



**immedia**

# In-bed systems

Ensures safe and comfortable transfers

# Increased mobility reduces risk of pressure injury

When a person's general health status is degraded they often become less mobile and spend more time in bed than before. Impaired mobility is the primary confounding factor associated with pressure injuries, which make micro and macro movements of great importance to prevent pain and pressure injuries.

## Stimulation of functional mobility

Micro and macro movements help prevent pressure and shear. This is an important part of the care since pressure ulcers represent a major burden of sickness and reduced quality of life for the patient; including chronic wound, pain and discomfort, stress, anxiety and depression (EPUAP 2019).

Today we are also aware of how important it is to prevent immobility and take advantage of the users abilities during moving and handling to maintain both functional mobility and the feeling of dignity and independence.

## Reduction of work-related injuries

30% of carers in hospitals and care homes experience so much musculoskeletal pain that it impairs their ability to work, but using assistive devices for transfers reduces the risk of musculoskeletal disorders among healthcare workers.

A cross-sectional study at five Danish hospitals measured back muscle activity and trunk inclination angle during 540 patient transfers. Using assistive devices for transfers reduces the physical workload and thereby decreases the risk of musculoskeletal disorders among healthcare workers (Vinstrup 2019).

## Single-handed care

A person-centered approach can add quality to care situations, since it is empowering and less invasive. The communication and relationship with the carer is often improved, and the person feels they are part of their care (Harrison 2021). When no one else is present in the room, communication and focus will be maintained between the carer and the user, which benefits the collaboration.



# A person's level of functional mobility

The International Classification of Functioning, Disability and Health (ICF) is a universal classification published by the World Health Organization (WHO) to provide a standard language and framework for describing health and disability (WHO 2001).

“Mobility” is a category under the components “Activities and Participation” and is relevant to determine when choosing the best solution for an in-bed system. The level of the problem is listed from 0 (No Difficulty) to 4 (Complete Difficulty) in ICF

Standing on the shoulders of ICF, ICIDH and RAI,

LOCOmotion (Knibbe & Knibbe) from The Netherlands developed the MK5 concept and the associated assessment tool TilThermometer almost 20 years ago<sup>1</sup>.

In MK5 the functional mobility of the resident is classified into five levels (A, B, C, D and E) based on the resident's limitations and possibilities to cooperate during the transfer.

Below you find a description of the five levels of functional mobility, and we will refer to these levels throughout this guide when suggesting appropriate product choices.

<sup>1</sup> www.tilthermometer.com



## Level A

Client can independently perform the action, with or without equipment, and without risk of physical overload for the healthcare workers.

Stimulating self-reliance is of great importance.



## Level B

Client needs help, but this does not cause physical overload for the healthcare workers.

Stimulating self-reliance is of great importance.



## Level C

Client needs help. This causes physical strain for the healthcare workers when equipment is not used. The client can however substantially contribute to the action. Stimulating activity and self-reliance is of great importance.



## Level D

Client needs help. This causes physical strain for the healthcare workers when equipment is not used. Client is very passive and can barely contribute. Stimulating activity and self-reliance remain of great importance.



## Level E

Client needs a lot of help. This causes physical strain for the healthcare workers when equipment is not used. Client is completely passive. Stimulating activity is not a priority: comfort and safety are the main concerns.

# Immedia SatinSheet

Immedia SatinSheet is a complete in-bed system of low friction satin designed to make moving and handling in bed easier when turning and positioning independent (A) to completely dependent users (E).

## Facilitates care for independent to dependent users

The SatinSheet material is very thin and consists of a low friction satin BaseSheet, which makes repositioning easier and reduces the risk of friction and hereby shear, which minimises the risk of pressure injury.

A wide range of DrawSheets meet the needs of the partly dependent to completely dependent user and helps reducing strain on the carer and therefore prevents work-related injuries.

As the sheets stay in the bed, they enhance comfort for the user and facilitate positioning, transferring or turning a user. The DrawSheet also comes in variants with handles on the underside for allowing attachment to a hoist. Moreover, it may help to save time and reduce the number of carers needed.



*To select the most suitable SatinSheet combination see page 6*

# Immedia 4WayGlide

Immedia 4WayGlide is a complete in-bed system of very low friction nylon designed to make moving and handling in bed easier when turning and positioning partly dependent (B) to completely dependent users (E).

## Facilitates care for partly dependent to completely dependent users

The 4WayGlide system consists of a NylonSheet and a Mattress with nylon on the underside, which must always be used together. The quilted cotton/polyester material, which is against the skin, is gentle and comforting for the user.

The Mattress has handles on the underside for improved grip and to allow attachment to a hoist, which may help to save time and reduce the number of carers needed.

A wide range of NylonSheets, with and without locks meet the needs of the carer to reposition the partly dependent to the completely dependent user and helps reduce strain on the carer and therefore prevents work-related injuries.



*To select the most suitable 4WayGlide combination see page 6*

# Immedia in-bed systems selection guide

Level of functioning



Level A



Level B

Choose length of  
SatinSheet BaseSheet

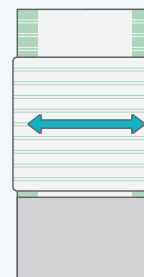


SatinSheet  
BaseSheet Mini



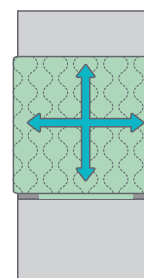
SatinSheet  
BaseSheet Midi

Choose type of  
SatinSheet DrawSheet



SatinSheet 2Direction  
DrawSheet Mini or Midi

Choose length of  
4WayGlide system



4WayGlide  
Mini



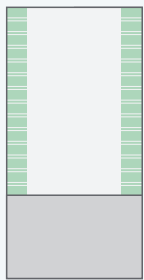
**Level C**



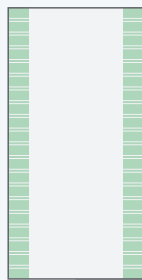
**Level D**



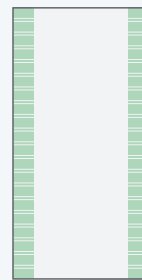
**Level E**



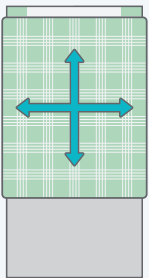
SatinSheet  
BaseSheet Midi



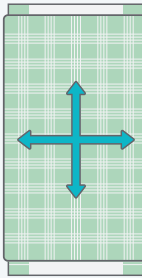
SatinSheet  
BaseSheet Maxi



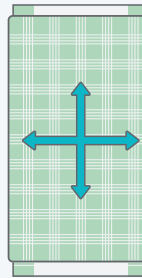
SatinSheet  
BaseSheet Maxi



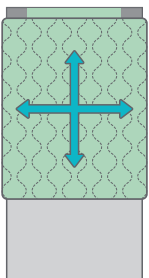
SatinSheet 4Direction  
DrawSheet Midi



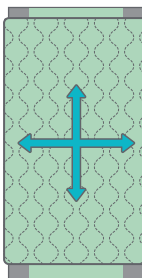
SatinSheet 4Direction  
DrawSheet Maxi



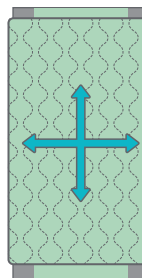
SatinSheet 4Direction  
DrawSheet Maxi



4WayGlide  
Midi



4WayGlide  
Mattress LPL

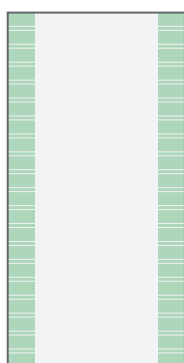


4WayGlide  
Mattress LPL

# Immedia SatinSheet combinations

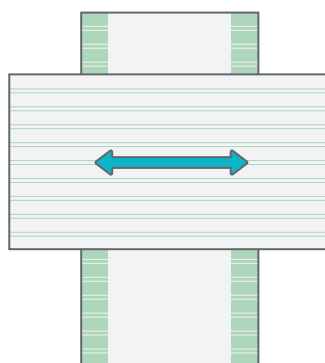
See below to understand how the SatinSheet BaseSheet and DrawSheet work, and how they can be combined to find the best solution for the user and the carer.

The SatinSheet BaseSheet can be used on its own by the independent user, who needs a low friction area for turning and repositioning in bed. The SatinSheet DrawSheet is chosen for additional low friction and for a more ergonomic grip for the carer, when assisting dependent users in moving and handling in bed.



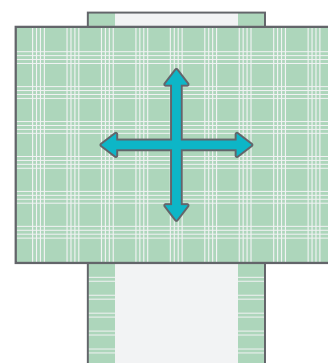
## SatinSheet 2Direction BaseSheet

Start with a 2Direction BaseSheet that is fitted directly to the mattress. The BaseSheet has a low friction sliding satin area in the centre, allowing independent side to side movement. Lengthways the BaseSheet has high friction edges to minimize the risk of sliding off the bed.



## SatinSheet 2Direction DrawSheet

Add the 2Direction DrawSheet for a partly dependent user who needs assistance with side to side movement. The DrawSheets are designed to be used on top of the BaseSheet. They do not work on their own.



## SatinSheet 4Direction DrawSheet

Add the 4Direction DrawSheet for a dependent user who needs assistance moving in all directions. The DrawSheets are designed to be used on top of the BaseSheet. They do not work on their own.



*Always perform a risk assessment on whether or not to raise the bed rails.*





## Immedia SatinSheet 2Direction BaseSheet

A base sheet that facilitates movements in the bed.



SatinSheet 2Direction BaseSheet has a low-friction satin area in the centre of the sheet, that allows movement from side-to-side to make turning in bed easier. The edges of the sheet are of cotton/polyester and will reduce movement, allowing the user to sit on the edge of the bed without sliding off it.

SatinSheet 2Direction BaseSheet is available in many different variants and sizes, based on the needs of the user.



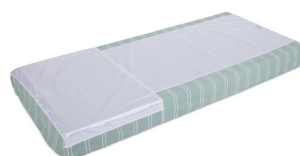
### BaseSheet 2Direction

A traditional sheet that can be tucked under the mattress. The user lies directly on the satin area which reduces friction between bedding and nightwear making moving and turning easier.



### BaseSheet 2Direction Corner

This sheet has elastic corner straps for fitting to the mattress. This is easy to fit for a single carer and works well when a thicker mattress is used.



### BaseSheet 2Direction Fit

This is a fitted sheet with drawstring. It has a satin area that covers the full width of the bed under the lower half of the body. This allows a more independent user to slide their legs in and out of bed.



### BaseSheet 2Direction Elastic Fit

This is a fitted sheet with elastic band. The BaseSheet is open in the corners to allow for the tube of an air mattress. This sheet has a satin area that covers the full width of the bed under the legs. This makes it easier to slide the users legs in and out of bed.

Product name	Size	Size satin	Item no.
SatinSheet 2Direction mini - small	W1950xL1050 mm	W600xL1050 mm	IM4133S
SatinSheet 2Direction mini	W1950xL1050 mm	W700xL1050 mm	IM4108S
SatinSheet 2Direction mini - wide	W2300xL1050 mm	W850xL1050 mm	IM4175S
SatinSheet 2Direction mini - double	W2300xL1050 mm	W960xL1050 mm	IM4178S
SatinSheet 2Direction midi - small	W2000xL1400 mm	W600xL1400 mm	IM4119S
SatinSheet 2Direction midi	W2000xL1400 mm	W700xL1400 mm	IM4113S
SatinSheet 2Direction midi - wide	W2300xL1400 mm	W600xL850 mm	IM4176S
SatinSheet 2Direction midi - double	W2300xL1400 mm	W960xL1400 mm	IM4179S
SatinSheet 2Direction maxi - small	W2000xL2000 mm	W600xL2000 mm	IM4181S
SatinSheet 2Direction maxi	W2000xL2000 mm	W700xL2000 mm	IM4114S
SatinSheet 2Direction maxi - wide	W2300xL2000 mm	W850xL2000 mm	IM4177S
SatinSheet 2Direction maxi - double	W2300xL2000 mm	W960xL2000 mm	IM4180S
SatinSheet 2Direction 180 cm bed Satin not centered	W2300xL2000 mm	W600xL2000 mm	IM4122S
SatinSheet 2Direction Fit	W900xL2000 mm	W700xL2000 mm	IM4112S
SatinSheet 2Direction Elastic Fit	W900xL2000 mm	W700xL2000 mm	IM4142S
SatinSheet 2Direction Corner mini	W850xL2000 mm	W650xL1050 mm	IM4126S
SatinSheet 2Direction Corner midi	W850xL2000 mm	W650xL1400 mm	IM4157S
SatinSheet 2Direction Corner midi - wide	W1050xL2000 mm	W800xL1400 mm	IM4158S
SatinSheet 2Direction Corner midi - small	W900xL1730 mm	W670xL1730 mm	IM4167S
SatinSheet 2Direction Corner midi - double	W1200xL2000 mm	W900xL1400 mm	IM4187S
SatinSheet 2Direction Corner maxi - double	W1800xL2000 mm	W1550xL2000 mm	IM4197S
SatinSheet 2Direction Corner	W850xL2000 mm	W650xL2000 mm	IM4107S
SatinSheet 2Direction Corner - wide	W1050xL2000 mm	W800xL2000 mm	IM4147S
SatinSheet 2Direction Corner - double	W1200xL2000 mm	W900xL2000 mm	IM4137S



## Immedia SatinSheet 2Direction DrawSheet

For partly dependent users - combined with SatinSheet 2Direction BaseSheet.



*Always perform a risk assessment on whether or not to raise the bed rails.*

The SatinSheet 2Direction DrawSheet can be added for a partly dependent user and when assistance is needed for side to side movement. The SatinSheet DrawSheets are designed to be used on top of the SatinSheet BaseSheet and do not work on their own.

Combining a 2Direction BaseSheet with a 2Direction DrawSheet facilitates lateral movement and turning in bed. The unique quality of the SatinSheet material reduces movement down in bed.



### Mini

Can be used for independent users that can lift their head and use their legs to reposition themselves. Typically placed from shoulders to knees.



### Midi

Can be used for almost independent users that can use one or both legs to either reposition themselves or with help from a carer. Typically placed from head to knee.

Product name	Size	Item no.
SatinSheet DrawSheet - mini	W2000xL1000 mm	IM4116S
SatinSheet DrawSheet - midi	W2000xL1400 mm	IM4118S

## Immedia SatinSheet 4Direction DrawSheet

For dependent users - combined with SatinSheet 2Direction BaseSheet.



Always perform a risk assessment on whether or not to raise the bed rails.

When the need is increased, the SatinSheet BaseSheet can be combined with an alternative SatinSheet DrawSheet. The SatinSheet 4Direction DrawSheet reduces friction in all four directions. The dependent user needs help for all repositioning in bed. The SatinSheet 4Direction system is used to reduce the workload on the carer.

The SatinSheet 4Direction DrawSheets with handles are suitable for single handed care, as they can be used combined with a hoist for turning. This is a cotton/polyester sheet with a satin underside which stays on the BaseSheet and allows movement up and down and side to side. The SatinSheet DrawSheets are designed to be used on top of the SatinSheet BaseSheet. They do not work on their own.



### Mini/Midi

Can be used for partly dependent users that can use one or both legs to either reposition themselves or with help from a carer. Typically placed from head to knee.



### Maxi

The Maxi covers the full length of the bed and is used for users that can't use their legs for repositioning.



### Handles & Wings

The models with handles are suitable for single handed care as the handles can be combined with a hoist for turning. Available in two sizes.

Product name	Size	Size satin	Item no.
SatinSheet 4Direction - midi	W2000xL1400 mm	W1470xL1400 mm	IM4115S
SatinSheet 4Direction w/handles - midi	W2000xL1400 mm	W1470xL1400 mm	IM4115SH
SatinSheet 4Direction - maxi	W2000xL2000 mm	W1470xL2000 mm	IM4121S
SatinSheet 4Direction w/handles - maxi	W2000xL2000 mm	W1470xL2000 mm	IM4121SH
SatinSheet 4Direction w/handles - maxi wide	W3000xL2000 mm	W2000xL2000 mm	IM4131SH

## Immedia SatinSheet In2Sheet4Direction

An incontinence pad for movement up and down and side to side.



This is an incontinence pad with a satin underside which stays on the SatinSheet BaseSheet and allows movement up and down and side to side. It is available in two sizes. Combine SatinSheet In2Sheet4Direction with SatinSheet 2Direction BaseSheet for low-friction in all four directions. They do not work on their own.



### Model with wings

Wings for pulling and tucking in under the mattress.



### Model with handles

The model with handles is suitable for single handed care as the handles can be combined with a hoist for turning.

Product name	Size	Size satin	Item no.
In2Sheet 4Direction w/wings - mini	W850xL900 mm	W850xL900 mm	IM4110S
In2Sheet 4Directions w/ handles - mini	W850xL900 mm	W850xL900 mm	IM4110SH
In2Sheet 4Direction w/wings - midi	W1200xL1400 mm	W1200xL1400 mm	IM4140S
In2Sheet 4Direction w/ handles - midi	W1200xL1400 mm	W1200xL1400 mm	IM4140SH

## Immedia SatinSheet 2Direction Pillow Case

Supports moving pillow from side to side.



The stripes show that the pillow can be moved from side to side. The carer can easily move the user's head from side to side without lifting and without risk of the pillow slipping away. The pillow can also be turned 90 degrees, and placed under the shoulders and head so it helps to move the user higher up in bed.



### Head side to side

The SatinSheet pillow case is for moving the head from side to side.



### Satin back side

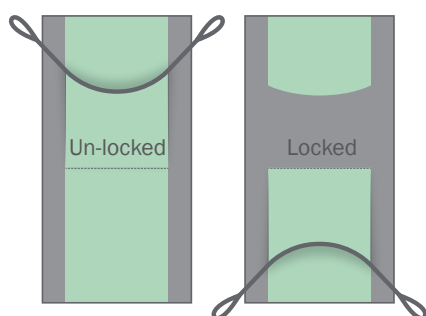
This pillow case has a satin area that covers the full back side of the pillow allowing movement in the same direction as the stripes.

Product name	Size	Size satin	Item no.
SatinSheet 2Direction PillowCase	W700xL600 mm	W700xL600 mm	IM4117S

# Immedia 4WayGlide combinations

To understand how the 4WayGlide system works, and how the different variants of NylonSheets allow the best solution for the user and carer to be found, see below.

The NylonSheet and the DrawSheet cannot be used on their own, they must always be used together.

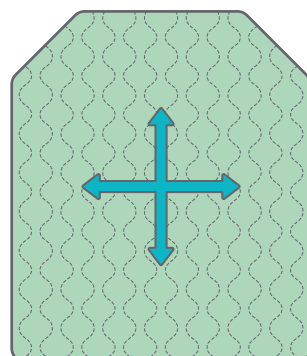


## 4WayGlide NylonSheet

Start with a NylonSheet that is fitted directly to the bed mattress. The low friction sliding surface allows the GlideMattress to easily slide on top. The NylonSheet has elastic corner straps for fitting to the mattress.

The 4WayGlide NylonSheet is designed to be used under the Glide Mattress and does not work on its own.

Available in several variants, without a lock, with one, two or three locks and with or without non-slip along the sides.



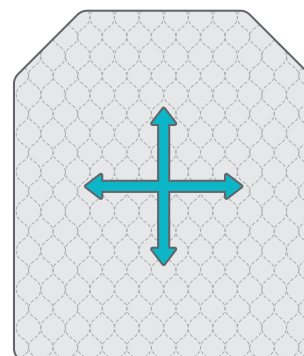
## 4WayGlide Mattress

Add the 4WayGlide Mattress to assist moving in all directions. The Glide Mattress has handles on the underside providing a good grip for repositioning or to use with a hoist.

Corner straps are placed under the bed mattress to prevent the users upper body from sliding when in a sitting position.

The 4WayGlide Mattress is designed to be used on top of the NylonSheet and does not work on its own.

Available in three lengths - full, midi and mini.



## TwinSheet4Glide

Add the TwinSheet4Glide to assist when moving in all directions. The mattress has an absorbent surface and is ideal for users with incontinence or other bodily fluids. The surface feels dry even when wet.

The Glide mattress has handles on the underside facilitating a good grip for repositioning, or to use with a hoist. It also has corner straps to place under the bed mattress to prevent the users upper body from sliding when in a sitting position.

The TwinSheet4Glide is designed to be used on top of the NylonSheet and does not work on its own.

Available in two variants.



Always perform a risk assessment on whether or not to raise the bed rails.





## Immedia 4WayGlide NylonSheet

The 4WayGlide NylonSheet comes in many different variants.



The 4WayGlide NylonSheet comes in different variants – without locks or with one, two or three locks and non-slip material along the bedside. The non-slip material along the bedside may be de-selected to allow transfer from the bed to another supine surface.

The 4WayGlide NylonSheet must always be used in combination with a 4WayGlide Mattress.



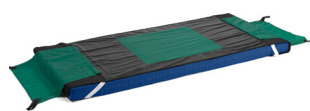
### No lock

NylonSheet with no lock allows micro-movements. Variant with or without non-slip along the side. The Mini and Midi always come with no lock.



### One lock

NylonSheet with one lock under the buttocks to prevent the user from sliding unintentionally when in a sitting position. The user can still move their upper body and feet. Variant with or without non-slip along the side.



### Two locks

NylonSheet with two locks placed under shoulders and lower legs. It is possible for the user to make micromovements under the buttocks, but will prevent them from sliding unintentionally when in a sitting position.



### Three locks

NylonSheet with three locks is ideal for users with many involuntary movements or where the locks can be activated to best suit the individual situation.

Product name	Size	Item no.
4WayGlide NylonSheet mini	W1700xL1000 mm	IM140/100NS
4WayGlide NylonSheet midi	W1700xL1500 mm	IM140/150NS
4WayGlide NylonSheet	W850xL2050 mm	IM85/200
4WayGlide NylonSheet - non-slip sides	W850xL2050 mm	IM85/200NS
4WayGlide NylonSheet - non-slip slides	W900xL2050 mm	IM90/200NS
4WayGlide NylonSheet LPL w/lock	W850xL2050 mm	IM85/200LPL
4WayGlide NylonSheet LPL w/lock - non-slip sides	W850xL2050 mm	IM85/200LPLNS
4WayGlide NylonSheet LPL w/2x lock	W850xL2000 mm	IM85/2002LPL
4WayGlide NylonSheet LPL w/3x lock	W850xL2000 mm	IM85/2003LPL

## Immedia 4WayGlide Mattress

The 4WayGlide Mattress with handles for improved grip.



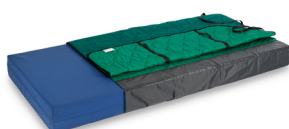
The 4WayGlide Mattress has a cotton/polyester or polyurethane surface on top. Handles on the underside improve grip and allows attachment to a hoist. The polyurethane surface is wipe-clean.

The 4WayGlide Mattress must always be used in combination with a 4WayGlide NylonSheet.



### Mini

Can be used for independent or partly independent users that can help during repositioning by lifting and turning their head, either using one or two legs and/or arms.



### Midi

Can be used for partly independent or dependent users that might help during repositioning by lifting and turning their head, either using one or two legs and/or arms.



### LPL

Covers the full length of the bed and is used for dependent users that can't help during repositioning.



### Maxi

Covers the full length of the bed and is used for dependent users that can't help during repositioning. The Maxi has net-reinforcement and is a good choice for users of size.

Product name	Size	Item no.
4WayGlide Mattress - mini	W1400xL1000 mm	IM140/100
4WayGlide Mattress - midi	W1400xL1500 mm	IM140/150C
4WayGlide Mattress LPL	W1400xL2100 mm	IM140/200LPL
4WayGlide Mattress LPL	W1400xL2100 mm	IM140/200LPLG
4WayGlide Mattress LPL - maxi	W1800xL2100 mm	IM180/200GLPL
4WayGlide Mattress LPL - maxi	W1800xL2100 mm	IM180/200LPL

## Immedia TwinSheet4Glide

The in-bed solution for incontinent users.



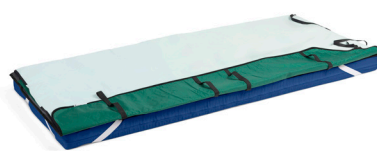
The TwinSheet4Glide is suitable for incontinent users. It consists of two main parts, a NylonSheet and an absorbent glide pad. The absorbant capacity is 2000 ml/m<sup>2</sup>. The glide pad has handles on the underside facilitating a good grip for repositioning or allowing attachment to a hoist.

The TwinSheet4Glide must always be used in combination with a 4WayGlide NylonSheet.



### Handles

Handles on the underside facilitate an ergonomic grip for the carer and allow attachment to a hoist.



### Full-length

A quilted mattress with a microfiber surface on top and an absorbent middle layer that covers the full-length of the bed.



### Two-parted

The two-parted version is ideal to use in combination with a hoist. The user can be positioned on the side for ulcer care or personal hygiene. The bottom part can easily be removed and replaced if soiled.

Product name	Size	Item no.
TwinSheet4Glide - long	W1470xL2000 mm	IM150/200N
Twinsheet4Glide - down	W1470xL1400 mm	IM150/140N
Twinsheet4Glide - top	W1470xL850 mm	IM150/75N



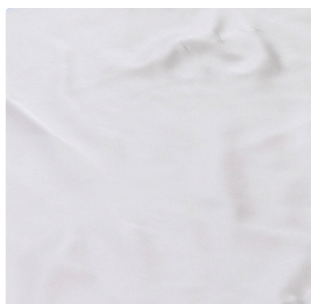
*Always perform a risk assessment on whether or not to raise the bed rails.*

# Washing instructions and materials

## SatinSheet

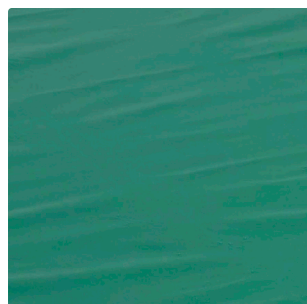


50% cotton/50% polyester

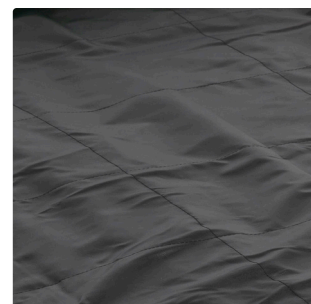


100% polyester

## NylonSheet

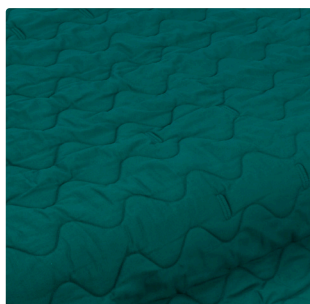


100% nylon

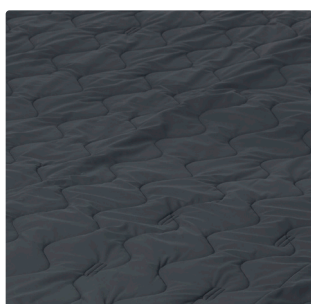


100% polyester with polyurethane coating

## 4WayGlide Mattress



Quilted 50% cotton/50% polyester, 100% polyester filling and 100% nylon



Quilted 100% polyester with polyurethane, 100% polyester filling and 100% nylon

## TwinSheet4Glide



100% polyester (mikro-fiber), 80% polyester/20% viscose filling, polyurethane barrier and 100% nylon

All materials are STANDARD 100 by OEKO-TEX®

### Maximum user weight

All SatinSheet and 4WayGlide models have a maximum user weight of 200 kg except 4WayGlide maxi that has 300 kg.

### Washing instructions



Machine wash - max. temperature 80°C/176 °F. Tumble drying - low temperature; max. 60°C/140 °F. Do not use solvents. Ironing - low temperature; max. sole-plate temperature 110 °C/230 °F without steam. No dry cleaning. Do not bleach. Do not use fabric softener or bleach..

# Pressure mapping

## Why pressure mapping?

- It has always been said that nothing should be in the bed between the patient and a pressure relieving mattress, but a pressure relieving mattresses it not enough.
- Patients must be turned for personal hygiene/ dressing/applying a sling/care of pressure sore or repositioning for pressure relieving/blood circulation/ breathing/sitting up/laying down several times a day
- Turning or repositioning can cause shear on the user and the risk of strain or injury for the carer
- The combination of a turning/slide system and a pressure relieving mattress will often make good sense to protect patient and carer against respectively pressure sore and injuries.

In this study we have placed the Immedia “in-bed systems” on top of a standard foam mattress and an alternating air mattress to see if the combination will have a negative effect on the pressure relieving mattress or it will be within an acceptable level, but at the same time improve the working environment for the carer.

Pressure mapping is a “snapshot” of pressure on a person’s body lying on a defined mattress in a given time period under given conditions. Change one parameter – person, positioning, mattress, temperature, clothes a new and different snapshot will appear



## Conclusion

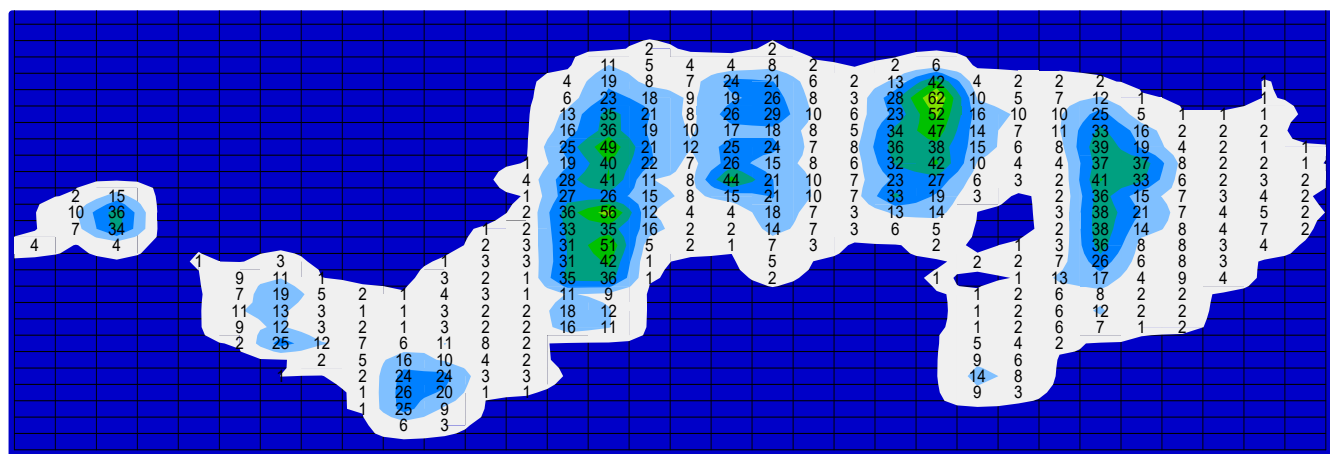
In general the air mattress has a lower average pressure on all measurements, But during the circulation the maximum can be higher and even become “yellow” on certain pressure points. Supine positioning gives the highest average and maximum pressure measurements, but on a lower sensing area.

Using in-bed systems or not shows the same tendency, the pressure is higher on well-known define risk points; shoulders, elbows, hip-area and heels.

Both the foam and air mattress show nearly the same picture as on the mattress without any in-bed system, a slightly small improvement on the average and maximum measurements using the in-bed systems.



Scan the QR-code to learn more about pressure mapping.





Etac is a world-leading developer of innovative assistive devices and patient handling equipment. Since 1973, we have been committed to improving quality of life for the individual, family members and caregivers.

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