



Architectural Ironmongery

This is one of a series of design guides provided to assist in the specification and manufacture of key touch surface components for use in healthcare and other environments where hygiene is important. Copper alloys reduce contamination by destroying harmful bacteria, fungi and viruses, thus reducing the risk of transmission of infection.

1. Lever handle or turn handle

- ◆ If replacing existing door hardware consider matching the dimensions or discuss upgrading the design with staff.
- ◆ The type and strength of internal springing should be appropriate to existing latch equipment or defined by the client if newly installed.
- ◆ If round, the **handle diameter** should provide sufficient strength and be comfortable to the hand; 19 mm is a reasonable minimum.
- ◆ The **finger gap** - between the door and handle – should be no less than approximately 45 mm to allow the fingers to close around the handle.
- ◆ **Length** should be a minimum of 95 mm with the end of the lever turned towards the door to minimise the risk of catching clothing.
- ◆ The **ergonomics** of the design should be smooth in order to facilitate cleaning.
- ◆ Material chosen is likely to be in the form of either:
 - extruded bar or tube, depending upon fabrication capabilities
 - die cast or hot stamped to near net shape.



If a rose, back plate or escutcheon is required, this should be cast, stamped or machined from a colour matched alloy.

- ◆ The **colour** should have sufficient contrast with the door material and be highly visible. Colours of readily available alloys are indicated below. The following is not an exhaustive list of antimicrobial alloys and others are under development; take advice from CDA or your supplier.

	Pink or Red		Brown		Yellow				Silver	
Name	Copper	Gilding Metal	Phosphor Bronze	Phosphor Bronze	Brass	Brass	Brass	Brass	Nickel Silver	Copper Nickel
Type	W	W	W	C	W	W	C	H	W	W
BS	C106	CZ101	PB104	PB1	CZ106	CZ108	CZ121	CZ122	NS106	CN102
ISO	CuDHP	CuZn10	CuSn8	CuSn11P	CuZn30	CuZn37	CuZn39Pb1-C	CuZn40Pb2	CuNi18Zn20	CuNi10Fe1Mn
EN	CW024A	CW501L	CW453K	CC481K	CW505L	CW508L	CC754S	CW617N	CW409J	CW352H
UNS	C12200	C22000	C52100	C90700*	C26000	C27200	C85700	C37700	C79200	C70600

C = casting alloy H = hot stamping alloy W = wrought alloy * = close equivalent

- ◆ **Hardness**, which indicates ductility or formability, should be suitable for your fabrication requirements; contact CDA or your supplier and see our separate guide.
- ◆ **Finishing** by polishing is recommended; brushing or bead blasting may be considered. **DO NOT** use any oil, lacquer or wax treatment as this will counter the inherent antimicrobial characteristics of the metal. **DO NOT** plate or electroplate with metal other than copper.
- ◆ **Legislation:** always verify your design meets local disability access, building or engineering standards e.g. HTM 59 or EN 1906.



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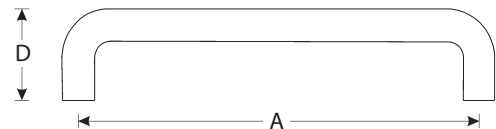
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2. Pull handle or D handle

- ◆ If replacing existing door hardware consider matching the dimensions or discuss upgrading the design with staff.
- ◆ The **finger gap** - between the door and handle – should be no less than approximately 45 mm to allow the fingers to close around the handle.
- ◆ The **diameter** should provide sufficient strength and be comfortable to the hand.
- ◆ The **length** between fixing centres should be greater than 150 mm. Common sizes are:



	Fixing centres A (mm)	Diameter D (mm)
a	150	19
b	225	19, 22, 25, 25.4
c	305	19, 22, 25, 25.4, 32
d	400	22, 25, 25.4, 32
Size and weight of handle will have an effect on cost as well as strength and safety. Ideally a balance should be struck to ensure all needs are met.		



- ◆ The **material** chosen may be in the form of solid extruded bar or tube depending upon fabrication capabilities.
- ◆ The **colour** should have sufficient contrast with the door material and be highly visible. Colours of readily available alloys are indicated below. The following is not an exhaustive list of antimicrobial alloys and others are under development; take advice from CDA or your supplier.

	Pink or Red			Gold	Brown		Yellow			Silver	
Name	Copper	Copper	Gilding Metal	Gilding Metal	Phosphor Bronze	Phosphor Bronze	Brass	Brass	Brass	Nickel Silver	Copper Nickel
BS	C106	C101	CZ101	CZ102	PB102	PB104	CZ106	CZ108	CZ121	NS106	CN102
ISO	CuDHP	CuETP	CuZn10	CuZn15	CuSn5	CuSn8	CuZn30	CuZn37	CuZn39Pb3	CuNi18Zn20	CuNi10Fe1Mn
EN	CW024A	CW004A	CW501L	CW502L	CW451K	CW453K	CW505L	CW508L	CW614N	CW409J	CW352H
UNS	C12200	C11000	C22000	C23000	C51000	C52100	C26000	C27200	C38500	C79200	C70600

- ◆ **Hardness**, which indicates ductility or formability, should be suitable for your fabrication requirements; contact CDA or your supplier and see our separate guide.
- ◆ **Finishing** by polishing is recommended; brushing or bead blasting may be considered. **DO NOT** use any oil, lacquer or wax treatment as this will counter the inherent antimicrobial characteristics of the metal. **DO NOT** plate or electroplate with metal other than copper.
- ◆ **Legislation:** always verify your design meets local disability access, building or engineering standards e.g. HTM 59 or EN 1906.



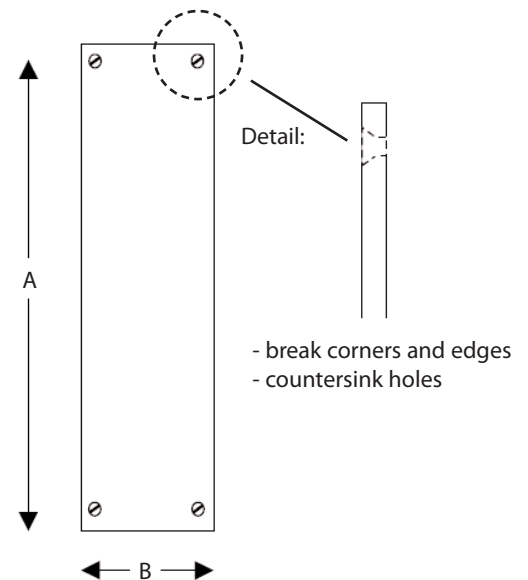
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3. Push plate or finger plate

- ◆ If replacing existing door hardware consider matching the dimensions or discuss upgrading the design with staff.
- ◆ Many push plates are designed to cover the fixing points of a matching pull handle on the reverse of the door and so should be large enough to achieve this.
- ◆ **Screw fixings** should be of the oval countersunk type to reduce sharp edges, minimise screw head damage during fitting and improve appearance.
- ◆ Longer plates will require six or more fixing screws.
- ◆ Plate **thickness** is typically 1.5 mm.
- ◆ The **length** should be greater than 275 mm. Common sizes are:

	Length A (mm)	Width B (mm)	Holes
a	275	60	4
b	300	60, 75	4
c	450	60, 75, 100	6
d	600	60, 75, 100	6
e	1000	60, 75, 100	8



- ◆ **Material** chosen: rolled plate or sheet. Some suppliers will cut to a size suitable for finish machining.
- ◆ The **colour** should have sufficient contrast with the door material and be highly visible. Colours of readily available alloys are indicated below. The following is not an exhaustive list of antimicrobial alloys and others are under development; take advice from CDA or your supplier.

	Pink or Red		Gold	Brown		Yellow		Silver		
Name	Copper	Copper	Gilding Metal	Gilding Metal	Phosphor Bronze	Phosphor Bronze	Brass	Brass	Nickel Silver	Copper Nickel
BS	C106	C101	CZ101	CZ102	PB102	PB104	CZ106	CZ108	NS106	CN102
ISO	CuDHP	CuETP	CuZn10	CuZn15	CuSn5	CuSn8	CuZn30	CuZn37	CuNi18Zn20	CuNi10Fe1Mn
EN	CW024A	CW004A	CW501L	CW502L	CW451K	CW453K	CW505L	CW508L	CW409J	CW352H
UNS	C12200	C11000	C22000	C23000	C51000	C52100	C26000	C27200	C79200	C70600

- ◆ **Hardness**, which indicates ductility or formability, should be half hard and suitable for your cutting and machining requirements; contact CDA or your supplier and see our separate guide.
- ◆ **Finishing** by polishing is recommended; brushing or bead blasting may be considered. **DO NOT** use any oil, lacquer or wax treatment as this will counter the inherent antimicrobial characteristics of the metal. **DO NOT** plate or electroplate with metal other than copper.
- ◆ **Legislation:** always verify your design meets local disability access, building or engineering standards e.g. HTM 59 or EN 1906.



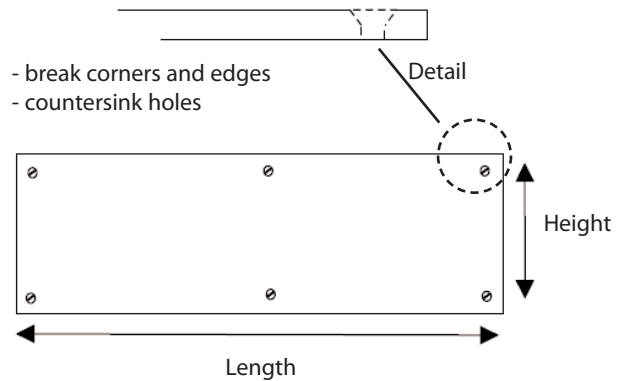
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4. Kick plate or door protector plate

- ◆ If replacing existing door hardware consider matching the dimensions or discuss upgrading the design with staff.
- ◆ Protector plates are designed to reduce damage to the door, e.g. from trolley traffic, and so should be large enough to achieve this. A survey of the existing door damage, whether plates are already fitted or not, should confirm size requirements.
- ◆ **Screw fixings** should be of the oval countersunk type to reduce sharp edges, minimise screw head damage during fitting and improve appearance.
- ◆ These are generally longer plates and will require six or more fixing screws.
- ◆ Plate **thickness** is typically 1.5 mm.
- ◆ The **length** should be less than the door width to allow for the frame. **Height** is typically 150 or 200 mm. Custom sizes for narrow, secondary leaf doors may be required.
- ◆ **Material** chosen: rolled plate or sheet. Some suppliers will cut to a size suitable for finish machining.
- ◆ The **colour** should have sufficient contrast with the door material and be highly visible. Colours of readily available alloys are indicated below.

The following is not an exhaustive list of antimicrobial alloys and others are under development; take advice from CDA or your supplier.



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ISO	CuDHP	CuETP	CuZn10	CuZn15	CuSn5	CuSn8	CuZn30	CuZn37	CuNi18Zn20	CuNi10Fe1Mn
EN	CW024A	CW004A	CW501L	CW502L	CW451K	CW453K	CW505L	CW508L	CW409J	CW352H
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- ◆ **Hardness**, which indicates ductility or formability, should be half hard and suitable for your cutting and machining requirements; contact CDA or your supplier and see our separate guide.
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