



Safestrive™ Floor

Preventing fall injuries
through world-leading
shock absorption



Preventing injuries, protecting resources

Every year, 424 000 individuals die from falls and 37,3 million⁽¹⁾ people experience falls that are severe enough to require medical attention. Such falls are responsible for over 17 million DALY's⁽²⁾ (disability-adjusted life years) lost. The largest morbidity occurs in people aged 65 years and older. As more and more people get older they are more likely to fall, partly caused by poor vision, vertigo, imbalance and chronic diseases.

The financial costs from fall-related injuries, especially head traumas, are substantial. According to an independent national authority in Sweden⁽³⁾, the estimated cost for fall injuries among elderly people is 14 billion SEK/year (€ 1.5 billion approximately).

The consequences of these falls will most likely place a larger economic burden on society including health care, convalescence, relative engagement and insurance. The emotional stress of patients and care givers are substantial.

To reduce the overall societal burden, the demand for the development of various protecting systems to prevent injuries in all categories is infinite⁽⁴⁾.

1) <http://www.who.int/mediacentre/factsheets/fs344/en/>

2) The disability adjusted life year (DALY) extends the concept of potential years of life lost by virtue of being in states of poor health or disability.

3) MSB-Injuries among elderly. Publ.nr: MSB712 – juni 2014 ISBN: 978-91-7383-458-2

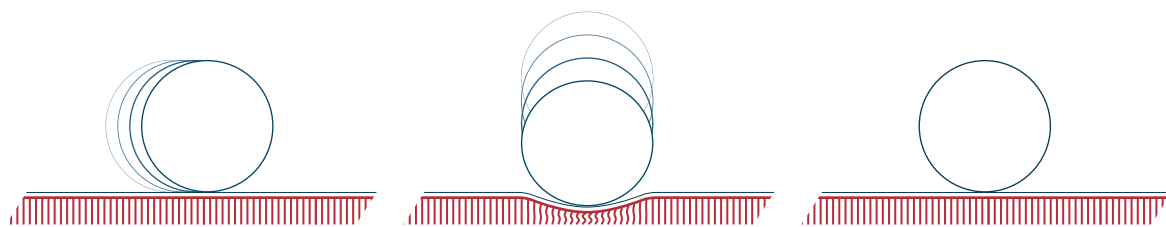
4) H. Carl Hanger MBChB, FRACP, Low-Impact Flooring: Does It Reduce Fall-Related Injuries? JAMDA xxx (2017) 1e4

Safestrive™ Floor: Setting new standards in floor impact technology

Safestrive Floor is built using an innovative polymer layer with connecting pins that absorb kinetic energy by twisting into an S-shape, reducing dynamic impact in a unique way. The pins return to a normal profile directly after impact, meaning there is no permanent deformity in the floor.

The floor is stable enough for normal requirements such as walking and clinical activities. Optimized to reduce head and hip injuries through absorbing both radial and oblique impact, Safestrive Floor intends to protect against all types of fall injuries, substantially reducing the overall costs of care.

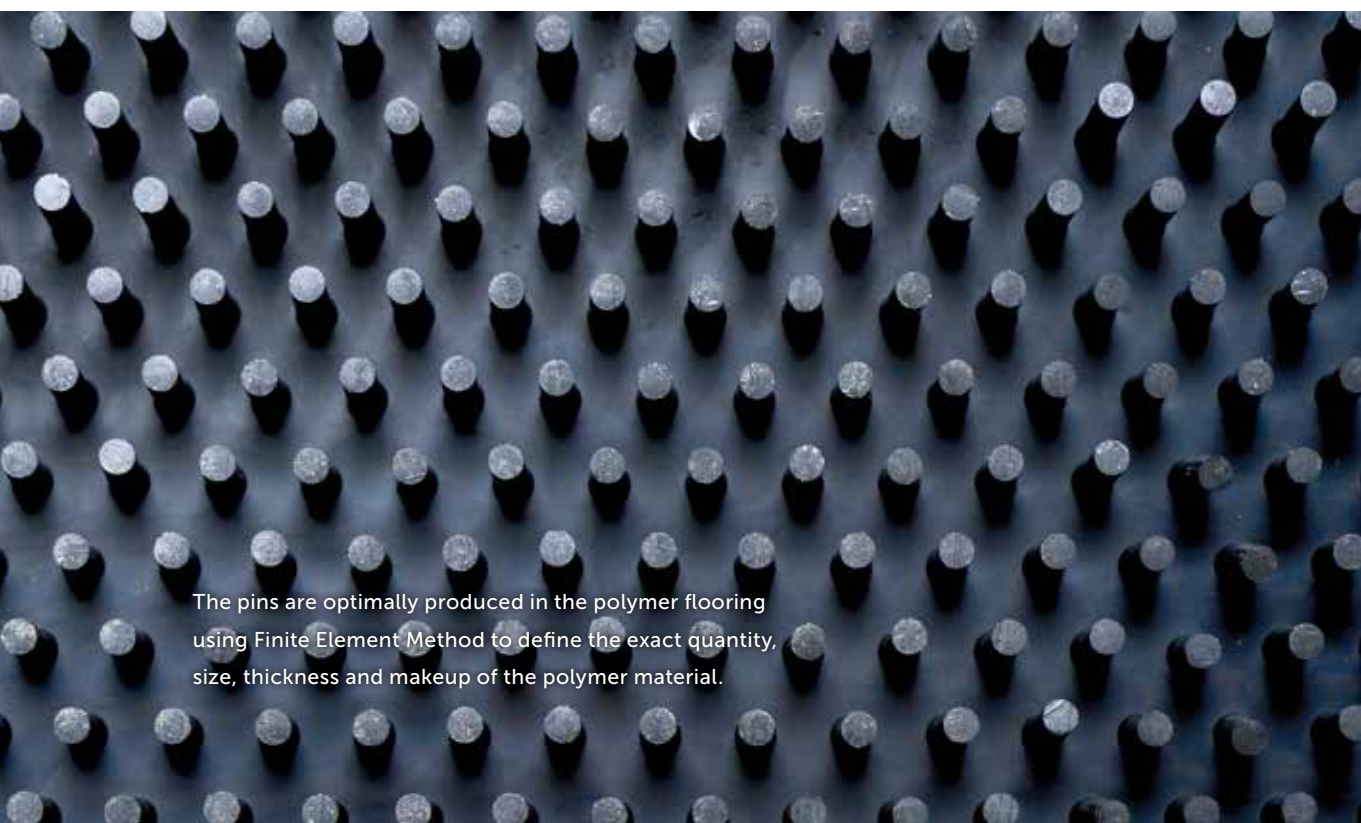
SAFESTRIVE
FLOOR
REDUCES
IMPACT
FORCE
TO 1/5
COMPARED
WITH A REGULAR
WOODEN FLOOR



The floor feels stable
at normal use.

At a fall the pins are bent into an
s-shaped, optimizing impact.

The pins will return to an upright
position after an impact.



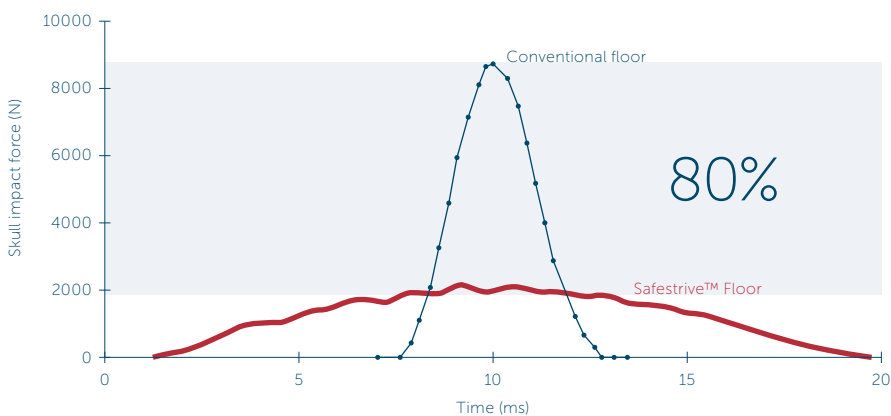
The pins are optimally produced in the polymer flooring using Finite Element Method to define the exact quantity, size, thickness and makeup of the polymer material.

Unique design, unique outcome

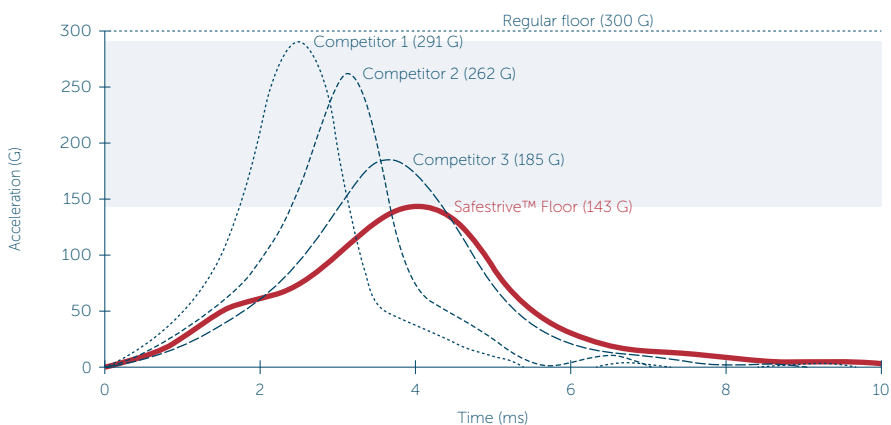
Simulation tests show that Safestrive Floor reduces the head impact force by up to 80% (a) compared to a conventional floor. Safestrive Floor benefits the general public as well as health care professionals, potentially resulting in improved health and better economy for society.

In short, Safestrive Floor aims to:

- Prevent the number of fall injuries especially head and hip injuries.
- Reduce the physical, emotional and economy burden of a fall.
- Meet existing and upcoming regulatory demands and requirements.
- Provide an environment that is likely to be better and safer for individuals, relatives and care workers.
- Be a safer choice for public and private care homes, especially for the elderly.



(a) Test results from head impact at a height of 60 cm on a conventional floor versus Safestrive Floor.



(b) Laboratory tests show that Safestrive Floor reduces the acceleration force by over 50% (143G) of a fall from 60 cm height (red) in comparison to other brands on the market.

Installing Safestrive™ Floor:

Following the gluing on a flat and clean ground floor, Safestrive Floor is placed with the pins downwards (a). On top of Safestrive Floor, another layer of glue is dispersed before the top layer of linoleum carpet is placed (b). After twenty-four hours of settlement, Safestrive Floor is ready to be used.

Safestrive Floor is 21 mm thick with an extra 2–3 mm linoleum carpet on top of the floor. It is delivered in 50 × 50 cm pieces. Safestrive Floor is coded: HSCode 400219 Styrene-butadiene rubber “SBR”.



(a)



(b)

MANUFACTURED BY TRELLEBORG —A WORLD-LEADER IN ENGINEERING POLYMER SOLUTIONS

To achieve the highest level of expertise in product development and industrialization, Safestrive Floor was developed in close collaboration with Trelleborg Group—a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. The group has global coverage and operates in over 50 countries.

Working closely with Karolinska University Hospital and the KTH Royal Institute of Technology for the injury preventive and neuronics research, Impact Neuronics entered into a partnership with Trelleborg to design, develop and produce a unique polymer formula to maximize impact force absorption. The final flooring solution is a result of more than 400 trials and ten years of research to find the optimal combination of polymer composition, pin size, thickness and shape.

Safestrive Floor is exclusively produced by Trelleborg.





Developed by scientists, designed to care

Safestrive Floor fulfils key requirements such as ease of installation, low chemical and emission levels, ease of cleaning and requirements of sustainability, wear and tear. Safestrive Floor is backed up by research including computer simulation and laboratory investigations by a well-known and trusted source, the interdisciplinary collaboration between the Department of Neurosurgery at Karolinska University Hospital and Division of Neuronic Engineering at the KTH Royal Institute of Technology in Sweden.

With the knowledge in neurosurgery and neuronic engineering regarding prevention solutions of injuries, Impact Neuronic has filed a patent application in 2011 including helmets, caps, headbands, vest, wrist bands and flooring.

Safestrive Floor is continuously undergoing development and improvement, and is available in several versions.

For more information about Safestrive Floor, a demonstration and cost estimate, please contact

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Trelleborg Engineered Coated Fabrics

trelleborg.com/en/rubber-flooring/safestrivefloor