

# Quality requirements and tolerances of the ceramic washbasins

Integrated flush-mounted washbasins meet the applicable general standards, current standards and regulations and standards regarding dimensions, functional properties and requirements. The manufacturing company reserves the right to make any modifications to the washbasins that may prove necessary, without altering the main essential product and packaging specifications.

## **1. Dimensions - standard**

**UNI EN 31 + UNI EN31/A1:** Washbasins – connecting dimensions

## **2. Functional requirements**

**UNI EN 14688:** Sanitary appliances - Washbasins – Functional requirements and test methods

**UNI EN 274:** Outlet systems for sanitary appliances - Test methods

## **3. Regulations / DOP / CE Marking**

The products meet the requirements of the Product construction Regulation (**EU 305/2011**) and the Product Safety Act (ProdSG). A proper **performance statement (DOP)** meeting the regulation is issued for the products.

The **CE marking** on the product is based on the performance declaration (**DOP**) and **it is applied** permanently, directly to the product in a prominent spot, together with all relevant informations.

## **4. Quality requirements**

### ***a. Colour***

The color of the surface material corresponds to that of the samples with a shade tolerance  $L_{A_B} < 2$ . A uniform color is applied to the entire surface, edges and technical holes. The lower part of the washbasin is completely enamelled. The bottom of the outlet connection may be an exception due to manufacturing processes.

**b. Surface**

In the critical areas **A and B**, the following defects can't be detected:

- ❖ Visible cracks
- ❖ Air bubbles and holes
- ❖ Discoloration and shade differences
- ❖ Cold repair or retouched areas
- ❖ Tactile defects
- ❖ Visible orange peel effect
- ❖ Scratches of the enamel, pressure marks

The washbasin is packaged clean and free from any residual dirt; however, it may have dust residues due to the industrial production process. The surface gloss level in zones A and B does not differ. After unpacking the basin, any packaging residues that can be removed by simple cleaning can be identified on the surface - e.g., glue, stickers.

**▪ Zone A (critical)**

There are no stains, cavities or impurities, black dots, scratches on the enamel and open pores larger than 1mm. Pinpoints with a diameter of less than 0.5mm in which dirt does not accumulate if at less than 30cm one from the other. Four small defects (spots, cavities or impurities, black dots and open pores) are permitted if they are less than 0.5mm in diameter, at least 30cm one from the other and barely visible at a distance of 70cm under normal light conditions.

**▪ Zone B (semi-critical)**

Four minor defects smaller than 1.5mm and 2 types of cold repairs are allowed. The repaired areas have the color in line with that of the enamel and are well filled. Any air bubbles are permitted if with a diameter of less than 10mm and if they are not present in the first 40mm in the outer edge area.

**▪ Zone C (non-critical)**

Four minor defects smaller than 1.5mm and 2 types of cold repairs are allowed. The repaired areas match color of the enamel and are well filled. Any air bubbles are permitted if with a diameter of less than 10mm and if they are not present in the first 40mm in the outer edge area.

***c. Undulating surfaces***

There are no bumps and dents visible from a distance of 70cm at different angles and under normal lighting conditions.

***d. Inspection methods***

Visual inspection and quality control must be performed by qualified personnel directly on the sink, under normal lighting conditions and from several angles, using test and measuring equipment.

***e. Test and measuring equipment***

Ruler, steel ruler, folding meter, tape measure, spirit level, pliers, goniometer, thickness gauge, standard mixer with discharge unit, overflow or clou system, valve filter.

***f. Flow characteristics/flush volume – water***

Water must flow from the drain without leaving bildups. Residual water surrounding the basin or present on the mixer's surface must not flow outwards or inwards. These surfaces are designed to stay horizontal position along their length and depth. The drainage capacity of the overflow complies with the applicables standards.

***g. Edge surface– corner***

The edge surfaces are slightly beveled. There are no flaws, bumps, dents or air bubbles on the bottom surface of the edge (or on the corners). Corners are regular in shape and of equal size. The vertical corners of the edges are finished to avoid sharp edges.

***h. Cracks***

There are no cracks in the enamel or in the sublayer independently of the zones A. B or C. Occasionally, hairline cracks in the enamel are allowed in teh zone C if not longer than 5cm and if present on the enamel only.

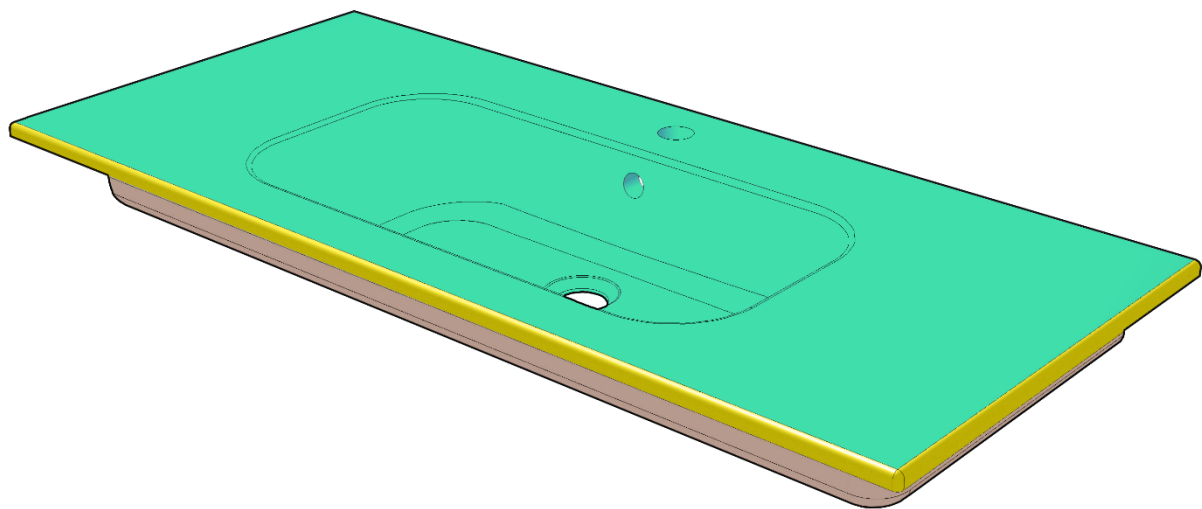
## 5. Monitoring areas



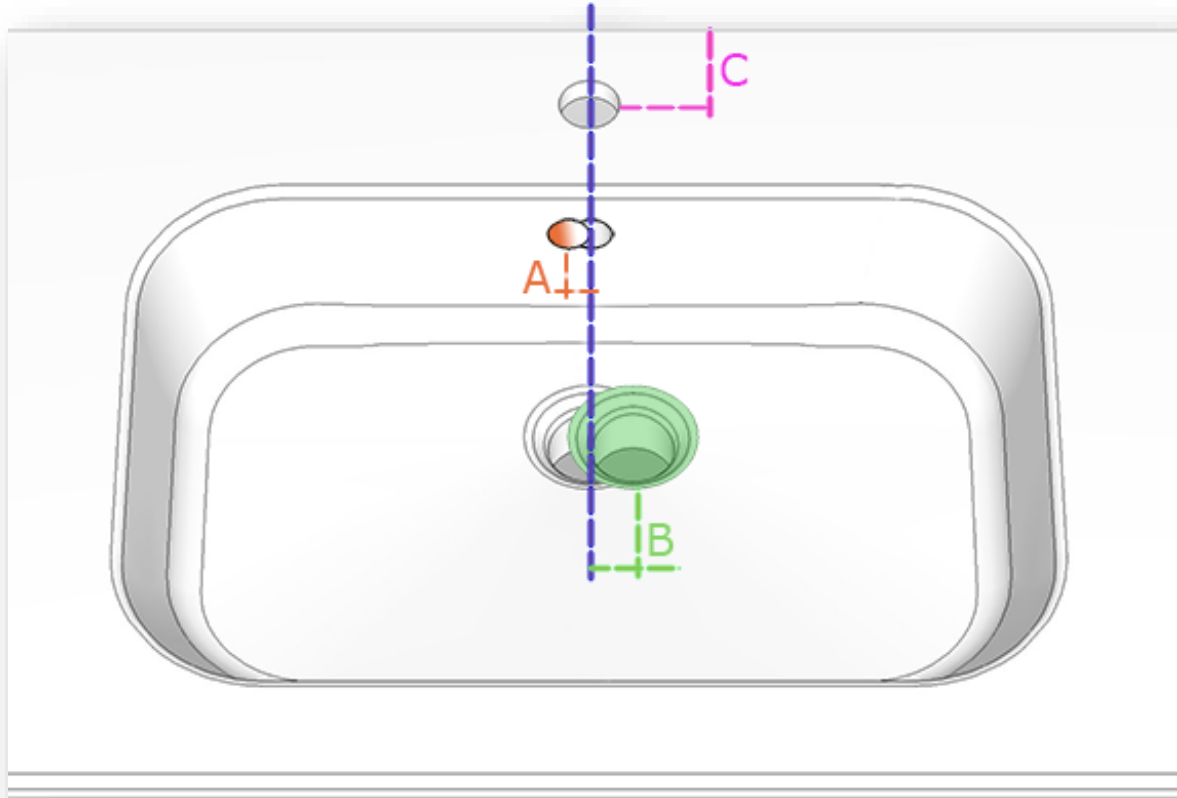
**Zone A** – (critical)

**Zone B** – (semi-critical)

**Zone C** – (non-critical)



## 6. Tolerances – misalignment of the holes

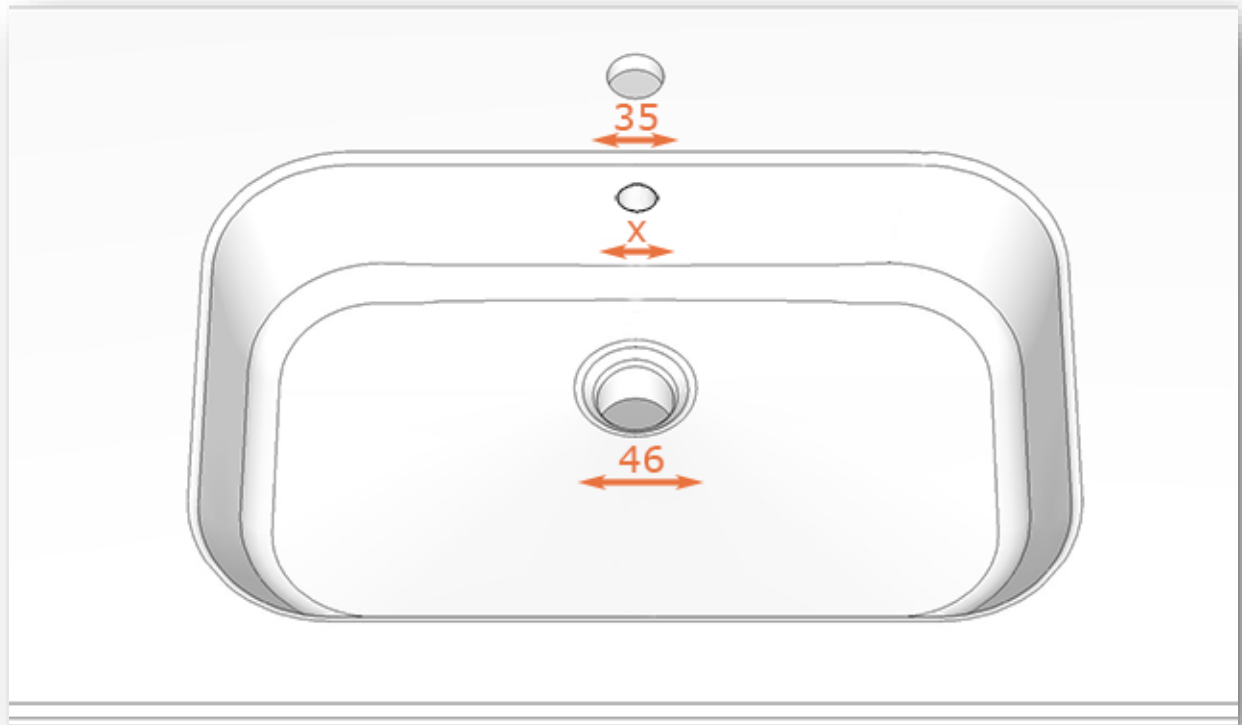


The misalignment between the holes must be checked along the axis perpendicular to the rear edge. In the table below are listed the tolerances of the misalignment referring to different elements.

The connection dimensions of the basin match the regulation UNI EN 31.

1° element	2° element	Tolerance
Overflow hole [A]	Mixer hole	$\pm 2\text{mm}$
Drain hole [B]	Mixer hole	$\pm 4\text{mm}$
Rear edge [C]	Mixer hole	$\pm 2\text{mm}$

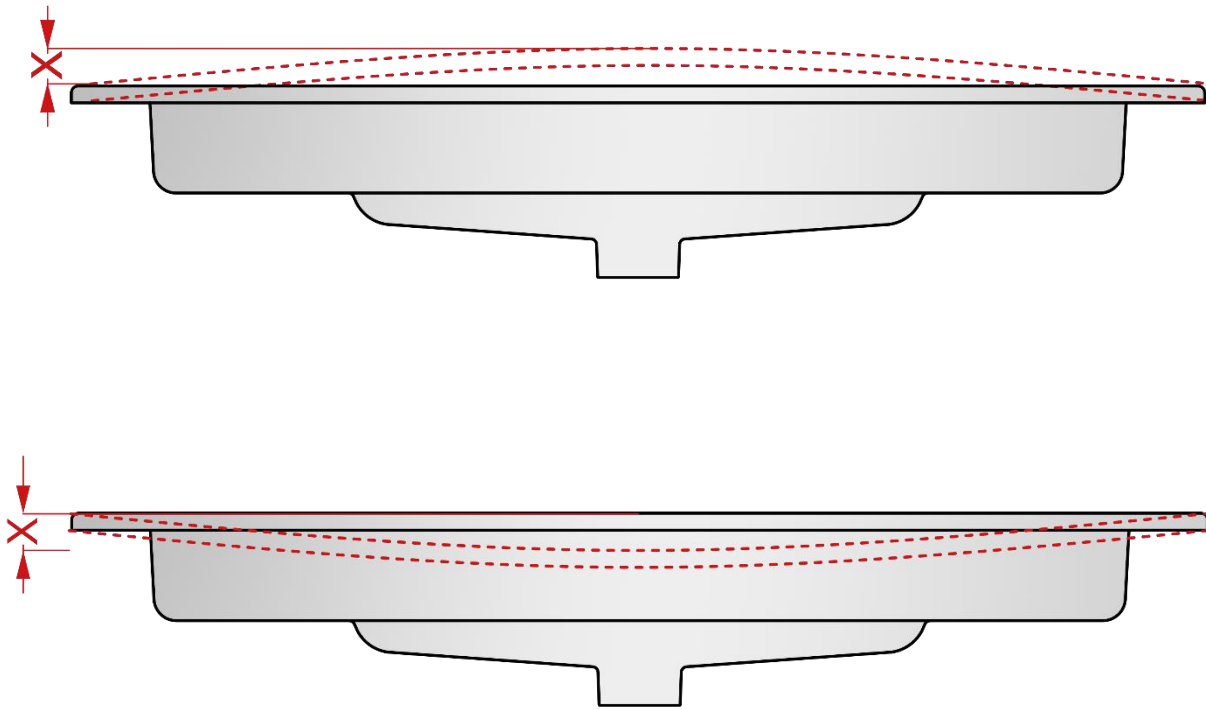
## 7. Diameters - Tolerances



The tolerances in regard to the diameter of the different holes in the basin are listed in the table below.

Type of hole	Diameter	Tolerance
Overflow hole	Ø variable	+1 / -0 mm
Mixer hole	Ø 35 mm	+2 / -1 mm
Drain hole	Ø 46 mm	+2 / -3 mm

## 8. Deformation of the front edge

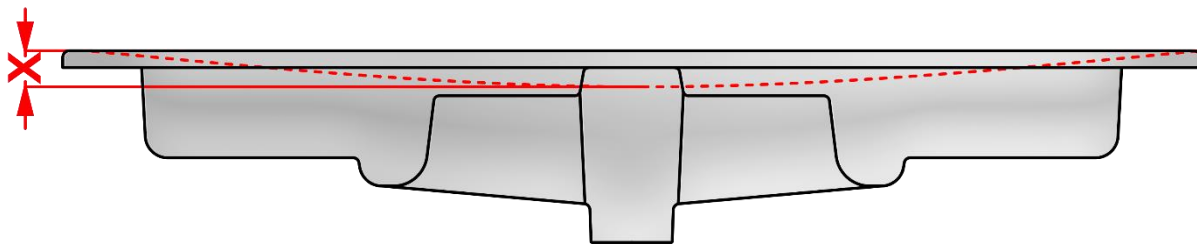
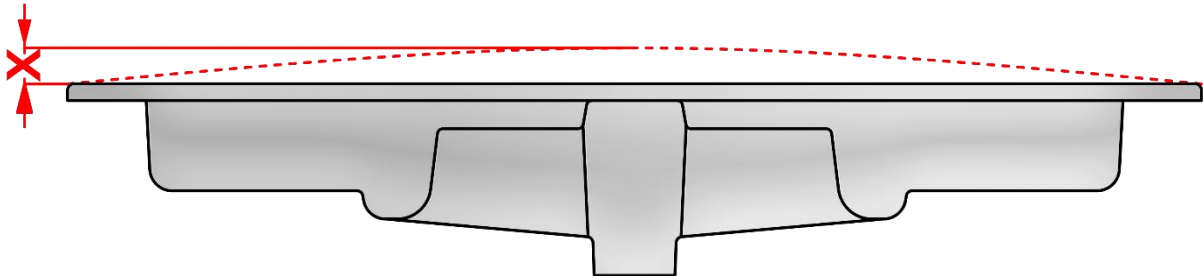


The tolerance relating to the deformation of the front edge, both downwards and upwards, is indicated in the table below. It is variable according to the variation of the basin's length.

Basin length	Value of X
$\leq 90$ cm	max 3 mm
$> 90$ cm $< 125$ cm	max 4 mm
$\geq 125$ cm	max 5 mm



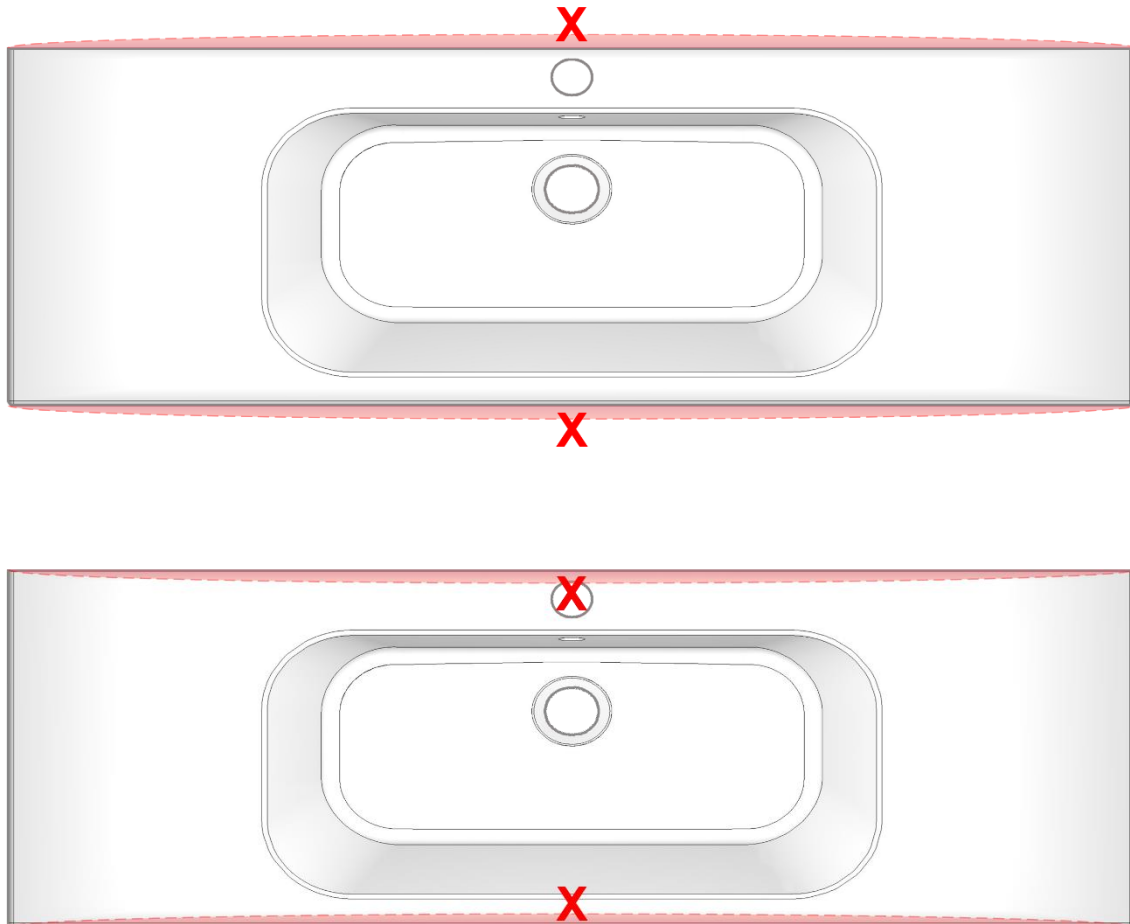
## 9. Deformation of the rear edge



The tolerance relating to the deformation of the rear edge, both downwards and upwards, is indicated in the table below. It is variable according to the variation of the basin's length.

Larghezza lavabo	Valore di X
$\leq 90$ cm	max 3 mm
$> 90$ cm $< 125$ cm	max 4 mm
$\geq 125$ cm	max 5 mm

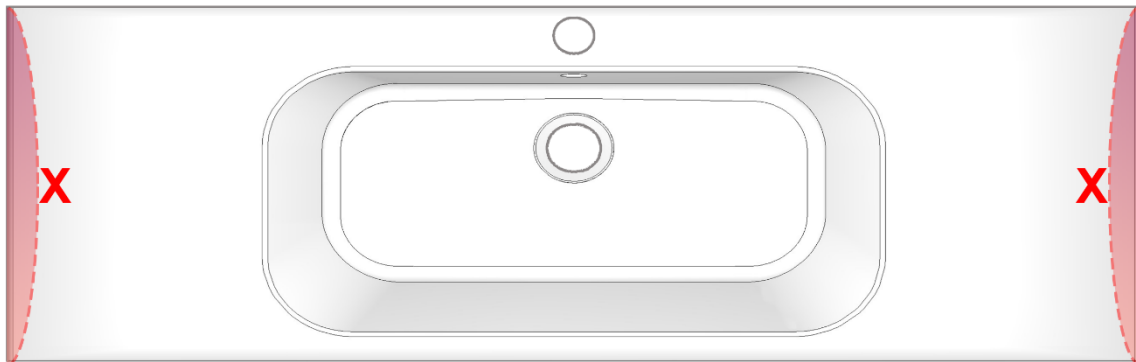
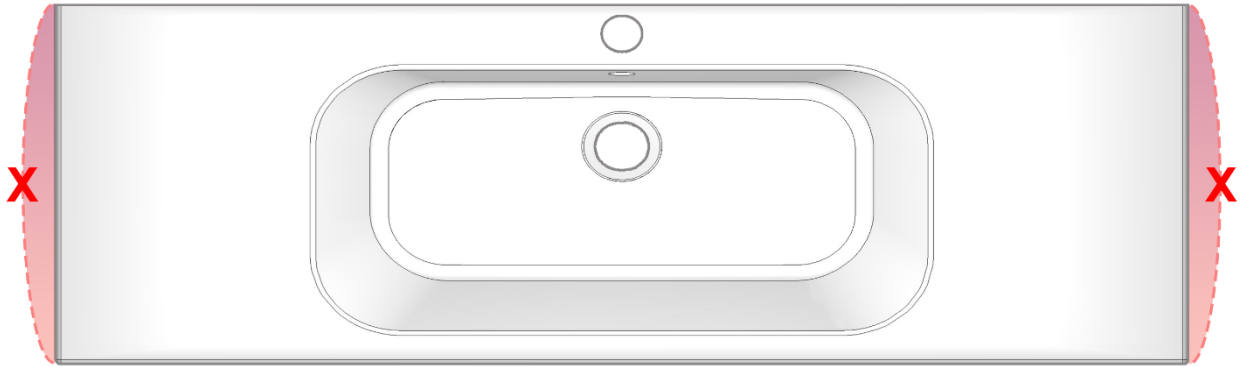
### 10. Curvature of rear and front edge



The tolerance relating to the deformation of the front and rear edge, both inwards and outwards, is indicated in the table below. It is variable according to the variation of the basin's length.

Basin length	Value of X
$\leq 90$ cm	max 3 mm
$> 90$ cm $< 125$ cm	max 4 mm
$\geq 125$ cm	max 5 mm

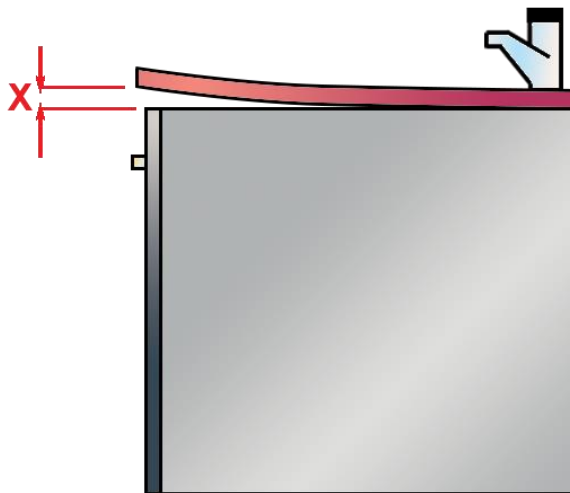
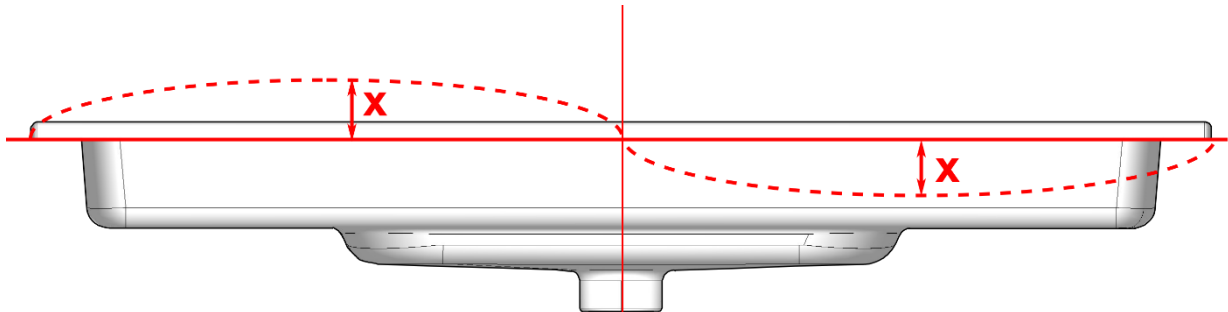
### 11. External curvature inwards/outwards of the side edges



The tolerance relating to the curvature inwards/outwards of the side edge, is indicated in the table below. It is variable according to the variation of the basin's length.

Type of deformation	Value of X
External curvature	<b>max 2 mm</b>
Internal curvature	<b>max 2 mm</b>

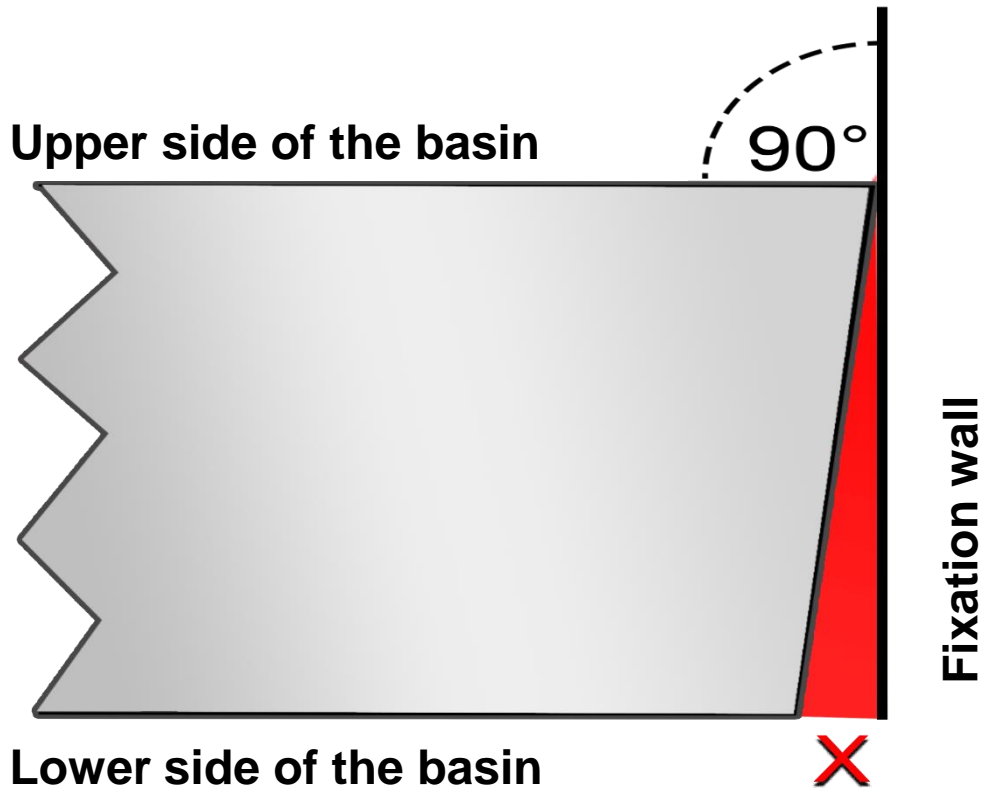
## 12. Bending of the front edge



The tolerance related to the bending of the lower edge compared to support stand is indicated in the table below. It is variable according to the variation of the basin's length.

Basin length	Value of X
$\leq 90$ cm	$\pm 1.5$ mm
$> 90$ cm $< 125$ cm	$\pm 2.5$ mm
$\geq 125$ cm	$\pm 4$ mm

**13. Wall fixing angle**



The tolerance related to the distance of the lower edge of the basin with regard to the fixation wall doesn't vary with the length of the basin.

Considered side	Value of X
Upper side of the basin	0 mm
Lower side of the basin	max 3 mm

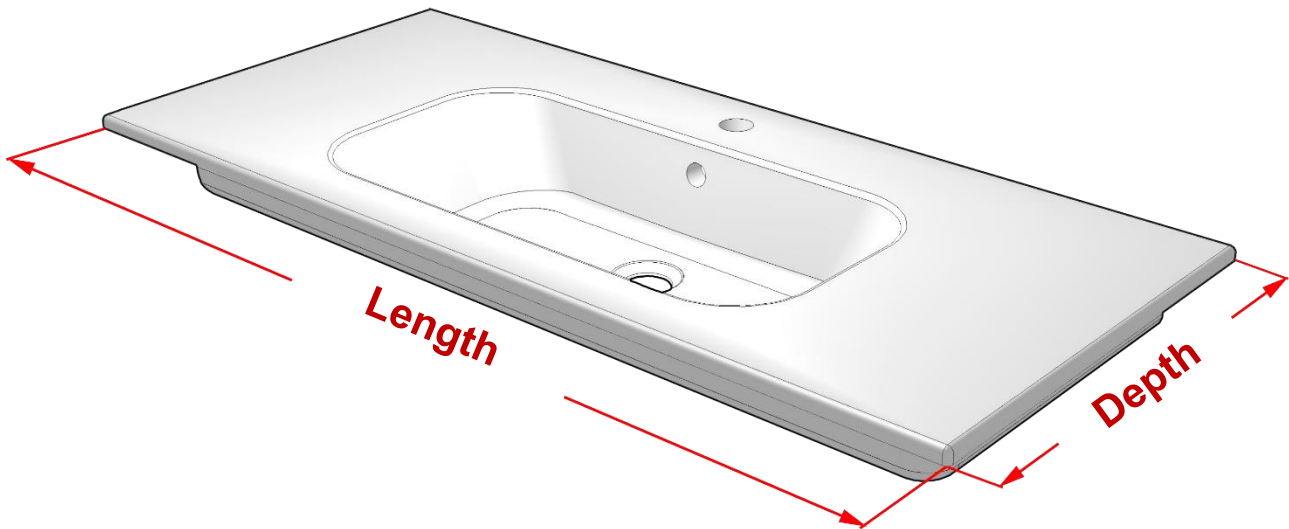
## 14. Thickness tolerance



The tolerance related to the thickness of the basin's edge is indicated in the table below. It varies on the base of the total thickness of the basin's edge.

Thickness of the basin	Tolerance related to the X-Value
$\leq 25$ mm	max 3mm
$> 25$ mm $< 50$ mm	max 4mm

### 15. Tolerance of length and depth



The tolerances related to length and depth of the ceramic basin, are indicated in the table below. They vary on the base of the variation both in length and depth.

Nominal Size	Tolerance Length	Tolerance Depth 51,5	Tolerance Depth 45
61 cm	+6 / -5 mm	+4 / -2 mm	+5 / -3 mm
71 cm	+6 / -5 mm	+4 / -2 mm	+5 / -3 mm
81 cm	+6 / -5 mm	+4 / -2 mm	+5 / -3 mm
91 cm	+7 / -5 mm	+4 / -2 mm	+5 / -3 mm
106 cm	+10 / -6 mm	+4 / -2 mm	+6 / -3 mm
121 cm	+10 / -6 mm	+4 / -2 mm	+6 / -3 mm
121 double	+10 / -6 mm	+4 / -2 mm	+6 / -3 mm
141 cm	+10 / -6 mm	+4 / -2 mm	+6 / -3 mm