Disclaimer

This sheet is intended for designers, specifiers and other members of construction project teams wishing to reuse this building material or product. It is part of a collection of sheets aimed at bringing together the available information to date that is likely to facilitate the reuse of building materials and products.

This sheet has been produced by Rotor vzw/asbl within the framework of the Interreg FCRBE project - Facilitating the Circulation of Reclaimed Building Elements, supported by the entire project partnership. Sources of information include the experience of reclamation dealers and involved project partners, lessons learned from exemplary projects, available technical documentation, etc.

The sheets have been produced between 2019 and 2021. As the reclamation sector is evolving, some information, notably regarding pricing and availability, may change over the time. When the text refers to European standards, it is up to the project team to refer, if necessary, to their national implementations and local specificities.

It is important to note that the information presented here is not exhaustive or intended to replace the expertise of professionals. Specific questions are always project related and should be treated as such.

The complete collection of sheets (including the introductory sheet) is freely available from different reference websites (a.o. opalis.eu, nweurope.eu/fcrbe, futureuse.co.uk).

Non-exhaustive directories of dealers in reclaimed building materials are available on www.opalis.eu and www.salvoweb.com.

Interreg FCRBE partnership: Bellastock (FR), the Belgian Building Research Institute / BBRI (BE) , Brussels Environment (BE), the Scientific and Technical Center of Building / CSTB (FR), Confederation of Construction (BE), Rotor (BE), Salvo (UK) and University of Brighton (UK).

The information contained in this document does not necessarily reflect the position of all the FCRBE project partners nor that of the funding authorities.

Product description

The use of basins for personal care and hygiene has been demonstrated in many cultures over time. However, it is the progressive development of running water and sewerage infrastructures in major cities during the 19th century which marked the emergence of modern washbasins. Closely connected to these networks, they now occupy a fixed place in buildings.

In the late 19th century to the early 20th century, washbasins are readily covered with a wide variety of patterns. Many manufacturers then offered to customise standard models by offering a wide range of decorative patterns. This taste for ornamentation gradually gave way to models with more refined lines and appearance in the first half of the 20th century.

Today we continue to find a very wide variety of washbasins, characterized by:

→ Their *material*: sanitary ceramics (vitrified porcelain or glazed stoneware), sheet steel, enamelled cast iron, stainless steel or even synthetic materials (acrylic, resins, etc.).

→ Their *fastening system*: suspended, on a column, placed or built into a piece of furniture or a worktop.

→ Their *uses*: domestic or community, one or more tanks.

→ Their *shapes*, *appearance* and *colours*.

→ Their *connections* to the plumbing: presence or absence of an overflow, presence or absence of one or more holes for the taps, dimensions of the drain, manual (plug) or mechanical (pop-up) closure, etc.

This sheet focuses on recent washbasins from domestic and public buildings. Far from being the only models available on the reclamation market (think of antique washbasins, for example), they are still quite common there. Their relative ease of maintenance and durability make them good candidates for reuse. Added to this is the fact that European standards for sanitary fittings have changed little over the past 20 years, making it easier to integrate them into new installations.

By extension, the general principles described in this sheet can also be applied to the reclamation of hand washbasins (small washbasins often intended for WCs), slop sinks (intended for collecting waste or cleaning water) and bidets (intended for washing the genitals while sitting). This sheet does not cover the taps which, depending on the case, can be kept as is, restored or replaced. In general, plumbing components age badly, which is why reclaimed sanitary fixtures are often installed with new plumbing and fittings.

Suspended washbasin: fixed by dowels, suspension brackets or side mounts

Double bowl domestic washbasin

Community stainless steel washbasin

Slop sinks

Washbasin on column : resting on a profiled central support

installed or built-in : in a vanity unit or on a countertop (built-in from above or below)

Product reclamation

Generally easy to dismantle, washbasins can be reclaimed on site or recovered by professional resellers. The interest of resellers in these items will strongly depend on the model, the quantities and the general condition of the lot in question. Large batches of identical parts, such as can be found in public facilities (schools, offices, etc.), are generally appreciated. That said, smaller batches of characteristic pieces can also spark the interest of professionals.

→ *Evaluation of potential*. An "expert eye" generally makes it possible to estimate the potential for keeping and reclaiming during an on-site visit or based on photos and technical information relating to the manufacturer, the model, the dimensions . The focal points will be among others:

- general condition: are the devices damaged (cracks, fissures)? Is the seal compromised? Is the equipment clogged (limescale, mould)? Is the coating layer in good condition?
- the condition of the accessories (drain, column, fixing brackets, seals, etc.) and, if necessary, the possibilities of replacement.
- Commercial interest depending on model, quantity, the potential for keeping or resale, ease of cleaning and maintenance.
- logistics arrangements (deadline, working time, handling, transport, etc.).

→ *Removal*. Careful dismantling should aim to ensure the integrity of the installation, the equipment and its accessories. The water supply should be cut off beforehand. Functional accessories and specific mounting brackets must be properly listed. It is advisable to document the fixing principle in order to facilitate refitting. The washbasins will be sorted by qualities, colours and dimensions. They are packaged in such a way as to avoid bumps and breakage. For example: storage on the side and on a flexible support, avoid support points on non-dismantled taps and use interlayer protections.

Removal of washbasins for reclamation

→ *Storage*. The items are best stored away from water and dust.

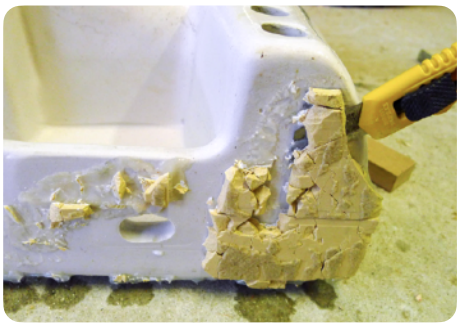
→ *Treatments/maintenance/cleaning*. in general, used washbasins are sold without any treatment other than surface cleaning with a weak acid (for example: vinegar) for traces of limescale and classic degreasing products. Any traces of putty and mortar are removed. It is advisable not to use abrasive products or metal objects to remove dirt, as this may damage the surface layer.
Some professionals offer deep cleaning and disinfection of ceramic equipment, in order to remove tough deposits (such as limescale, mortar, paint, putty). After removing the metal accessories, the devices are soaked in an acid solution before being pressure washed and rinsed.
If superficial blows affect the glaze layer, it is possible to carry out spot repairs. Ready-to-use kits are readily available on the market.

→ *Transport and delivery*. the necessary precautions must be taken during transport and delivery in order to limit knocks and scratches (interlayer protection, corner protectors, strapping of pallets, etc.).

It is advisable to involve specialised professionals to ensure the smooth running of these operations.

Reclamation supplier showroom

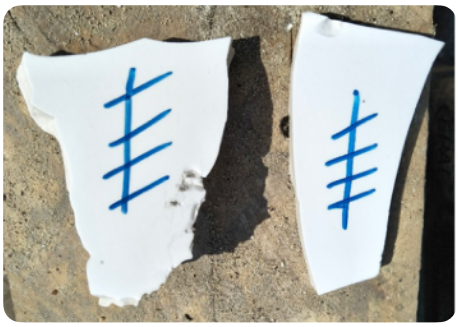
Slop sink before and after thorough cleaning



Removal of adhesive remains

Checking the condition of the glaze

It is possible to test the condition of the glaze layer using an alcohol marker: if it is easily erased, the glaze is still in good condition, otherwise the glaze has probably become "porous".



*"Porous" glaze **vs** glaze in good condition*

Applications and installation

The reuse of reclaimed washbasins is no different from that of new washbasins. It raises the same points for attention, in particular: properties and condition of the wall support, installation height, adaptability to people with reduced mobility (PRM), installation and grouting products and techniques, connections and plumbing, gaskets, valves, installation deadlines, costs, specific maintenance, etc.

In all cases, reference should be made to the European and national standards relating to the product (EN 14296 and EN 14688) and to the rules of practice in force (or implementation standards). To facilitate installation, the designer/specifier will take care to use washbasins having the following characteristics.

→ *Types and dimensions*. It must correspond to the expressed needs. Leaving some latitude on the dimensions generally makes it easier to find a batch on the reclamation market.

→ *Condition*. Reclaimed washbasins must not have any major cracks or breaks likely to damage the watertightness of the bowl. Slight alterations such as signs of surface wear, traces of scale or stains, however, do not affect the watertightness of the bowl.

→ *Accessories*. in the event of worn or defective parts, it is necessary to ensure the compatibility of the reclaimed washbasins with the taps and spare parts (new or used), namely: plug, mechanical trap, pop-up mechanism , specific fixing means, connections, shut-off valves and rosettes, external overflows, drain and strainer or even drain fittings with siphon. Having the technical documentation of the original part can facilitate this work. Most professional sanitary ware dealers are able to offer compatible accessories.

Caution is advisable in the event of change of installation method. For example, most wall-mounted washbasins have not been glazed on the back side and are therefore not suitable for use as a top-mounted washbasin.

Most of the reclaimed building products are sold as is. The conditions of sale may however contain special guarantees specific to the material. Some suppliers are able to indicate the origin of the product and/or provide documentation on the product purchased (for more information, see the introductory sheet). For recent equipment, it is generally possible to find the original technical documentation using the make and model.

Design tip!

Changes to the tap system are possible but must be precisely described to the operators. For example, it is feasible to switch from a system with separate inlet to a mixing valve system. It is then necessary to provide hole covers to block the unused fixing locations.

Washbasins reuse. Private project (BE) © Sophie Boone

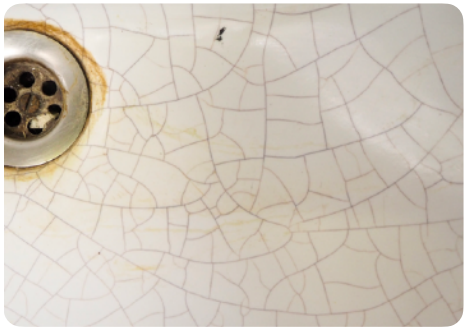
Washbasins reuse. Chiro Itterbeek (BE) © Rotor

Reuse of slop sinks, Bar Mono Le Terrain Vague, Paris (FR) © FAIRE AVEC architecture

Characteristics an fitness for use

The harmonised European standard EN 14688 EN 14296 establishes the relevant characteristics (depending on the context) in order to determine the fitness for use of washbasins for domestic and community use. Although detailed for new products, these characteristics may prove useful in considering the specific case of reclaimed washbasins.

Characteristics	Comments
Load resistance	This characteristic determines the solidity of suspended or column equipment during use "according to the manufacturer's instructions". In the case of reclaimed washbasins, it is possible to test this performance under installation conditions (in the absence of instructions from the supplier, refer to the expertise of a plumber!) by applying a static load (for example: 2 bags of 50 kg placed on top of the standard-sized washbasins for 1 hour). The washbasins must not crack, collapse or exhibit a permanent deformation that would prevent the drainage of water. For bidets, a load resistance of 400 kg (~ 4 kN) for 1 hour should be considered.
Water drainage	The bottom of the bowl of the equipment must have a shape suitable for draining water without stagnation when the plughole is open. This can be checked by pouring water into the basin of the sinks in use. This feature could also be applicable to the rim of the washbasin (for example at the level of the integrated soap dishes).
Resistance to temperature variations	Sanitary appliances must withstand thermal shock (change in water temperature). Experience has shown that washbasins made of sanitary ceramic, stainless steel, enamelled steel and glass meet this requirement.
Chemical resistance	The surface of sanitary equipment must be resistant to common chemicals and cleaning products. Experience has shown that washbasins made of sanitary ceramic, stainless steel, enamelled steel and glass meet this requirement. Note that the use of bleach (and chlorinated products in general) is particularly not recommended for stainless steel equipment.
Abrasion and scratch resistance	This characteristic is mainly applicable to equipment made from synthetic materials (e.g. acrylic). In the case of reclamation, we can estimate that equipment which has already been used AND which does not have any abrasion/scratch (AND which one plans to re-use under similar conditions of use) has in a way shown its ability to withstand these stresses. This deduction can be assessed following a visual or detailed examination.
Suitability for cleaning	This characteristic is mainly related to the surface appearance, to the shape and to the properties of the material constituting the equipment. In general, shapes with sharp edges are less easy to clean. Likewise, porous materials (certain stones, cement) are more prone to deposits. Finally, wear defects such as chips in the glaze can also complicate cleaning. Careful visual inspection of surfaces can already give a valuable indication of cleanability. If necessary, some small imperfections can be repaired.
Overflow protection	The presence of an overflow must allow water to drain, without overflowing, when the main drain is closed. The capacity of the overflow therefore depends on the inlet rate. This capacity can be checked when in use. In the absence of an overflow, it is recommended to ensure that the discharge device remains open at all times.



Crackling or *crazing* *is the phenomenon responsible for the appearance of a set of hairline cracks in the glaze. These can lead to the penetration of liquids inside the fissure, causing the appearance of lasting stains and causing the development of pathogens. It is therefore advisable to discard equipment with this defect.*

Embodied carbon (Cradle to gate - production A1-A3)	kg CO_2 eq./PU	kg CO_2 eq./kg
INIES database (FR) – Generic data– glazed ceramic *	104,0	-
INIES database (FR) - AFISB collective data - white porcelain **	62,0	2,1
INIES database (FR) – Generic data– enamelled steel ***	68,8	-
INIES database (FR) – Generic data– synthetic material ****	54,6	-

** Indicative value for PU (Product Unit) = Standard range washbasin in glazed ceramic for a reference life of 20 years. Taps and drainage products are not included.*

*** Indicative value for PU (Product Unit) = Standard range pedestal washbasin 50 to 70 cm wide, in porcelain (~ 30 kg) for a reference lifespan of 20 years. The taps are not included.*

**** Indicative value for PU (Product Unit) = Built-in enamelled steel washbasin for a reference lifespan of 20 years. The taps are not included.*

***** Indicative value for PU (Product Unit) = Built-in acrylic washbasin (8 kg) for a reference life of 20 years. The taps are not included.*

According to the sources, reusing a standard range washbasin prevents the equivalent production of ~ 55 to ~ 104 kg of CO_2 related to the manufacture of new washbasins (production phase only). This corresponds to a journey of ~ 328 to ~ 624 km in a small diesel car.

Availability

Ceramic washbasins are a very common product in the reclamation market. However, availability depends on the quantities required. As an example:

Frequent	Batch of 1 piece
Occasional	Batch of 2 to 10 identical pieces
Rare	Batch of > 10 identical pieces

To increase the chances of meeting the offer available on the reclamation market, the designer/specifier can choose to split large surfaces into smaller quantity batches (for example, by providing different models in each room).

Indicative prices (Excl. tax)

Random sampling of the reclamation market in Western Europe (Belgium, France, Great Britain and the Netherlands) made it possible to extract some indicative prices. These vary depending on the models, materials and original manufacturer. Designer washbasins, pedestal washbasins with clean lines from the 1950s, colourful hand basins from the 1970s are very popular.

Some prices:

- Cost of supplies: 20 to 200 €/item for standard range models
- Removal cost: around 40-50 €/item
- Cleaning service: 10-20 €/item

At these prices, it is sometimes advisable to provide for a supplement for the replacement of the seals, the taps or certain accessories as well as for cleaning or descaling.

Illustrated manual for removing washbasins and taps: https://reuse.brussels/nl/lavabos-et-robinetterie/ (In French)

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