

# Recommendations for Hand Hygiene Sink Requirements

**Note:** These recommendations are intended to be used with and supplement the Healthcare Facility Design Recommendations.

If you have any questions or comments contact IPC at [ipcsurvstdadmin@ahs.ca](mailto:ipcsurvstdadmin@ahs.ca).

## Best practice recommendations

Appropriate sink and faucet size, composition, and design will help minimize contamination of surrounding areas - due to splash or aerosolization - and re-contamination of hands during hand hygiene through inadvertent touching of components.

### 1. Product evaluation

AHS and Covenant Health staff responsible for purchasing new sinks and faucets for handwashing should follow these recommendations. Infection Prevention and Control should be consulted when evaluating and purchasing new sinks and faucets. This will ensure that products purchased do not increase the potential for transmission of infectious agents to patients or staff. If additional guidance or clarification is required, IPC personnel in the applicable facility or zone should be contacted.

### 2. Definition

**Hand hygiene sink (HHS):** A sink that is designed for effective and efficient cleaning of the hands while restricting splashes and the spread of aerosols, and that is dedicated exclusively for the purposes of hand hygiene.

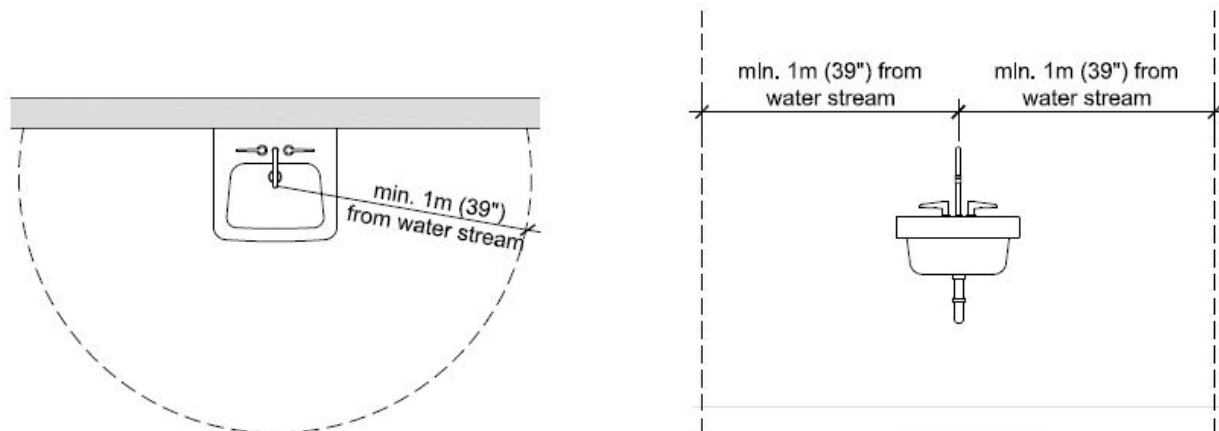
**Note:** A handwashing station includes a hand hygiene sink, soap dispenser, paper towel dispenser and waste receptacle. <sup>(1)</sup>

### 3. Installation of handwashing stations

- Hand hygiene sinks shall be wall-mounted and not inserted into or immediately adjacent to a counter. <sup>(1)</sup>
- Hand hygiene sinks shall be installed at least 865 mm (34 in.) above the floor. <sup>(1)</sup> For barrier-free requirements, see Section 10.
- Due to the risk of splash, sinks shall be located at least 1 metre (39 in.) from patients, clean supplies, adjacent counters, <sup>(1)</sup> from curtains, and from sources of extrinsic contamination such as clinical rim flushing sinks or hoppers.

**Note:** The 1 metre distance is measured from the water stream horizontally.

**Figure 1 – One meter splash zone**



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- If the existing footprint does not allow a 1 metre (39 in.) distance, a splash barrier shall be used.<sup>(1)</sup>
- Seamless backsplashes are required behind the basin and on adjacent wall surfaces to contain splashing, reduce microbial growth, and facilitate cleaning. All edges shall be sealed with a waterproof barrier. Backsplashes shall extend a minimum 600 mm (24 in.) above sink level and shall extend to meet the floor coving. Backsplashes shall include the area under the papertowel dispenser and soap dispenser.<sup>(1)</sup>
- A mounting height of 1200 mm (47 in.) from floor to point of dispensing, for paper towel dispensers and soap dispensers meets requirements for both standing and wheelchair users. For more information refer to AHS document “Ergonomics Best Practices - Mounting Heights for Hand Hygiene Products and Sharps” (Refer to AHS Insite>Home>Teams> Human Resources>Working Safely (WHS)>Resource Index (A - Z)>Ergonomics>Ergonomics Resource Library>Mounting Heights for Hand Hygiene Products and Sharps).<sup>(5)</sup>
- To minimize splashing, water pressure should be adjusted to reduce forceful discharge at maximum flow.<sup>(3)</sup>
- Adequate drainage flow rate shall be provided to ensure the removal of soap residue.<sup>(1)</sup>

For a listing of healthcare areas where hand hygiene sinks are required, refer to the Hand Hygiene Section in the “AHS IPC Health Care Facility Design Recommendations”.<sup>(4)</sup>

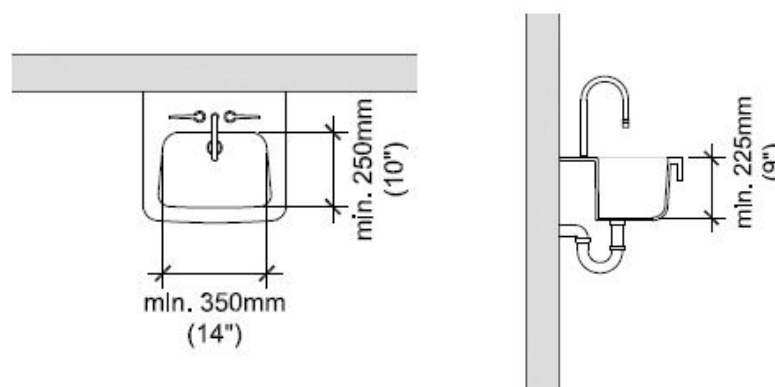
### 4. Selection criteria for basins

Design requirements for hand hygiene sink basins include the following:

- The sink should have a basin depth of at least 225 mm (9 in.) to prevent splashing of surrounding areas<sup>(1)</sup> and to prevent bumping of hands while performing hand hygiene.
- The minimum inside sink basin dimensions should not be less than 350 mm (14 in.) by 250 mm (10 in.) to minimize contact and to prevent recontamination (from splashing) during use.<sup>(1)</sup> For oval designs, and designs with rounded corners, these distances should be measured at the widest point.

**Note:** Adequate clearance for handwashing mitigates the risk of contaminating the hands through inadvertent touching of sink and fixtures.

**Figure 2 – Basin dimensions**



- The front to back dimension of the sink basin shall allow easy reach to faucet blade handles and soap dispenser.

- The sink basin shall be made of solid, non-porous materials, (e.g., porcelain, enamel, vitreous china, or 18 gauge or thicker stainless steel) <sup>(1)</sup> and shall be scratchresistant.
- Porous materials (e.g., granite or marble) shall not be used.<sup>(1)</sup>
- Inside contour of basin should allow for easy cleaning and maintenance.
- The drain shall be offset from the faucet and water flow. When water falls from the faucet it shall not flow directly into drain as this causes splashing.<sup>(1)</sup>
- Basin rim shall be of minimum width and sloped to the inside of the basin to prevent the placement of objects on the rim.<sup>(1)</sup>
- Basin shall be designed to prevent pooling of water.
- Sink basin shall not have an overflow.<sup>(1)</sup>

**Note:** Overflows are difficult to clean and become contaminated very quickly, serving as reservoirs of bacteria. <sup>(1)</sup>

- Sink drain shall not be able to take a plug. Strainers shall not be used.<sup>(1)</sup>

**Note:** Fine mesh strainers can easily become contaminated with bacteria <sup>(1)</sup> Open grid strainers are acceptable. <sup>(2)</sup>

- Traps shall be metal. Gaskets at the sink/drain connection shall be plastic or neoprene. Natural rubber gaskets shall not be used. Trap size shall be 40 mm (1.5 in. indiameter.)<sup>(1)</sup>

**Note:** Trap size affects drainage time and water flow time.<sup>(1)</sup>

### 5. Selection criteria for faucet fixtures

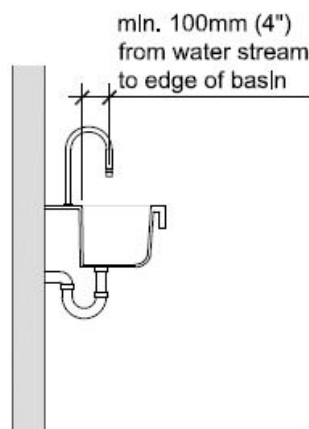
Proper fixtures for dedicated hand hygiene sinks, when combined with an acceptable basin design, minimize contamination of surrounding area through splash and aerosolization. Adequate clearance for handwashing mitigates the risk of contaminating the hands through inadvertent touching of sink and fixtures.

Criteria for selection of faucets include the following:

- Shall provide suitable clearance between water flow and sides of the basin to avoid bumping. A minimum distance of 100 mm (4 in.) is recommended.

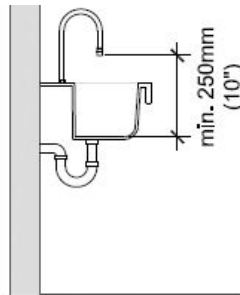
**Note:** A gooseneck faucet radius of 100 mm (4 in.) is not sufficient, as the actual clearance will be less due to where the faucet is mounted.

**Figure 3 – Faucet clearance**



- The distance between the water discharge point of the faucet to where it touches the basin shall be at least 250 mm (10 in.).<sup>(3)</sup>

**Figure 4 – Discharge distance**



- Faucets shall be stationary and not swivel.<sup>(1)</sup>
- Faucet mouth shall not pool water.
- All faucets shall be equipped with non-aerated splash-free, laminar flow devices.<sup>(2)</sup> Faucets shall not have aerators/modulators/rose sprays.<sup>(1)</sup>

**Note:** Aerators can easily become contaminated with bacteria.<sup>(1)</sup>

- Hands free operable controls (e.g., electric eye, foot pedal) or faucet blade controls shall be used<sup>(1)</sup> and the following specifications apply:
  - A means shall be provided to control the water temperature.<sup>(1)</sup> Optimal water temperature should be achieved quickly since cold water leaves soap residue.
  - If an electronic sensor is used, faucet shall be capable of operating during power failures.<sup>(1)</sup>
  - When an electronic sensor is used:
    - There shall be sufficient clearance between position of hands (when triggering water flow) and the faucet mouth to avoid bumping.
    - Hand position shall be level with sink rim or below to minimize splashing.
  - If faucet blade controls are used:
    - Blade handles shall be no less than 150 mm (6 in.) in length.<sup>(1)</sup>
    - Blade handles shall not interfere with handwashing when faucet blade controls are in the open position.

### 6. Soap dispensers

- Liquid soap dispensers shall be mounted to permit unobstructed access to minimize splashes or drips onto adjacent wall and floor surfaces, and shall be placed to prevent splash-up contamination.<sup>(1)</sup>
- The soap dispenser shall be mounted within easy reach, considering the overall dimensions of the sink.
- Lotion and alcohol-based hand rub (ABHR) dispensers shall be clearly labelled and physically separate from a hand hygiene sink to avoid confusion of products.<sup>(1)</sup>

### 7. Selection criteria for hand drying fixtures

- A dispenser for single use paper towels shall be provided.<sup>(1)</sup> A “no touch” design is preferred and should operate so that only the towel is touched when dispensing.
- Air hand dryers shall not be used in patient care areas.<sup>(1)</sup>
- Air hand dryers are only permitted in public washrooms with a hands-free entrance outside of patient care areas.<sup>(1)</sup>

### 8. Waste receptacles

- A waste receptacle shall be in close proximity to the hand hygiene sink.<sup>(1)</sup>
- To avoid recontamination of hands, paper towels should be available to use on the exit door hardware and a waste receptacle for used towels should be located near the exit door.<sup>(1)</sup>
- Waste receptacles shall be a corrosion free material and wide mouth design.<sup>(1)</sup>

### 9. Cleaning and disinfection of handwashing station

All components of a handwashing station (basin, faucet, paper towel dispenser, soap dispenser, waste receptacle) shall be able to withstand frequent cleaning with low level disinfectants currently provided and used in AHS and Covenant Health facilities.

### 10. Barrier-free handwashing stations

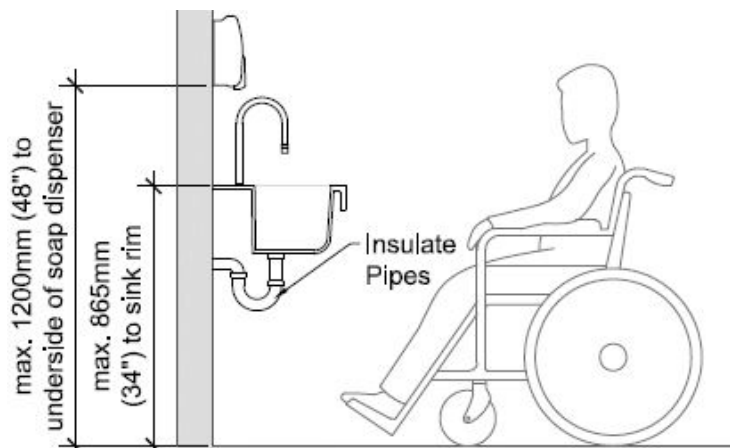
The following are specific requirements for hand hygiene sinks that are accessible to persons in wheelchairs:

- Minimum knee clearance: The distance from the floor to the bottom of the basin should be 685 mm (27 in.). This distance is measured at a point 205 mm back from the frontedge.
- The standard barrier-free sink rim height is 865 mm (34 in.)<sup>(6)</sup>, which is only achievable with a shallower basin. For installation of hand hygiene sinks using a basin depth of 230 mm (9 in.), minimum sink rim height is 915 mm (36 in.).
- Maximum height for dispensers shall be 1200 mm (47 in.)<sup>(6)</sup>
- The soap dispenser shall be mounted in an accessible location (i.e., easy to reach from front to back or side).
- Controls shall be automatic.<sup>(6)</sup>
- Exposed parts of hot water and drain pipes shall be insulated or guarded.<sup>(6)</sup>

**Note:** Some shrouds can interfere with leg clearance. If pipes are insulated, a person can move in closer by placing their legs on either side of the pipes.

- Adequate clear floor area, and knee and toe clearance below the basin shall be provided. Refer to Alberta Safety Codes Council - Barrier-Free Design Guide.<sup>(6)</sup>

**Figure 5 – Barrier-free and washing station**



### 11. Summary of key requirements for basins and faucets

Specifications			
✓	<b>Basin</b>	<b>Metric</b>	<b>Imperial</b>
	Basin dimensions (min.)	350 x 250 mm	14 x 10 in.
	Basin depth (min.)	225 mm	9 in.
	Solid, non-porous material		
	Offset drain from water flow		
	Rim – min. width and sloped inside so no objects can rest on it		
	Shaped to prevent pooling of water		
	No overflow, strainers, not able to take a plug		
	Metal traps; 40 mm (1.5 in.) in diameter		
	Plastic or neoprene gaskets (not rubber) at sink/drain connection		
✓	<b>Faucet</b>	<b>Metric</b>	<b>Imperial</b>
	Discharge distance (min.)	250 mm	10 in.
	Faucet – distance between basin & water stream (min.)	100 mm	4 in.
	Blade handle length (min.)	150 mm	6 in.
	Blade handles cannot interfere with handwashing when in the open position		
	Faucets must be stationary; cannot swivel		
	Non-aerated, splash-free laminar flow devices		
	Hands free operable controls (e.g., electric eye, foot pedal) or faucet blades; provide means to control water temperature; electronic sensor must operate during power failure		
	Electronic sensor – must be sufficient clearance for handwashing without bumping faucet mouth		
✓	<b>Installation</b>		
	Wall mounted, no counter top		
	One meter clearance surrounding HHS		
	Backsplash – min. 600 mm (24 in.) above sink level & extending to floor coving. Include area under dispensers		
	Water pressure & flow rate – ensure removal of soap residue and minimize splashing		

## References

1. CSA Z8000-18 Canadian Health Care Facilities.
2. CSA Z317.1-16 Special Requirements for Plumbing Installations in Health Care Facilities.
3. The Facility Guideline Institute. Guidelines for Design and Construction of Health Care Facilities, 2018 edition.
4. AHS Infection Prevention and Control - Health Care Facility Design Recommendations and Preventive Measures for Construction, Renovation and Maintenance Activities, May 2013 (Updated March 2016).
5. AHS General Ergonomic Best Practices - Mounting Heights for Hand Hygiene Products and Sharps.
6. AB Safety Codes Council - Barrier-Free Design Guide, June 2017.

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