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Promoting safety and security for aging residents with appropriate finishes

Connecting aging with the built environment

North America's rapidly growing 65+ population has drastically impacted senior care and the processes behind the design and architecture of its communities.

In order to design effectively for our aging population, it is vital to understand the many ways that the simple act of getting older is likely to affect residents and their perceived physical environment. The physiological changes associated with aging alter how we perceive the built environment around us, and are often accompanied by declines in our sense of sight, hearing, touch, smell and taste. When these senses are dulled, one's surroundings become more difficult to understand and navigate, making routine tasks stressful and frustrating.

Architects and designers will be increasingly called upon to design supportive, livable, helpful and safe senior care accommodations to remove stress and confusion from an aging resident's everyday life.

Key concepts for effective senior care design

Floors and walls play a crucial role in creating warm, welcoming environments. When designing for senior care communities, these materials must be capable of balancing familiar aesthetics with a reliable foundation that can handle the needs of aging residents.

As we age, the potential for injury and illness increases, which is why proper material selection is so important in residential care communities. When discussing the idea of promoting safety and security through effective senior care design, the subject extends beyond simply preventing slips and falls, focusing on the following key concepts:

- Durability
- Hygiene
- Underfoot comfort
- Slip resistance

Durability

Selecting appropriate finishes for senior care communities involves consideration for constant foot traffic, wheelchairs and rolling beds, walking sticks and other similar movement aids that can potentially damage flooring over time. Carpeting can be lifted as fibers are caught within wheels and walkers, creating uneven surfaces. Another common flooring alternative, VCT tile, is also susceptible to surface damage whether it be in the form of cracks or gradual chipping.

For an individual with altered depth perception and hindered mobility, sporadic lifts or gaps in flooring can easily become tripping hazards that contribute to an increased risk of injury. With this in mind, it is important to prioritize the use of smooth, continuous surfaces capable of enduring both foot and wheeled traffic without compromising surface integrity.

Transitions are another component that must be considered in these environments. FGI Guidelines state that flooring surfaces used in these communities shall provide smooth transitions between different flooring materials. Where tripping is a major cause of accidents for those living with mobility issues, a smooth transition between rooms is essential for allowing them to navigate safely between adjacent areas. Heat welding and vinyl shims can be successfully used to bring vinyl sheet flooring up to the same level as carpeting.

Altro flooring is extremely durable. Its indentation resistance and surface abrasion results enable it to resist scuffing and other damage from constant foot and wheeled traffic that can create unintentional tripping hazards. Similarly, Altro Whiterock wall cladding is highly impact-resistant and known to withstand damage normally caused by equipment being moved frequently within care communities.

Hygiene

Residents of senior care communities are already at a higher risk than the rest of the population of contracting an infection due to age as well as increased vulnerability to illness. It is necessary to maintain a clean and healthy indoor environment to ensure a high quality of life for residents and peace of mind for their loved ones.

FGI Guidelines regarding hygiene requirements for resident communities include the following:

- Surfaces need to be water-resistant and easily cleanable.
- Flooring should remain intact, safe and functional in heavy weight-bearing, high-traffic and impact-susceptible areas.
- Water-resistant materials, sealed-seam construction methods and moisture-impervious surface selections should be used for any wet areas.
- All areas subject to wet cleaning methods should have heat-welded seams with flash-coved flooring.
- Floor and wall bases of kitchens and other areas subjected to wet-cleaning methods shall be constructed of materials that are not physically affected by germicidal or other types of cleaning solutions.

Carpeting and porous tile grout can easily absorb and retain moisture while also harboring bacteria, mold and mildew beneath the surface. While these surface alternatives are commonplace in many communities, they are not exactly ideal for promoting a hygienic environment for immunocompromised residents.

Interior finishes with an impervious, watertight seal allow for truly thorough cleaning and disinfecting in these communities because they keep contaminants on the surface rather than allowing them to evade routine maintenance underneath. Altro floor and wall products are 100% adhered to substrates and utilize watertight seams and terminations to prevent excess moisture and pathogens from escaping below the surface. Their impressive stain and chemical resistances eliminate the threat of gradual fading or discoloration that can result from frequent cleaning and harsh chemical solutions over time.

Underfoot comfort

It is well established that all individuals, regardless of age or ability, are susceptible to developing one or multiple musculoskeletal disorders (MSDs) throughout their lifetime. These disorders are caused by excessive strain placed on the musculoskeletal system through long-term repetitive motion or upright movement on surfaces with insufficient support.

Both staff and residents that experience regular prolonged standing on hard flooring surfaces can experience pain and discomfort, and if ignored, can have lasting health implications. This pressure can swell and damage joints, cause lingering numbness and produce tendonitis along with other orthopedic conditions. In the case of older individuals, they are increasingly more prone to MSD development than their younger counterparts, as the loss of flexibility that accompanies aging makes their tendons, joints and ligaments more susceptible to damage. This results in painful inflammation and restricted movement that can make even walking a few feet feel like a rigorous task.

Hard, unforgiving surfaces require muscles and joints to exert additional energy to compensate stability support during upright movement. FGI Guidelines for Residential Health, Care and Support Facilities mention that flooring used in senior care applications should be flexible and supportive, while its “give” should be reviewed to reduce injury to residents who fall. While carpeting is a common solution for this, its fibers trap dust that can negatively affect indoor air quality. Meanwhile, wheelchairs and other similar wheeled equipment cannot roll as well over carpet due to the material’s resistance.

Choosing finishes with additional padding and ample underfoot comfort can reduce the potential risk of MSD development as well as aggravation of preexisting conditions. These surfaces alleviate the strain placed on aging individuals during upright movement and provide added insulation in the event of a fall, helping to prevent serious injuries. For example, Altro Wood Comfort, a smooth, continuous surface solution with a residential wood-look aesthetic, offers ample musculoskeletal support with its 2.85mm thick backing.

Preventing slips, trips and falls with appropriate slip resistance

Falls occur when body movement shifts the body off the center of balance.

- Slips: too little friction between footwear and walking surface.
- Trips: foot collides with an object. Any unevenness greater than an eighth of an inch is a tripping hazard to a shuffling resident.

Combined data from Liberty Mutual Group and OSHA states that

- More than 15,000 Americans age 65+ die annually as a result of slips and falls.
- 20% of slip and fall incidents occur in nursing homes and that
- 50% of those that suffer from a hip fracture will never regain full mobility. They may have to rely on a cane, a walker or even a wheelchair.
- What is most alarming is that 1/3 of these serious bone injuries result in death within one year of the incident. Beyond suffering pain, a hip fracture results in a loss of physical function and decreased social engagement as well as increased dependence, and vulnerability.

In response to these alarming statistics, it is crucial that flooring used in care communities possess appropriate slip resistance. Too little can result in slips and falls but too much slip resistance can be harmful and may impede movement or result in trips and falls, especially to those with reduced ambulatory ability.

As the inventor of safety flooring, Altro takes slip resistance very seriously. All of our ranges are rigorously tested using multiple techniques that comply with global standards. This enables us to engineer products for specific areas and applications

It is the designers', specifiers' and end-users' responsibility to ensure flooring is fit for purpose and it's part of our role at Altro to help make this process easy. Our flooring is separated into three categories: safety, slip-resistant and smooth. These categories have been created to help assist in selecting the floor that is right for the application type and any contaminants that may be present on a regular basis.

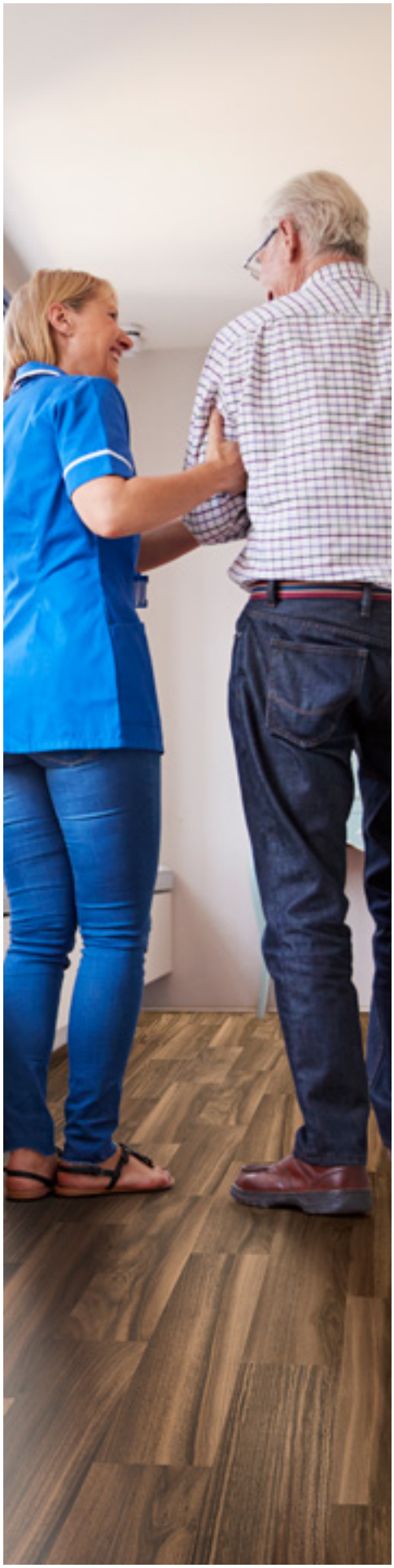
Wet areas in particular, such as resident bathrooms, shower areas, spas and hydrotherapy areas are particularly susceptible to an increased risk of slips and falls. These settings present frequent liquid contaminants in the form of excess water, shower gels and shampoos that can be harmful to aging residents with a single misstep. As a result, they require materials with ample slip resistance that avoid unintentionally creating hazardous conditions.

Developed for lasting performance in wet environments, for both shoes or barefoot traffic, Altro Aquarius is a prime example of a fit-for-purpose flooring solution that can help ensure resident safety. It provides optimum protection against slips and falls and has been extensively tested against common wet area contaminants, reducing the chances of these incidents to one-in-a-million. In addition, unlike other floors, our slip-resistant aggregate is found throughout the thickness of the floor, ensuring durability and safety for the life of the product.

Promoting safety and security with Altro

In summary, it is apparent that specifying finishes for effective senior care design can never be done from a single dimension. Designs must not only promote wellness, but also ensure safety and security. Of all of the materials in a building, flooring and wall cladding are probably what sees the most abuse. They also have a huge impact on the ability for a space to find that balance between wellness and safety helping residents maintain independence, reinforce orientation, and enhance confidence.

At Altro, we use the term "fit-for-purpose" because when we engineer our products, "we think beyond the product to the underlying human need and develop solutions that can enhance people's emotional and physical wellbeing in the spaces they occupy."



Company info: Family-owned and operated since 1919, Altro has become a world-leading manufacturer and innovator in commercial floors and walls in senior care. With an impressive portfolio of safe, durable and hygienic design options, we provide a complete interior solution for communities tasked with caring for the elderly. From showers to dining rooms and even recreational areas, our integrated floor and wall system creates an environment that is both functional and welcoming to staff and residents alike.