

Handle Technology

**Latching on to things.**

## Comings and goings

The door handle (or door latch) is one of the most frequently used functional elements in the home: it's the very first object that people make contact with when they enter a building and it hardly ever comes to rest in busy places. But the door handle is much more than a mere functional element of household technology. A person's first physical perception of a house is made through the door handle – and as we all know, you only get one chance to leave a good first impression.



The tactile encounter with the handle is aesthetic and ergonomic at the same time. The first thing is "what the handle feels like" and this refers not only to its shape but also to its mechanical qualities when pressed. The high-quality bearings in the handle not only allow it to function for a long time, they also convey a feeling of quality. ECO Schulte underscores this by granting a five-year warranty on its handle range.

The ergonomic shape of the handle results mainly from its function. It must of course be possible to locate and operate it intuitively. A good grip and reliable power transfer have to be guaranteed, because considerable forces are required when opening a door if its form is to help prevent fingers from getting jammed or squeezed. In addition to this, a design that complies with standards also provides the highest possible level of functional security.

## Users and handles

European Standard **EN 1906** defines the utilization classes for door handle and handle systems. These classes depend on the intensity of use and level of care exercised by the users. ECO Schulte only offers handle systems in utilization categories 3 and 4.

### Utilization Categories:

#### Class 1:

Moderate utilization frequency by persons motivated to exercise great care and from whom there is a low risk of improper use. Typical areas of application: interior doors of residential buildings.



#### Class 2:

Moderate utilization frequency by persons motivated to exercise care but from whom there is a certain risk of improper use. Typical areas of application: interior doors of office buildings.



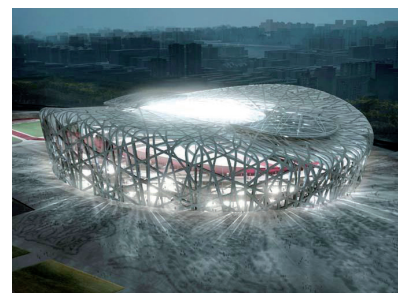
#### Class 3:

High utilization frequency by the general public or other persons with low motivation to exercise care and from whom there is a high risk of improper use. Typical areas of application: interior doors of office buildings open to the general public.



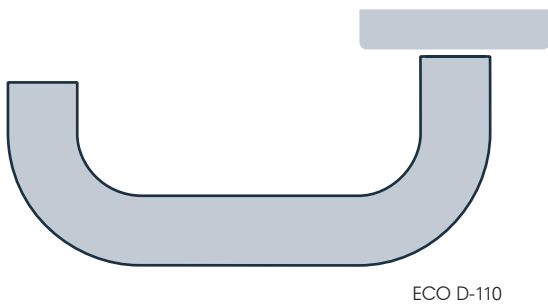
#### Class 4:

For use in doors that are frequently subjected to violence or damage. Typical areas of application are football stadia, barracks or public toilets.



## Timeless forms and classics

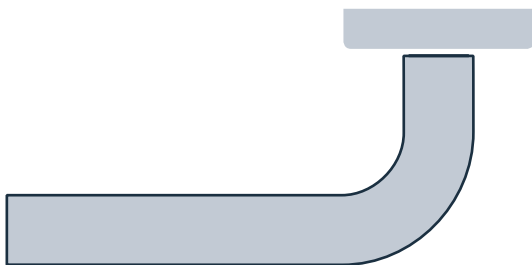
Even though door handles are subject to fashion trends, there are still a number of classics or even archetypes which can have an aesthetically striking effect on the first contact with a building. ECO Schulte focuses on timeless and functional classics in its product range. They are always available for profile frame doors too (OVR oval rosette handle) and as protective door handle sets. ECO Schulte also offers matching window handles.



ECO D-110

### ECO D-100 Archetype: U-shaped handle

A classic with value added: the advantage of the u-shaped handle lies in the second 90 degree bend. It was used traditionally to prevent people or material from getting "threaded on". The rear bend helps to prevent shopping bags or coat sleeves from getting caught in the handle. The u-shaped handle also has comfort qualities, because the rear turn supports the ball of the hand when opening the door. ECO Schulte has the u-shaped handle in its product range as factory design draft D-110.



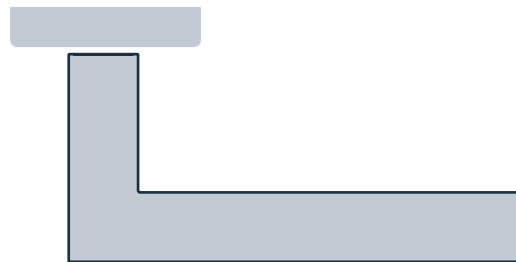
ECO D-210

### ECO D-200 Archetype: Frankfurt standard L-shape handle

In their efforts to lower house construction prices and rents in the 1920s, many architects became involved with the standardization of construction components. The ECO D-200 is a variation of the draft that once made a name for itself as the Frankfurt standard handle where a round rod was bent to 90 degrees and positioned on a simple rosette. All of the Frankfurt versions are based on the idea of the right angle. ECO Schulte has included the Frankfurt standard handle in its product range in a high-quality modern interpretation as factory design draft D-210.

### ECO D-300 Archetype: Frankfurt mitred handle

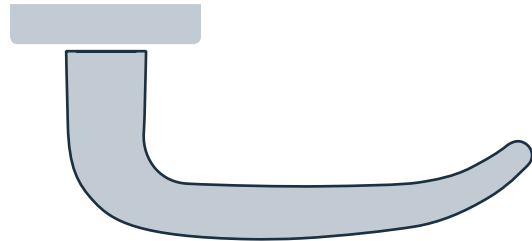
The ECO D-300 is a variation of a geometric handle draft design from the 1920s which stands out through the legible simplicity of the construction: a circular tube is separated with a mitred cut before the two halves are joined together again at right angles. This handle was given the attribute "Frankfurt" not only through its close geometric relationship with the Frankfurt standard handle but also because it was used when the Frankfurt Architecture Museum was built. ECO Schulte has included its interpretation of the Frankfurt mitred handle in its product range as factory design draft D-310.



ECO D-310

### ECO D-400 Archetype: Ulm handle

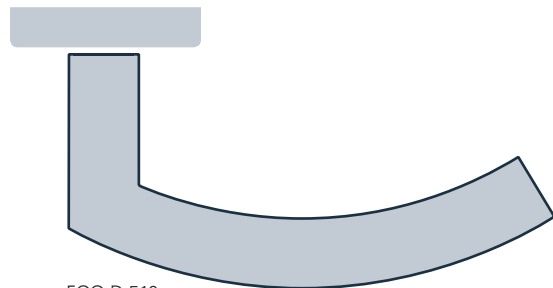
Made for getting to grips with! The archetype of this u-shaped handle was named after the Ulm School of Design where it was first used in the 1950s. The draft was based at the time on the door handles of the trains run by the Swiss railway. ECO Schulte reworked the Ulm handle with its own factory design version D-400.



ECO D-410

### ECO D-500 Archetype: Hand-shape handle

As far as the typology is concerned, this handle constitutes a connection between the Frankfurt mitred handle and the Ulm handle. The design of this factory design draft D-500 is discreet, easy to grip and orientated towards the direction of movement.



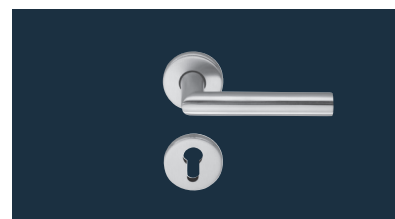
ECO D-510

## Handles in all versions

Where form is concerned, ECO Schulte deliberately focuses its handle solutions on classic designs while ensuring at the same time that all areas of application can be served with the solutions on offer, from protective handles to window handles.

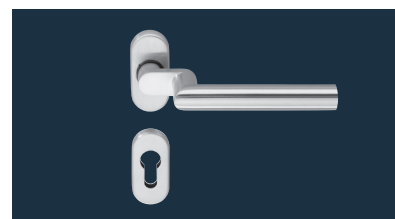
### Rosette handles

The classic for apartment doors is the two-piece rosette handle which is available with a handle or a round or flat knob. The rosette that goes with it comes in warded lock, oval hole or profile cylinder versions.



### Oval rosette handles

Oval rosettes are used on profile frame doors made of steel, plastic or aluminium. They permit the mounting of the handle onto narrow frame profiles which conceal the risk of hand injuries, which is why the use of offset handles is recommended.



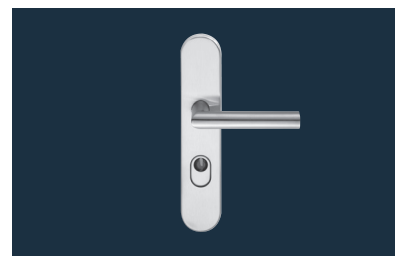
### Long and short plate handles

With long and short plate handles, the handle and keyhole are covered by a single continuous plate. This combination provides additional hold for the handle on the door and additional screw attachment options. This makes these handles suitable for high levels of wear and tear, such as in schools.



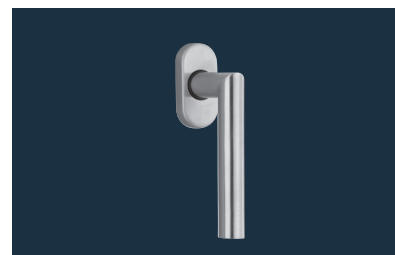
### Protective handles

Protective handles on exterior doors provide the prerequisites for break-in security. They are bolted through the door, thus providing good break-in protection. The standard **DIN 18257** splits protective handles into resistance classes from ES 0 to ES 3, whereby ES 3 covers protective handles which are extremely resistant to break-ins. Available with an optional cylinder protection system.



### Window handles

ECO Schulte offers a range of window handles to match its programme of classical door handles. This guarantees that houses and apartments can be fitted out in a uniform form language in high-grade stainless steel with a satin surface.



## Three materials on offer

The choice of the handle material is not only a question of aesthetics. Different materials are available, depending on hygiene requirements and the place and intensity of use.

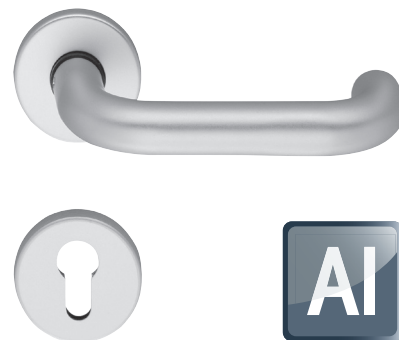
### High-grade stainless steel handles

Stainless steel handles from ECO are distinguished by their wear resistance and insensitive surface. Even when used intensively, stainless steel shows hardly any dents or scratches and is therefore recommended as the ideal material on frequently used doors (e.g. in public buildings, gastronomy businesses and sports facilities). Stainless steel handles are corrosion resistant, which makes them very well suited for outdoor areas. They do not require much care and are distinguished by their durability. Stainless steel is a hygienic material which can be disinfected and which inhibits the transfer of bacteria thanks to its smooth, non-porous surface, and this makes it very well suited for use in hospitals and medical and nursing practices.



### Aluminium handles

The ECO light alloy handle programme is distinguished by the quality of its surfaces. Because they are anodized, they are easy-care, lightfast and weather-proof. The advantages of the material lie in its low weight and outstanding malleability which open up virtually unlimited design possibilities. The typical ECO surface is additionally condensed through a sand-blasting process, thus giving it a particularly high level of toughness and durability.



### Nylon handles

Used as basics, ECO handles made of high-quality nylon offer the option of setting colourful accents in architecture. A steel core is covered with polyamide, thus combining a pleasant feel with toughness and durability. ECO nylon handles are wearproof, colour and lightfast. The surfaces are harmless from a health and hygiene point of view, not susceptible to electrostatic charging and dimensionally stable in hot and cold temperatures. ECO shows a preference for clear forms in the plastic range too and offers a wide range of handles and accessories in addition to the door handles.



## Good, better, best: Quality bearings with a system

Because people don't always treat doors gently, we have developed three different bearing technologies - all the way up to the high-class OKL version - to take this fact into account in all situations. ECO Schulte grants a five-year warranty on all handle products. And ECO Schulte doesn't make any compromises either where utilization categories are concerned. Our range consists exclusively of handle systems which comply with user categories 3 and 4, as defined by the standard.

### OKL - Premium handles with ball-bearing technology



#### OKL Bearings

Industrial ball bearings are characteristic for these high-quality handles. A precise and maintenance-free, fully encapsulated grooved ball bearing ensures the well-balanced, play-free bearing mounting of the handle.

#### Free Movement

The movement of the handle is well adjusted and has a top-quality feeling to it. An integrated return torsion spring supports the lock's reset mechanism. A wave spring washer equalizes the axial play of the bearing.

#### Reliable Assembly

The screw attachments are covered by the cover rosette which is firmly connected to the base rosette once the handle has been bolted on. With ECO Schulte handles, the handle and rosette always form a solid unit. The stainless steel base rosette with support cams is firmly connected to the door with self-retaining screws. The door/handle connection is protected against turning out of position. Furthermore, it is fixed axially. This means that there is no accidental risk due to the loosening of the locking screws and detachment of the handle from the pinion square. The stainless steel handle hub is firmly welded to the stainless steel tube of the handle. The result of this technique is that the tested permanent load bearing capacity exceeds the requirements of the norm by the factor ten.

#### Quality/Standard

OKL handles have been subjected to more than two million test cycles by independent test institutes without any failures. They are certified in accordance with **EN 1906**, class 4 and have fire protection certification in line with **DIN 18273**.

#### OGL - Handles with friction bearing technology



##### OGL Bearings

The maintenance-free plastic friction bearing is characteristic of these high-quality handles. The highly stable friction bearing floats in the base steel rosette and compensates the axial and radial forces. A wave washer spring compensates the angle tolerances between the pin and the support bracket of the base rosette.

##### Reliable Assembly

The screw attachments are concealed by the cover rosette which is firmly connected to the base rosette once the handle has been bolted on. With ECO Schulte handles, the handle and rosette always form a solid unit. The stainless steel base rosette with support cams is firmly connected to the door with self-retaining screws. The door/handle connection is protected against skewing on a fixed axle. This means that there is no accident risk due to the loosening of the locking screws and detachment of the handle from the pinion square. The stainless steel handle hub is firmly welded to the stainless steel tube of the handle and set to a torsional strength of 75 Nm.

##### Quality/Standard

OGL handles have been subjected to more than 200,000 user cycles by independent test institutes without any failures. They are certified in accordance with **EN 1906**, class 4 and have fire protection certification in line with **DIN 18273**.

#### SGL - Handles with friction bearing technology



##### SGL Bearings

The base rosette made of reinforced plastic guides the axial movement of the handle. A wave washer spring compensates the angle tolerances between the pin and the support bracket of the base rosette.

##### Reliable Assembly

The screw attachments are concealed by the cover rosette which is firmly connected to the base rosette once the handle has been bolted on. With ECO Schulte handles, the handle and rosette always form a solid unit. The base rosette with support cams is firmly connected to the door with self-retaining screws. The door/handle connection is protected against skewing on a fixed axle. This means that there is no accident risk due to the loosening of the locking screws and detachment of the handle from the pinion square. The stainless steel handle hub is firmly welded to the stainless steel tube of the handle and set to a torsional strength of 75 Nm.

##### Quality/Standard

SGL handles have been subjected to more than 200,000 user cycles by independent test institutes without any failures. They are certified in accordance with **EN 1906**, class 3.

## Long-term antimicrobial protection

In health care facilities, hospital germs are a very big danger. The solution to this problem is Bacterlon®+, an experienced and tested method for refining contact and circulation surfaces. By this treatment, the surfaces are coated. Experience has shown that the germs on contact and circulation surfaces do not increase any further after finishing.



### Fields of application for Bacterlon®+

The usage of Bacterlon®+ for reducing the microorganisms is retained in hospitals or public buildings. The outstanding and germs reducing effect of Bacterlon®+ was tested by accredited testing laboratories and proved with certificates (see rear page). The study result was a reduction of germs up to 80% on Bacterlon®+ finished surfaces compared to unfinished surfaces.



## Why Bacterlon®+?

The door handle (or door latch) is one of the most frequent used functional element at home: it's the very first object that people make contact with when they enter a building and it hardly ever comes to rest in busy places.

Bacterlon®+ is not a short term disinfection but a long lasting solution against germs. Bacterlon®+ is absolute biocompatible and skin as well as mucosa compatible. Therefore Bacterlon®+ can be used in all areas of daily life.

Bacterlon®+ contains water and oil abrasive attributes. This is the reason why there is no chance for bacterias on finished surfaces.

### What's special about Bacterlon®+?

Bacterlon®+ bases on the newest scientific findings. The effectiveness of the environmentally friendly, skin and mucosa compatible as well as absolute biocompatible product was confirmed by well known testing laboratories with certificates.

### How should Bacterlon®+ finished products be cleaned?

The finished surfaces can be cleaned simple and fast. Contaminations can be cleaned with warm water. Only for strong contaminations we recommend domestic cleaner.



### Field of application

- ECO Handle Technology
- ECO Panic, Lock and Bolting Technology

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