

SURFACE BOXES

COMMON
ISSUES
&
AVK
SOLUTIONS



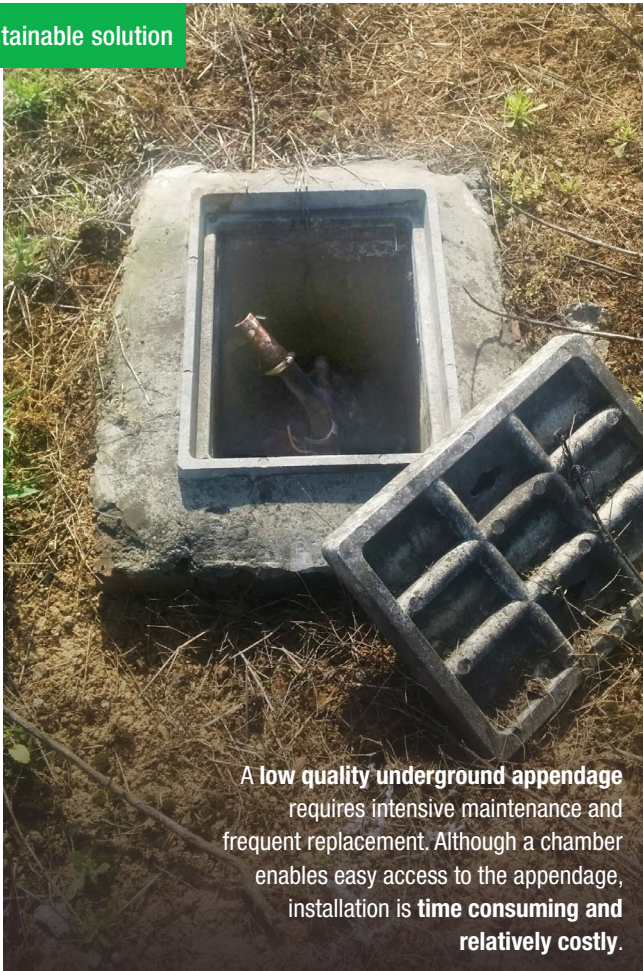
 Strong and durable	 High quality
 Time saving	 Maintenance free
 Cost saving	 Safe solution
 Aesthetically nice and clearly visible	 Environmentally friendly
 Silent	 Lightweight

These icons indicate the most relevant benefits for each application and AVK solution. You can find them below every solution displayed in this handbook.

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Sustainable solution



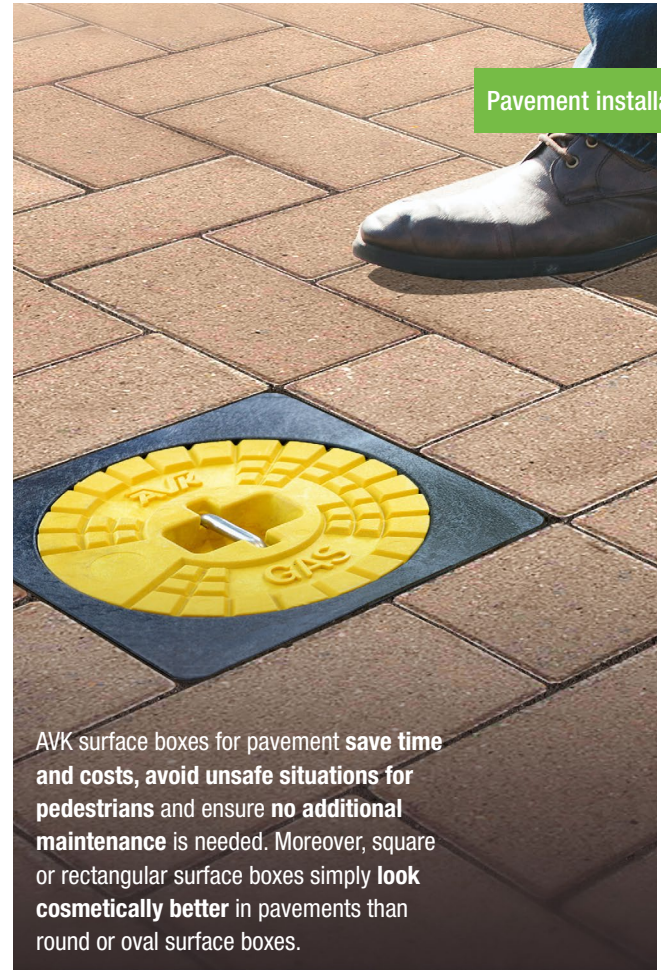
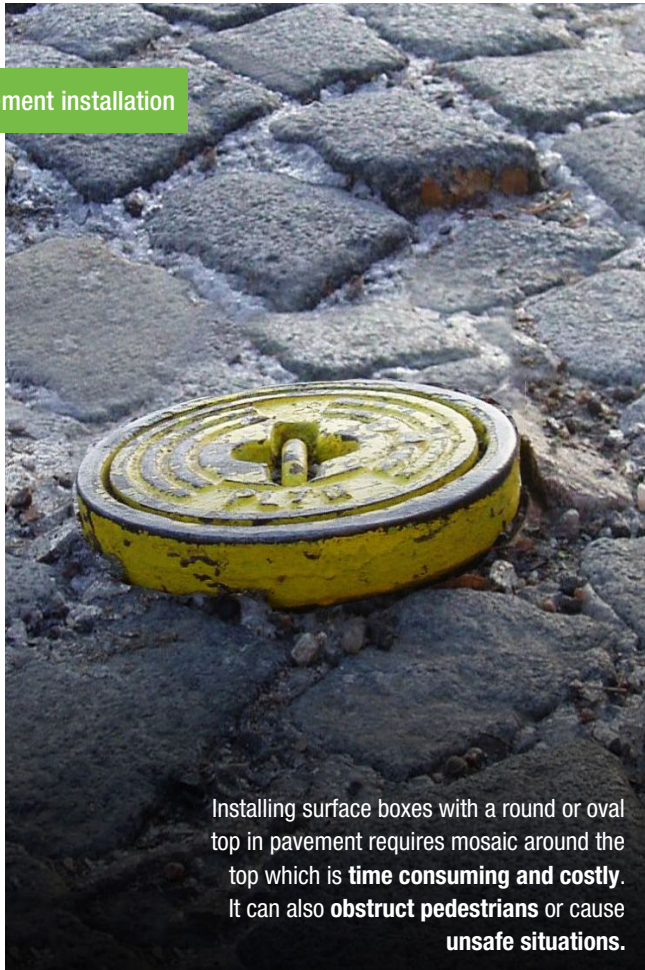
A **low quality underground appendage** requires intensive maintenance and frequent replacement. Although a chamber enables easy access to the appendage, installation is **time consuming and relatively costly**.

Sustainable solution

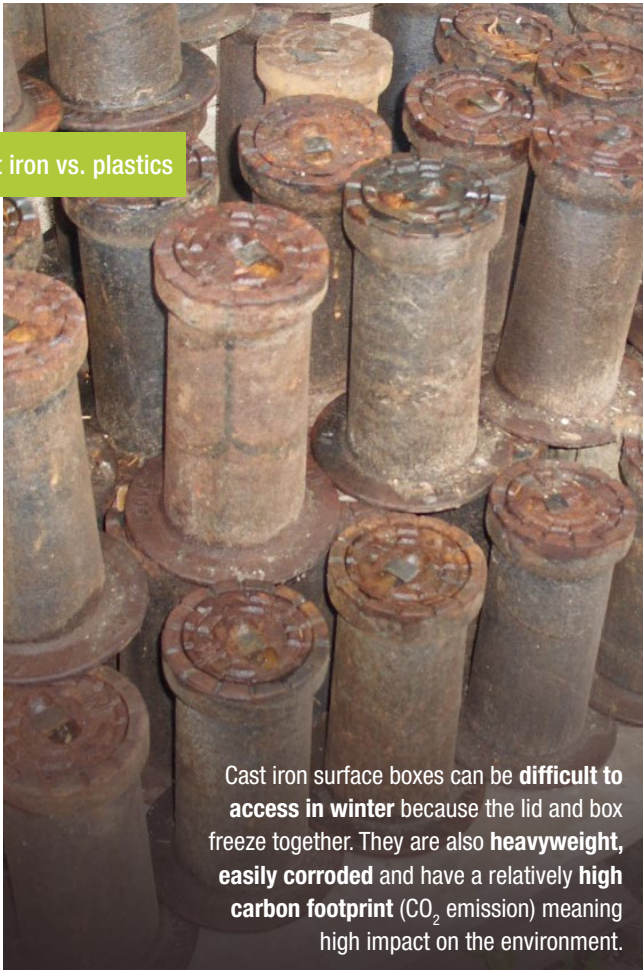


The AVK system solution consists of a high quality buried AVK valve with an extension spindle, support tile and surface box. Advantages: **maintenance free, low costs, high quality, lightweight, durable, sustainable**.





Cast iron vs. plastics



Cast iron surface boxes can be **difficult to access in winter** because the lid and box freeze together. They are also **heavyweight, easily corroded** and have a relatively **high carbon footprint** (CO₂ emission) meaning high impact on the environment.

Cast iron vs. plastics



Synthetic surface boxes are **lightweight** ensuring **safe and easy handling** at all times. Furthermore they are **maintenance and corrosion free, durable, easily accessible throughout the year, noise reducing in traffic zones** and have a **low carbon footprint** in comparison to cast iron surface boxes.



Flexible height
adjustment



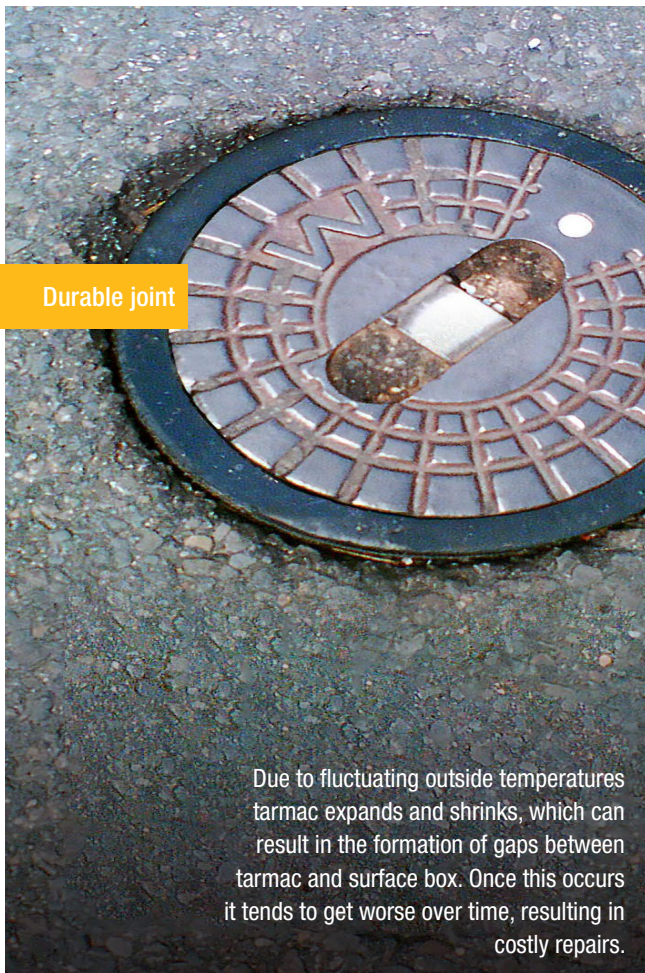
In tarmac roads fixed height surface boxes frequently end up positioned **too high or too low** compared to the road surface. Even when the surface box is perfectly aligned with the road surface during installation, over time it does not move with the tarmac, causing the surface box to stand proud and eventually requiring **costly corrections**.

Flexible height
adjustment



Due to the flexible top part of the AVK height adjustable surface boxes, a **perfect installation** is easy. The floating top part ensures a **safe and lasting alignment with the road surface** avoiding costly and time consuming corrections after installation.





Durable joint

Due to fluctuating outside temperatures tarmac expands and shrinks, which can result in the formation of gaps between tarmac and surface box. Once this occurs it tends to get worse over time, resulting in costly repairs.



Durable joint

AVK offers a height adjustable surface box with a “joint ring” (in German: “Fugenring”). At the final stage of installation the ring is removed and the gap is filled with a bituminous substance. This elastic filling makes a **durable joint between tarmac and surface box**. No gap formation means a **long lasting solution without costly repairs**.





Increased support

If a surface box isn't properly supported it can sink, especially in weak soils, leaving **dangerous holes** in the road. It can also cause **obstruction of valve operation** making costly and time consuming corrections necessary.



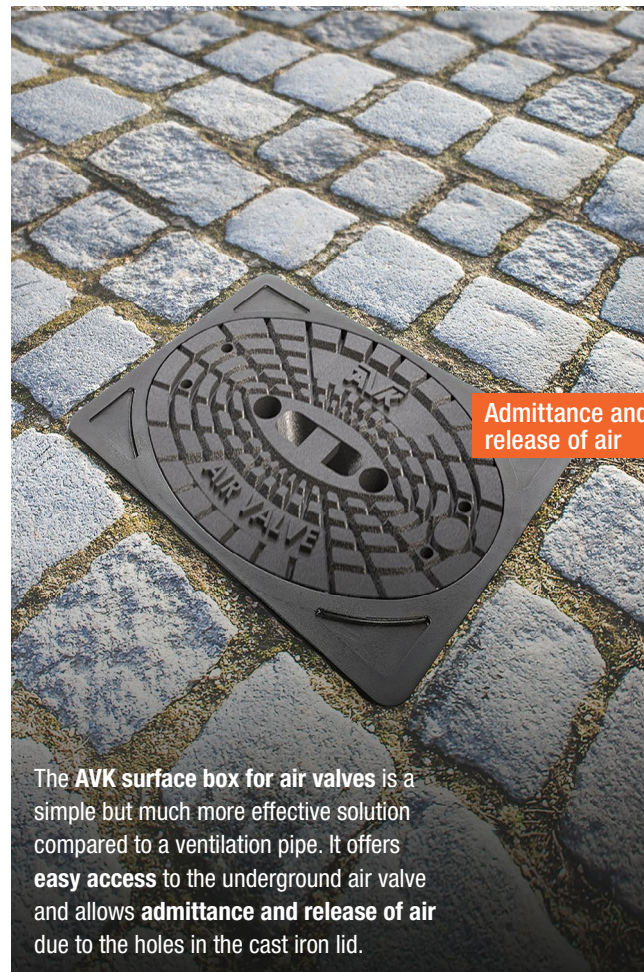
Increased support

To ensure maximum support of surface boxes in weak soils, AVK advises to use support tiles. Support tiles avoid potential sinking of the surface box and prevent the need of corrections or replacements over time.



Admittance and release of air

To enable admittance and release of air, air valves are often equipped with a ventilation pipe. Although this may provide ventilation, there is a chance that **the pipe gets damaged** and it's **difficult to access the air valve** when maintenance is required.



Admittance and release of air

The **AVK surface box for air valves** is a simple but much more effective solution compared to a ventilation pipe. It offers **easy access** to the underground air valve and allows **admittance and release of air** due to the holes in the cast iron lid.

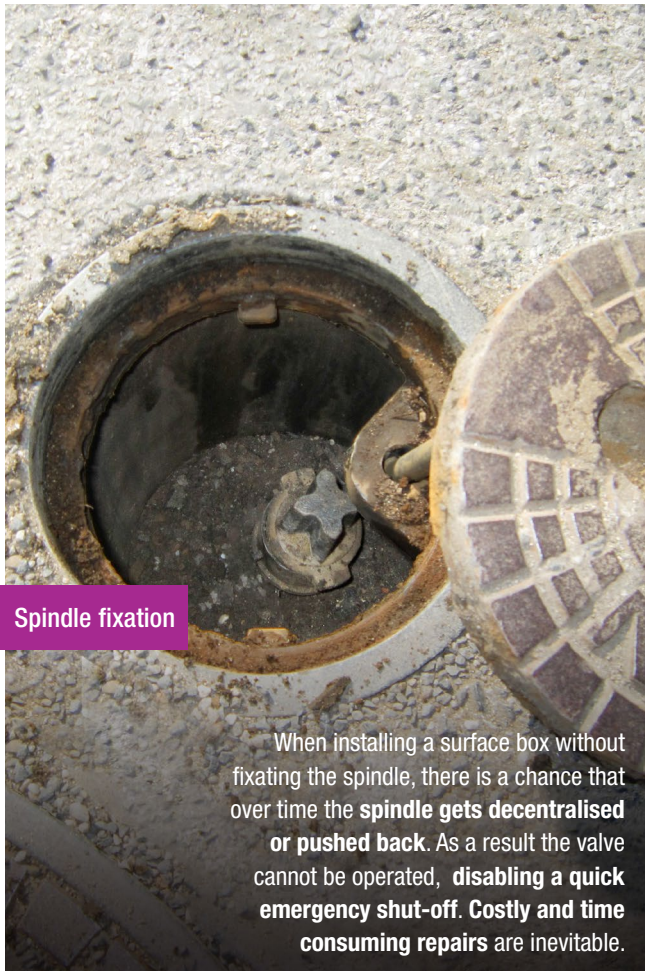






*Height range of surface box 4057V (displayed on this page)





Spindle fixation

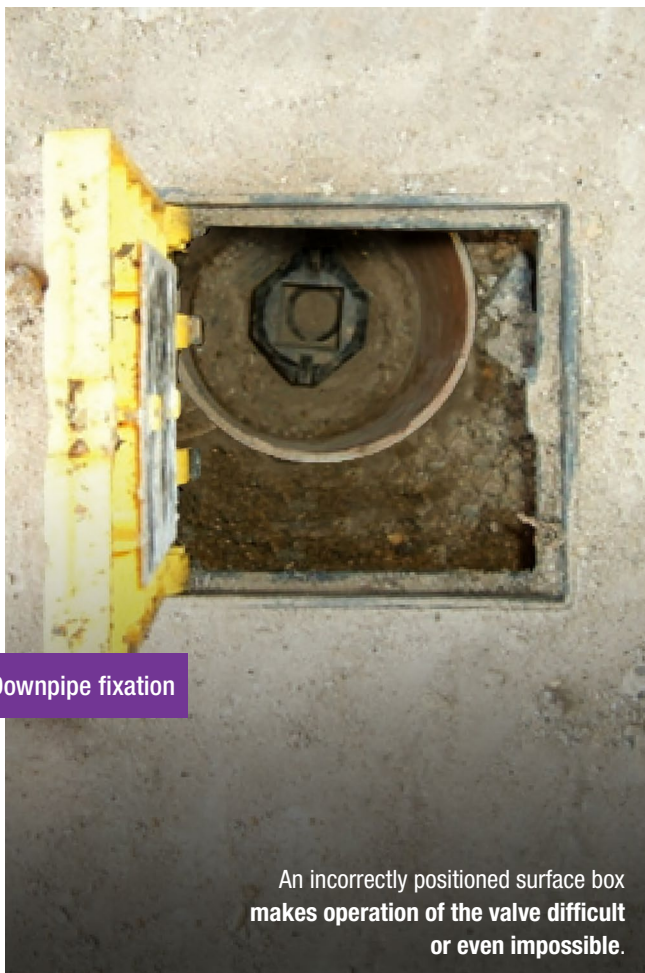
When installing a surface box without fixing the spindle, there is a chance that over time the **spindle gets decentralised or pushed back**. As a result the valve cannot be operated, **disabling a quick emergency shut-off**. **Costly and time consuming repairs** are inevitable.



Spindle fixation

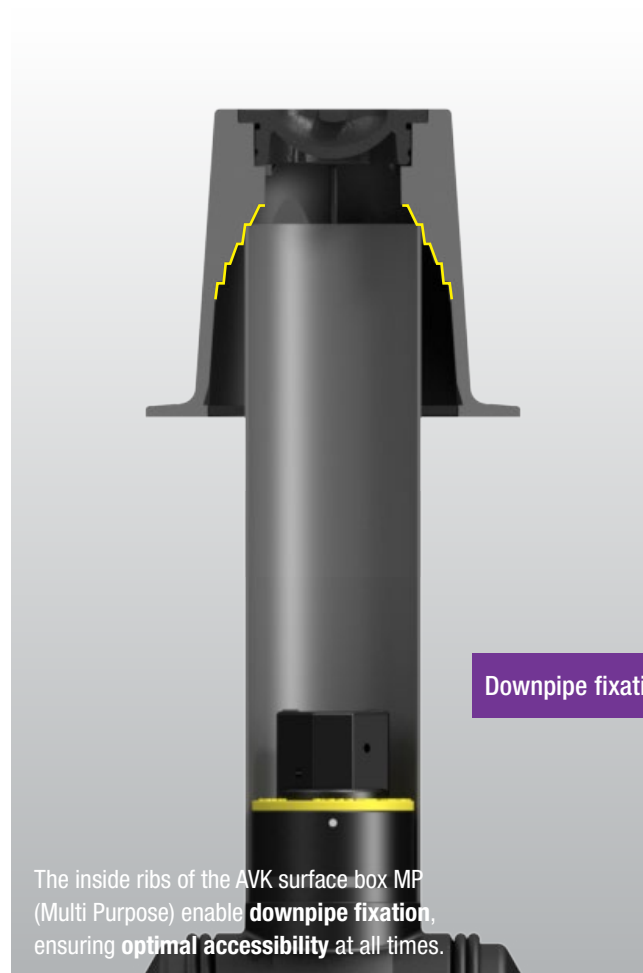
AVK support tiles with spindle fixation **centralize the spindle** making it unable to move or be pushed back. This **enables easy valve operation** at all times and **avoids the need of maintenance** over time.





Downpipe fixation

An incorrectly positioned surface box makes operation of the valve difficult or even impossible.



Downpipe fixation

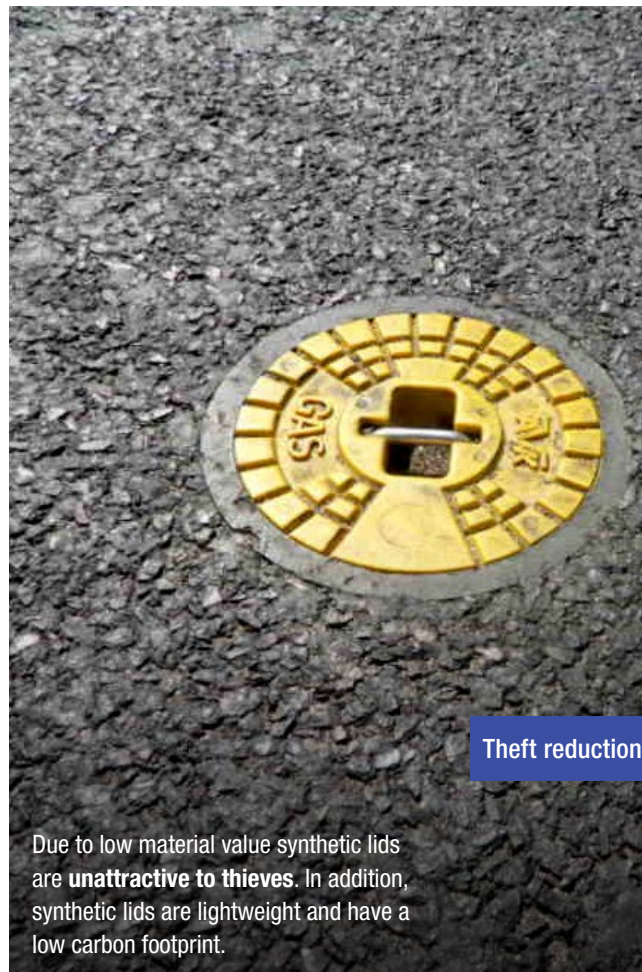
The inside ribs of the AVK surface box MP (Multi Purpose) enable **downpipe fixation**, ensuring **optimal accessibility** at all times.





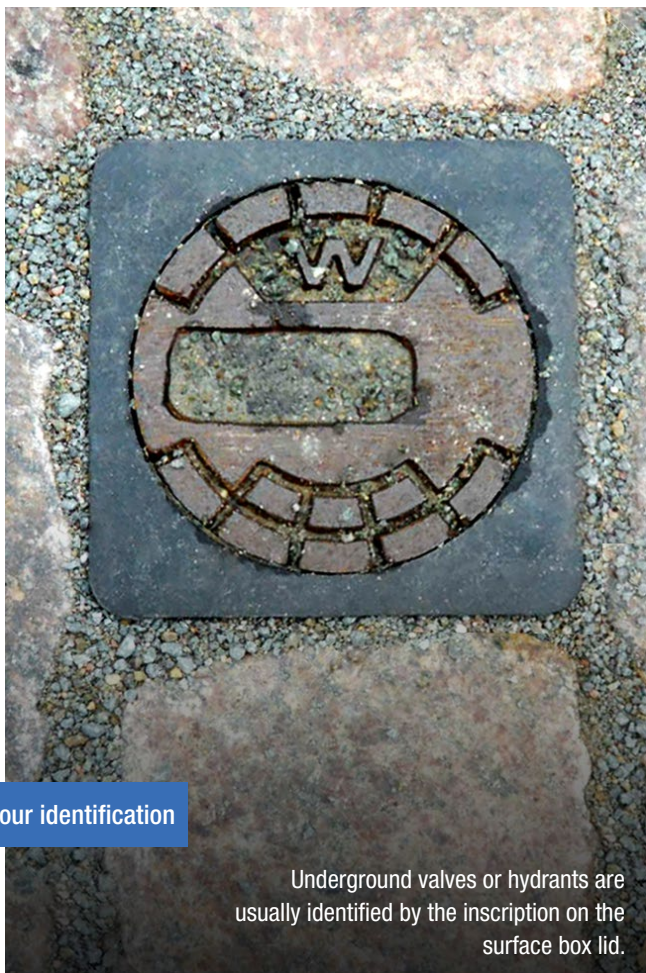
Theft reduction

Regular cast iron surface box lids are theft-sensitive. Stolen lids cause **dangerous situations** and require **costly replacements**.



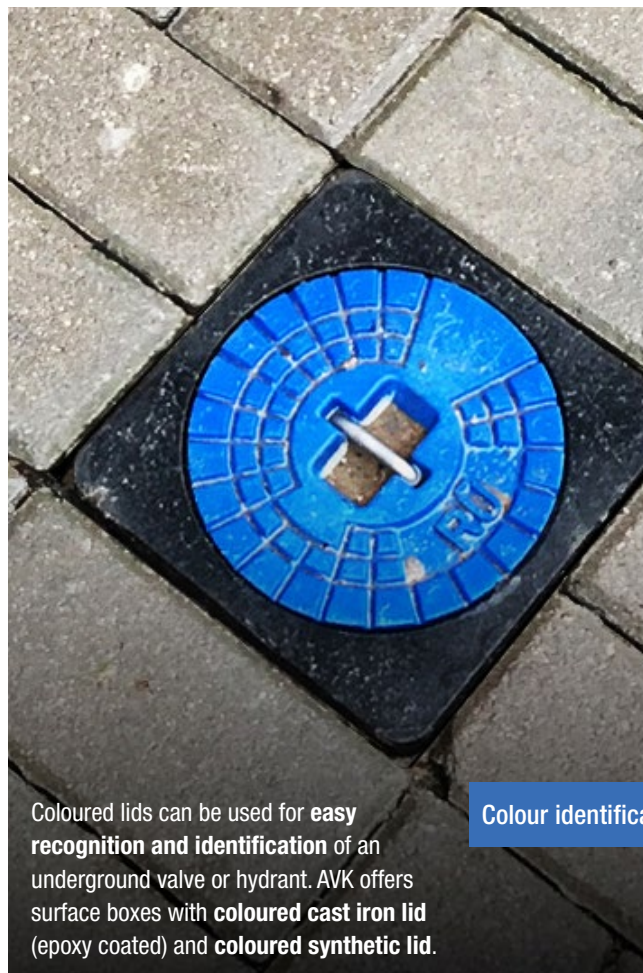
Theft reduction

Due to low material value synthetic lids are **unattractive to thieves**. In addition, synthetic lids are lightweight and have a low carbon footprint.



Colour identification

Underground valves or hydrants are usually identified by the inscription on the surface box lid.



Colour identification

Coloured lids can be used for **easy recognition and identification** of an underground valve or hydrant. AVK offers surface boxes with **coloured cast iron lid** (epoxy coated) and **coloured synthetic lid**.



Lid fixation

The so called suction effect that occurs when traffic passes over a surface box, can cause surface box lids to be lifted. By using AVK surface boxes with lid fixation, lids stay in place and unsafe situations are avoided.

A locking system prevents unauthorized operation of the valve or hydrant below.



AVK height adjustable surface boxes with reinforced rim ensure an **extremely good support of the top part**, making the surface box suitable for heavy duty application areas.

The image on the right side shows a top view of a top part with standard rim versus the enlarged reinforced rim.

Reinforced rim



Sustainable solution

Pavement installation

Cast iron vs. plastics

Flexible height
adjustment

Durable joint

Increased support

Admittance and
release of air

Improved visibility

Limited
installation depth

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SURFACE BOXES

COMMON ISSUES & AVK SOLUTIONS

This handbook shows some of the many AVK solutions for common issues concerning accessing and operating underground appendages, like valves and fire hydrants.

Synthetic surface boxes

AVK offers a wide range of synthetic surface boxes in various dimensions, which can be used in many fields of application.

Synthetic surface boxes are lightweight, user-friendly, easily accessible, silent and maintenance free.

The carbon footprint (CO₂ emission) of synthetic surface boxes, measured from resource to end of life, is significantly lower compared to surface boxes made of traditional materials, making AVK surface boxes ecologically sound.

For more information go to avkplastics.com

Expect... AVK