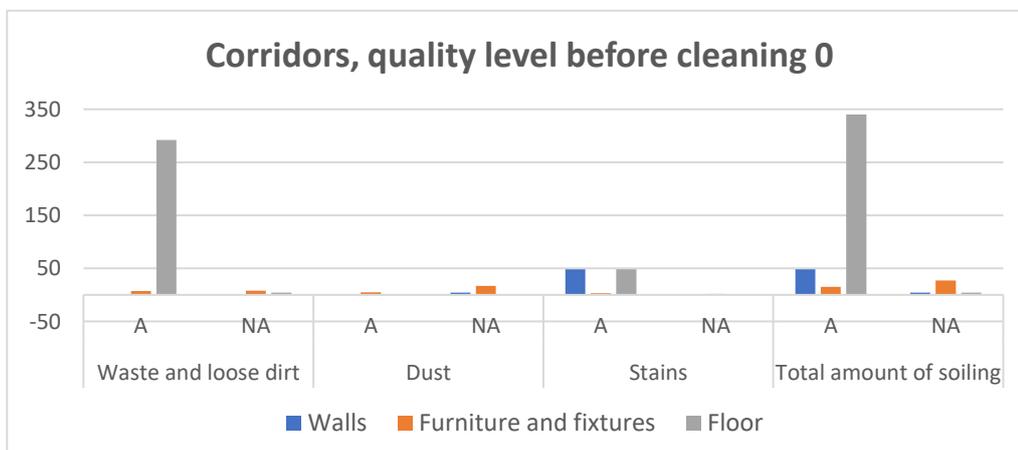
**FOR THE SERVICE PROVIDER** Train the cleaners, give feedback and monitor expertise.

## Soiling types differ and affect cleaning time

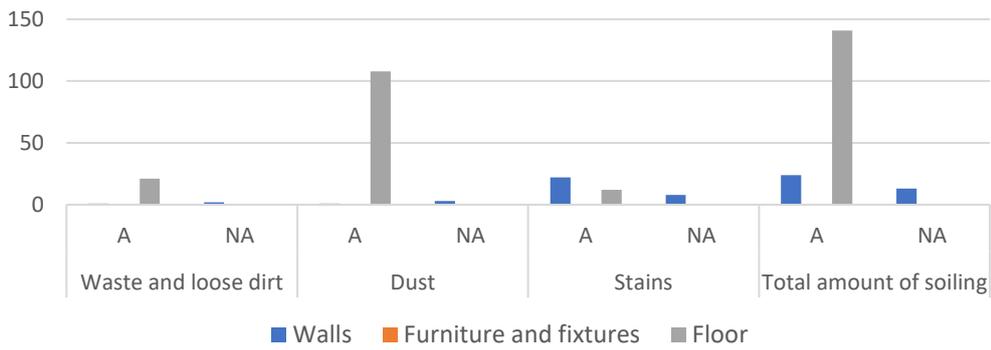
The type of soiling differs between room types, object groups, and days. Type of soiling also affects the cleaning time. Different kinds of cleaning methods are needed, e.g. if we compare removing small accumulated limescales to finger marks in toilets.

Some examples of soiling type 1 appearances in different room types and quality levels before cleaning.

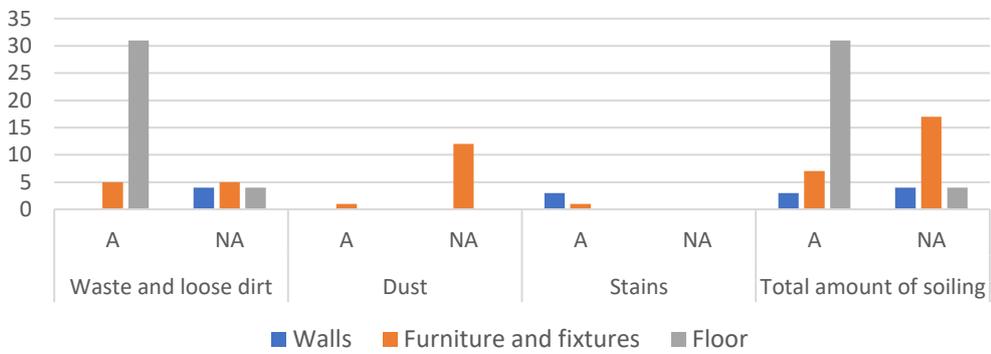
**Figure 13.** Number of accumulations of soiling on A (accessible) and NA (not immediately accessible) areas of different object groups and room types.



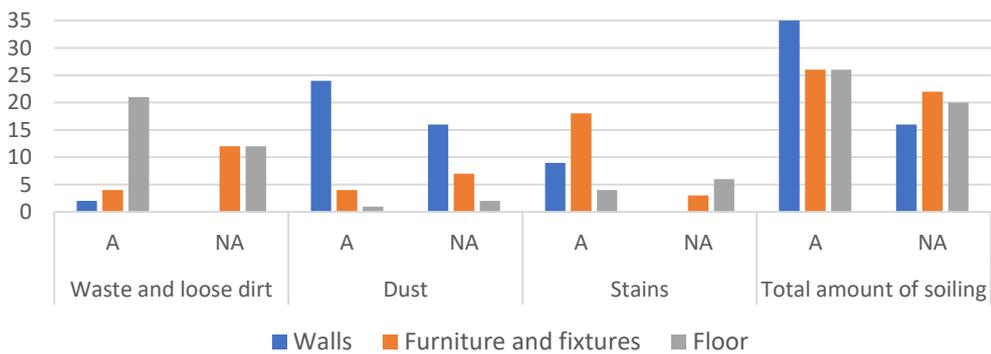
### Stairs, Quality level before cleaning 0

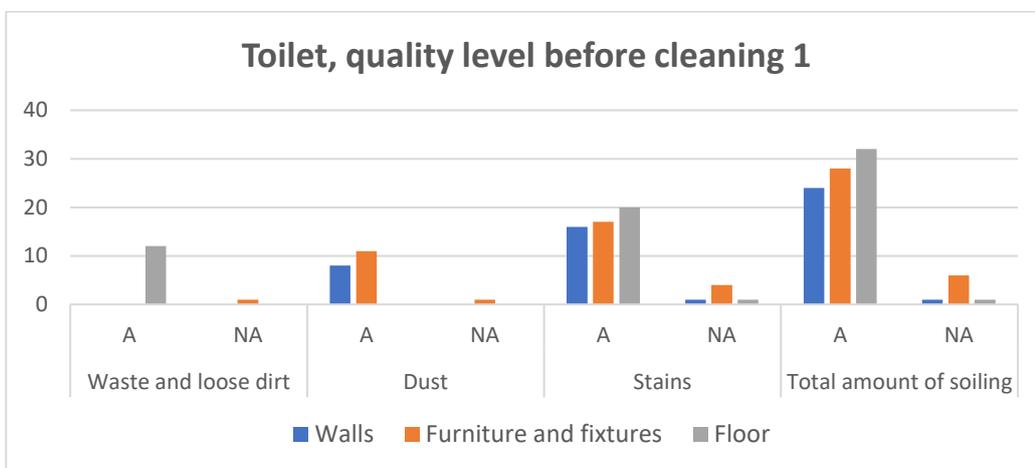
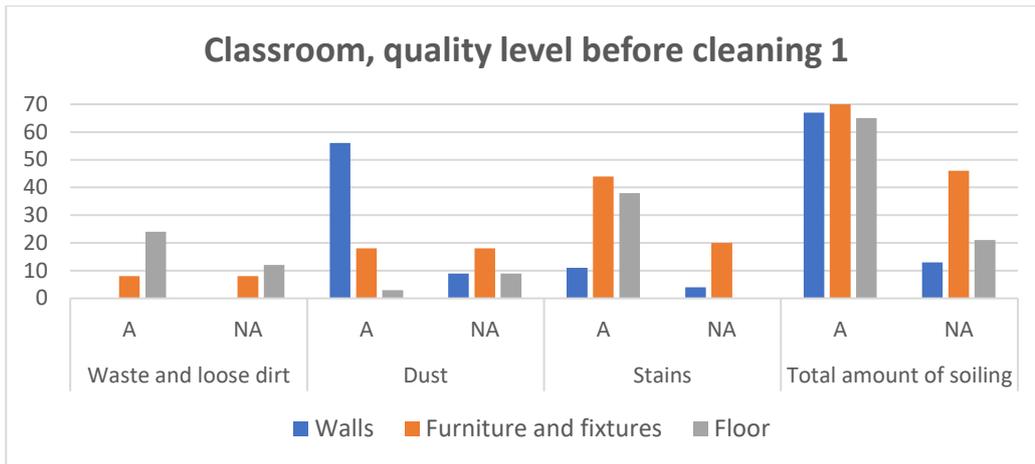


### Office, textile floor, quality level before cleaning 3



### Office, hard floor, quality level before cleaning 3





**LESSONS FOR THE SERVICE PROVIDER** Analysis of soiling may help to plan cleaning and choose the right methods. The key skill of the cleaner is to identify the dirt and choose the method accordingly.

### Type of soiling affects the customer experience on cleaning quality

If there is surface soiling or other “old” soiling, customers consider the room dirtier than if there were only loose dirt or dust.

**LESSONS FOR THE SERVICE BUYER** A sufficient quality frequency is needed.

**FOR THE SERVICE PROVIDER** Proper maintenance cleaning with sufficient frequencies, cleaning methods, qualified personnel, and rational schedule is needed. E.g. when planning cleaning schedules, it is worth considering if it is possible to schedule cleaning for Fridays instead of Monday mornings.

### Consider quality levels in toilets

In small inspection units or if you divide a toilet into smaller inspection units, quality level 3 allows a lot of soiling.

**LESSONS FOR THE SERVICE BUYER** For toilets in these cases, you should consider choosing quality level 4 or 5. Quality level 3 may be a sufficient level for bigger toilets which are not divided into smaller inspection units.

## Cleaning work can be inefficient

It may happen that the targeted quality level is not reached. Traces of mopping or wiping, loose dirt or stains may remain on the surfaces.

Reasons for poor results in floor cleaning may be, e.g. that the mop should have been changed during room cleaning to be able to bind all the dirt. The mopping technique can be incorrect or not the best one in that situation, or the floor is cleaned with a dirty tool. The choice of cleaning method or tool can also be incorrect.

In these cases, cleaning work is done, but time is spent in vain.

**LESSONS FOR THE SERVICE PROVIDER** Good professionalism of the cleaner is important. If that is not the case, the employer should provide good, simple instructions, guidance, training and encouraging feedback to the employee to achieve the goal.

**LESSONS FOR THE SERVICE BUYER** Cleaning staff should be required to have adequate professional skills, and knowledge of INSTA 800.

## Overcleaning may happen

It is not very simple to clean to a certain quality level, especially to quality level 3, where more soiling after cleaning is accepted compared to quality levels 4 and 5. It is very easy to overclean.

**LESSON FOR THE SERVICE PROVIDER** It is important that the cleaner is familiar with INSTA 800 quality levels and knows what kind of cleaning effort is needed to reach them in different soiling situations. Quality inspections done by cleaners themselves are instructive and recommendable.

## Amount of soiling at quality level 0 can vary a lot

E.g. if a floor has a lot of loose dirt, the quality level may in all cases be 0, but the amount of soiling may be double or even more.

**LESSONS FOR THE SERVICE BUYER** It saves costs and surfaces if all possible measures are taken to prevent dirt from entering the premises. The quality frequency should be considered in heavily soiled rooms.

## Detergent overdosing

An overdose of detergent can lead to the accumulation of detergent residues on the surface and form surface soiling.

**LESSON FOR THE SERVICE PROVIDER** The correct dosage of cleaning agents must be verified by training the cleaners with care, and by providing automatic dispensers, if possible. It is also important to choose cleaning methods based on soiling.



## Condition of surface materials

The condition of surface materials affects cleaning. If a surface is worn, it may be impossible to clean it properly or even to see if the surface is dirty.

**LESSON FOR ALL PARTIES** At the beginning of the contract, it is good to agree on how to inspect worn surfaces.



## The amount of furniture

It may be good to consider the amount of furniture in a room when setting quality levels.

**LESSONS FOR THE SERVICE BUYER** If there are only a few pieces of furniture in a room, it may be good to set a higher quality level than in other rooms of the same type. Otherwise, the furniture cleanliness after cleaning may not be at the desired level, because the quality level allows a certain amount of soiling depending on room size, not on the amount of furniture.

If the room is heavily furnished, cleaning takes more time. Any extra stuff especially in the wrong places will slow down cleaning.

## Remove stains from the walls daily

It makes sense to remove stains from the walls daily or as often as the room is cleaned. Otherwise, stains easily attach to the surface so that removing the stains is more difficult.

**LESSON FOR THE SERVICE PROVIDER** Pay attention to this in the cleaning instructions.

## Possibility to remove soiling by cleaning

It is not always obvious whether the soiling is removable with maintenance cleaning methods, e.g. black stains on the floor. It is also necessary to distinguish which dirt can be removed at all (ref. INSTA 800 standard, 3.2.5).

**LESSON FOR ALL PARTIES** Common understanding of soiling types is needed.

## Cleaning methods matter

If the quality levels have not been reached, efforts may have been made to solve the situation by increasing cleaning times. This does not self-evidently correspond to the quality of cleaning.

**LESSON FOR THE SERVICE PROVIDER** Using the wrong cleaning methods may increase quality problems, e.g. by creating detergent residues on surfaces and causing surface soiling.

Soiling type affects the choice of the cleaning tool and method. Train the cleaner on how to choose the best tool and method in different situations.

## Cleanliness of cleaning cloths and tools matters

The condition of the microfibre cleaning cloth affects its cleaning performance.

**LESSONS FOR THE SERVICE PROVIDER** It is recommended to check the condition of the cleaning cloths regularly. A worn cleaning cloth consumes unnecessary work time. It is more cost effective to get new wipes than to clean with ineffective wipes.

## Poor co-operation with property maintenance may cause problems in cleaning

E.g. poor lighting makes it difficult to clean efficiently. Damaged or broken devices may cause extra soiling.

**LESSON FOR ALL PARTIES** Good co-operation with property maintenance is needed. Make sure everyone involved has the information on where to report, e.g. broken lamps, toilets out of order or other issues. Property maintenance should respond to a maintenance request without delay.

## The lighting in the room affects the cleaning

**LESSONS FOR THE SERVICE BUYER** Ensure that there are proper lighting conditions at the time of cleaning. Notice that the inspection shall be done in the same lighting conditions as cleaning (ref. INSTA 800 standard, 7.1.1).

## 6 CONCLUSIONS

These time measurements have shown the numerous factors affecting cleaning and cleaning time. It is obvious that both soiling and the quality requirements are of great importance, but the effect on cleaning and cleaning time varies by room type. Also, both the skills of the cleaner and the know-how of the cleaning company have a big impact. The measurements highlighted the importance of understanding the core of the standard, identifying dirt, and cleaning expertise.

The measurement results and findings can be used as guidance when planning quality requirements, however, keeping in mind that every case is unique.

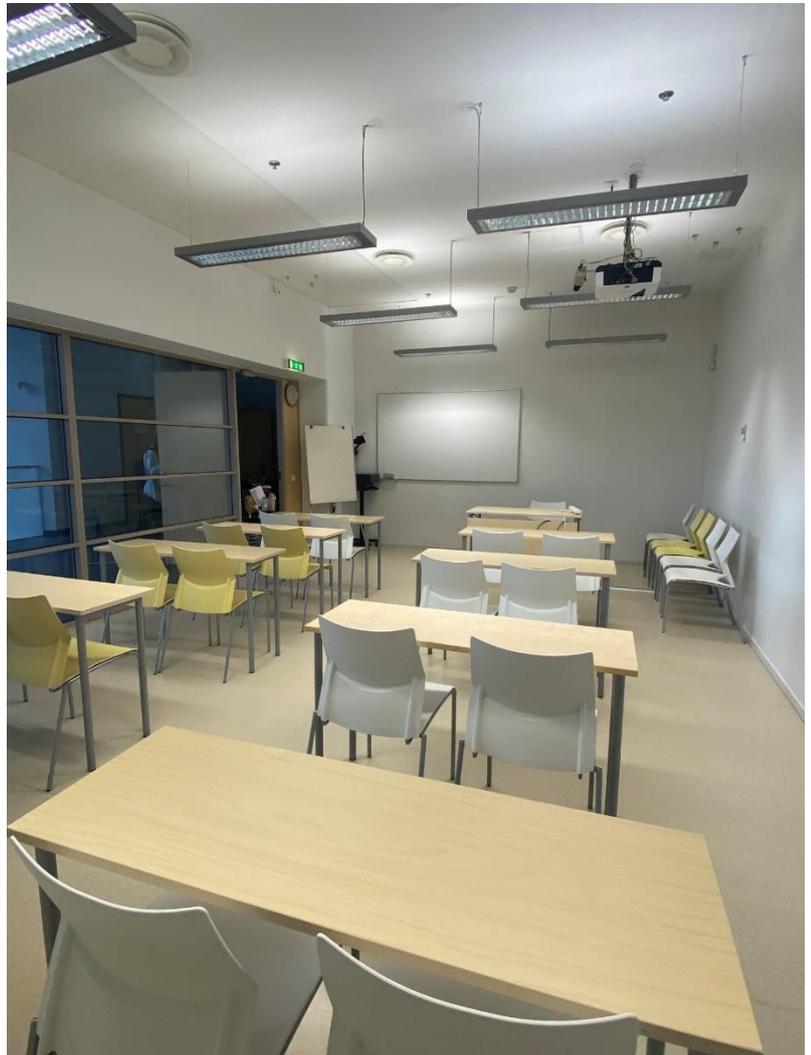
Based on these measurements and combining all the results, it could be concluded as an estimate that 10–30% more time is needed for cleaning if the set quality level increases by one, depending on soiling and type of premises. This requires that cleaning is optimised by taking into account the amount and quality of dirt before cleaning and the desired quality level. As a result, under- and overcleaning will not happen.

All the time measurements were made in real-life situations. It is evident that this caused variation in the results. But as such, this corresponds to real situations in daily work in the cleaning industry. Cleaning services are not a standard product, but our research results show that with the INSTA 800 standard, we are able to develop cleaning services and the industry.

## Annex 1. Documentation of rooms, equipment, cleaners, and inspectors

### Classrooms (University)

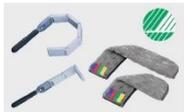
|  |
|--|
| <b>Room size:</b><br>33–35 m <sup>2</sup>  |
| <b>Floor material:</b><br>Plastic tile with polish   |
| <b>Wall materials:</b><br>Painted  |
| <b>Furniture materials:</b><br>12 tables, including the teachers<br>23 chairs<br>Whiteboard<br>Wire “tunnels” on the walls |
| <b>Obstacles:</b><br>The tables are organised really tightly together, making it difficult to reach under them.            |
| <b>Frequently touched surfaces:</b><br>Door handles<br>Table surfaces<br>Chairs  |



### Qualifications

|   |
|---|
| <b>Cleaners:</b><br>EQF level 3<br>Supervisor level 4   |
| <b>Inspector:</b><br>INSTA 800 knowledge level 3, Supervisor level 5<br>INSTA 800 knowledge level 4 |

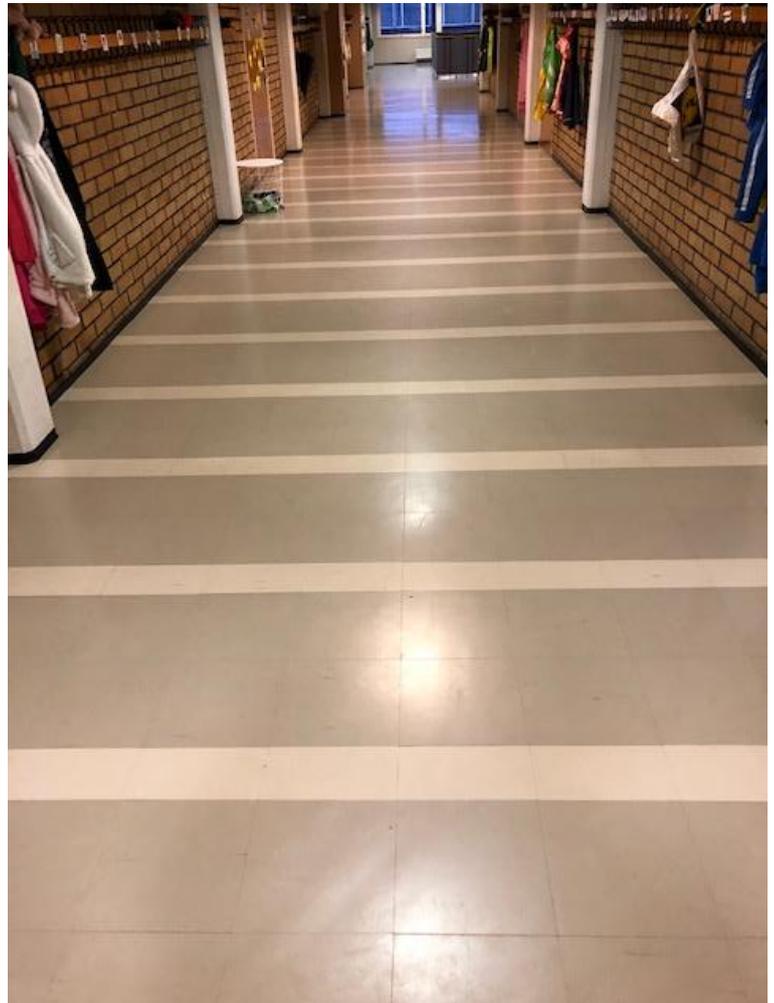
### Tools used

|   |   |   |  |   |   |
|---|---|---|--|---|---|
|  |  |  |  |  |  |
| MicronQuick cleaning cloth  | Multiduster   | MiraClean sponge  | Sanifix narrow hygienic brush  | Vileda Hygenbrush   | Swep Duo MicroCombi 50 cm   |
| Damp and moist wiping of furniture  | Dust removal, both damp and dry   | Cleaning dirtier surfaces and removing stains                                       | Cleaning around crannies and narrow spaces   | Cleaning the sink   | Damp and moist mopping of floors  |

## Annex 1. Documentation of rooms, equipment, cleaners, and inspectors

### Corridors (School)

|  |
|--|
| <b>Room size:</b><br>68–70 m <sup>2</sup>  |
| <b>Floor material:</b><br>Plastic tile with polish   |
| <b>Wall materials:</b><br>Brick<br>Painted wood<br>Painted concrete  |
| <b>Furniture materials:</b><br>Lacquered wood<br>Painted wood and metal<br>Imitation leather                         |
| <b>Obstacles:</b><br>A lot of pillars, corners<br>Worn surface materials (racks)<br>Brick walls<br>Worn floor polish |
| <b>Frequently touched surfaces:</b><br>Door handles  |



### Qualifications

|  |
|--|
| <b>Cleaner:</b><br>Specialist vocational qualification in cleaning (cleaning technician)<br>Work experience since 2005 |
| <b>Inspector:</b><br>INSTA 800, person certificate, knowledge level 4  |

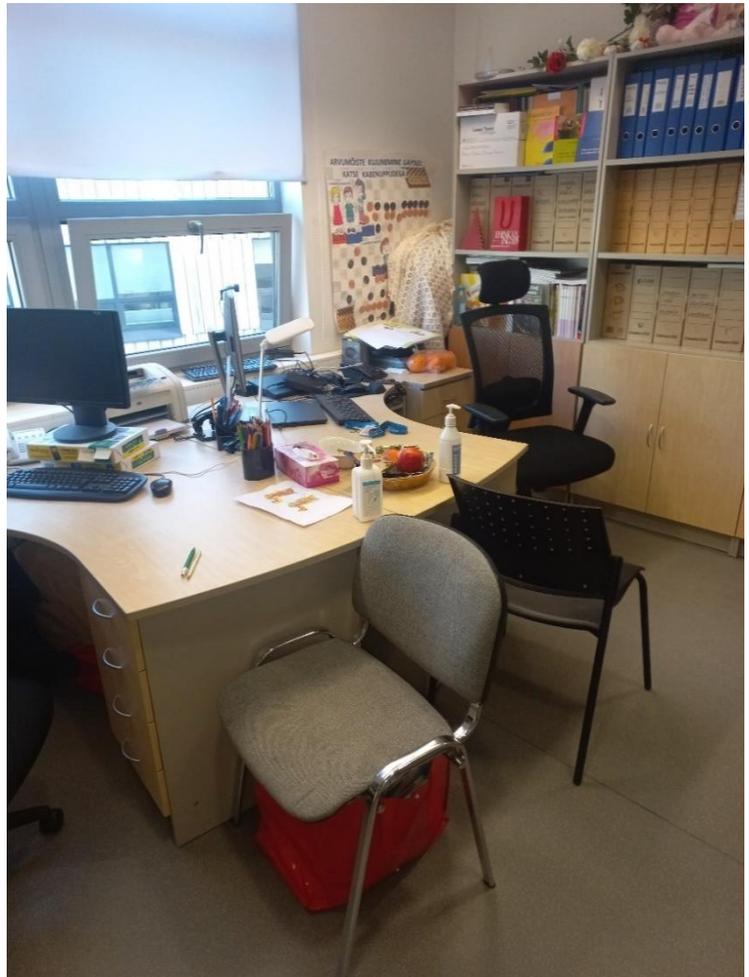
### Tools used

|   |   |   |   |  |   |   |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| MicronQuick cleaning cloth  | Swep Duo flat and furniture mop   | MiraClean sponge  | Swep Duo MicroTech 75 cm  | Swep Duo MicroCombi 50 and 75 cm   | Swep squeegee mop 50 cm   | Taski 855 scrubber drier  |
| Damp and moist wiping of furniture  | Damp and moist wiping of furniture and walls  | Removing stains   | Dry and damp mopping of floors  | Damp and moist mopping of floors   | Damp and moist mopping of floors  | Floor cleaning  |

## Annex 1. Documentation of rooms, equipment, cleaners, and inspectors

### Offices, hard floor (University)

|  |
|--|
| <b>Room size:</b><br>9–11 m <sup>2</sup>   |
| <b>Floor material:</b><br>PVC  |
| <b>Wall materials:</b><br>Painted walls  |
| <b>Furniture materials:</b><br>Two desks<br>Two office chairs<br>2 visitors chairs<br>6 bookcases  |
| <b>Obstacles:</b><br>A lot of stuff on the tables. Behind the tables there are radiators and window sills and it is hard to get there to clean. It is also hard to get near skirting boards. |
| <b>Frequently touched surfaces:</b><br>Door handles, switches, chairs  |



### Qualifications

|  |
|--|
| <b>Cleaner:</b><br>EQF level 3<br>Supervisor level 4   |
| <b>Inspectors:</b><br>INSTA 800 knowledge level 3, Supervisor level 5<br>INSTA 800 knowledge level 4 |

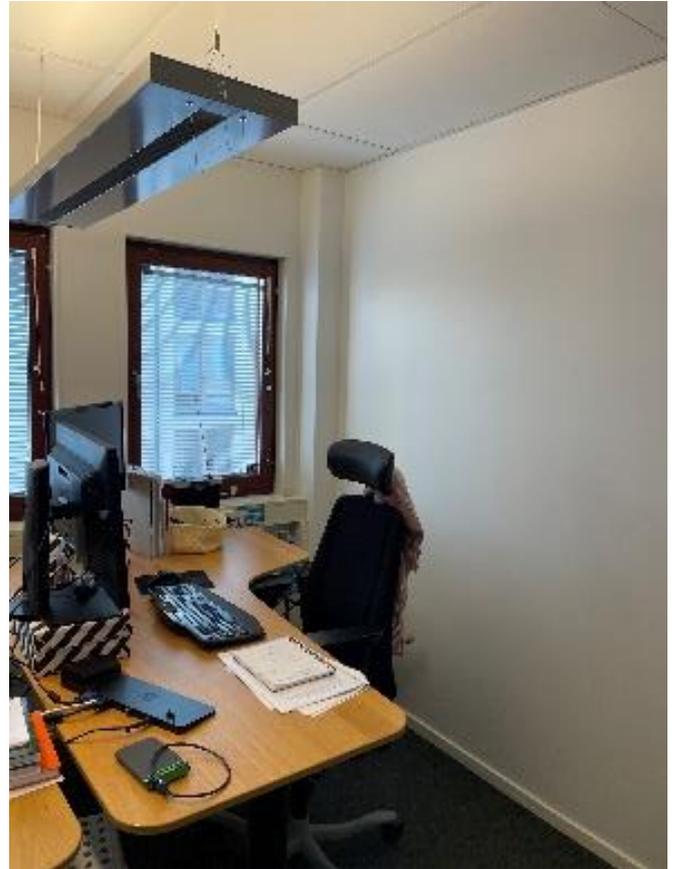
### Tools used

|   |   |  |   |
|---|---|--|---|
|  |  |  |  |
| MicronQuick cleaning cloth  | MicroPlus sleeve handle   | MiraClean sponge   |   |
| Damp and moist wiping of furniture  | Damp and moist wiping of boards and furniture                                       | Removing stains  | Cleaning the floor  |

## Annex 1. Documentation of rooms, equipment, cleaners, and inspectors

### Offices, textile floor (Office building)

|   |
|---|
| <b>Room size:</b><br>14 m <sup>2</sup>  |
| <b>Floor material:</b><br>Textile carpet  |
| <b>Wall materials:</b><br>Painted walls and some glass in the wall  |
| <b>Furniture materials:</b><br>In each office there are<br>Two desks<br>Two office chairs<br>An armchair<br>Two filing cabinets<br>Two box cabinets |
| <b>Obstacles:</b><br>A lot of paper on desks and storage on the floor   |
| <b>Frequently touched surfaces:</b><br>Door handles   |



### Qualifications

|  |
|--|
| <b>Cleaner:</b><br>Five years of cleaning experience. No Insta education but educated In August and September to INSTA 800 knowledge level 2 |
| <b>Inspector:</b><br>Knowledge level 3   |

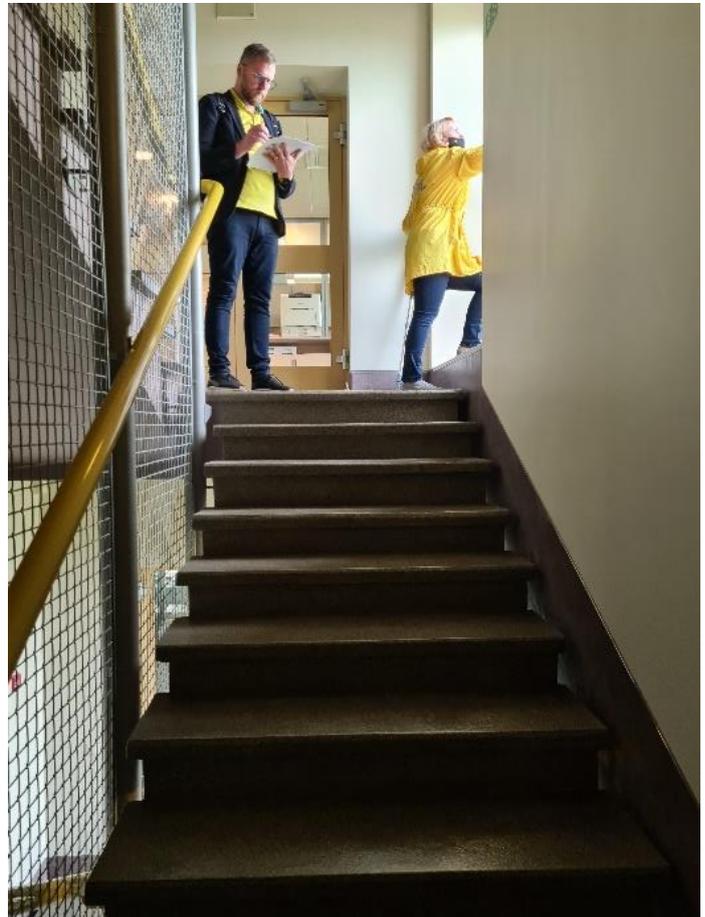
### Tools used

|   |   |  |   |
|---|---|--|---|
|  |  |  |  |
| MicronQuick cleaning cloth  | MicroPlus sleeve handle   | MiraClean sponge   | Vacuum cleaner, activa HT25.0 by Hygienteknik AB                                      |
| Damp and moist wiping of furniture  | Damp and moist wiping of boards and furniture                                       | Removing stains  | Vacuumping of the floors.   |

## Annex 1. Documentation of rooms, equipment, cleaners, and inspectors

### Stairs

|  |
|--|
| <b>Room size:</b><br>14,3 – 14,6 m <sup>2</sup>  |
| <b>Floor material:</b><br>Grey safety floor  |
| <b>Wall materials:</b><br>Painted  |
| <b>Furniture materials:</b><br>None  |
| <b>Obstacles:</b><br>Hard to see if floors are dirty due to the colour of floor, if they are only covered with dust. |
| <b>Frequently touched surfaces:</b><br>Door handles<br>Staircase railing   |



### Qualifications

|  |
|--|
| <b>Cleaner:</b><br>Baltic quality specialist |
| <b>Inspector:</b><br>Exam level 4            |

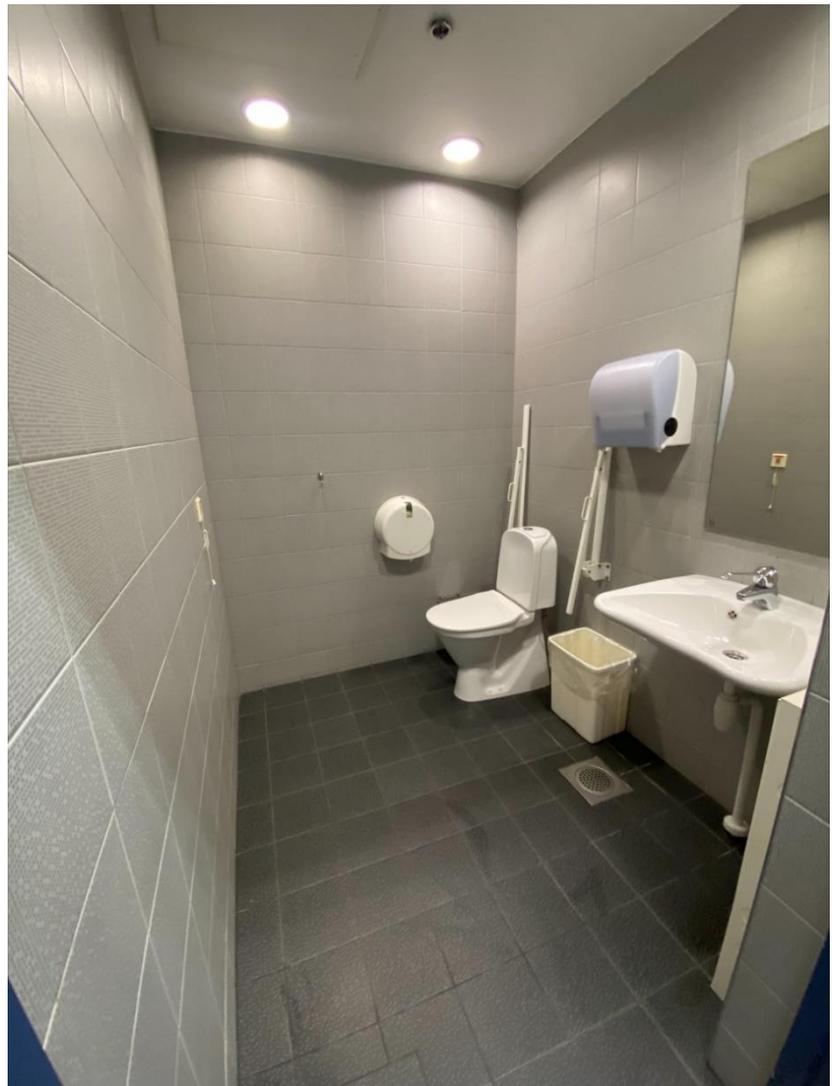
### Tools used

|   |  |
|---|--|
|  |  |
| MicronQuick cleaning cloth  | Swep Duo MicroCombi 50 and 75 cm   |
| Dry, damp wiping of walls, contact surfaces   | Damp and moist mopping of floors   |

## Annex 1. Documentation of rooms, equipment, cleaners, and inspectors

### Toilets (University)

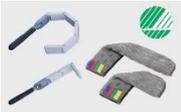
|   |
|---|
| <b>Room size:</b><br>1.3–5.4 m <sup>2</sup>   |
| <b>Floor material:</b><br>Ceramic tile  |
| <b>Wall materials:</b><br>Ceramic tile  |
| <b>Furniture materials:</b><br>A toilet<br>A sink<br>A metal rack on the wall<br>A pair of disabled grab rails<br>Soap, toilet paper and hand towel dispensers. |
| <b>Obstacles:</b><br>The ceramic tile filling collects dirt<br>Bad lighting   |
| <b>Frequently touched surfaces:</b><br>Door handles<br>Light switch<br>Disabled grab rails<br>Toilet bowl button<br>Seat rings                                  |



### Qualifications

|   |
|---|
| <b>Cleaner:</b><br>Cleaner 1  |
| <b>Inspector:</b><br>INSTA 800 knowledge level 3, Supervisor level 5<br>INSTA 800 knowledge level 4 |

### Tools used

|   |   |   |  |   |   |
|---|---|---|--|---|---|
|  |  |  |  |  |  |
| MicronQuick cleaning cloth  | Multiduster   | MiraClean sponge  | Sanifix narrow hygienic brush  | Vileda Hygenbrush   | Swep Duo MicroCombi 50 cm   |
| Damp and moist wiping of furniture  | Dust removal, both damp and dry   | Cleaning dirtier surfaces and removing stains                                       | Cleaning around crannies and narrow spaces   | Cleaning the sink   | Damp and moist mopping of floors  |