GRADUS
contract interior solutions

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A discussion paper

Flooring accessories in public buildings

Creating inclusive environments for the ageing population, with a focus on stair safety

Synopsis

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Figures from the Office of National Statistics show that in Britain, for the very first time, there are more people of a pensionable age than children under sixteen.

This has huge ramifications on the population as a whole, as well as public services such as the NHS and public buildings; more specifically – how public buildings are designed and built.

Local retail outlets, shopping centres and other public buildings such as libraries and hospitals have to be accessible and to accommodate the needs of the elderly and with the extension of the retirement age, it's also important that commercial buildings are properly adapted, to ensure a safe environment for an older workforce.

According to the Health and Safety Executive (HSE), slip, trip and fall accidents are the most common hazard in public and commercial buildings and are responsible for more than half of all reported injuries to the general public. This statistic contributes to rising compensation claims, which are currently at an all time high costing the UK £800 million each year.

What's more, with the increase in specification of expensive luxury floors such as ceramic and terrazzo, the number of slip accidents is increasing. HSE findings go on to show 30,000 workers take more than three days off due to slip, trip and falls – equating to a staggering 90,000 days absent from work.

With low pensions and a higher retirement age, more people are staying in work beyond the 'traditional' 60-65 years. This could undoubtedly contribute to the incidences of slips and trips at work, which will increase the already high number of days lost.

However, the HSE also states that 90 percent of slip, trip and fall accidents can be avoided. This paper covers how flooring accessories can help prevent trips and falls, and discusses how stair edgings, floor trims and barrier matting in particular can be utilised in order to improve public building inclusivity and accessibility.

About the author
Keith Oakes has had significant involvement in all aspects of floorcoverings and flooring accessories, with over 33 years experience understanding the needs and requirements of individual market sectors. He has worked for Gradus since 1980 and sits on various BSI committees, the UK Slip Resistance Group and the CFA Manufacturers Committee.

About Gradus
Gradus was founded in 1966 and has evolved from a flooring accessories business, which still remains at the heart of its activities, into a fully-fledged contract interior solutions provider. With over 300 employees serving both the UK and International markets, Gradus offers solutions for floorcoverings, barrier matting, wall protection and lighting design, in addition to a comprehensive range of stair edging and floor trim profiles.

The ageing population

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Recent figures from the Office for National Statistics show that life expectancy in the UK has reached its highest level on record for both males and females: 78.1 years at birth for men and 82.1 years at birth for women.

What's more, the number of centenarians in the UK in 2010 was estimated to be 12,640 – a five-fold increase on the 1980 estimate of 2,500.

The research goes on to show that 10 million people in the UK are over 65 years old and the latest projections are for 5.5 million more elderly people in 20 years time, with the number nearly doubling to around 19 million by 2050. This means that while one-in-six of the UK population are currently aged 65 and over, by 2050 one-in-four will be.

Within this total, the number of even older people grows even faster; there are currently three million people aged more than 80 years and this is projected to almost double by 2030 and reach eight million by 2050.

The ageing population is partly a consequence of the ageing of the large number of people born during the 1960s 'baby boom', but it also stems from increased longevity; for example, a man born in the UK in 1981 had a cohort life expectancy at birth of 84 years. For a boy born today, the figure is 89 years, and by 2030 it is projected to be 91. The trend for women is similar; a girl born in 1981 was expected to live for 89 years and one born today might expect to live to 92.

Impacts of an ageing population on public building usage and accessibility

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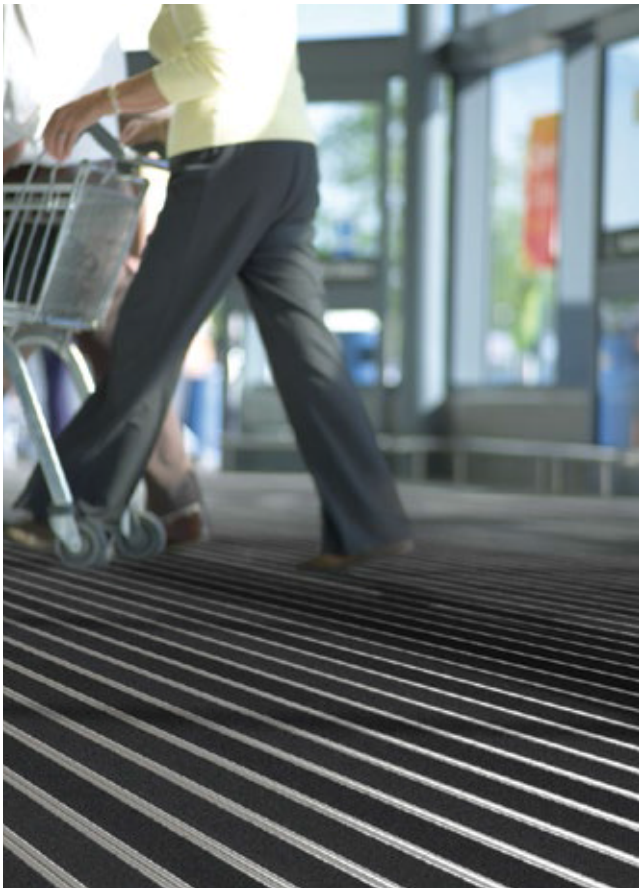
The construction industry must start to take into account the changing needs of the population in its projects. It's not just homes that need to be adapted to ensure a safe and inclusive environment, but also the wider surroundings.



Local retail outlets, shopping centres and other public buildings such as libraries and hospitals have to be accessible and to accommodate the needs of the elderly. Plus, with the extension of the retirement age, it's also important that commercial buildings are properly adapted, to ensure a safe environment for an older workforce.

A recent survey by The Chartered Institute of Building (CIOB) showed that 97% of respondents state that it's important to adapt and improve the built environment for the elderly. 25% of those who acknowledge this importance are already incorporating designs appropriate for the elderly into their projects.

In general, respondents felt that accessibility is the most important aspect of adapting the built environment, with 51% selecting this option as their first choice. For reference, accessibility in this context applies to housing, public buildings and commercial buildings.

Research suggests that the Government has not fully considered the impact of the ageing population upon commercial and office buildings. 49% of respondents stated that it is important to adapt workspaces to take into consideration the extension of the retirement age, and although all commercial buildings need to comply with guidelines set out in the Building Regulations and British Standards, further measures could be taken to make them more 'age friendly'.

47% of respondents said they believe that standards should be developed for commercial and public buildings, similar to the 'Lifetime Homes' standard (16 design criteria that provide a model for building accessible and adaptable homes). These would set out key design features to help make buildings more accessible for the elderly and would be particularly important when the retirement age is extended further, as workspaces will have to reflect the needs of all employees.

Final results of the survey showed that respondents thought that the biggest improvements that could be made are as follows: level access to buildings (55%); lifts as standard (50%); car parks and drop off points (44%).

Stair safety in public and commercial buildings

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When it comes to creating more inclusive and accessible environments for the aging population, reducing slips, trips and falls on stairs is a major concern for building owners, specifiers and contractors.

Stair edgings, or stair nosings as they are also referred to, should be used to highlight the edges of steps in public and commercial buildings, in line with Approved Documents M (ADM) and K (ADK) of The Building Regulations 2010 and BS 8300:2009+A1:2010, which look at the design of buildings and their ability to meet the requirements of less able people.

BS 8300:2009+A1:2010 recommends that stair edgings should incorporate a permanent slip-resistant material (rather than temporary materials such as paints or tapes that can fade, peel off or become a trip hazard themselves), as close to the front edge as possible, in a single solid band of colour across the full width of the stair that contrasts visually with the remainder of the step to assist blind or partially sighted people.

Stair edgings can help to deliver inclusive environments by creating visual contrast between the edge of each step and the floorcovering on the staircase. However, achieving visual contrast is not as straightforward as it may first appear.

It is important that a tonal contrast is achieved between the stair edging and floorcovering, measured using Light Reflectance Values (LRVs) in accordance with BS 8493:2008+A1:2010. There should be at least a 30-point difference on the LRV scale between the stair edging and floorcovering for a suitable contrast to be achieved. Therefore, for specifiers and contractors to be confident about delivering visual contrast, they need to request LRV test reports from both the stair edging and floorcovering manufacturers.

Furthermore, all stair edgings should be durable, retain their appearance and be fit-for-purpose throughout their lifecycle. To ensure this, they should be tested both in-house and independently.

The Health & Safety Laboratory Pendulum Test is undertaken to determine a Pendulum Test Value (PTV), which is used to assess slip-resistance on staircases in public buildings. A PTV of 36 or more is required to be classed as safe and a suitable slip-resistant stair edging insert should be chosen for the environment to ensure a low risk of slip in wet and dry conditions.

Stair edging inserts should not only be tested for slip-resistance and LRVs, but also surface roughness, wear (SATRA, using Taber Abrader Method) and chemical and bacterial/fungal resistance.

Utilising floor trims and barrier matting to improve accessibility in public buildings

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Floor trims, or transition strips as they are also referred to, are essentially a safety product. They allow floorcoverings of different materials and heights to be joined together safely, reducing the likelihood of trip accidents and allowing easy access and circulation.

The trim itself must be chosen correctly as the wrong trim can become a trip hazard in its own right. Ramp trims, for example, must ramp down gently, and, dependent on the risk of the trim becoming wet, should incorporate a slip-resistant material. Wrongly selected ramps can also hinder access for wheeled traffic such as wheelchairs, which is obviously more important than ever considering the ageing population.

The heights of trims should also be carefully considered. Trims that do not fit flush with the floorcoverings can create a lip that in turn becomes a trip hazard. Floorcoverings should always be a tight fit to the trim, especially in the case of carpet where the compressed thickness should be considered, rather than the overall height of the carpet. If the trim is flush with the full pile height over time the pile will be flattened leaving the trim standing proud.

Not only would this be a trip hazard but would also cause issues with cleaning, with equipment catching on the trim edge, resulting in a high likelihood of the trim being damaged and again potentially becoming a trip risk.

According to the Health and Safety Executive (HSE), up to 90% of all slip injuries in public and commercial buildings result from wet floors. By removing dirt and moisture from pedestrian and wheeled traffic at the point of entry, barrier matting can reduce the risk of slips to create a safer and more accessible environment.

Building owners, specifiers and contractors should follow guidelines from bodies such as the Health and Safety Laboratory (HSL) and the HSE to ensure they meet guidance in The Building Regulations 2010, Approved Document M ‘Access to and use of buildings’ and BS 7953:1999 Entrance flooring systems - selection, installation and maintenance when it comes to specifying and installing fit-for-purpose barrier matting.

In addition, secondary matting should be used in conjunction with the primary mat to provide extra protection. The versatility of secondary barrier matting means it does not have to stop at a building’s entrance, it can also be continued through to corridors, lift areas and even stairs if required to ensure that excess moisture is not transferred to surrounding floorcoverings, in line with HSL guidelines.

Protecting surfaces in public buildings

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With an ageing population, the amount of wheeled traffic in public access spaces, such as wheelchairs and mobility vehicles, is increasing.

The sheer weight of mobility scooters, as well as the robust tyres, can damage floorcoverings, floor trims and wall surfaces. Shopping centres in particular are facing this new challenge and are starting to employ fit-for-purpose barrier matting and wall protection solutions.

Securely fixed barrier matting with suitable ramping strips can improve access for wheelchair and mobility vehicle users by creating a safe, smooth transition to the surrounding floor finish. By specifying an adequate amount of matting, moisture tracked into retail outlets by pedestrian and wheeled traffic can be significantly reduced, preventing the surrounding flooring from becoming wet and therefore a potential safety hazard. Matting also helps adjacent flooring look clean and tidy, reduces cleaning and maintenance costs, and prolongs the lifecycle of the building's floorcoverings.

Installing wall and corner guards in public access buildings can protect surfaces from damage caused by wheelchairs and mobility scooters. Wall protection systems also help to reduce maintenance costs by absorbing impact and deflecting moving traffic in areas that are subject to heavier trolley and pedestrian traffic. They are replaceable and easy to clean, which also helps keep maintenance costs down.

Summary

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With a continuously ageing population in the UK, it is vital that building owners, specifiers and contractors specify and install fit-for-purpose flooring accessories in order to adhere to guidelines in Approved Documents M (ADM) and K (ADK) of The Building Regulations 2010, BS 8300:2009+A1:2010 and BS 9266:2013 in line with the Equality Act 2010.

By specifying and fitting stair edgings, floor trims and barrier matting in the correct way, measures can be taken to make public and commercial buildings much more ‘age friendly’, thus improving inclusivity and accessibility. Factors such as Light Reflectance Values (LRVs) as well as intensive testing of flooring accessories should also be taken into strong consideration.

Increasing awareness of how correctly specified flooring accessories can help create more accessible buildings should also have an impact on a building’s overall design, and not solely highlight the benefits for an older population. Similarly, building accessibility should not just be seen as beneficial for less able-bodied members of the public, but all of the population as a whole. It is this realisation that will aid the way in which we design and specify materials for buildings of the future, thus improving them beyond recognition.

Appendix

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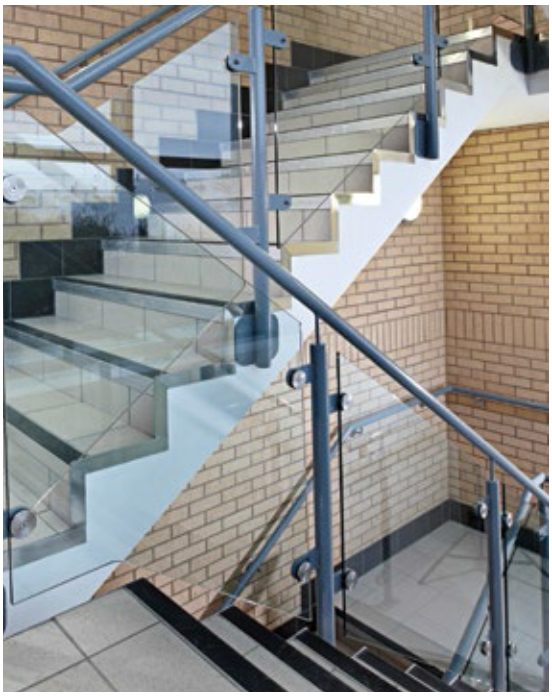


The Gradus XT range of stair edgings has been developed in line with The Building Regulations 2010 Approved Document M (ADM), BS 8300:2009+A1:2010 and BRE guidelines to provide the ultimate solution in reducing trips and slips on interior stairs.

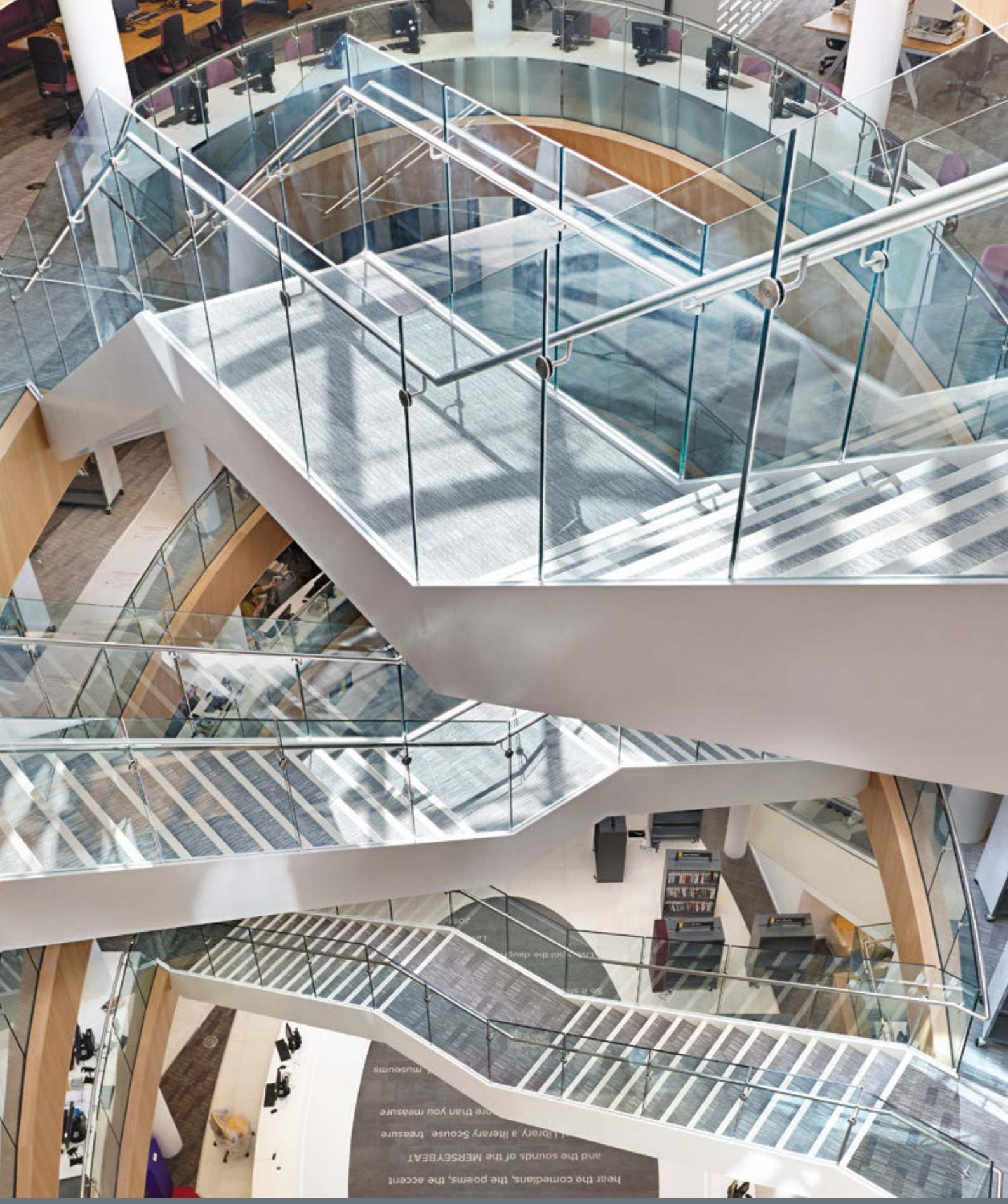
Incorporating a slip-resistant material that extends around the leading edge of the stair edging to ensure maximum safety underfoot, the XT range also features a locking mechanism to secure the insert in place. The correct insert should be selected for the conditions, to ensure that the right level of slip-resistance is achieved. Inserts that are for use in dry interior conditions will not perform effectively when the stairs become wet and will become a slip hazard.

For greater slip-resistance in both dry and wet interior conditions, Gradus Xtra-grip insert, which incorporates mineral aggregate for increased surface roughness, can be used with the XT range.

For interior areas subject to more frequent cleaning, Xtra-grip Plus insert is available and utilises an enhanced insert bond system making it suitable for the likes of catering and food preparation environments, Both inserts have been independently tested by the Health & Safety Laboratory and are proven to offer a ‘low risk of slip’, giving Pendulum Test Values of 70 for dry conditions and 64 for wet conditions, far exceeding the minimum requirements.

In addition, independent wear tests by SATRA have given Xtra-grip and Xtra-grip Plus a classification of Group T, Classes 34 and 43, meaning that it is suitable for ‘very heavy’ use in commercial environments, and ‘heavy’ use in light industrial environments. Each insert colour also has an LRV rating, which allows suitable visual contrast between the stair edging and floorcovering to be achieved.

For more information please visit **www.gradusworld.com**



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