HEALTH AND HEALING

THE ROCKFON ADVANTAGE

activeceilings®

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ACTIVATE YOUR CEILING

ROCKFON INTRODUCES …

MediCare

a range of products that …

…is easy to clean and disinfect, specifically developed for use in health care

… with surfaces that meet different hygienic requirements

… whilst keeping Rockfon's strong basic properties (acoustics, fire behaviour, humidity resistance, ease of installation,…)

… supported by all required test reports from independant laboratories

MediCare Product Overview

MEDICARE STANDARD	MEDICARE PLUS	MEDICARE AIR
		Airtightness
	Resistant to dilluted H_2O_2, chlorine and quaterny ammonium Disinfection by steam cleaning (documented) Steam cleaning resistant Enhanced resistance to finger marking High water repellance Sealed edges Corridor dimensions Concealed edge (X)	Resistant to dilluted H_2O_2, chlorine and quaterny ammonium Disinfection by steam cleaning (documented) Steam cleaning resistant Enhanced resistance to finger marking High water repellance Sealed edges
Does not allow growth of MRSA Bacteriological Class B10-B5 Low particle emission (ISO Class 5) Dry and damp cloth cleaning Fire safety (RtF A1) Acoustic (αw = 0.85-0.95) - Class A	Does not allow growth of MRSA Bacteriological Class B1 Low particle emission (ISO Class 4) Dry and damp cloth cleaning Fire safety (RtF A1) Acoustic (αw = 1.00) - Class A	Does not allow growth of MRSA Bacteriological Class B5-B1 Low particle emission (ISO Class 3) Dry and damp cloth cleaning Fire safety (RtF A1) Acoustic (αw = 0.80) - Class B

MediCare Standard

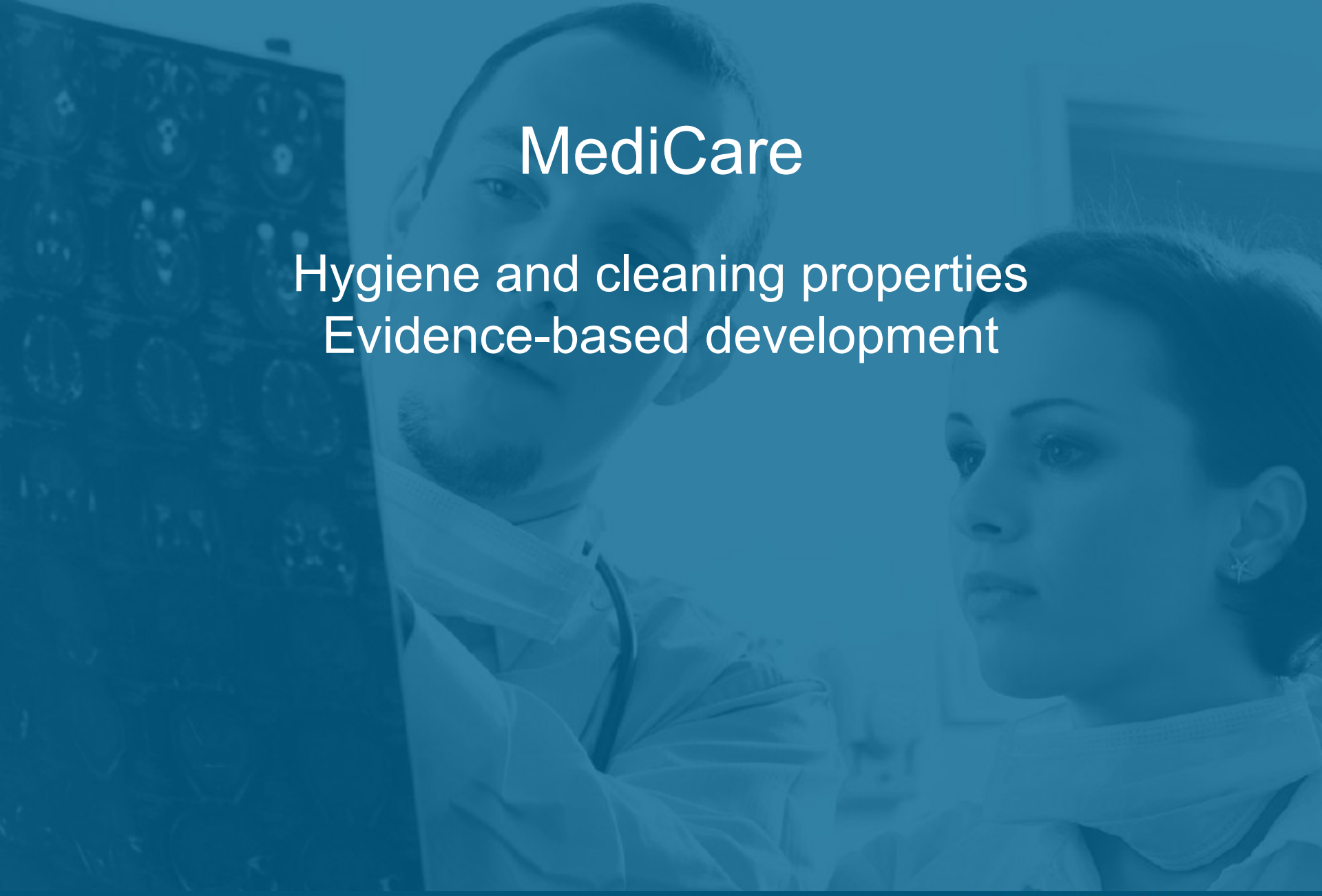
- Dimensions: 600x600mm / 1200x600mm
- Thickness: 12 and 15 mm
- Edges: A/E
- Painted edges
- Alpha w: 0.85 (12 mm) – 0.95 (15 mm)
- Reaction to Fire: A1
- Bacteriological class (spread):
  - B5
  - B10
- Does not allow growth: MRSA
- Clean Room Classification: ISO Class 5
- Cleaning: vacuum cleaning, humid cloth

MediCare Plus

- Dimensions: 600x600mm / 1200x600mm / 1800x600mm / 2100x600mm / 2400x600mm
- Thickness: 20, 22, 25 mm
- Edges: A/E/X
- Sealed edges
- Alpha w: 1,00
- Reaction to Fire: A1
- Bacteriological class (spread):
  - B1
- Does not allow growth: MRSA
- Clean Room Classification: ISO Class 4
- Cleaning: vacuum cleaning, humid cloth. Resistant to diluted ammonia, H2O2, chlorine and quaterny ammonium. Steam cleaning resistant.
- Finger marking resistant
- Water repellant surface

MediCare Air

- Dimensions: 600x600mm / 1200x600mm
- Thickness: 25 mm
- Edges: A
- Sealed edges
- HPM membrane on backside
- Alpha w: 0,80
- Reaction to Fire: A1
- Bacteriological class (spread):
  - B1
  - B5
- Does not allow growth: MRSA, Aspergillus Niger
- Clean Room Classification: ISO Class 3
- Cleaning: vacuum cleaning, humid cloth. Resistant to diluted H2O2, chlorine and quaterny ammonium. Steam cleaning resistant.
- Finger marking resistant
- Water repellant surface
- Air-tight for rooms in over-/underpressure in combination with hold-on clips. Use of closed cells neoprene foam tape on the grid improves performance



MediCare

Hygiene and cleaning properties
Evidence-based development

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Evidence based approach of MediCare concept has led to following specific tests on cleaning and hygiene:

- Clean Room Classification (particle emission)
- Bacteriological Class (Spread of micro-organisms)
- Resistance to steam cleaning
- Disinfection by steam cleaning
- Air pressure control (airtightness)

French norm NF S 90-351

NF S 90-351

- The French norm NF S 90-351 defines requirements to air treatment systems used in clean rooms and related healthcare facilities for the control of airborne contamination.
- NF S 90-351 defines 4 zones in Healthcare facilities (clean rooms and controlled areas) characterised by 3 main criterias:
  - Clean room classification in acc. with ISO 14644-1 (particle emission)
  - Bacteriological class: Class B100 to B1 (spreading of micro-organisms)
  - Kinetic of particle decontamination (min.): Class CP10 to CP 20 (time to obtain 90% decontamination) (test results not used by Rockfon – as not representative)

Zone 1	Zone 2	Zone 3	Zone 4
Minimal risk	**Average risk**	**Servere risk**	**Very high risk**
Halls Offices Administrative services Technical services Elderly homes	Corridors Elevators Stairways Waiting areas External consulting areas Functional re-education areas Maternities Long and mid-term areas Psychiatry areas Central sterilisations areas (washing zone) Pharmacies Laundries Toilets	Intensive care units "Small surgery" areas Wake-up rooms Delivery rooms Nursery Paediatrics Surgery Haemodialysis Radiology Central sterilisation areas (clean zone) Laboratories Post-mortem rooms	Neonatology Operating theatres Urgencies Transplatation areas Victims of burns uniots
		Medical intervention images Oncology, Haemato-oncology, Haematology, Haemodynamics, Endoscopy	

Designation of the zone	Particle class of the zone to be protected	Target level of kinetic of particle decontamination class at 0.5 µm	Target level of bacteriological class of the zone to be protected
Zone 4	ISO 5 < 3,500 particles ≥ 0.5 µm/m³ of air	CP 10	B 10
Zone 3	ISO 7 < 350,000 particles ≥ 0.5 µm/m³ of air	CP 20	B 10
Zone 2	ISO 8 < 350,000,000 particles ≥ 0.5 µm/m³ of air	CP 20	B 100
Zone 1	No specific requirements		

Clean room classification – How clean is the air ?

- Clean room classification (ISO Class) is important in areas where control of airborne particle contamination is crucial e.g. healthcare, microelectronics, pharmaceuticals, food.
- The ISO Class assigned by the ISO 14644-1 characterises the air cleanliness of an environment.
- This standard has been adapted to characterise particle emission of building materials.
- The lower the ISO Class, the lower the particle emission, the lower the contribution of the ceiling on the indoor environment

Table 1 — Selected airborne particulate cleanliness classes for cleanrooms and clean zones

ISO classification number (*N*)	Maximum concentration limits (particles/m³ of air) for particles equal to and larger than the considered sizes shown below (concentration limits are calculated in accordance with equation (1) in 3.2)					
	0,1 µm	0,2 µm	0,3 µm	0,5 µm	1 µm	5 µm
ISO Class 1	10	2				
ISO Class 2	100	24	10	4		
ISO Class 3	1 000	237	102	35	8	
ISO Class 4	10 000	2 370	1 020	352	83	
ISO Class 5	100 000	23 700	10 200	3 520	832	29
ISO Class 6	1 000 000	237 000	102 000	35 200	8 320	293
ISO Class 7				352 000	83 200	2 930
ISO Class 8				3 520 000	832 000	29 300
ISO Class 9				35 200 000	8 320 000	293 000

NOTE Uncertainties related to the measurement process require that concentration data with no more than three significant figures be used in determining the classification level

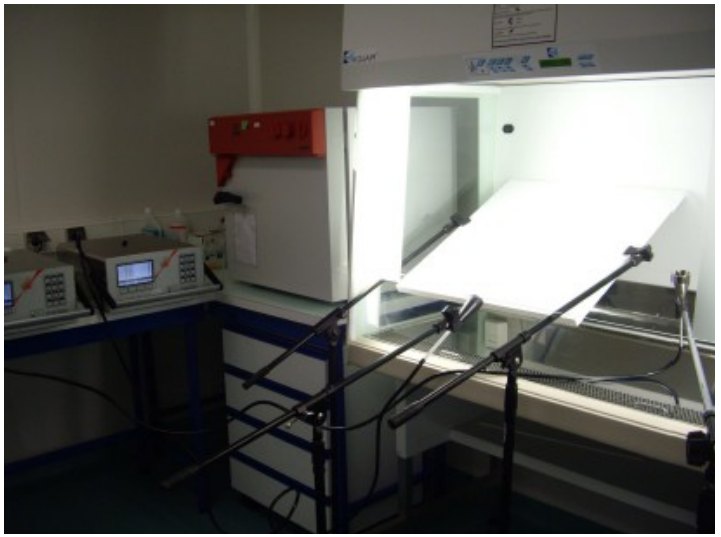
Clean room classifications		
FED STD 209D / 209E*		ISO 14644-41
English	Metric	ISO Class
-	-	1
-	-	2
1	M1.5	3
10	M2.5	4
100	M3.5	5
1,000	M4.5	6
10,000	M5.5	7
100,000	M6.5	8
-	-	9

* US FED 209 D/ 209E are officially withdrawn but still used

Clean room classification – MediCare Results

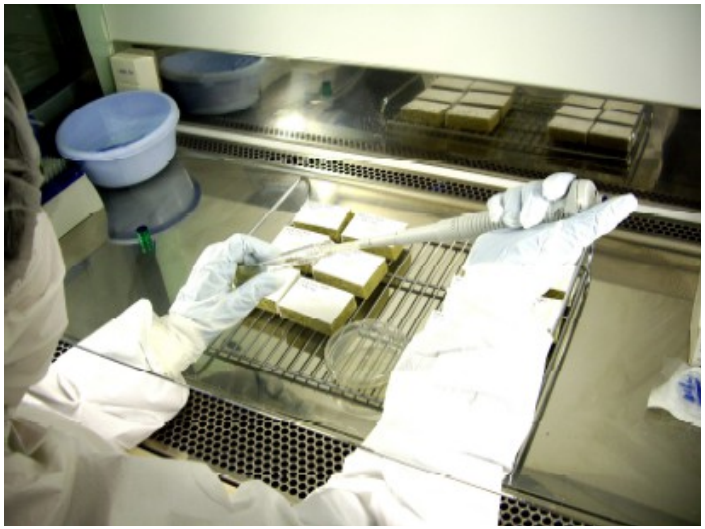
- **MediCare** products have a low particle emission and live up to **ISO Class 5 to Class 3** requirements.

- The clean room classification of MediCare products fulfils the requirements of Zone 4 (very high risk) as defined in the NF S 90351:
  - Operation theatres, intensive care, transplantation, burn victims



Bacteriological class – spread of micro-organisms

- The purpose of this test is to verify if, in case of severe contamination, the product releases/spreads micro-organisms in the atmosphere / room
- The MediCare range have no or very limited contribution to spreading of the following micro-organisms in the atmosphere:
  - Methicilin Resistant Staphylococus Aureus - MRSA (bacteria)
  - Candida Albicans (yeast)
  - Aspergillus Niger (mould)
- The **MediCare** range lives up to Bacteriological **Class B10 or better** (Max. concentration in number of particles per cubic metre of air (ufc/m^3))
- The lower the index (1 – 100) the lower the spread of micro-organisms via the ceiling
- The bacteriological class of MediCare products fulfils the requirements of Zone 4 (very high risk) as defined in the NF S 90351: Operation theatres, intensive care, transplantation, burn victims



MediCare and steam cleaning

- Steam cleaning is an efficient alternative to methods using chemical detergents and disinfectants

- Steam cleaning has two effects:
  - Cleaning effect: Water vapour acts as a solvent (eliminates organic and inorganic soils) and a surfactant (releases soil from the surface). It is sprayed under pressure (4-6 bars) and bring a mechanical effect
  - Disinfecting effect: water combined with high level of heat kills bacteria

- Steam eliminates the “biofilm” left by chemical disinfecting methods. Biofilm can contribute to the growth of micro-organisms

- Steam is able to clean areas which are difficult to access

- Steam cleaning is an environmentally friendly cleaning/disinfecting method:
  - No chemicals: no risk of allergic reaction by users, no chemical waste in running water
  - No specific protection needed (e.g. gloves)
  - The quantity of water needed is low

Air-tightness of MediCare Air

- Differential pressure control is used in hospitals to prevent nosocomial infections also known as hospital-acquired infections
- Air pressure distribution between facilities/areas in hospitals can be in:
  - Overpressure (+) = Prevent airborne particles to enter into a room to protect patient/process (intensive care)
  - Under pressure (-) = Airborne particles are kept in one area (infectious isolation room)
- Most common differential pressure recommended: 10-15 Pa.

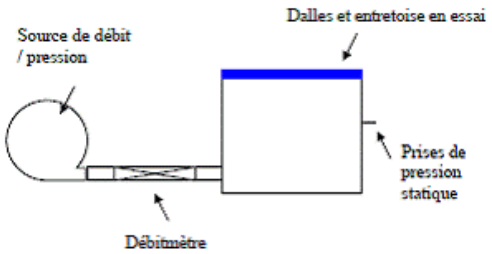
Table 6. Differential pressure control.

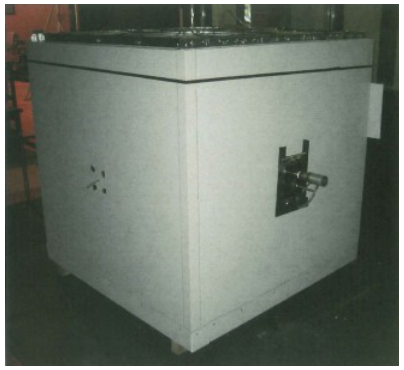
Area	Differential pressure
Infectious isolation room	Negative
Darkroom	Negative
Equipment sterilization room	Negative
Laboratory	Negative
Intensive care unit	Positive
Protective isolation room	Positive
Operating/surgical room	Positive
Delivery room	Positive
Pharmacy	Positive
Patient room	Equal

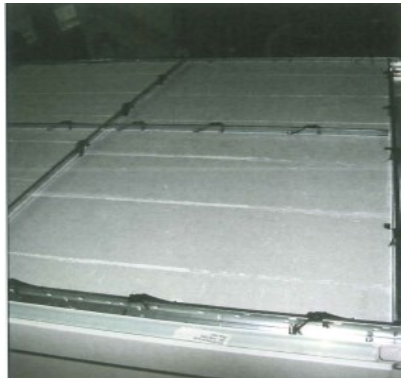
"Negative pressure" means the air pressure of the facility is lower than that of the adjacent areas.

Air-tightness test – MediCare Air

- To keep differential pressure between rooms, the ceiling system must be “airtight”
- MediCare Air due to its sealed edges and HPM at the back is “airtight”
- MediCare Air combined with hold-on clips provides an airtight ceiling system
- For higher requirements, neoprene foam tape (closed cells) or grids with pre-applied gasket seal placed on the grid can be used
- Air-tightness test made in an airtight chamber in overpressure
- Leakage rate (m3/h/m2/Pa) measured at pressure levels between 5-30 Pa < 1 m3/h/m2/Pa







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Accessories

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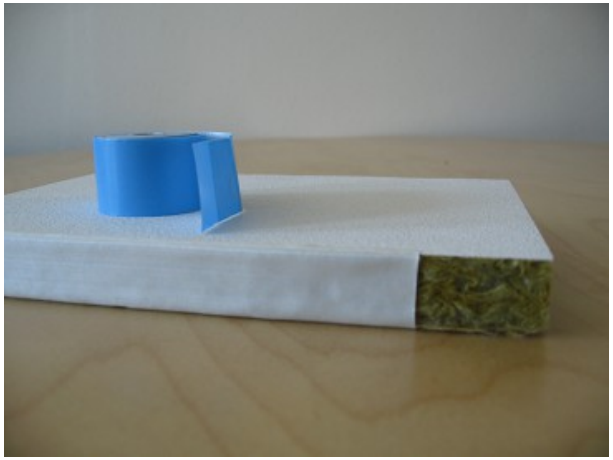
Clean room inspection hatch

- Dimension: 600x600 mm
- Ceiling tile thickness: 20 mm
- 2 square locks
- Ceiling tile glued in the hatch for a uniform ceiling surface. Only the locks are visible.
- Galvanised steel powder coated white
- Lay-in grid
- Airtight (documented)

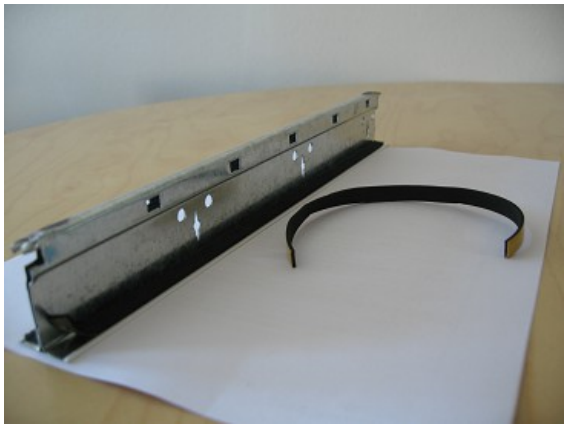
Sealing tape for off-cuts

- Glass fibre cloth / acrylic adhesive tape with PE liner
- Good adhesion on stone wool
- Eliminate fibre emission/dust
- No drying time required as with edge paint
- Abrasion resistant
- Humidity resistant
- Airtight
- Good fire properties (flame retardant, low smoke emission)



Standard neoprene foam tape (closed cells)

For higher air-tightness performance with MediCare Air



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Product Information

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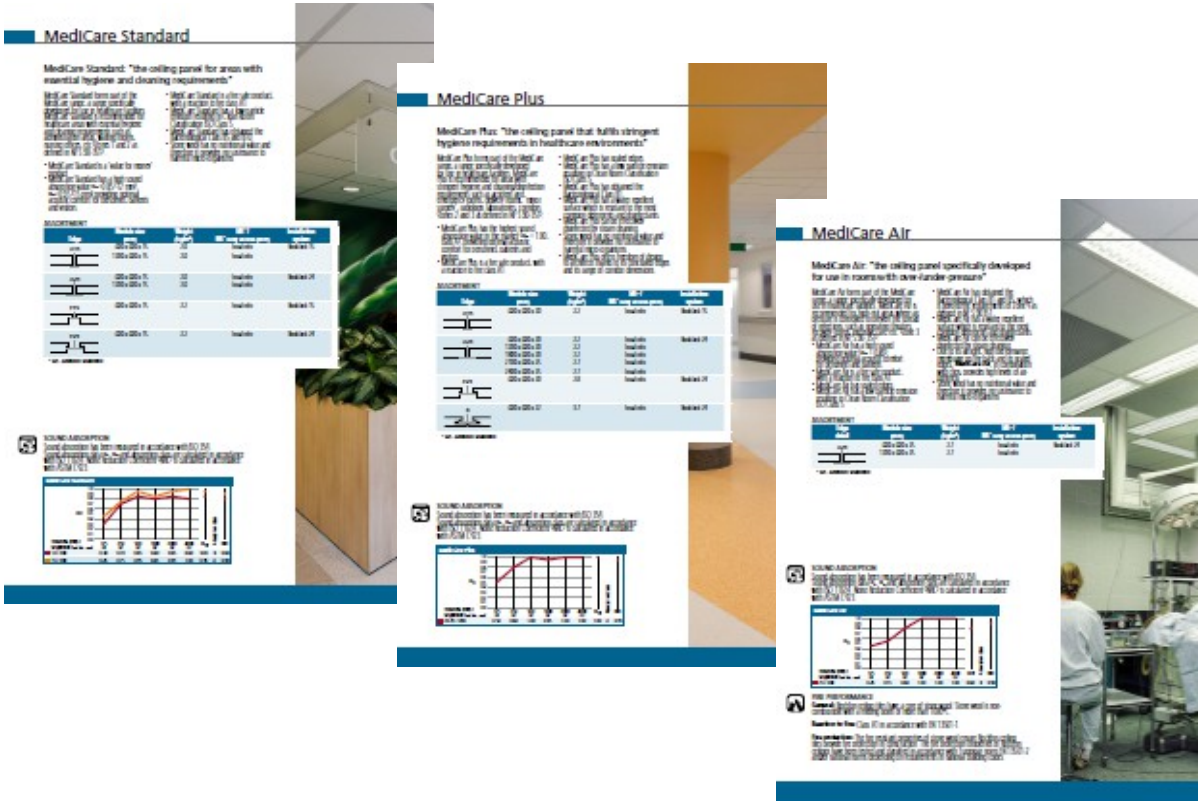
- Data sheets available online



MediCare®

- Samples

- Health brochure

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Health brochure

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- Web news text & flash animation