

Statistics Austria

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Mini-presentation on

SPPI for Cleaning and Facilities Services in Austria

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1. Introduction

The bureau of the Voorburg Group decided to treat the following service sector at the annual meeting 2010:

- Cleaning and Facilities Services

This paper provides a brief overview of the SPPI for NACE Rev. 2 category 81.2 “Cleaning activities”. Other related service activities like NACE-codes 81.1 “Combined facilities support activities” and 81.3 “Landscape service activities” are not covered in this paper. There is no legal basis for a survey of these NACE three-digit level codes in Austria. The structure of this Mini-presentation is based on the Content Development Framework of the Voorburg Group.

2. Definition of the service being priced

The index relates to “Cleaning activities” which is group 81.2 in the Austrian Statistical Classification of Economic Activities¹ (ÖNACE 2008). This ÖNACE-code is divided into sub-class 81.21 “General cleaning of building”, 81.22 “Other building and industrial cleaning activities” and 81.29 “Other cleaning activities”.

Table 1: Cleaning activities according to ÖNACE 2008

NACE-group	Description	NACE-class	Description
81.2	Cleaning activities	81.21	General cleaning of buildings
		81.22	Other building and industrial cleaning activities
		81.29	Other cleaning activities

Source: Eurostat Ramon

There is a further division of ÖNACE-code 81.2 “Cleaning activities” into sub-class 81.21.1 “General cleaning services of buildings”, 81.22.1 “Industrial cleaning services” and 81.29.1 “Other cleaning services” according to CPA 2008.

Table 2: Cleaning activities according to CPA 2008

CPA 2008	Description	Service Products
81.21.1	General cleaning services of buildings	81.21.10 General cleaning services of buildings
81.22.1	Industrial cleaning services	81.22.11 Window cleaning services 81.22.12 Specialised cleaning services 81.22.13 Furnace and chimney cleaning services
81.29.1	Other cleaning services	81.29.11 Disinfecting and exterminating services 81.29.12 Sweeping and snow removal services 81.29.13 Other sanitation services 81.29.19 Other cleaning services n.e.c.

Source: Eurostat Ramon

A more detailed description of cleaning services in the Austrian NACE can be found in chapter 5 “Standard classification structure and detail related to the area”. Chapter 6

¹ ÖNACE 2008 which corresponds with NACE Rev. 2 and ISIC Rev. 4 respectively

“Evaluation of standard vs. definition and market conditions” describes cleaning services from a practical point of view in contrast to chapter 5.

3. Pricing unit of measure

In the cleaning service branch the pricing unit of measure depends on the surveyed service product (e.g. standard interior cleaning service in an office building) as well as on the chosen pricing method (e.g. contract pricing). It is important to survey various cleaning services to get a reasonable Service Producer Price Index (SPPI) for ÖNACE 81.2 “Cleaning activities”. There are sub-indices of this ÖNACE-code where strong heterogeneity of services is observable between/within the NACE four-digit level codes and the CPA-codes (see Table 2). For this reason a broad diversification of service products and pricing methods can be found on the Austrian questionnaire sheets. Only a short extraction of collected prices is mentioned below:

- General cleaning services of buildings (e.g. “price per month” for maintenance cleaning of an office building)
- Industrial cleaning services (e.g. “price per performance” for a furnace and chimney cleaning service or for cleaning the face of a building)
- Other cleaning services (e.g. “price per unit” for cleaning the inside of a road tanker)

Country experiences of the most common pricing methods employed for cleaning activities will be presented in chapter 8 “Pricing method(s) and criteria for choosing various pricing methods” with a short explanation of their advantages and drawbacks.

4. Market conditions and constraints

Activities classified under NACE code 81.2 cover a wide range of different services: from “Interior cleaning of buildings and window cleaning”, “Furnace and chimney cleaning services”, “Disinfecting and exterminating services” to very specialised services such as “Cleaning services of the inside of road and sea tankers”.

Austrian service enterprises classified under CPA 81.21.1 “General cleaning services of buildings” predominantly operate in a highly competitive market whereas “Furnace and chimney cleaning services” are strongly regulated by regional governments (provinces of Austria). There are specific laws² in each of the nine provinces determining a maximum price for clearly defined furnace and chimney cleaning services. A lot of small and specialised enterprises can be found in CPA codes 81.22.1 “Industrial cleaning services” and 81.29.1 “Other cleaning services”.

a. Size of the industry

The Structural Business Survey (2008) which uses the Austrian Business Register (UR) as a sampling frame shows some key figures for ÖNACE 81 “Services to buildings and landscape activities” and gives a rough picture of this service sector in Austria (see Table 3). Enterprises are classified according to their main activity on five-digit level in the UR.

² These laws regulate rate ceilings for certain and characteristic “Furnace and chimney cleaning services” for all households and business units

Table 3: Turnover and no. of enterprises by ÖNACE 81-categories

ÖNACE 2008 category	Number of enterprises	Share on turnover of ÖNACE code 81 2008
81 Services to buildings and landscape activities		in 1000 EURO
Total	4.557	2.627.474
81.1 Combined facilities support activities	1.046	19,80%
81.2 Cleaning activities	2.671	66,42%
81.3 Landscape service activities	840	13,78%

Source: Structural Business Survey (2008)

Table 4 provides further details about the number of enterprises and the share on turnover concerning ÖNACE 81.2 “Cleaning activities”. According to the Austrian Structural Business Survey (2008) there were 2.671 enterprises registered to operate in ÖNACE 81.2 “Cleaning activities”. The huge majority of enterprises has less than 10 employees, only 40 out of 2.671 enterprises have 250 or more employees but produce almost half of the total turnover.

Table 4: Key figures of ÖNACE 81.2

Business service ÖNACE (NACE Rev. 2)	Employees	Number of enterprises	Share on turnover of ÖNACE category 81.2 2008
81.2 Cleaning activities			in 1000 EURO
Total		2.671	1.745.205
	0 - 9	2.160	19,10%
	10 - 19	238	7,43%
	20 - 49	143	9,69%
	50 - 249	90	18,01%
	≥ 250	40	45,77%

Source: Structural Business Survey (2008)

Table 5 provides a detailed list of turnover shares for ÖNACE 81.2 “Cleaning activities” on four-digit level. The importance of ÖNACE 81.21 “General cleaning of buildings” is reflected with a share of 67,87%. The two remaining four-digit level codes ÖNACE 81.22 “Other building and industrial cleaning activities” and ÖNACE 81.29 “Other cleaning activities” are both of similar but much less importance according to their turnover shares.

Table 5: Split of turnover according to ÖNACE 81.2 on four-digit level

ÖNACE 2008 category	Share on turnover of ÖNACE category 81.2 2008
81.2 Cleaning activities	in 1000 EURO
Total	1.745.205
81.21 General cleaning of buildings	67,87%
81.22 Other building and industrial cleaning activities	15,87%
81.29 Other cleaning activities	16,26%

Source: Structural Business Survey (2008)

b. Special conditions and restrictions

ÖNACE 81.21-0 General cleaning of buildings

In Austria this market is a typical example of outsourcing because in the 1990s there was a growing demand for such services and a lot of cleaning enterprises emerged on the market. After an expansion period a tendency to market concentration can be observed till now. Nowadays especially small cleaning enterprises get into trouble because they are not able to offer their services in all nine regions of Austria. Companies which are operating Austrian-wide prefer cleaning services from one service provider for all their establishments. Beyond that large service enterprises are more likely to be able to offer cleaning services at relatively low costs and they have the possibility to provide integrated services (e.g. security services, etc.) to their clients.

At present the cleaning service market is highly competitive, especially the general (non-specialised) interior cleaning activities for all types of buildings. To get the permission to work in this service branch it is necessary to apply for a licence. Basically there are two types of licences available for general cleaning of buildings in Austria: Around 700 enterprises have a big licence which gives them the permission to clean all kinds of buildings. Small licences are granted to enterprises which offer only one cleaning service, e.g. residential building cleaning service, for which a separate licence is available.

ÖNACE 81.22-1 Chimney cleaning

As mentioned earlier in this chapter furnace and chimney cleaning services are under regulation in Austria. There are districts in each of the nine provinces where a limited number of chimney sweepers are allowed to work. Competition is low and customers rarely change the chimney cleaning enterprise. This is known as the regulated part of the chimney cleaning market.

There are just a few services offered from chimney sweepers which are not mentioned explicitly by law as regulated chimney cleaning activity. This means that other professionals (e.g. heating installation enterprise, etc.) are allowed to offer these services (e.g. chemical cleaning of a central heating boiler) at market prices. Therefore it was required to draft a questionnaire in which both types of services are represented adequately.

ÖNACE 81.22-9 Other building and industrial cleaning activities n.e.c.

One important restriction for the price survey is the wide range of services summarised by this ÖNACE-code. Many enterprises are specialised in a certain type of cleaning activity. For this reason it was not possible to develop a questionnaire suitable for general use.

A second restriction to be taken into account was the missing support from Austrian trade associations because of their lack of knowledge about this branch of business. In the SPPI preparation process enterprises were therefore asked to give basic information about price determining factors of nonstandard cleaning activities and accounting approaches which are regularly in use.

ÖNACE 81.29-1 Snow and ice removal

See ÖNACE 81.22-9 "Other building and industrial cleaning activities n.e.c."

ÖNACE 81.29-9 Other cleaning activities n.e.c.

See ÖNACE 81.22-9 "Other building and industrial cleaning activities n.e.c."

c. Record keeping practice

Price information is collected from enterprises directly considering the different sub-markets of cleaning services. The respective prices should reflect real transaction prices³ normally charged to clients and not list prices. Table 6 gives an overview about some figures concerning the sample of ÖNACE 81.2 “Cleaning activities”.

Table 6: Sample of ÖNACE 81.2 “Cleaning activities” by sub-market

ÖNACE 2008 category	Sample Method	Sample Size	Sample turnover coverage
81.2 Cleaning activities			
81.21 General cleaning of buildings			
81.21-0 General cleaning of buildings	Cut-off sampling*	82	75%
81.22 Other building and industrial cleaning activities			
81.22-1 Chimney cleaning	Cut-off sampling	44	15%
81.22-9 Other building and industrial cleaning activities n.e.c.	Cut-off sampling*	18	75%
81.29 Other cleaning activities			
81.29-1 Snow and ice removal	Cut-off sampling*	18	75%
81.29-9 Other cleaning activities n.e.c.	Cut-off sampling*	19	75%

* Sorted in descending order by turnover with the criteria of sample turnover coverage of 75% in the respective ÖNACE 2008 5-digit level code. Source: Statistics Austria (2010)

The method of cut-off sampling is applied to all 5-digit level codes of the ÖNACE 2008 codes for cleaning activities. There is sample turnover coverage of 75% within ÖNACE 81.21-0 “General cleaning of buildings”, ÖNACE 81.22-9 “Other building and industrial cleaning activities n.e.c.”, ÖNACE 81.29-1 “Snow and ice removal” and 81.29-9 “Other cleaning activities n.e.c.”. For ÖNACE 81.22-1 “Chimney cleaning” a turnover threshold of 15% was chosen considering the relative low importance compared to the other ÖNACE-codes.

There are standardised questionnaires available for ÖNACE 81.21-0 “General cleaning of buildings” and ÖNACE 81.22-1 “Chimney cleaning”. In cooperation with respondents enterprise-specific questionnaires were developed for ÖNACE 81.22-9 “Other building and industrial cleaning activities n.e.c.”, ÖNACE 81.29-1 “Snow and ice removal” and ÖNACE 81.29-9 “Other building activities n.e.c.”

One important remaining point is the loss of enterprises due to the closing of business activities⁴. Then a price imputation is carried out using a sub-index or overall index change from the remaining enterprises of the sample as a rate of change for the missing price(s). In the past no new enterprises were added to the index calculation during the first reference period.

d. Results

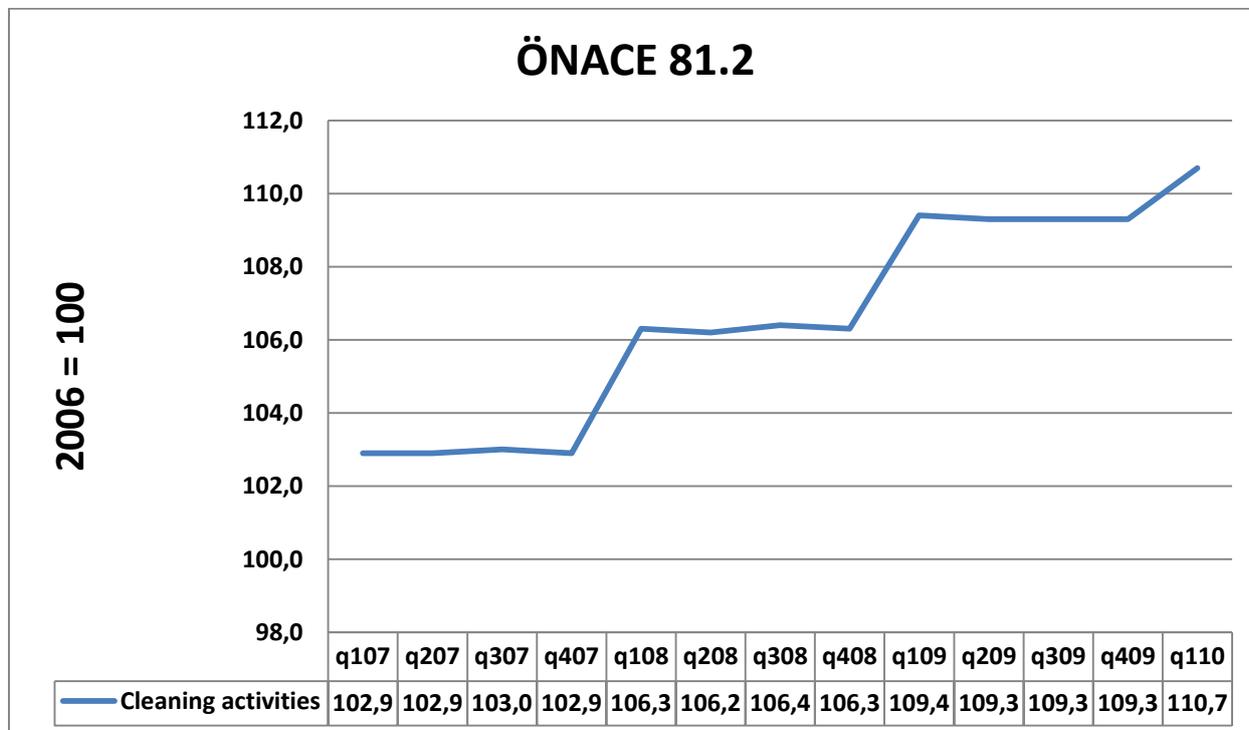
Graph 1 describes the price trend in the ÖNACE 81.2 “Cleaning activities” from quarter 1 2007 until quarter 1 2010 (2006 = 100). In the first quarter of 2007, 2008 and 2009 similar price increases (~ 3%) were observed but this price increase was typically only in the first quarter whereas prices were stable in the rest of the year. This indicates that cleaning

³ Respondents are asked to calculate prices including all duties and taxes but excluding VAT as well as possible subsidies

⁴ In Austria a reminder system was installed that ensures nearly hundred percent response rates. As a last consequence local authorities can impose a fine if an enterprise refuses to respond to the price survey. That is the reason why the drop out of firms is mainly caused by closing business activities

services are a branch where price setting takes place in the beginning of the year. In 2010 the service producer price index rose only moderately by 1,3 % compared to the average of 2009. The index figure of quarter 1 2010 is a preliminary value which will be final with the publication of quarter 2 2010.

Graph 1: Index of ÖNACE 81.2 “Cleaning activities “



Source: Statistics Austria

5. Standard classification structure and detail related to the area

In contrast to some other service branches the national classification⁵ structure reflects the real market situation of cleaning services quite well. Therefore it was possible to identify relevant cleaning services in advance of further discussions with the respective trade association. The Austrian classification structure looks as follows:

ÖNACE 81.2 Cleaning activities

- 81.21 General cleaning of buildings
- 81.21-0 General cleaning of buildings
- 81.22 Other building and industrial cleaning activities
- 81.22-1 Chimney cleaning
- 81.22-9 Other building and industrial cleaning activities n.e.c.
- 81.29 Other cleaning activities
- 81.29-1 Snow and ice removal
- 81.29-9 Other cleaning activities n.e.c.

(Ö)NACE 81.21 comprises the following services:

This class includes the general (non-specialised) cleaning activities of all types of buildings, such as:

⁵ The Austrian standard classification structure ÖNACE is identical to the NACE on 4-digit level and has another 5-digit level breakdown of activities

- offices
- houses or apartments
- factories
- shops
- institutions;

and other business and professional premises and multiunit residential buildings. These activities are mostly interior cleaning although they may include the cleaning of associated exterior areas such as windows or passageways.

This class excludes:

- specialised cleaning activities, such as window cleaning, chimney cleaning, cleaning of fireplaces, stoves, furnaces, incinerators, boilers, ventilation ducts, exhaust units, see 81.22

(Ö)NACE 81.22 comprises the following services:

This class includes the activities of:

- exterior cleaning of buildings of all types, including offices, factories, shops, institutions and other business and professional premises and multiunit residential buildings
- specialised cleaning activities for buildings such as window cleaning, chimney cleaning and cleaning of fireplaces, stoves, furnaces, incinerators, boilers, ventilation ducts and exhaust units
- cleaning of industrial machinery
- other building and industrial cleaning activities, n.e.c.

This class excludes:

- steam cleaning and blasting and similar activities for building exteriors, see 43.99

(Ö)NACE 81.29 comprises the following services:

This class includes the activities of:

- swimming pool cleaning and maintenance activities
- cleaning of trains, buses, planes, etc.
- cleaning of the inside of road and sea tankers
- disinfecting and exterminating activities
- bottle cleaning
- street sweeping and snow and ice removal
- other cleaning activities, n.e.c.

This class excludes:

- agriculture pest control, see 01.61
- automobile cleaning, car wash, see 45.20

6. Evaluation of standard vs. definition and market conditions

ÖNACE 81.21-0 General cleaning of buildings

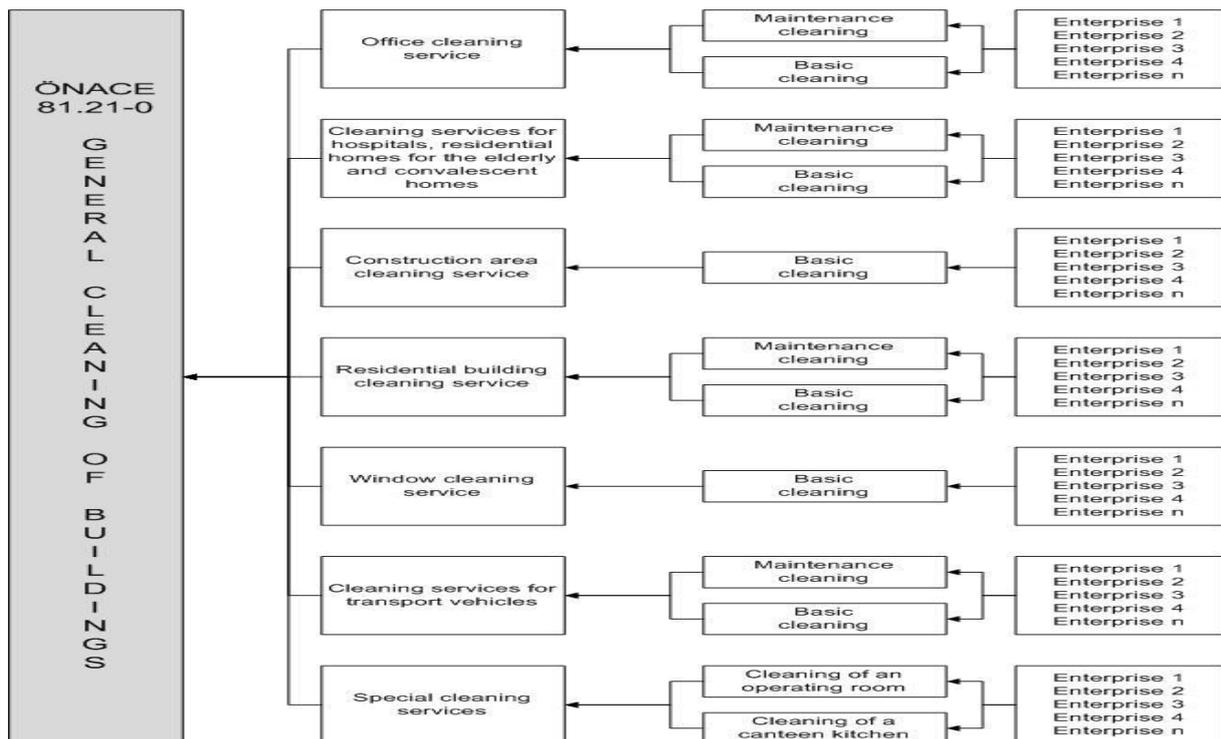
Based on the information of the trade association the following differences appear in the structure of the proposed ÖNACE (ÖCPA) description to real world conditions. In Austria the discrepancy is caused by different wage groups according to the collective bargaining agreement for this branch as follows:

- Office cleaning services
- Cleaning services for hospitals, residential homes for the elderly and convalescent homes
- Construction area cleaning services
- Residential building cleaning services
- Window cleaning services
- (Cleaning services for transport vehicles)
- (Special cleaning services)

The trade association suggested two important cleaning activities “Cleaning services for transport vehicles” and as representative examples for special cleaning services “Cleaning of an operating room” and “Cleaning of a canteen kitchen” that should be added to the price survey for this ÖNACE code.

Furthermore a distinction is necessary between “Maintenance cleaning” and “Basic cleaning”. For “Construction area cleaning services” and “Window cleaning services” there is no “Maintenance cleaning” service. Another distinction is required for “Special cleaning services” where non-standard knowledge is employed to meet the expectations of customers.

Scheme 1: Index aggregation structure for ÖNACE 81.21-0



Source: Statistics Austria

In order to setup an adequate Austrian SPPI calculation procedure a family tree was constructed which is shown in Scheme 1. Comparable service products can be observed within the industry for general cleaning of buildings. The elementary aggregates (e.g. Office cleaning service, etc.) are weighted according to the information provided from the trade association.

Service packages were created for all of the above-mentioned service fields. According to the SPPI Methodological guide⁶ several issues should be taken into consideration:

- Type of object (dimension of the building, type of room, type of floor, etc.)
- Quality demanded (Maintenance cleaning, basic cleaning, and others)
- Time of cleaning (weekday/weekend, day/night, etc.)
- Type of client (Business service provider, government, etc.)
- Type of contract (length of contract; short-term contract/long-term contract)
- The moment of billing compared to delivery

⁶ OECD / Eurostat (2005), Methodological guide for developing producer price indices for services, Luxembourg. ISBN 92-79-01297-5

81.22-1 Chimney cleaning

There are differences in the business structure compared to the proposed ÖNACE (ÖCPA) descriptions of 81.22-1 “Chimney cleaning” in Austria. Technical inspections are also important besides pure cleaning services but not listed as such in the ÖNACE classification description. They amount to 40% of chimney sweeper’s services in present but expected to get more important in the future. Therefore various types of technical inspections were added to the price survey. The following service examples of buildings were constructed in cooperation with the respective trade association:

- Wood processing company building
- Industry building
- Property administration building
- Bank or insurance company building

As in the case of the four above-mentioned examples a detailed description of the service being priced for two non-regulated chimney cleaning services were developed for:

- Chemical cleaning of a central heating boiler
- Ground off of a chimney

81.22-9 Other building and industrial cleaning activities n.e.c.

There are many niche markets for enterprises classified under this ÖNACE-code. On the basis of an information exchange with enterprises⁷ service packages (similar to chapter 8: ÖNACE 81.21-0 “General cleaning of buildings”) were developed concerning window cleaning activities. For other enterprises individual services and/or pricing methods were chosen in order to compute the sub-index. The same procedure was applied to ÖNACE 81.29-1 “Snow and ice removal” and ÖNACE 81.29-9 “Other cleaning activities n.e.c.” in order to get useful price data from enterprises.

7. National accounts concepts and measurement issues for the area related to GDP measurement

Compilation of output at constant prices in the Austrian National Accounts (NA)

Table 7 provides an overview of the NA working scheme on the major business service activities of which cleaning activities are part of. The coding in the scheme is still according to the old ÖCPA classification because in NA the change over to ÖNACE/ÖCPA 2008 will take place in 2011.

For ÖCPA codes 74.11, 74.4 specific SPPIs are already in use as deflators. Furthermore new SPPIs have been developed and they are available for ÖCPA codes 74.12, 74.13, 74.14, 74.2, 74.3, 74.5, 74.6 and 74.7. For the remaining ÖCPA codes 74.15, 74.8 (exclusive of 74.81) other deflators (input-method and CPI) are in use where no SPPIs are available.

⁷ There was no information available from trade associations about services and accounting methods from enterprises classified under ÖNACE 81.22-9 “Other building and industrial cleaning activities n.e.c.”, ÖNACE 81.29-1 “Snow and ice removal” and ÖNACE 81.29-9 “Other cleaning activities n.e.c.”

Table 7: Working classification to measure production of ÖCPA 74

ÖCPA	Description	Description
74	74.11	Legal services
	74.12	Accounting, book keeping and auditing services; tax consultancy services
	74.13	Market research and public opinion polling services
	74.14	Business and management consultancy services
	74.15	Management holdings services
	74.2	Architectural, engineering and related technical consultancy services
	74.3	Technical testing and analysis services
	74.4	Advertising services
	74.5	Labour recruitment and provision of personnel services
	74.6	Investigation and security services
	74.7	Industrial cleaning services
	74.8	Miscellaneous business services n.e.c.

Source: Inventory of methods for price and volume measures in the Austrian National Accounts (October 2007)

Compilation of real output (volume)

Aspects to be taken into account with cleaning activities

Cleaning activities are services with a broad range of products which are partly regulated (ÖNACE 2008 81.22-1 “Chimney cleaning”) in Austria. There are important aspects of price measurement regarding cleaning activities which can have an impact on the calculation of real volumes:

- Broad range of products and therefore the difficulty to ensure representative coverage of the services
- Technological developments are not easy to identify (e.g. the use of better cleaning material or machines) and to measure them precisely
- Quality changes are not always recorded in pricing mechanism schemes of this service branch (e.g. in cleaning contracts)

Discounts/surcharges are important for price calculations of this business segment but often top secret (especially discounts for general cleaning services where competition is high)

What does the theory say?

The inventory of methods for price and volume measures in the Austrian National Accounts (October 2007) classifies A, B and C methods for measuring volume in accordance with the output and/or expenditure approach.

A methods are the most suitable ones and basically producer price indices belong to that class of methods for purposes of the production approach. As mentioned before for some ÖCPA codes SPPIs are in use (A method). If an A method cannot be employed there is the alternative to choose a B method. Some CPIs for deflating ÖCPA 74 codes are B methods but that does not apply automatically to both approaches. C methods deviate most from the ideal of A methods. The following criteria must be fulfilled by A methods.

- Full and/or representative coverage of the goods and services (groups)
- Recording of changes in quality and new products
- Valuation at basic prices for the production approach and purchaser’s prices for the expenditure approach
- Consistency with national accounts concepts

Self-assessment and preview

According to the handbook on price and volume measures the importance of developing adequate price indices for B2B services was emphasized not only because of self-interest. In January 2003 prices and price indices for a few services were available but reflecting only B2C price changes.

Until 2000, ÖCPA 74 was deflated by using CPI-subindex for services, which is a C method. Currently the CPI (B method) is used as deflator for 74.7 "Industrial cleaning services". However proper SPPIs on five-digit level are calculated already (base period = 2006). In principle this SPPI is available for both "old" and "new" NACE versions each quarter and backcast SPPI series are available for 81.2 "Cleaning activities" (NACE Rev. 2) and 74.7 "Industrial cleaning services" (NACE Rev. 1.1) which gives the NA experts the possibility to use the adequate NACE version deflator. Now an A method is obtainable which improves the compilation of volumes.

8. Pricing method(s) and criteria for choosing various pricing methods

This service branch is for the first time on the agenda of a Voorburg Group meeting. Country experiences in the development of SPPI's for cleaning services have been presented only once at an Eurostat Task Force by Finland and Hungary in Luxembourg (April 2008). Further information about pricing methods used in this chapter comes from Germany⁸, UK and the Netherlands with the focus on general cleaning activities of buildings.

Time-based methods are in general critical alternatives for using them as measurement for cleaning service outputs. There are other pricing methods which are presented in the following and which are probably more suitable for a price survey:

Direct use of prices of repeated services - contract pricing

Basically contract pricing is a recommended pricing method according to the SPPI Methodological guide for services *for which an (almost) exact repetition occurs by the same producer for the same client*. Typical pricing mechanisms of this branch are long-term contracts that normally fulfil the requirements for employing contract pricing as pricing method.

Therefore contract pricing in various forms is widely approved as pricing method. In all observed countries it's necessary for respondents to specify price determining factors⁹ for the chosen cleaning service contract. In Finland from each cleaning contract a ratio between total payment and total hours spent in cleaning is calculated periodically. Respondents in Germany are asked to state cleaning contracts for maintenance cleaning and cleaning of glass surfaces. Then the index is calculated on the basis of a weighting scheme displaying price changes in the course of time.

Direct use of prices of repeated services - standard case

Another possible and sometimes employed pricing method is the standard case of repeated services. The difficulty to implement this pricing method is due to the complexity and packages of services usually ordered from clients in practice. For example interior cleaning of an office building is a service calculated for each client separately with different prices and

⁸ Federal Statistical Office of Germany (processing status: August 2009), Service producer price indices: Information to the sub-index cleaning of buildings, inventory and chimneys (WZ2003:74.7 / WZ2008: 81.2), Wiesbaden 2009

⁹ See chapter 6. Evaluation of standard vs. definition and market conditions

price developments. For this reason it could cause some trouble to find a representative one. It is not possible to take service packages as offered regularly from telecommunication enterprises that might consist of fixed amount of hours and/or some other specifications with a fixed fee. In Austria this pricing method is only used for special cleaning services.

Model pricing

Cleaning activities are usually unique services because of individual needs of customers also for general cleaning of buildings services. Even though it is the same building (e.g. Office building) that is required to be cleaned varying prices at a particular time are possible when different clients are ordering the cleaning service by the same enterprise. There is a scope of action regarding the quality of the cleaning service (e.g. cleaning the carpet of an office building) for which different methods come into consideration regardless of service frequency. In case of such unique services to customers model pricing is a recommended pricing method (see: SPPI Methodological guide) with the difficulty to specify the model in sufficient detail.

In the Netherlands model pricing is used for the SPPI of cleaning services after testing a couple of other pricing methods during a short pilot period. As in the case of contract pricing models of different cleaning activities are based on certain price determining factors (e.g. Total surface area in m² that need to be cleaned). After having defined them in general the models (e.g. Cleaning office block) which are asked from enterprises are defined in more detail (e.g. Surface area per area: workspace/sanitary/corridors). Similar to Austria a price is requested for the whole package or per m² cleaning area.

Unit value method

Another applicable pricing method for cleaning services is the unit value method. Prices for SPPI's can be estimated by dividing the value of service outputs (e.g. value of cleaning contracts or models of cleaning services) by the corresponding output quantities (square metres to be cleaned or total hours needed, etc.). Nonetheless cleaning service packages are required because in practice there are many prices (per square metre or hour) even for the interior cleaning of identical buildings by one/different enterprise(s). Therefore detailed descriptions for surveying the value and quantities are needed from enterprises in order to calculate meaningful SPPI's.

Hungary for example uses unit values for 8121 "General cleaning services of buildings", 8122 "Other building and industrial cleaning services" and 8129 "Other cleaning services" whereas the turnover depends on square metre, metre or number of items and kilometre. It is not surprising that for special cleaning services (8122, 8129) other variables than square metres are necessary for the calculation of unit values.

The situation in Austria

Table 8 gives a summary of the different pricing methods which are in use to survey prices in Austria's cleaning service sector. An important pricing method is model pricing/direct use of prices of repeated services.

This pricing method has characteristics of both alternatives. The services or service descriptions can be fictitious models or they appear in the same way in reality. An example for this pricing method can be found in this chapter for ÖNACE 81.21-0 "General cleaning of buildings". This kind of pricing method is an adequate one for most of the enterprises of the sample. Respondents are able to fill in useful prices on the questionnaire sheets because in practice similar service descriptions are basis for price calculations. One disadvantage is that the change of productivity won't be reflected with this pricing method.

Table 8: Pricing method(s) for cleaning activities in Austria

ÖNACE 2008 category	Pricing method(s) for cleaning activities in Austria
81.2 Cleaning activities	
81.21 General cleaning of buildings	
81.21-0 General cleaning of buildings	a) Model pricing/Direct use of prices of repeated services b) Contract pricing c) Hourly charge-out rates
81.22 Other building and industrial cleaning activities	
81.22-1 Chimney cleaning	a) Model pricing/Direct use of prices of repeated services b) Contract pricing
81.22-9 Other building and industrial cleaning activities n.e.c.	a) Model pricing/Direct use of prices of repeated services b) Direct use of prices of repeated services c) Hourly charge-out rates
81.29 Other cleaning activities	
81.29-1 Snow and ice removal	a) Direct use of prices of repeated services b) Contract pricing c) Hourly charge-out rates
81.29-9 Other cleaning activities n.e.c.	a) Model pricing/Direct use of pricing of repeated services b) Direct use of prices of repeated services c) Hourly charge-out rates

Source: Statistics Austria

Alternatives to the pricing method “Model pricing/Direct use of prices of repeated services” are mentioned above.

ÖNACE 81.21-0 General cleaning of buildings

To give an example of a service package one service description for cleaning an office building is mentioned below.

1) Basic terms and conditions:

- Example of cleaning an office building
- Cleaning during 6 a.m. - 8 p.m. (Monday - Friday)
- The contractor is responsible for purchasing, providing and handling the cleaning equipment (cleaning machines, cleaning material, dispenser systems, bin liners and toilet paper)

Table 9: Characteristics of an office building used for the SPPI survey

Type of room	m2 PVC flooring	m2 Tiled floor	m2 Carpeted floor
Offices, staff rooms, (cleaning of 2 desks, 6 cupboards, 2 waste bins per room)			4875 m ² (195 offices) 1950 m ² (78 offices)
Hallway, staircase (cleaning of 5 doors and 1 cupboard, waste bin per floor)	975 m ² 390 m ²		
Toilets and wet area (cleaning of 1 urinal and 2 toilets, paper towel dispensers and 4 hand washbasins, mirrors per floor)		300 m ² 120 m ²	
Storage rooms	195 m ² 195 m ²		

Source: Statistics Austria

2) Service description

Offices, staff rooms (Daily work)

- Cleaning of surfaces, desks, lamps and telephones
- Cleaning of furniture, doors, light switches and windowsills
- To empty the waste bins and to exchange bin liners
- Disposal of sorted waste (glass, plastics, and so on)
- Removal of cobwebs if required

Offices, staff rooms (Twice a week)

- To Hoover the carpet
- Cleaning of paintings, mirrors and exhibits

Hallway, staircase (Daily work)

- Cleaning of furniture, doors and handrails
- To empty the waste bins and to exchange bin liners
- Clean the floor

Hallway, staircase (Twice a week)

- Clean the floor on a two-step basis

Toilets and wet area (Daily work)

- Cleaning of toilets and urinals with splash zone and hand washbasins, fittings and mirrors
- Checking the toilet paper, paper towel dispensers and soap dispensers and refill them if necessary
- Clean the wall tiles up to a high of 1,60 metres
- Clean the tiled floor

Toilets and wet area (Each second week)

- Clean the tiled wall up to a high of 2,15 metres

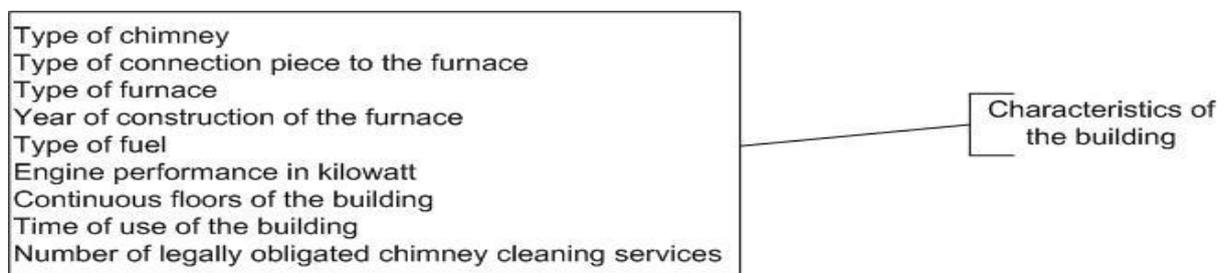
Storage rooms (Once a week)

- Clean the floor on a two-step basis

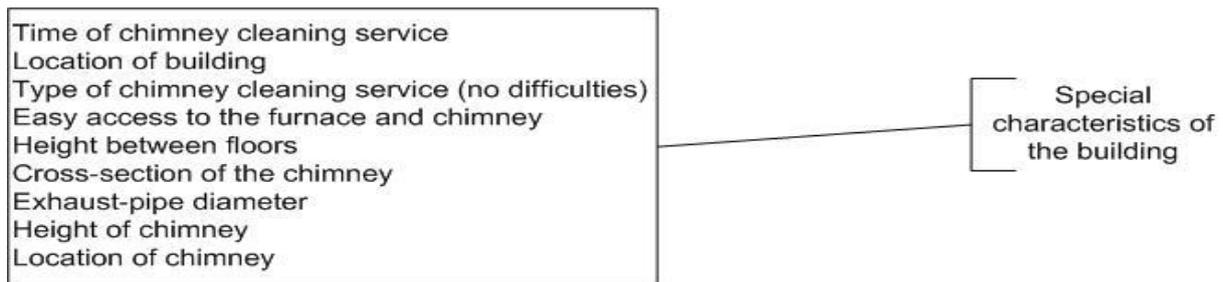
Similar service packages were developed for all cleaning activities (see: aggregation tree in chapter 6) suggested by the trade association. To be sure that cleaning enterprises are able to fill in the questionnaire with useful prices an information meeting was organised in cooperation with the respective chamber at the beginning of the survey. In principle the prepared service packages were considered to be suitable because in practice most of the Austrian enterprises use service descriptions to calculate bids.

ÖNACE 81.22-1 Chimney cleaning

In cooperation with the chairman of the trade association for chimney cleaning services a questionnaire was designed similar to the service packages from ÖNACE 81.21-0 "General cleaning of buildings" but for a limited number of chimney cleaning examples. In a first stage for all four examples of chimney cleaning services characteristics of the building (fireplaces and chimneys) are mentioned on the survey sheet.



Secondly there was the need for correct price calculations by the respondents to include further special characteristics of the building.



To get reasonable prices and a representative price index it is necessary to involve all above-mentioned price determining factors in the service packages. Similar service packages were developed for the competitive part of the chimney cleaning market.

ÖNACE 81.22-9 Other building and industrial cleaning activities n.e.c.

See ÖNACE 81.29-9 “Other cleaning activities n.e.c.”

ÖNACE 81.29-1 Snow and ice removal

See ÖNACE 81.29-9 “Other cleaning activities n.e.c.”

ÖNACE 81.29-9 Other cleaning activities n.e.c.

Different pricing methods are in use especially for special cleaning services because of a wide range of varying activities from enterprises classified in this service sector. One example out of several possibilities is direct use of prices of repeated services. In cooperation with an enterprise from the sample the following representative products were chosen for the price survey:

Table 10: Characteristics of cleaning of the inside of road tankers used for the SPPI survey

	Silo lorry	Tank lorry	Railway-car	IBC-container
Loading	Synthetic granules	Chemistry (lye)	Heavy fuel oil	Lacquer
Number of tanks	1	4	1	1 (1000 litres)
Type of cleaning	No brushing	Getting into the vehicle not necessary	No brushing	No brushing

Source: Statistics Austria

9. Quality adjustment methodologies

In theory the quality adjustment methods described in the Methodological guide for SPPI's are suitable but sometimes affected by subjectivity when a decision about quality adjustment should be made. As mentioned in the guide changes in service characteristics are not easy to identify because of many customised products in service branches. In principle there are two problems regarding quality adjustment by (cleaning) service products.

There is a wide range of potential (quality) changes in service characteristics especially by cleaning activities. Detailed service descriptions are often necessary for cleaning contracts. These service packages describe the types of cleaning activities but not necessarily their quality. It's easier for a statistician to identify a quality change by activity (e.g. using cleaning machines instead of cleaning personnel) than changes by quality (e.g. cleaning the same office equipment but of different quality) in contracts.

When speaking about quality adjustment methods the chosen pricing method for a service branch is of interest. As already mentioned in the paper contract pricing is a widely used pricing method for “general cleaning of buildings” services. Thus if a contract alters it’s inevitable to stay in close contact with respondents to identify a modification as quality change or as simply changed service. For discontinued contracts the SPPI manual suggests targeted mean imputation.

In Austria the SPPI for 81.2 “Cleaning activities” (ÖNACE 2008) is calculated according to the Laspeyres index formula concept using a fixed base year for five years. Since the starting point of the price survey (2008) in the cleaning service branch there has been no loss of single service products by respondents because at the beginning of the survey enterprises were given the possibility to discuss in detail potential difficulties that can emerge during the survey period. Besides that only important service activities that will be offered on a regular basis with the criteria of representativeness for other ones were chosen in cooperation with the trade association for the questionnaire sheet.

In preparation of the new base year trade associations were asked to give advice in general changes of services (representativeness, quality, etc.) over time to adjust survey sheets to new market conditions for the reference period (2010 - 2015). Due to the fact that the development of questionnaires for most of the service branches was finalised 2008 no substantial changes were necessary.

10. Evaluation and comparability with turnover/output measures

The Austrian short-term statistics on services are produced on the basis of register administrative data source since 2003. The turnover index for selected service sectors (Division H, I, J, M and N of ÖNACE 2008) is available quarterly. In Austria companies have to provide monthly in-advance-reports on VAT to the tax authorities from where Statistics Austria gets the data about total taxable turnover. The quarterly total turnover is aggregated from the monthly data base.

For the moment only turnover indices in nominal values are calculated which are working-day adjusted. They measure for each NACE Rev. 2 code the total turnover of the current month in percentage of the average monthly turnover in the base period (year 2005=100). No time series of turnover indices of services based on volumes are available presently.

The compilation of turnover by product

Turnover data for cleaning activities are only published in the context of the Structural Business Survey but not deeper than the 4-digit level.

11. Summary

- Since the beginning of 2009 Statistics Austria is publishing a SPPI for ÖNACE 81.2 “Cleaning activities”
- Turnover data is published by the respective directorate of Statistics Austria on a four-digit level
- Weighting information on a product level is only available for ÖNACE 81.21-0 “General cleaning of buildings” from the respective trade association
- For the sample of enterprises a turnover coverage of 75% was achieved for nearly all five-digit level codes of ÖNACE 81.2 “Cleaning activities”
- Representative services for the index calculation have been selected in close cooperation with trade associations and/or respondents themselves
- The most important pricing method used for cleaning services in Austria is a combination of model pricing/direct use of prices of repeated services
- There is a wide range of service aggregates and services representing the resulting index for ÖNACE 81.2 “Cleaning activities”

12. Quality Assessment tool

Points	Category and Questions	Score
	1. Shipment Price (Weight = .10)	
	<i>Select a. or b.</i>	
0	a. Price represents order pricing, actual price at shipment may well be different.	
100	b. Price represents the completion of service or a proxy measure for the completed transaction.	100
	2. Representative of current period production (Weight = .10)	
	<i>Select a. or b.</i>	
50	a. Emergence of new product lines or critical new product features has not occurred since the index reference period or since sample augmentation last done.	50
0	b. Emergence of new product lines or critical new product features has occurred since the index reference period or since sample augmentation last done.	
	<i>Select c. or d.</i>	
50	c. Product substitution usually occurs when an item becomes obsolete or, if model pricing applies, the models are regularly updated to reflect changes.	50
0	d. Product substitution usually does not occur when an item becomes obsolete or, if model pricing applies, the models are not regularly updated to reflect changes.	
	3. Transaction price (Weight = .25)	
	<i>Select the one most prevalent in the industry</i>	
100	a. The price is the real transaction price or a list price that can always be assumed to be equal to the transaction price.	100
50	b. The price is a list price not equal to the transaction price.	
100	c. The price is a unit value for a homogeneous group of products.	
50	d. The price is a unit value for a non-homogeneous group of products.	
75	e. The price is a model price.	
50	f. The price is constructed from input cost plus profit and overhead mark-up.	
	4. Output price (Weight = .25)	
	<i>Select the one most prevalent in the industry</i>	
100	a. Recorded price reflects an actual transaction or average of actual transactions.	
75	b. Recorded price reflects a model transaction incorporating the pricing of all features found in an actual transaction.	75
50	c. Recorded price reflects a model transaction incorporating the pricing of only some of the features found in an actual transaction.	
50	d. Recorded price reflects some components of a transaction.	
50	e. Recorded price reflects input costs plus overhead and profit margins incorporating the pricing of all features found in an actual transaction.	
25	f. Recorded price reflects input costs plus overhead and profit	

	margins incorporating the pricing of some of the features found in an actual transaction.	
0	g. Recorded price reflects charge out rates for fixed labor inputs not directly tied to a specific quantity of output.	
	5. Timely measure (Weight = .10)	
	<i>Select a. or b.</i>	
50	a. Pricing data reflect the service provision in the current period and are not lagged.	50
0	b. Pricing data are lagged.	
	<i>Select c., d., or e.</i>	
50	c. Pricing data reflect an average over the entire period.	50
40	d. Pricing data reflect an average of multiple measurements over a portion of the period.	
25	e. Pricing data reflect a single point in time.	
	6. Constant quality maintained (Weight = .20)	
	<i>Select a. or b.</i>	
100	a. Rapid changes to product specification are not expected or, if they are, a good method to explicitly quality adjust is in use.	
0	b. Rapid changes to product specification are expected and no explicit quality adjustment method is in use.	0
	Total =	73,75
	Type A point range = over 90	
	Type B point range = 70 to 90	
	Type C point range = less than 70	

ANNEXES

Detailed classification structure and explanatory notes of CPA 2008

Source: Eurostat Ramon

CPA 2008

Code: 81.21.10

Description: General cleaning services of buildings

This item includes: This subcategory includes:

- services consisting of cleaning and maintaining dwellings or commercial, administrative and industrial buildings:

- floor cleaning and waxing
- interior wall cleaning
- furniture polishing
- other janitorial maintenance services, including minor repairs

This item excludes: This subcategory excludes:

- specialised interior cleaning services, such as chimney cleaning, cleaning of fireplaces, stoves, furnaces, incinerators, boilers, ventilation ducts, exhaust units, see 81.22.1

Code: 81.22.11

Description: Window cleaning services

This item includes: This subcategory includes:

- services consisting of cleaning windows in dwellings and other buildings. Included here are cleaning services for exterior windows using swing stages.

Code: 81.22.12

Description: Specialised cleaning services

This item includes: This subcategory includes:

- cleaning services for computer rooms and the like
- cleaning services for industrial machinery
- specialised cleaning services for reservoirs and tanks, these being parts of industrial sites
- sterilisation services of objects or premises (operating rooms)
- exterior cleaning services of buildings of all types, including offices, factories, shops, institutions and other business and professional premises and multiunit residential buildings
- other building and industrial cleaning services n.e.c.

This item excludes: This subcategory excludes:

- cleaning services for agricultural premises (hen houses, piggeries, etc.), see 01.62.10
- maintenance services for central heating installations, see 43.22.12
- building exterior cleaning services when associated with building completion, see 43.39.19
- furnace and chimney cleaning services, see 81.22.13
- cleaning of carpets, upholstery, fabric, wall hangings, etc., see 96.01.19

Code: 81.22.13

Description: Furnace and chimney cleaning services

This item excludes: This subcategory excludes:

- maintenance services for central heating installations, see 43.22.12

Code: 81.29.11

Description: Disinfecting and exterminating services

This item includes: This subcategory includes:

- disinfecting dwellings and other buildings
- disinfecting vehicles, e.g., buses, trains, boats, planes

- exterminating insects, rodents and other pests
- fumigation services and pest control services

This item excludes: This subcategory excludes:

- pest control services (including rabbits) in connection with agriculture, see 01.61.10
- cleaning of agricultural premises (hen houses, piggeries, etc.), see 01.62.10
- impregnation of timber services, see 16.10.91
- asbestos, lead etc. abatement in buildings, see 39.00.14

Code: 81.29.12

Description: Sweeping and snow removal services

This item includes: This subcategory includes:

- runway vacuuming services
- street sweeping and cleaning services
- gritting and salting of roads
- snow ploughing and removal

Code: 81.29.13

Description: Other sanitation services

This item includes: This subcategory includes:

- beach cleaning services

This item excludes: This subcategory excludes:

- pest control services (including rabbits) in connection with agriculture, see 01.61.10
- cleaning services of oil spills and other pollutions in coastal areas, see 39.00
- disinfection and extermination services for buildings and other non-agricultural structures, see 81.29.11

Code: 81.29.19

Description: Other cleaning services n.e.c.

This item includes: This subcategory includes:

- non-specialised cleaning services of: buses, underground and other trains, planes, ships and other transport equipment
- bottle cleaning services
- swimming pool cleaning and maintenance services
- cleaning services of the inside of road and sea tankers
- other cleaning services n.e.c.

This item excludes: This subcategory excludes:

- cleaning of agricultural premises (hen houses, piggeries, etc.), see 01.62.10
- remediation and clean-up services, see 39.00
- building exterior cleaning services when associated with building completion, see 43.39.19
- car cleaning services, see 45.20.30
- cleaning of carpets, upholstery fabric, wall hangings, etc., see 96.01.19