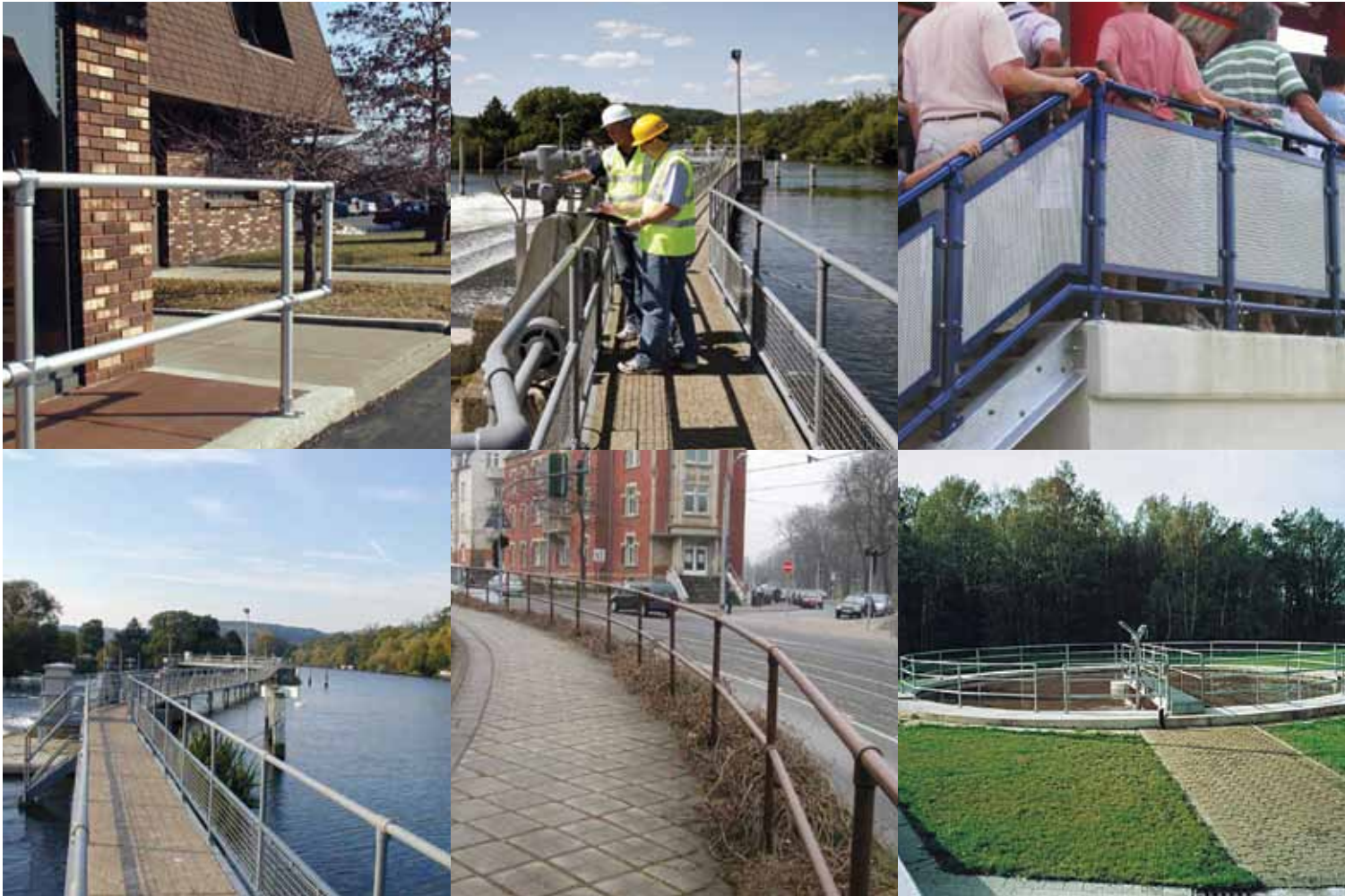




SEPARATING PEOPLE FROM HAZARDS

Safety Barrier Solutions



- SOLUTIONS TO YOUR BARRIER NEEDS
- SIMPLE TO DESIGN AND SPECIFY
- UNRIVALLED TECHNICAL SUPPORT
- WORLDWIDE AVAILABILITY

The Kee Safety Concept



KEE SAFETY is a leading global supplier of components and bespoke safety systems for railing and barriers. We have been designing and building safety equipment for over 70 years.

KEE SAFETY offers an extensive range of components which can be used to develop bespoke applications, including those which require compliance to the UK Disability Discrimination Act (DDA).

Exceeding Safety Standards

KEE SAFETY systems not only meet but also exceed the current safety requirements for maximum protection. Our components comply with the latest health, safety and legislative guidelines wherever you are in the world.

As market leader we regularly monitor all new safety standards and legislation to ensure the highest protection.

True Versatility

From simple protection for loading bays or safety walkways in factories, to safety barriers in aggressive coastal environments or the protection of road bridges and culverts, **KEE SAFETY** barriers provide the strategic integrated solution to give you absolute confidence in your safety requirements.

We offer a variety of different barrier types and sizes, however in general all barriers are manufactured with a formed frame and offer an optional welded mesh or solid bar infill. We can provide materials in galvanised iron or aluminium, and an additional optional powder coating can be supplied to match a corporate image.

Whether you need to separate people from hazards or protect your equipment on site, **KEE SAFETY offers the most cost effective and safe solutions to your barrier requirements.**

Exceptional Quality

Quality is the overriding priority when building barriers. **KEE SAFETY** components are TÜV certified for strength, manufacturing quality and consistency. The final design will be reviewed by our projects department to all of the applicable safety requirements.

As standard all **KEE SAFETY** barrier systems are manufactured and galvanised to British Standard (ISO) requirements, and are subject to stringent visual inspection on completion.

Ease of Design and Installation

KEE SAFETY barrier systems are very easy to install using only a standard hex key – no threading, welding or bolting. Our guardrail modules consist of a versatile choice of modular upright and fitting arrangements. All arrangements are pre-assembled, the selected module simply needs to be positioned and fixed to the roof, parapet, wall or ground surface with the appropriate tube lengths inserted and secured in the open fitting end, then connected to the next module in the run to build an effective guardrailing structure.

Single rail and double rail fitting options can be provided together with a range of vertical or raked uprights. They are also reusable should you wish to dismantle or redesign your structure.

Safe, Durable and Versatile Barrier Solutions

Pedestrian Barriers

Pedestrian barriers are essential at outdoor events where the safe direction of pedestrian traffic is required; however they can also be used on construction sites and road works.

KEE SAFETY offers fittings for both in-line and offset constructions which allow continuous guardrail across a variety of angles. Installation requires no welding, and no special tools.

We also offer pedestrian guardrails (PGR) for sites which are not straight and level. There is sufficient play within the component to negotiate a slope up to 7 degrees, or a radius greater than 6m (when the uprights are 2m centres, using straight pipe). It enables the construction of ramps and slopes without the need to bend the tube.



Stairs and Ramps

KEE SAFETY barrier systems can cope with virtually any problem that your building or design may create, e.g. bends, tight turns and steep treads. Our systems can be used in balustrading for stairways, landing and ramps as well as wall mounted handrails or guardrailing on the top of balconies and parapets.



DDA Handrailing & Compliant Guardrails

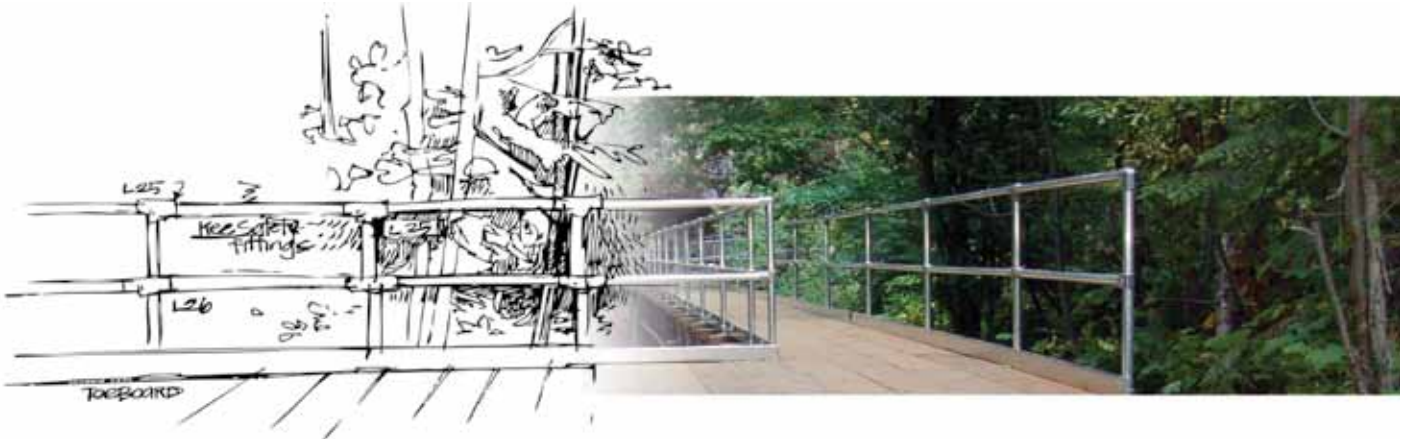
Under the terms of the UK Disability Discrimination Act (DDA), all commercial and public building owners are obliged to provide non-discriminatory balustrading and handrailing on stairways and ramps. Our **KEE ACCESS** range meets all these requirements and complies with current Building Regulations.

KEE ACCESS fittings have been specifically designed to give a smooth handrail with size 7 tube (outside diameter 42.2mm). All fittings can be powder coated in a choice of RAL colours to meet the visibility and "not cold to the touch" requirements of the DDA.

KEE ACCESS range is ideal to create new barriers but the system can also be used as a retrofit solution due to its add-on components which allow a new handrail to be added onto an existing railing system.



From Idea to Installation



Unrivalled Technical Support Service

When purchasing **KEE SAFETY** systems, you can be assured of unrivalled technical support. Our technical team can offer practical assistance either over the phone or by fax or if required check your designs or drawings for compliance with safety standards.

We can also help you with writing the specification or doing the layout of the safety barrier. If you wish, we can provide you with a list of required components for your project, and advise you on costs.

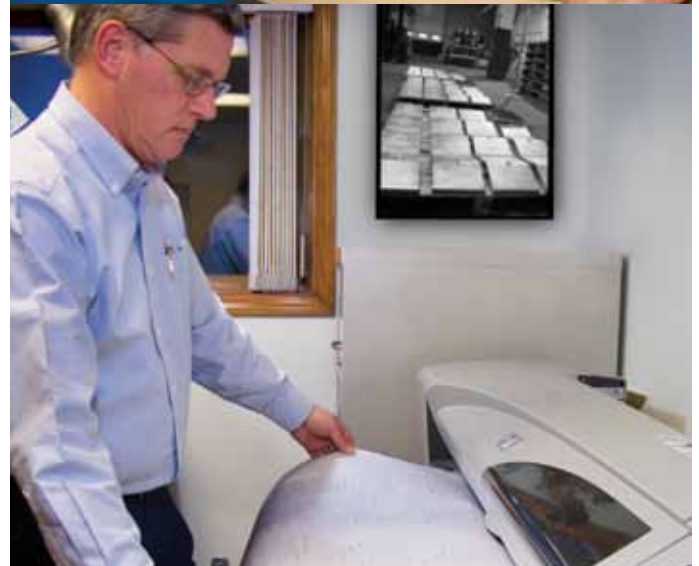


Custom Safety Solutions



If you have a major project requirement we can offer a full design and installation service through our **KEE PROJECTS** division, assuring you of a safe installation, fully compliant with all major standards and statutory requirements.

KEE SAFETY has dedicated construction professionals who have worked within the construction industry for many years. Together with their expert industry knowledge and our safety product ranges, our team is fully capable of providing you with safety guardrail and handrail solutions that will serve your project needs.



- Cost estimation to specific project needs
- Technical advice and support
- Site inspection service
- Design solution in CAD
- Installation service



Options Available to Special Order

RAL Colours



In addition to the standard galvanised finish, **KEE SAFETY** offers the complete range of RAL colours in Polyester Powder coated finishes.

The broad colour range offers a variety of visual colour contrast options and is not cold to touch. Not only will these colours aid you in complying with the requirements of the DDA, they will also enhance any handrail, guardrail, balustrade or a multitude of other applications.

Anti-Bacterial Powder Coating

We recommend our special anti-bacterial powder coating for heavy traffic environments, such as schools, libraries, museums and other communal buildings. Fittings coated with the anti-bacterial powder coating will benefit from a supportive defence against the growth of potentially harmful yet invisible bacteria and fungi, thus reducing the risk of cross-contamination from surfaces with high frequency of contact.

Our anti-bacterial coating has been independently tested against a broad range of bacteria, and it is available in the full range of RAL colours.



Kee Coat® / Thredcoat®

KEE KOAT is our unique coating which protects grub screws and prolongs the life of barrier structures.

Grub screws coated with our **KEE KOAT** have four times greater red rust resistance than the bright zinc plated grub screw. This, combined with the **THREDKOAT** (patented) factory applied coating for the threaded recess, ensures that safety barriers achieve longer life and better corrosion resistance.

Mesh Infill

Our mesh barrier is constructed from heavy gauge tube and has a welded mesh infill, making it very strong and durable, whilst being light and easy to handle. The three and half metre span of the mesh barrier combines economy and strength with fewer components per metre, which makes it the ideal choice for the construction industry.

Our made-to-order welded mesh infill, plain, galvanised or colour coated, are normally 50mm x 50mm x 3mm welded onto an 8mm diameter rod frame. **KEE KLAMP** Clips 81 and 82 comply with BS 7818 Clause 2.4.

Vertical Bar Infill

KEE SAFETY offers made-to-order Vertical Bar Infill which are stronger than welded mesh and are normally fabricated from 12mm solid bar welded at 100mm centres. This complies with the 100mm sphere rule stated in BS 6180:1995, Clause 5.3.



Safety Standards

360 Newtons per metre run (N/m)
740 Newtons per metre run (N/m)
1500 Newtons per metre run (N/m)

Industrial Use-Non Emergency
Commercial Use
Retail/Public Access

The current regulations give various design requirements to be fulfilled of which the Design Load is the most important.

KEE KLAMP LOAD CHART

Tube Size	6 3.2mm	7 3.2mm	7 4mm	8 3.2mm	8 4mm	8 5mm	9 3.65mm	9 4.5mm
Grade	BS EN 10255 Medium	BS EN 10255 Medium	BS EN 10255 Heavy	BS EN 10255 Medium	BS EN 39	EN 10210 S355 JOH	BS EN 10255 Medium	BS EN 10255 Heavy
Design Load Criteria	Upright Height 900mm							
360 N/m	814mm (4.44KN)	1369mm (6.52KN)	1595mm (7.60KN)	1828mm (7.73KN)	2584mm (10.92KN)	3052mm (12.90KN)	3265mm (13.80KN)	3856mm (14.75KN)
740 N/m	396mm (4.44KN)	666mm (6.52KN)	776mm (7.60KN)	889mm (7.73KN)	1257mm (10.92KN)	2229mm (19.36KN)	1588mm (13.80KN)	1876mm (14.75KN)
1500 N/m	195mm (4.44KN)	329mm (6.52KN)	383mm (7.60KN)	439mm (7.73KN)	620mm (10.92KN)	1100mm (19.36KN)	784mm (13.80KN)	925mm (14.75KN)
Design Load Criteria	Upright Height 1000mm							
360 N/m	732mm (4.44KN)	1232mm (6.52KN)	1435mm (7.60KN)	1645mm (7.73KN)	2326mm (10.92KN)	2930mm (13.76KN)	2939mm (13.80KN)	3470mm (14.75KN)
740 N/m	356mm (4.44KN)	599mm (6.52KN)	698mm (7.60KN)	800mm (7.73KN)	1131mm (10.92KN)	2006mm (19.36KN)	1430mm (13.80KN)	1688mm (14.75KN)
1500 N/m	176mm (4.44KN)	296mm (6.52 KN)	345mm (7.60KN)	395mm (7.73KN)	558mm (10.92KN)	990mm (19.36 KN)	705mm (13.80 KN)	833mm (14.75 KN)
Design Load Criteria	Upright Height 1100mm							
360 N/m	666mm (4.44KN)	1120mm (6.52KN)	1305mm (7.60KN)	1496mm (7.73KN)	2114mm (10.92KN)	2778mm (14.35KN)	2671mm (13.80KN)	3155mm (14.75KN)
740 N/m	324mm (4.44KN)	545mm (6.52KN)	635mm (7.60KN)	728mm (7.73KN)	1028mm (10.92KN)	1824mm (19.36KN)	1300mm (13.80KN)	1535mm (14.75KN)
1500 N/m	160mm (4.44KN)	269mm (6.52KN)	313mm (7.60KN)	359mm (7.73KN)	507mm (10.92KN)	900mm (19.36KN)	641mm (13.80KN)	757mm (14.75KN)

Base upon Rail diameter being the same as the upright but using EN 10255 medium wall tubing.

Design Loads are as stated in BS 8118, BS 6180, BS 6399 & BS 7818.

The above bay sizes are based upon using the **KEE KLAMP** type 62 base fitting fixed perpendicular to the line of the Handrails.

The figures shown in brackets are the required anchor pull out loads for the bay size indicated after all reduction factors have been applied.

Notes

- The table is based on the maximum permissible bending moment of the tube
- All rails are the same tube size as uprights but in EN 10255 medium grade tube
- Where tube is to be used to form ground sockets:
 - Tube size 6 fits inside tube size 7 medium grade only
 - Tube size 8 fits inside tube size 9 all grades.

KEE LITE LOAD CHART

Tube Size	6 3.38mm	7 3.56mm	8 4.05mm	9 4.06mm
Grade	6082 T6	6082 T6	6082 T6	6082 T6
Design Load Criteria	Upright Height 900 mm			
360 N/m	720mm	1388mm	1879mm	2490mm
740 N/m	N/A	N/A	1220mm	1940mm
Design Load Criteria	Upright Height 1000 mm			
360 N/m	540mm	1117mm	1664mm	2370mm
740 N/m	N/A	N/A	950mm	1690mm
Design Load Criteria	Upright Height 1100 mm			
360 N/m	400mm	871mm	1398mm	2205mm
740 N/m	N/A	N/A	730mm	1400mm

Based upon Rail diameter being the same size & grades as the upright.

Design Loads are as stated in BS 8118, BS 5950, BS 6180, BS 6399 & BS 7818.

To achieve bigger bay sizes than those stated please contact Kee Safety Ltd for further details.

KEE LITE components are made from high grade Aluminium Silicon Magnesium Alloy.

- Recommended set screw torque is 39Nm
- Minimum slip load capacity on aluminium tube: 7.56kN (safety factor = 2 with tube having a minimum UTS of 275 N/mm²)
- Large grubscrews are designed to resist thread stripping
- The core range of **KEE LITE** fittings has undergone independent testing by TÜV.

You'll Never Be Better Protected

**Kee®
Klamp**

Components for safety barrier solutions

An innovative product for the construction of steel tubular structures. **KEE KLAMP** fittings are pre-galvanised cast iron for strength and corrosion resistance.



**Kee®
Lite**

Aluminium components for safety barrier solutions

A flexible solution for the construction of safety barrier systems. **KEE LITE** fittings are manufactured from a high grade aluminium alloy for superior corrosion resistance, strength and durability.



**Kee®
Access**

Components for DDA compliance for safety barrier solutions

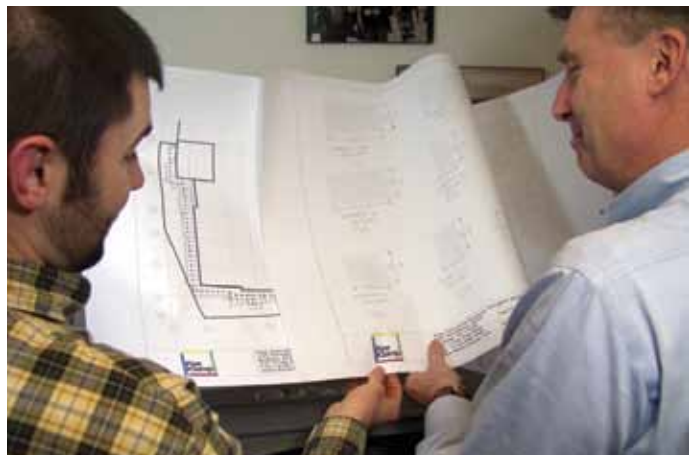
A range of galvanised cast iron fittings suitable for stairs, ramps and walkways specially designed to meet all DDA requirements and Building Regulations.



**Kee®
Projects**

Design, Installation and Management of compliant safety barrier systems

For a major project requirement, we offer a full design and installation service, assuring you of a safe installation fully compliant with all major standards and statutory requirements.



Safety Barrier Photo Gallery



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