

# Design and renovation of stairs





## A BRIEF INTRODUCTION INTO THE WORLD OF KÜBERIT® STAIR PROFILES

Do you wish to renovate or redesign your staircase?  
Then you have come to the right place!  
Küberit® has been dedicated to metal processing since 1863 and acts as a solution  
provider for the modernisation of steps and stairs. When redesigning stairs,  
you can use different floor coverings to create a homogeneous ambience or set  
specific accents. On the following pages, we will show you various possibilities  
and solutions for staircase design - be inspired!

Your Küberit®-Team



Küberit® THEME PARK STAIRS

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## Distinguishing types of stairs

### Shapes of stairs

Stairs usually reflect the type of society for which they were built and tell us, for example, about the state of art, fashion and technology. They can be emblematic and recognisable features of an everlasting source of inspiration and eternal history.

Even today, we can still visit and admire some of the earliest staircases in their original splendour. Stairs usually led to the top and were intended to facilitate reaching the very summit, such as Mount Olympus. How else would it have been possible to reach such high locations if not via endless steps?

Source: "Historie des Treppenbaus" (History of staircase construction)  
[www.markiewicz-holztreppen.de/historie-des-treppenbaus/](http://www.markiewicz-holztreppen.de/historie-des-treppenbaus/) [accessed 06/11/2023]

**We have listed the principal types of stairs on the following pages.**



The availability of BIM data for construction planning can be found here!

© Block.com / Katarzyna Białasiewicz



String stair



Cantilever stairs



**Straight stairs**



**Spiral stairs**





# Staircase terminology

## Staircase basics

A staircase is an ascent or descent formed by steps that makes it possible to negotiate height differences comfortably and securely. The ratio of the rise height to the tread is the (standardised) slope ratio of the stair pitch.

Stairs consist of at least three consecutive steps. Combinations of stair flights and landings are also common, as well as balustrades as fall protection and a handrail to hold on to for safe use.

Source "Treppe" (Stairs)  
<https://de.wikipedia.org/wiki/treppe>  
[accessed 06/11/2023]





# Solutions for tread and riser

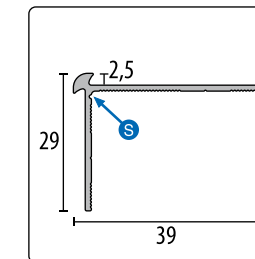
## Nosing profiles (870, 871, 872, 873, 874, 875, 876, 879)

The models in the 870 series are among the classic nosing profiles.

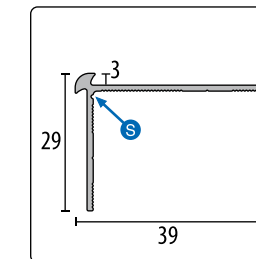
We have developed the 870 series profiles as the most unobtrusive solution for treads and risers. The wide range of colours, cross sections and variants opens up a wealth of design options. The profile can blend almost invisibly into the colour of the floor covering or create a colour contrast, providing a pleasant, unobtrusive accent. The range of applications for this family of profiles extends from 2.5 mm to 15 mm flooring heights and consequently covers everything from vinyl to parquet. Predetermined bending points and extra grooves for force-fit bonding are quality hallmarks and support the craftsman in his daily work.



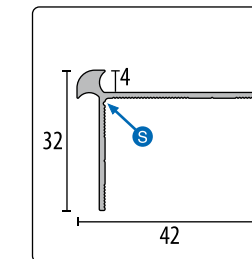
870



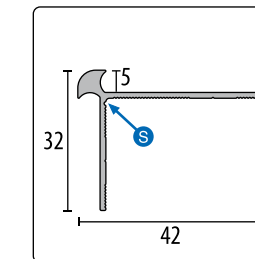
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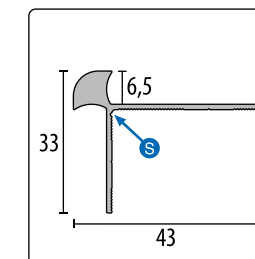
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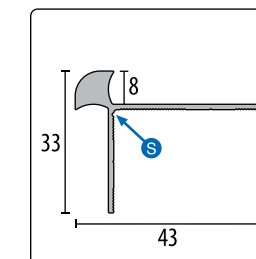
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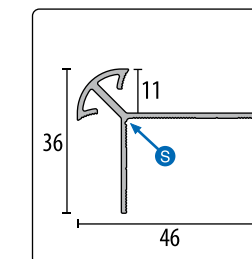
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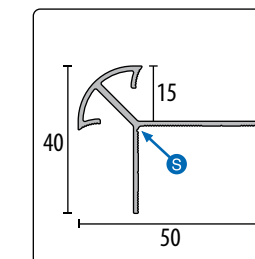
875



876



879



**S** = predetermined bending point



· unobtrusive solution  
· round corner configurations possible  
· bendable variants  
for bespoke solutions



You can find out more about nosing profiles for discreet edge protection on our product platform!



The availability of BIM data for construction planning can be found here!



**Rounded corner solutions in aluminium** (870, 871, 876, 879)  
Some models in the 870 series are also available with round corners.

We have developed the round corners at Küberit® with safety, top quality and convenient processing in mind. When installing the profiles on 90° corners, the stair nosing profiles are usually mitred on site and then fitted. This can lead to unevenness and misalignment of the profiles during installation or later use, due to different loads on the two profiles, for example. This may cause tripping hazards, damage your socks or shoes or even, in extreme cases, lead to injuries when walking barefoot.

We aim to solve such problems by developing our round corners. The rounded corners ensure time-saving processing without loss of quality and also improve the safety characteristics of the profile. They are available as standard in 300 x 300 mm, 300 x 1,000 mm and 300 x 1,500 mm (in right/left versions) for types 870 and 871. We can also produce other sizes and angles as well as "U" and "C" shapes to meet your requirements. The edges of the risers can also be accentuated in combination with the connector profile. Special corners for open steps are available for types 876 and 879. Please contact our manufacturing department.



You can find our assembly instruction videos here!



**Expert tip - Novel corner combination solution**  
(870, 871, 279)

These profile types are available with round corners.

Discover our prefabricated aluminium angles for smart and time-saving installation, as no time-consuming mitre cuts are required on site.



You can find out more about nosing profiles intended for bending on our product platform!

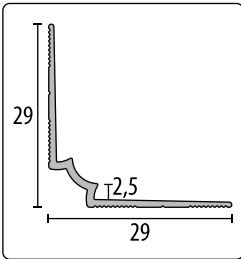


**Complement tread internal angle** (870IW, 871IW, 877IW)  
Profiles for internal angles are also available.

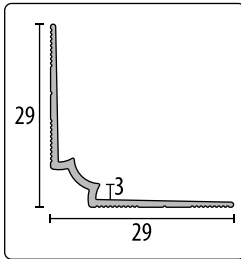
To create a special transition between the tread and riser in the range of 2.5 mm - 3.2 mm, you can also use our internal angles.



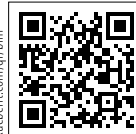
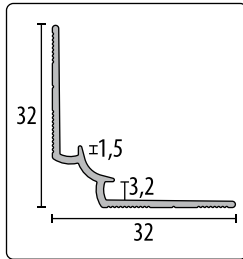
870IW



871IW



877IW



The availability of BIM data for construction planning can be found here!



You can find out more about tread internal angles on our product platform!

**Solutions for curved steps and landings**  
(870, 871, 872, 873, 874) Nosing profiles for bending.

As a complement for curved steps, we offer open-cut profiles for floor coverings from 2.5 mm - 6.5 mm, which can be curved on site using our bending device (also available for hire). We test the bending of the profiles in-house beforehand to provide the customer with information on the minimum possible bending radius.



You can find out more about nosing profiles intended for bending on our product platform!





### Important facts

According to the Federal Statistical Office, 561,000 accidents involving private individuals and over 46,000 reportable accidents at work involving falls down stairs that require medical treatment occur in Germany every year in 2023. In addition, over 1,000 fatal fall accidents on staircases have to be registered every year. This means that stairs are one of the biggest accident blackspots. We offer a comprehensive range of TÜV-approved stair nosing solutions to reduce or completely prevent accidents on stairs.



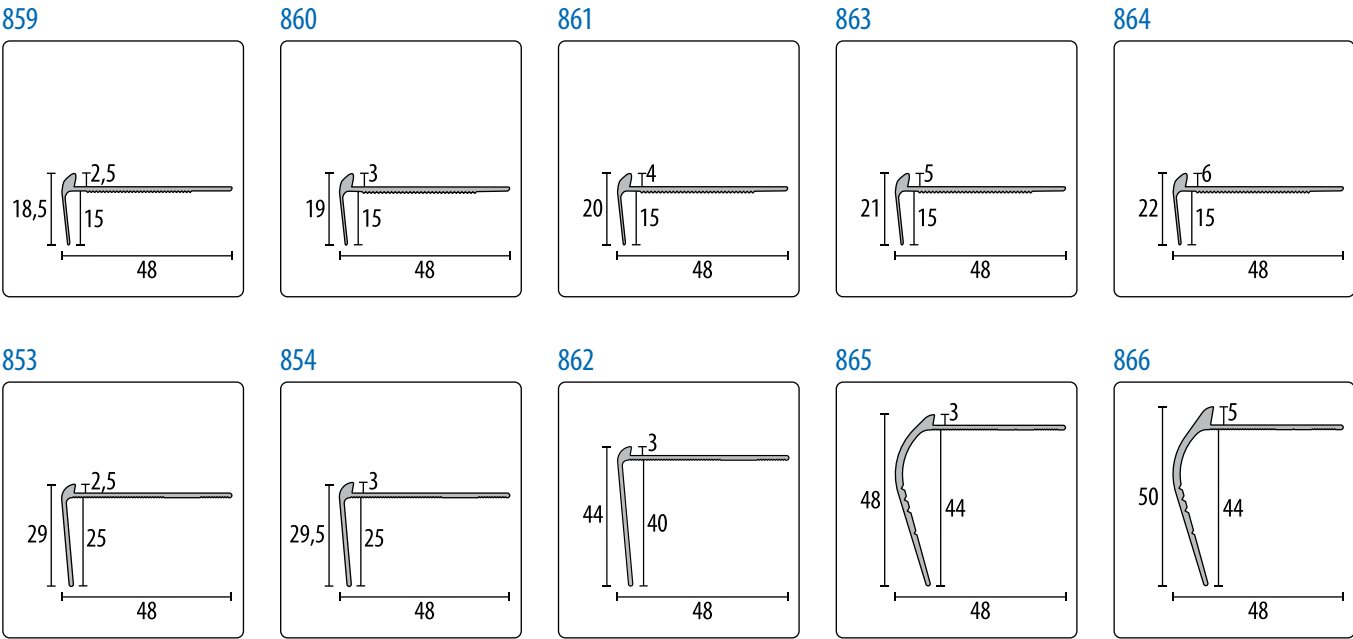
# Solutions for the tread



## Nosing profiles with leg (859, 860, 861, 863, 864, 853, 854, 862, 865, 866)

The models in this series are also among the classic nosing profiles.

The 853ff series appeals with its simple elegance and the treads appear to "float" in the room. It sets off the edges a little more and integrates them homogeneously into the room. The option of rounded corners also dramatically reduce the risk of injury. The riser is usually plastered or painted and the longer leg highlights it in a striking contrast. This is now mandatory in the public sector.



- Nosings with visible leg
- bendable variants available
- round corner configurations possible



You can find out more about nosing profiles for discreet edge protection on our product platform!



Round corner solutions in aluminium (859, 860, 862)

We also offer these profile types with a round corner.

We are also offering round corners for the same reasons of safety and convenient processing. Professionals appreciate attention to detail. The profiles are already bent in their blank state and only finished afterwards to eliminate the unavoidable stress whitening on the visible leg caused by bending. The following profile formats are available as standard: 300 x 300 mm, 300 x 1,000 mm and 300 x 1,500 mm (in right/left versions), as well as "U" and "C" shape. Our manufactory also offers bespoke solutions for your building project.



You can find our assembly instruction videos here!

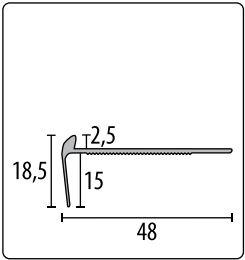


Solutions for curved or straight steps and landings

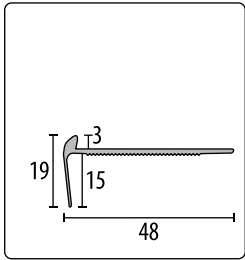
(859, 860, 861, 863, 864, 862) Nosing profiles for bending or levelling landings.

For flooring heights from 2.5 - 6.0 mm, we also offer open-cut profiles for customised installation on curved steps.

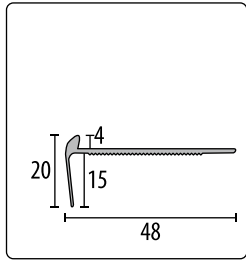
859



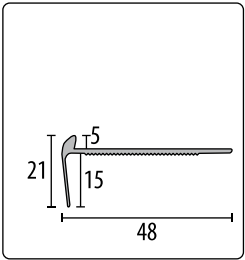
860



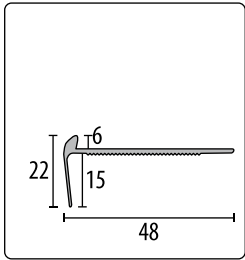
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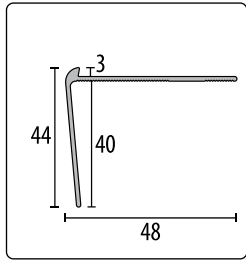
863



864



862



You can find out more about profiles intended for bending on our product platform!





### Important facts

Did you know that climbing stairs is a very effective type of cardio training? Climbing stairs improves vital functions such as breathing, cardiac output, circulation, muscle strength and endurance. At a normal, easy pace, you will burn around 200 kilocalories per 20 minutes. At a fast pace, you will burn around 300 kilocalories, which is almost twice the calorie consumption of jogging!



# Solutions for nosing overhang and open stairs

## Stair profiles for open stairs or nosing overhang

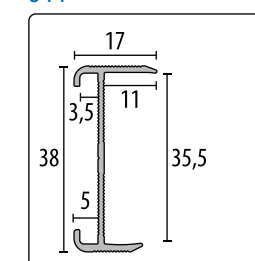
(844, 844 WS, 845, 846, 847)

The 844 series models are our perfect solution for overhanging nosing.

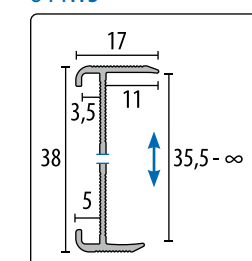
The 844 series profiles are specially designed for profiled (overhanging treads). The profile is fitted to the front of the tread. A floor covering can be fitted in the insert to give the stairs a discreet, different-coloured or individual look. Needless to say, the range is completed by round corners, smaller internal and external corners and end pieces. Thanks to its special processing of the wave-shaped cut groove, profile 844WS can be used individually for steps from a height of 35.5 mm. The water jet cut lets you telescopically adapt the profile to almost any height.



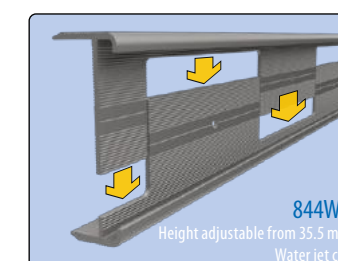
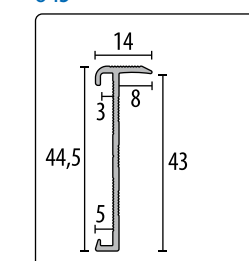
844



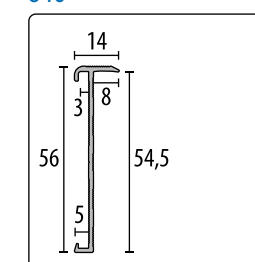
844WS



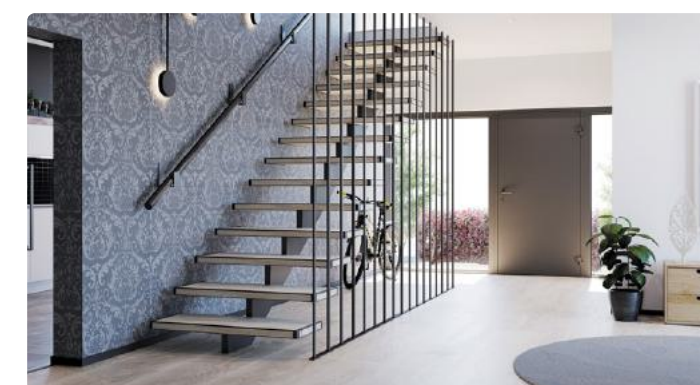
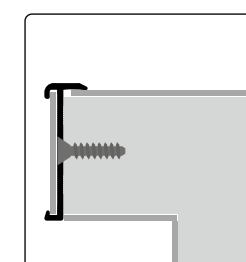
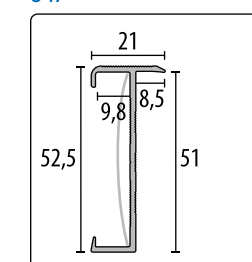
845



846



847



- perfectly understated nosing profiles for nosing overhang
- bendable variants available
- round corner configurations possible



You can find out more about nosing profiles for discreet edge protection on our product platform!



### Important facts

Most children make their first stair climbing endeavours at 18 months. At the age of 3, they manage to walk up and down stairs safely without help from their parents. Children want to go and play, ideally everywhere, not just under the stairs or on the landing. This is why safety on the entire stairs is important and necessary.



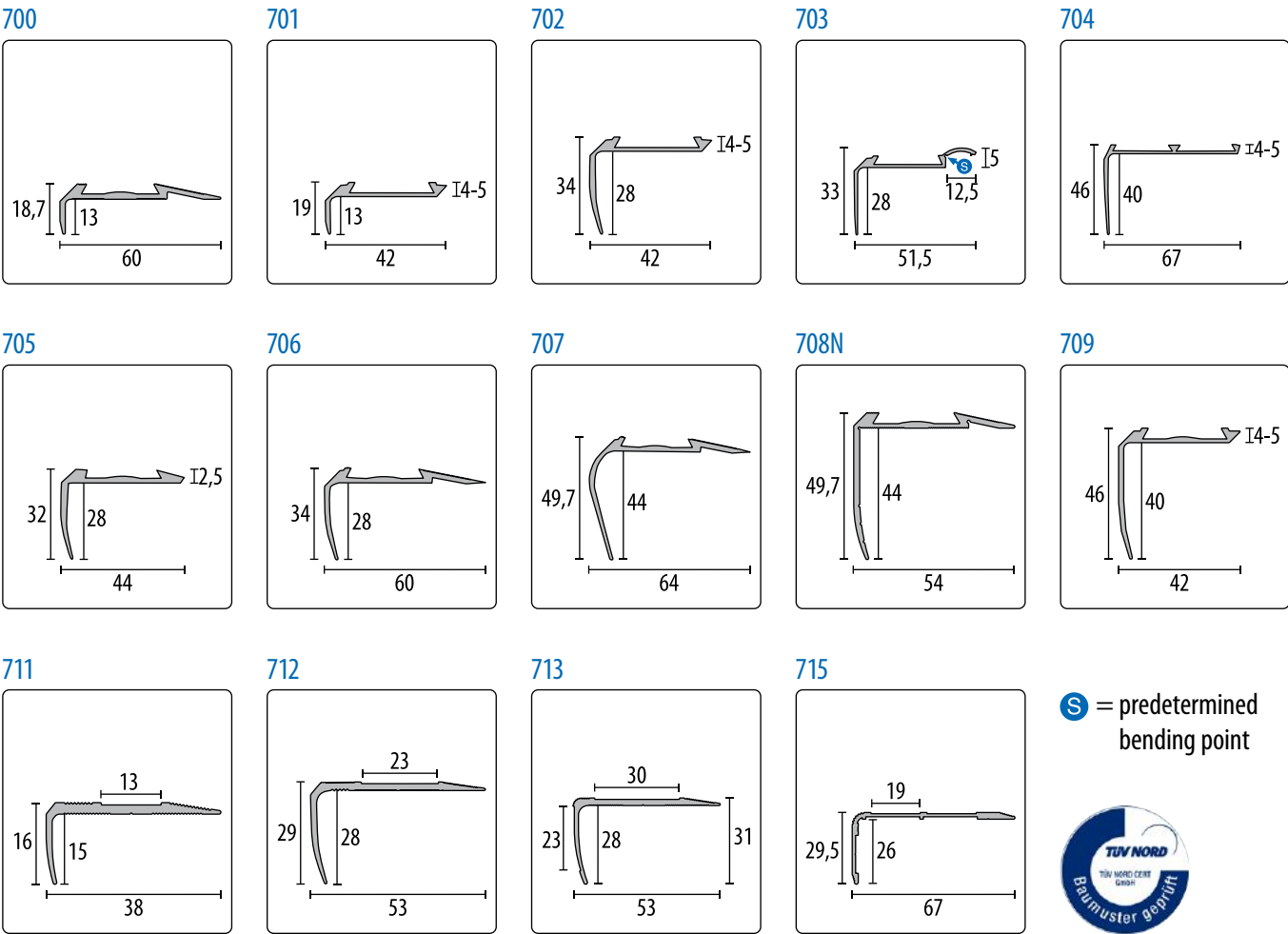
# Steps in the commercial or public sector

## Nosing profiles with anti-slip inserts

(700, 701, 702, 703, 704, 705, 706, 707, 708N, 709, 711, 712, 713, 715)

The products in this range are safety nosing profiles.

The profiles can be used for timber and stone steps, platforms and landings, but are not suitable for use on textile coverings. Unlike the previous profiles, these are installed after the floor coverings have been laid. After fastening the profiles, the anti-slip insert is glued on so that the screw heads are covered. Our especially low-shrinkage anti-slip inserts are available in different designs and colours as well as photoluminescent versions for good visibility, even in the dark.



· interchangeable PVC inserts  
· self-adhesive anti-slip inserts in various colours and surfaces  
· with slip resistance rating R9-R13



You can find out more about safety nosing profiles on our product platform!





### Further information about Küberit®

Are you an architect or planner? Then you've come to the right place for the right profile. We are pleased to help you! Küberit® has installation videos and instructions, leaflets, brochures and much more.

Visit our homepage and discover a multitude of solutions for your problem. At [pro.kueberit.com](http://pro.kueberit.com) you will definitely find the profile that suits you!



The availability of BIM data for construction planning can be found here!



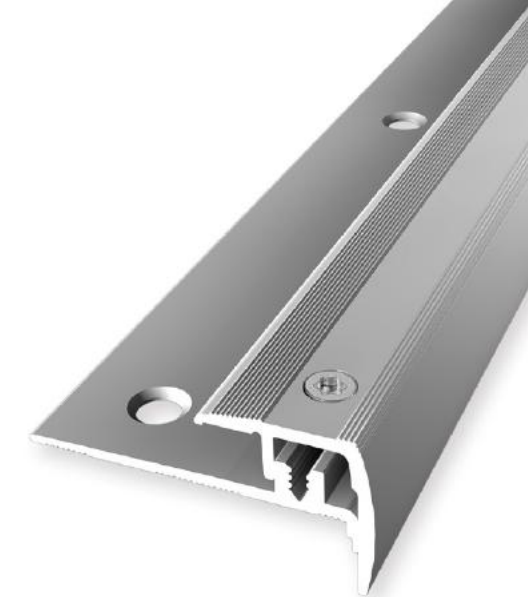
## 2-part stair profile systems

### Grooved nosing profiles in 2 parts (320, 325, 510, 402, 401)

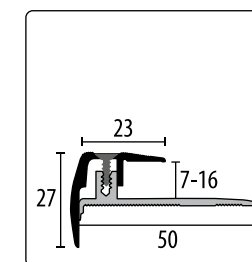
The models of this series are part of the Küberit® profile systems.

For the refurbishment of stairs with old parquet or laminate flooring, the internationally patented Euro-Step® Champion nosing profile system complements the Küberit® product range.

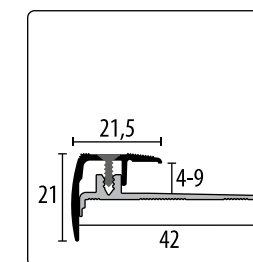
The two-part, anti-slip nosing profile, comprising a top and base profile, is suitable for installation heights of 7 to 16 mm. Professionals can use the profile system for straight and spiral staircases and landings. We also offer angled brackets and mounting profiles for straight or angled installation of the risers. A suitable finishing angle is available for open staircases. This produces a perfect result functionally and visually with a minimised risk of accidents thanks to the anti-slip nosing.



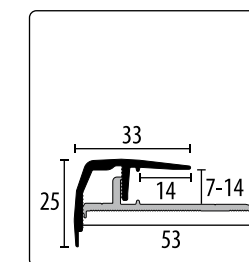
320



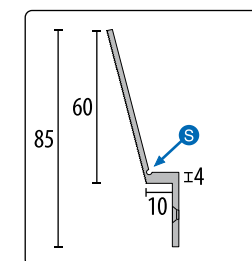
325



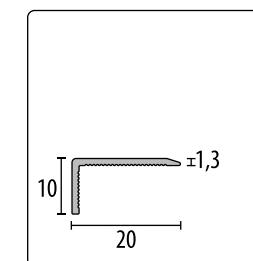
510



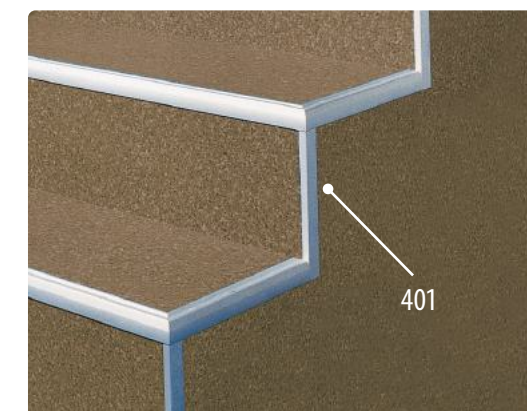
402



401



· optimised stairs trimming  
· interchangeable top profile  
· anti-slip, safe nosing



You can find out more about profile systems for stairs on our product platform!



## Stair rods



### Subtle stair rods (730, 734, 733, 736)

High-quality stair rods for stair runners.

They are still around! Premium stair rods for stair runners, which you'll find in hotels, museums, venerable villas or buildings from time to time. These solid stair rods provide not only safety, but also add a touch of quality to the character of the staircase. For decades, we have been providing customers with an extensive selection of colours, formats and accessories.



You can find out more about stair rods on our product platform!



### Important facts

Which muscle groups are particularly challenged when climbing stairs?

**Legs:** front of the thighs (quadriceps femoris), inner side (musculus adductor), leg flexors (biceps femoris), calf muscles (gastrocnemius, plantaris, soleus) and foot muscles

**Buttocks:** large gluteal muscle (gluteus maximus), gluteus medius and gluteus minimus

**Back:** especially the back extensor muscle (erector spinae)

Several muscle groups in the hip and abdominal area also support movement and correct posture when climbing stairs.



## Steps with LED-illumination



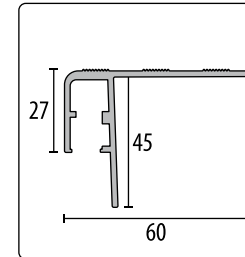
### Nosing profiles with LED illumination (890, 891, 936)

The models of this series belong to the profiles with LED lighting.

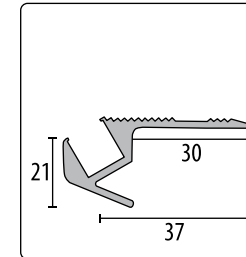
Our profiles with LED lights are used wherever steps need to be signalled in the dark. They cast enough light onto the steps to provide safety even under these circumstances. Our LED square tubing for nosing profiles is available in various colours.



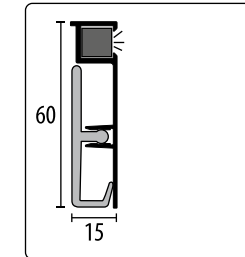
890



891



936



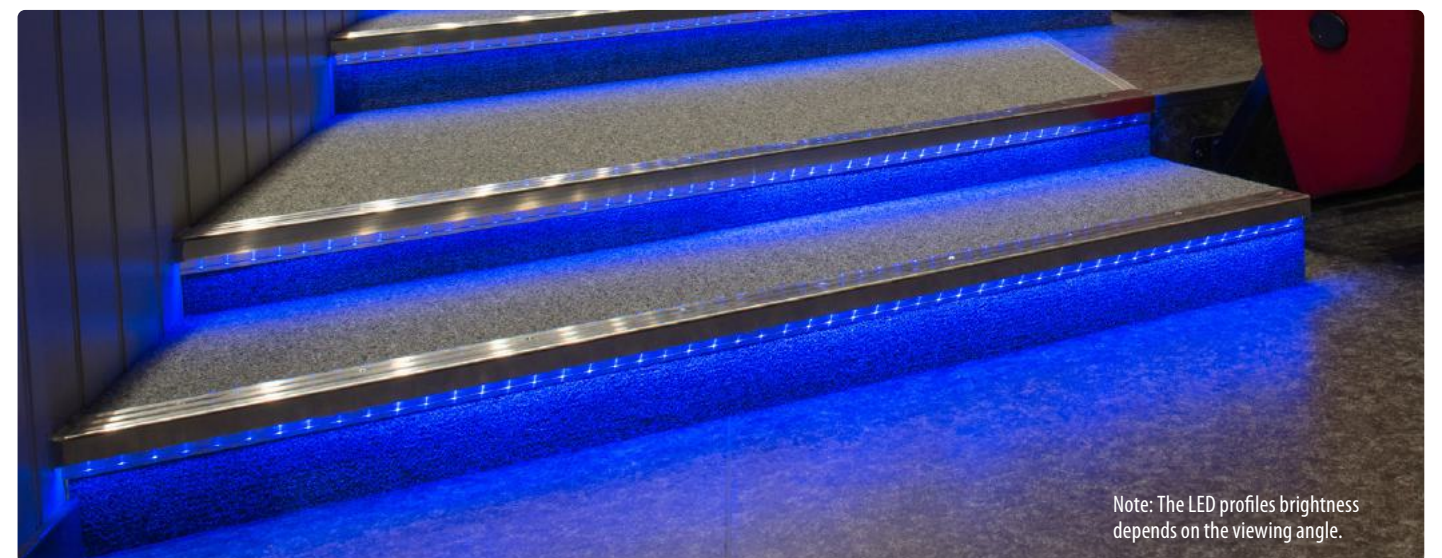
894 - LED tubes



896-897 - LED drivers



899 - LED luminaires



Note: The LED profiles brightness depends on the viewing angle.



You can find out more about profiles on our product platform!



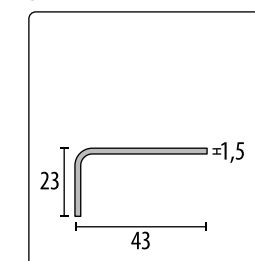
## Stainless steel edge profiles

### Stainless steel edge profiles (544, 545)

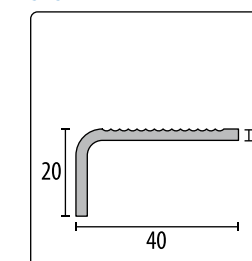
Solutions for anti-slip steps in public and commercial areas.

The stainless steel edge profiles 544 and 545 are the ideal solution for steps that are subjected to the highest loads. They can safely be used outdoors. We are thinking of steps in multi-storey car parks, steps at public squares, museums, etc. The 544 profile fulfils slip resistance rating R12 and the 545 profile fulfils slip resistance rating R10 V4. The profiles can be glued and / or fastened with screws after installation.

544



545



· elegant stainless steel staircase trim  
· with slip resistance rating R10 and R12  
· 544 with Crossline finish

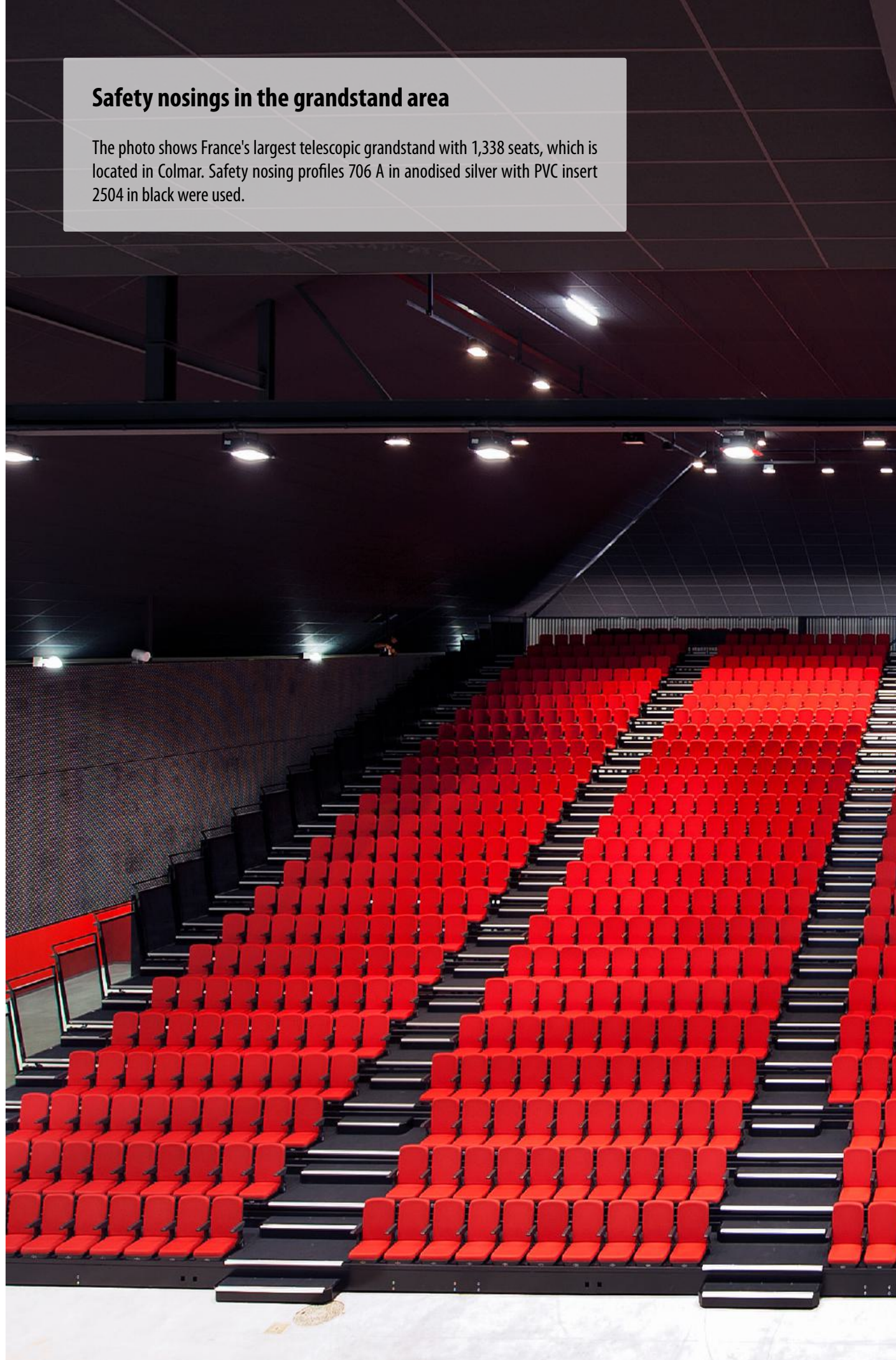


You can find out more about edge profiles on our product platform!



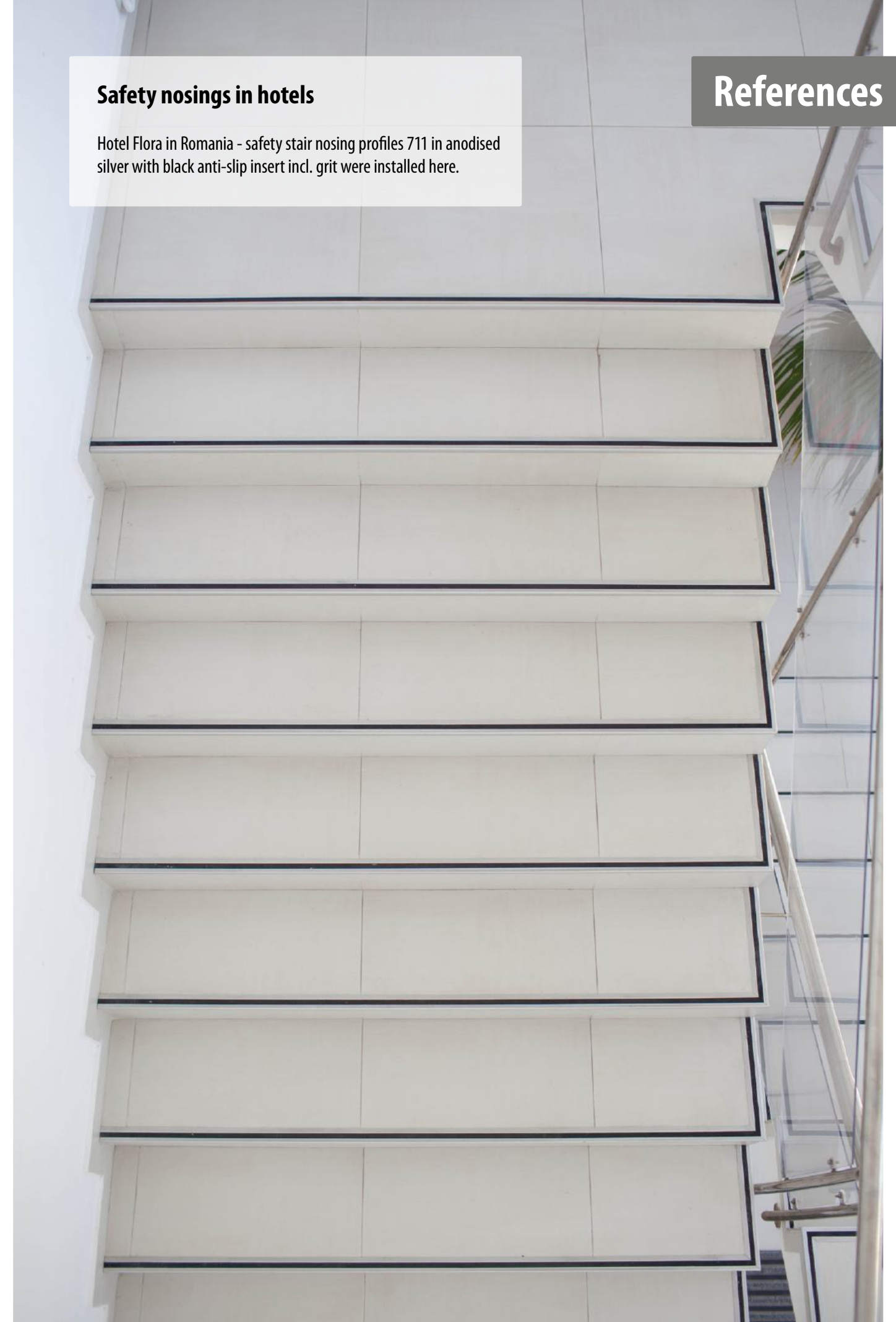
## Safety nosings in the grandstand area

The photo shows France's largest telescopic grandstand with 1,338 seats, which is located in Colmar. Safety nosing profiles 706 A in anodised silver with PVC insert 2504 in black were used.



## Safety nosings in hotels

Hotel Flora in Romania - safety stair nosing profiles 711 in anodised silver with black anti-slip insert incl. grit were installed here.

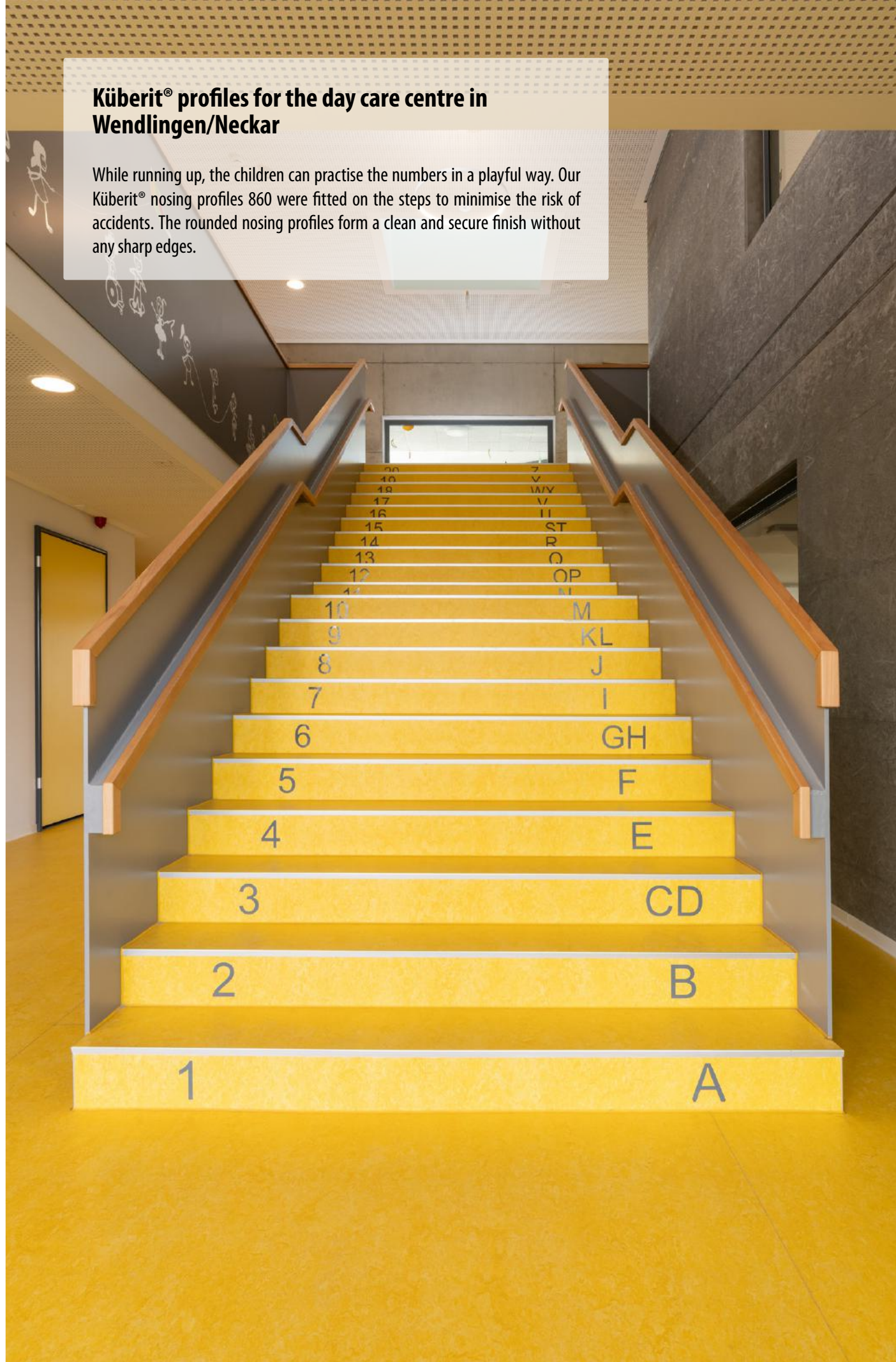


## References



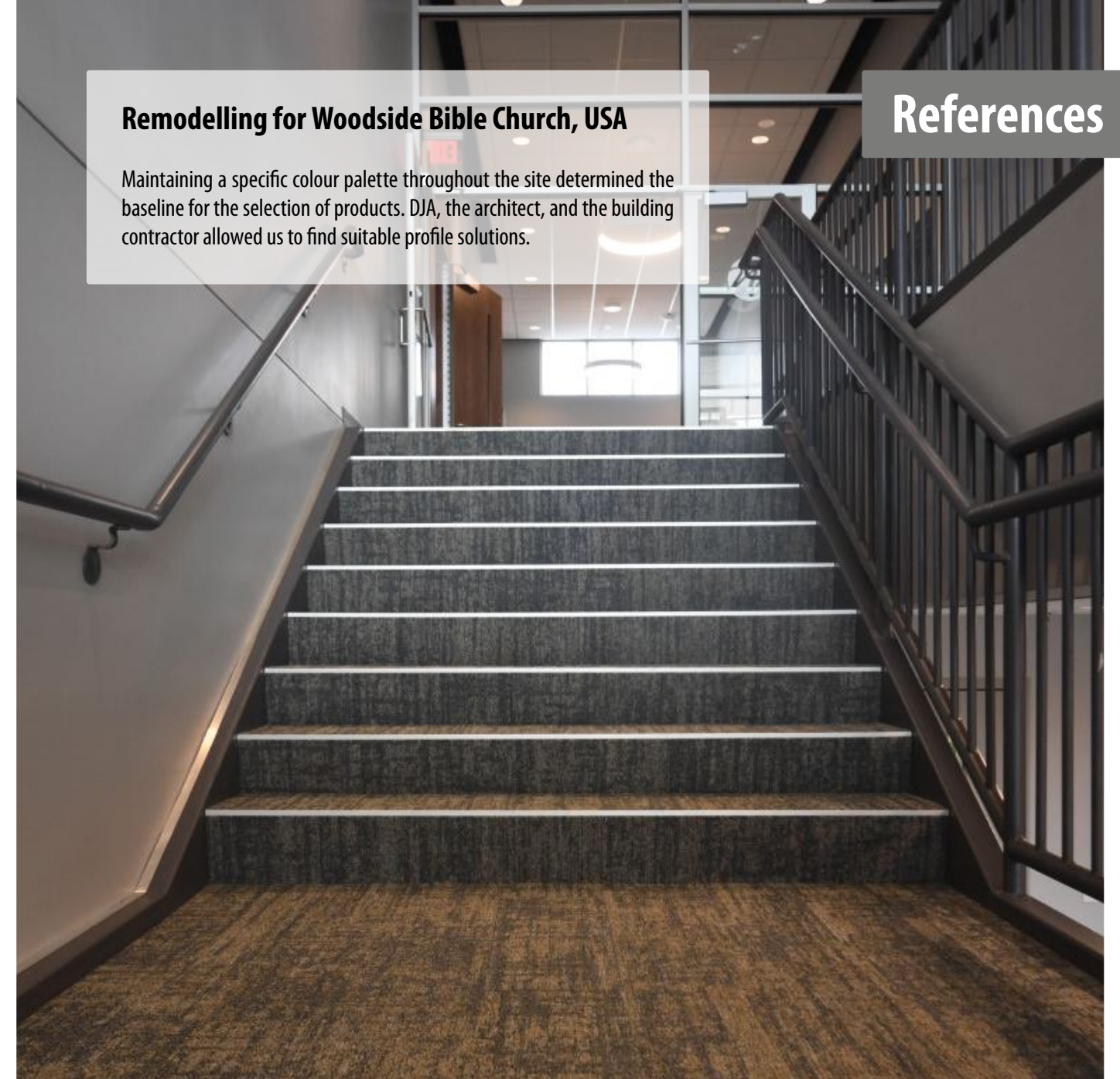
## Küberit® profiles for the day care centre in Wendlingen/Neckar

While running up, the children can practise the numbers in a playful way. Our Küberit® nosing profiles 860 were fitted on the steps to minimise the risk of accidents. The rounded nosing profiles form a clean and secure finish without any sharp edges.



## Remodelling for Woodside Bible Church, USA

Maintaining a specific colour palette throughout the site determined the baseline for the selection of products. DJA, the architect, and the building contractor allowed us to find suitable profile solutions.



## References





The availability of BIM data for construction planning can be found here!

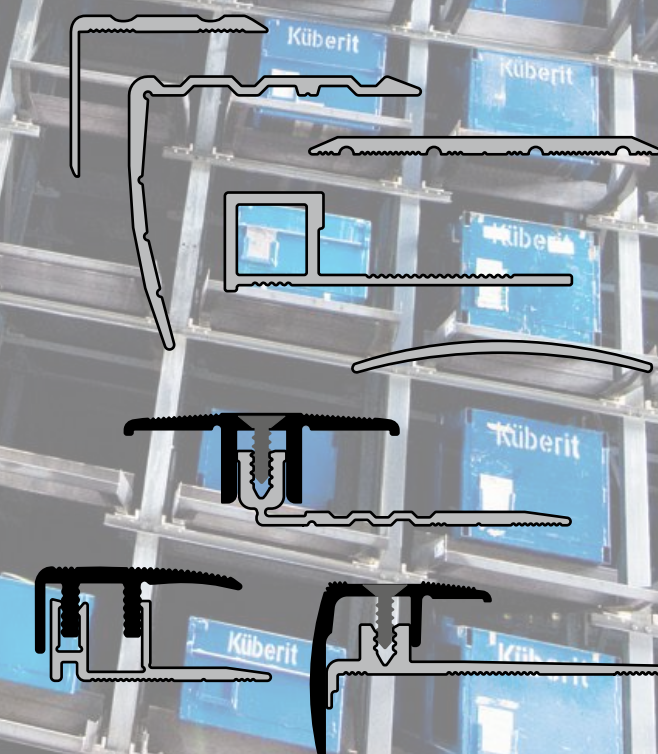
# KÜBERIT®

## The original since 1863

### Profile solutions for interior fittings made of aluminium, brass and stainless steel

Ever since 1863, Küberit® has been a synonym for first-class quality and innovative product development. As a global manufacturer of floor, stair nosing and wall profiles made of aluminium, brass and stainless steel, Küberit® holds a leading position in trade and crafts. The comprehensive range of more than 15,000 profiles and mouldings includes two- and three-part profile systems, transition, end and edging profiles, nosing and edge profiles, stair rods, skirting boards made of aluminium and stainless steel, wall and wallpaper profiles as well as corner protection angles, ramp profiles, profiles intended for bending, tile/screed profiles and expansion and movement joint profiles.

With its 160-year history, Küberit® is a traditional Luedenscheid company. Today, 140 employees develop and produce profile solutions made in South Westphalia. We deliver to more than 65 countries worldwide, with 13 million running metres leaving the factory every year. When searching for the perfect profile, you will find the right solution using our innovative product platform.



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PLATFORM**  
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## Sustainability

### Protecting the environment and resources - for a better future!

At Küberit® we aim to produce and distribute our profiles with the greatest possible conservation of resources and nature. Küberit® eco pro<sup>3</sup> - the ecological choice. Aluminium is valuable - which is why we manufacture our profiles from certified recycled aluminium. This not only benefits nature and the carbon footprint, but also quality! We currently process around 25% primary and 75% recycled aluminium, i.e. secondary aluminium. This high proportion means that our products have a remarkably good carbon footprint.

We are specialists in our field and ensure the superior quality of our products with strict quality guidelines and close monitoring, thereby guaranteeing a long service life. We apply stringent environmental criteria when selecting our suppliers and work exclusively with extrusion and anodising plants within the EU Customs Union that are certified to the latest standards and follow the same environmental philosophy, which also avoids long sea routes. In the pressing plants, we mainly use hydro billets from Norway as primary material. Their production with hydroelectricity improves the carbon footprint enormously.

Alongside the changes in production and avoiding material from countries where aluminium is produced with a significantly poorer energy and environmental balance, such as China, the large storage capacity in Lüdenscheid and the improvement of internal processes in our administration also play a major role. The steps for sustainable, resource-conserving management are so extensive and varied that we have summarised them under eco pro<sup>3</sup> so that we can drive them forward in a more targeted manner in future.







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