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Cleaning services - Basic requirements and recommendations for quality measuring systems

Cleaning services - Basic requirements and recommendations for quality measuring systems

Reinigungsdienstleistungen - Grundanforderungen und Empfehlungen für Qualitätsmesssysteme

Services de nettoyage - Exigences et recommandations fondamentales pour les systèmes de mesurage de la qualité

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Cleaning services - Basic requirements and recommendations for quality measuring systems

Services de nettoyage - Exigences et recommandations
fondamentales pour les systèmes de mesurage de la
qualité

Reinigungsdienstleistungen - Grundanforderungen und
Empfehlungen für Qualitätsmesssysteme

This European Standard was approved by CEN on 19 April 2001.

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 328 " Standard measuring system for cleaning performance", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2001, and conflicting national standards shall be withdrawn at the latest by November 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The annexes A, B and C are informative.

Introduction

With the help of a good control system cleaning services can be inspected for quality. This immediately creates questions of what should be inspected, how inspections should be carried out, and what measurement criteria should be used.

There has been, until now, no comprehensive view taken of the measuring devices and systems available that can be used easily in the work place for inspecting cleaning service activities and providing an objective view of the results achieved.

That is the purpose of this framework model for quality measuring systems. It provides a template of acknowledged best practice within which locally or nationally acceptable systems can continue to be used and developed.

This is the best way to proceed as the work of the Technical Committee has established the existence of a wide range of quality control systems for cleaning with a variety of features. These have been developed in response to specific needs or to fit local regulations and laws; in some cases they have a long history of successful use. With the help of this standardized framework model, all systems can be helped towards greater objectivity and completeness.

1 Scope

This standard provides basic requirements and recommendations for quality measurement systems for cleaning performance.

2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publications referred to applies (including amendments).

ISO 2859-1:1999

Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection.

ISO 2859-2:1985

Sampling procedures for inspection by attributes – Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection.

ISO 3534-1:1993

Statistics - Vocabulary and symbols – Part 1: Probability and general statistical terms.

ISO 3534-2:1993

Statistics - Vocabulary and symbols – Part 2: Statistical quality control.

ISO 8402:1994

Quality management and quality assurance - Vocabulary

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3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply:

3.1

quality measuring system

inspection system designed to assess whether the services defined and agreed between two parties meet the quality level that is intended to be present according to the requirements expressed explicitly or implicitly in that agreement

NOTE In this standard hereafter the quality measuring system is referred to as “the system”.

3.2

cleaning performance

result of cleaning services and cleaning related services according to requirements

NOTE Cleaning services are cleaning activities of a cleaning operative.

3.3

specification

document stating the requirements with which the service has to conform

NOTE The specification is the part of a contract or service level agreement, that will define the items covered by the system (see ISO 8402:1994, 3.14).

3.4
item

entity or surface (or groups of these) subject to cleaning and cleaning related services and to be inspected. (In this standard further referred to as item.)

NOTE When referring to sampling inspections an item is called a sampling unit.

3.5
area

group of items located within a spatial unit

3.6
qualitative criterion

the stated characteristic result of a service required according to the specification

3.7
quantitative scale of judgment

the acceptance threshold for a qualitative criterion based on its degree of absence or presence

3.8
acceptance quality limit (AQL)

when a continuous series of lots is considered, the quality level which for the purposes of sampling inspection is the "worst tolerable product quality level" (see ISO 2859-1:1999, 3.1.24)

3.9
average outgoing quality (AOQ)

average quality of outgoing product, material or service, including all lots that have been considered (see ISO 2859-1:1999, 12.3)

3.10
average outgoing quality limit (AOQL)

when a continuing series of lots is considered, the quality level which for the total series of lots is the limit of a satisfactory average outgoing quality (see ISO 2859-1:1999, 12.4)

3.11
normal inspection

use of a sampling plan with an acceptance criterion that has been devised to secure the producer a high probability of acceptance when the process average of the lot is better than the acceptance quality limit (ISO 2859-1:1999, 3.1.20)

3.12
tightened inspection

use of a sampling plan with an increased discriminatory ability than under a corresponding plan for normal inspection

3.13
reduced inspection

use of a sampling plan with a reduced discriminatory ability than under a corresponding plan for normal inspection

3.14
population

totality of items under consideration (see ISO 3534-2:1993, 1.3.1)

3.15
subpopulation

defined part of a population (see ISO 3534-1:1993, 2.5)

3.16

lot

definite quantity of some product, material or service, collected together and submitted for examination (see ISO 3534-2:1993, 1.3.5)

NOTE All areas composing all or part of one or more buildings, pieces of equipment or installations.

3.17

lot-size

number of items in a lot (see ISO 3534-2:1993, 1.3.6)

3.18

sampling inspection

inspection of selected items in the group under consideration

NOTE Sampling inspection also refers to whole-lot inspections.

3.19

simple random sample

sample of n sampling units taken from a population in such a way that all possible combinations of n sampling units have the same probability of being taken (see ISO 3534-1:1993, 4.9)

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3.20

cluster sampling

method of sampling in which the population is divided into mutually exclusive and exhaustive aggregates (or clusters) of sampling units related in a certain manner (see ISO 3534-1:1993, 4.18)

NOTE A sample of these clusters is taken at random and all sampling units which constitute them are included in the sample.

EXAMPLE When selecting items for inspection a number of areas may be chosen. It is called cluster sampling when all the items within these areas are inspected

3.21

stratified sampling

in a population which can be divided into different mutually exclusive and exhaustive subpopulations (called strata), sampling carried out in such a way that specified proportions of the sample are drawn from the different strata and each stratum is sampled with at least one sampling unit (see ISO 3534-1:1993, 4.14)

EXAMPLE When for example a random sample of 20 rooms is needed in a building with ten floors, it is called stratification if the building would be divided in clearly defined parts like one stratum per floor. This would in this example lead to randomly selecting two rooms per floor.

4 Requirements

4.1 Conditions

4.1.1 The system shall specify what limitations exist on the kind of service and locations to which it is applicable.

4.1.2 The system shall specify what it covers in the way of cleaning related services.

4.1.3 The system shall provide guidelines to specify one or more levels of quality.

4.1.4 The system shall provide an evaluation plan for all types of inspection within the system.

4.1.5 The system shall provide guidelines to specify categories of areas or items (e. g. offices and sanitary).

NOTE When referring to sample inspections these categories are called subpopulations.

4.2 Inspection

4.2.1 Items of inspection

4.2.1.1 Items within the system shall be clearly identified and defined.

4.2.1.2 The system shall give guidelines on how a list of items for inspection shall be made up.

NOTE This list itself could be all items which are covered by the specification; or it could be a list of items which are excluded by the specification.

4.2.2 Criteria

4.2.2.1 The system shall specify for each item what are the qualitative criteria to be employed in inspection. The system shall specify for each qualitative criterion a quantitative scale of judgment.

NOTE For visual inspection the quantitative scale of judgment may be the definition of a single threshold level.

4.2.2.2 When the system uses the weighting of items it shall specify guidelines for the correct evaluation of the result.

4.2.3 Procedures for inspection

4.2.3.1 The system shall specify how each qualitative criterion shall be measured, primarily by visual inspection.

4.2.3.2 If instruments are to be used, the system shall specify the type of instrument, its method of use and the requirements to ensure that its readings remain consistent.

4.2.3.3 If an item is inspected partially this shall be specified within the system.

4.2.4 Moment of inspection

4.2.4.1 The system shall define how the accuracy of observation is to be secured through the timing of inspections.

4.2.4.2 The system shall define suitable criteria in relation to the timing of inspection (i. e. regardless of the timing of cleaning operations, following completion of cleaning operations or taking into consideration possible recontamination).

4.2.5 Conclusion and reporting

4.2.5.1 The system shall measure the conformity or nonconformity of items with specified requirements.

4.2.5.2 The system shall describe how the results are reported.

4.2.5.3 The report shall allow identification and traceability of nonconformities.

4.2.5.4 When the system is used for final inspections or acceptance inspections the system shall specify the use of acceptance quality limits for the evaluation of the inspection.

Preferred acceptance quality limits and their corresponding conditions shall be specified within the system.

4.2.5.5 The system shall provide tables specifying acceptance and/or rejection numbers for the preferred acceptance quality limits, for example the tables of Annex C.

4.3 Sampling

4.3.1 Method of sampling

4.3.1.1 Inspections in the system shall be either 100 % sample inspections or simple random sample inspections (see 3.19).

4.3.1.2 The system shall use the method of cluster sampling (see 3.20).

NOTE The use of cluster sampling does not exclude the use of simple random sampling or stratified sampling.

4.3.1.3 The populations or subpopulations shall be divided into clusters using rooms/areas, where one room/area is one cluster of items.

NOTE Where an area is an item, the cluster comprises only one item.

4.3.2 Sample size

4.3.2.1 The system shall specify guidelines to the determination of the lot-size. When the lot-size is estimated, the confidence-level shall be specified. When assumptions are made these shall be stated explicitly within the system (ISO 3534-1:1993, 2.59).

4.3.2.2 One or more tables specifying the relation between lot-size and sample-size shall be part of the system, or the system shall make reference to the tables in the Annex C.

4.3.3 Probability

When the system uses acceptance quality limits, it shall specify for sample sizes the Producer's Risk (PR) and Consumer's Risk (CR) involved, as well as the associated Limiting Quality (LQ). (resp. ISO 3534-2: 1993, 2.6.7; ISO 3534-2:1993, 2.6.4; ISO 3534-2:1993; 2.7.3 and ISO 2859-2:1985) (see Annex C).

4.4 Average outgoing quality

4.4.1 When the system is used for verifying the consistency of quality of the cleaning services over a given period of time the system shall specify the minimum number of inspections for that period.

4.4.2 When the system is used for acceptance of the average quality of cleaning services over a given period of time the system shall specify the use of average outgoing quality limits (AOQL's) for the evaluation of that average.

5 Recommendations

5.1 Quality levels

To meet different clients' needs and agreements the system should describe some preferred levels of quality and define them clearly and/or illustrate them with clear examples.

5.2 Understandability

The system should be capable of:

- being clearly understood by the client and the service provider;
- being understood by the work teams delivering the service, as far as it affects their work;
- presenting its standards for work teams to check their own work.

(See Annex B)

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5.3 Operating costs (standards.iteh.ai)

The system should specify in a clear way the costs of operating the system, especially in respect to the following aspects:

- training of an inspector;
- time needed for preparation, inspection and analysis of the results;
- equipment needed.

5.4 Objective methods of measurement

The system should be capable of supplementing the visual inspection by described objective methods of measurements.

5.5 Sample inspection

For economy of operation the system should give preference to sample inspection and allow for reduced sample sizes when a given number of inspections all show positive results (see ISO 2859-1:1999, 9.3).

The system should provide tables not only for normal inspections, but also for tightened and reduced inspection (see for example Annex C, tables C.2, C.3 and C.4).

NOTE For an example of how switching rules may be specified, reference is made to ISO 2859-1:1999, 9.3.

5.6 Range of application

The system should be applicable to all types of service locations.