



 **LG Hausys**

www.himacs.eu

HI-MACS®

The best in class material
for Healthcare.



Natural Acrylic Stone™

HI-MACS®. The Solid Surface Material Ideal for Healthcare.

Cleanliness and sterility are paramount in hospitals, laboratories and healthcare facilities, and HI-MACS® is well placed to address these issues. It is internationally certified resistant to mould, dirt, viruses, bacteria and numerous chemicals. The smooth, non-porous and seamless surface meets the highest quality standards for hygiene, functionality, aesthetics and fabrication, making HI-MACS® the material of choice in the healthcare sector. In addition to its hygienic properties, design versatility, and easy cleaning maintenance, HI-MACS® is emission-free, highly resistant and long lasting.

The ultimate in hygienic standards make HI-MACS® the material of choice for healthcare experts.

Quality Performance

- Strong and durable
- Emissions and formaldehyde free
- Free of Nanoparticles
- Fire resistant
- Hygienic
- Water resistant
- Resistance to dirt, viruses, bacteria and numerous chemicals

Quality Fabrication

- Most advanced fabrication technology in the market
- Simple processing
- Seamless surfaces

Sustainable Quality

- Renewable and repairable
- Long-life cycle

Quality Design

- Translucent properties
- 3-Dimensional design
- Huge colour spectrum



HI-MACS®: perfect for a resilient, healing and anti-pathogen environment.

The requirements governing the use of materials in the medical sector are extensive: and with good reason. In addition, architecture can have a positive appearance in the hospital setting especially where children are being treated. An example of one such project is seen here in this children's centre where the cheerful motifs are directly printed on the HI-MACS® surface.

Niño Jesús Hospital, Madrid, Spain | Design: Elisa Valero | Fabrication: Muebles Maderama | Photo: Fernando Alca

Design makes itself at home in the healthcare sector, with HI-MACS[®], the best in class solid surface material.



A seamless, resistant and easy-to-clean surface.

HI-MACS[®] has a smooth and non-porous surface, making it impervious to liquids and germs. It can be cleaned with the strongest detergents, as used in operating theatres, yet retains its pristine appearance for years to come. It can be designed and fabricated to have a visually seamless finish making the proliferation of bacteria, viruses and mould impossible. HI-MACS[®] is the most resistant solid surface on the market when following the ECDC* cleaning protocols. Furthermore, time between operations can be reduced, due to the ease of cleaning.

**European Centre for Disease Prevention and Control*

Outstanding hygienic properties.

HI-MACS[®] constitutes a perfect base for disinfected areas which need to comply with the strictest hygiene rules playing an important role in preventing Cross contamination and helping HAI's avoidance. In tests carried out in accordance with the U.S. EPA OCSPP 810.2000 (2018) and 810.2200 (2018) product performance guidelines, it was demonstrated that HI-MACS[®], which has been in contact with the HIV virus, can be decontaminated with just 30 seconds use of a solution of bleach or isopropyl alcohol. In addition, tests conducted on HI-MACS[®] Alpine White S028, conforming to EN 16615, have demonstrated an excellent resistance to the staphylococcus aureus bacteria. Being completely sterile, this material contains absolutely no toxic or harmful substances, it's emissions free and has been awarded the Greenguard Gold Indoor Air Quality Certificate. HI-MACS[®] has been certified by an independent laboratory for its hygienic properties in accordance with the international norm LGA and NSF, meeting the higher standards for hygiene.



Maternity, Spain | Design: AMA Arquitectura de Maternidades | Architect: Angela Müller and Marta Parra | Fabrication: Jucalbe Carpinteria | Photo: David Frutos / BIS Image



Denttaglio Clinic, Romania | Design: Atvanguard Design Team | Fabrication: Atvanguard Surfaces | Photo: Atvanguard Surfaces

Quality means durable and easy to maintain.

HI-MACS® is scratch-proof and is very easy to repair. Any slight marks can be removed with a simple sponge or cloth. Thanks to this resilience, renovation work is reduced, resulting in long term maintenance savings. HI-MACS® is extremely durable and long-lasting, offering an excellent price/performance ratio and a 15 Years Warranty when manufactured and fitted by a HI-MACS® Quality Club member.

Incredible versatility and impressive aesthetics.

This versatile material is available in a huge range of colours, and finishes, and can be used for wall-cladding, counters, shelves, sinks & drawers. Its thermoformability means any shape is possible, offering designer looks for sterile environments. According to research, a pleasing surround can improve patient recovery. Combining ease of use and beguiling design together with hygiene is therefore a challenge that HI-MACS® can overcome.

Sustainable Quality.

HI-MACS® is composed of minerals, the finest acrylic and natural pigments. Since HI-MACS® can be seamlessly joined, any off-cuts can be used in other projects, meaning there is virtually no wastage of the material. HI-MACS® installations are extremely strong and durable, with a limited warranty of 15 years. Additionally, products that last a long time do not need to be replaced, which saves resources and energy, reduces waste and has a positive effect on the eco-balance.

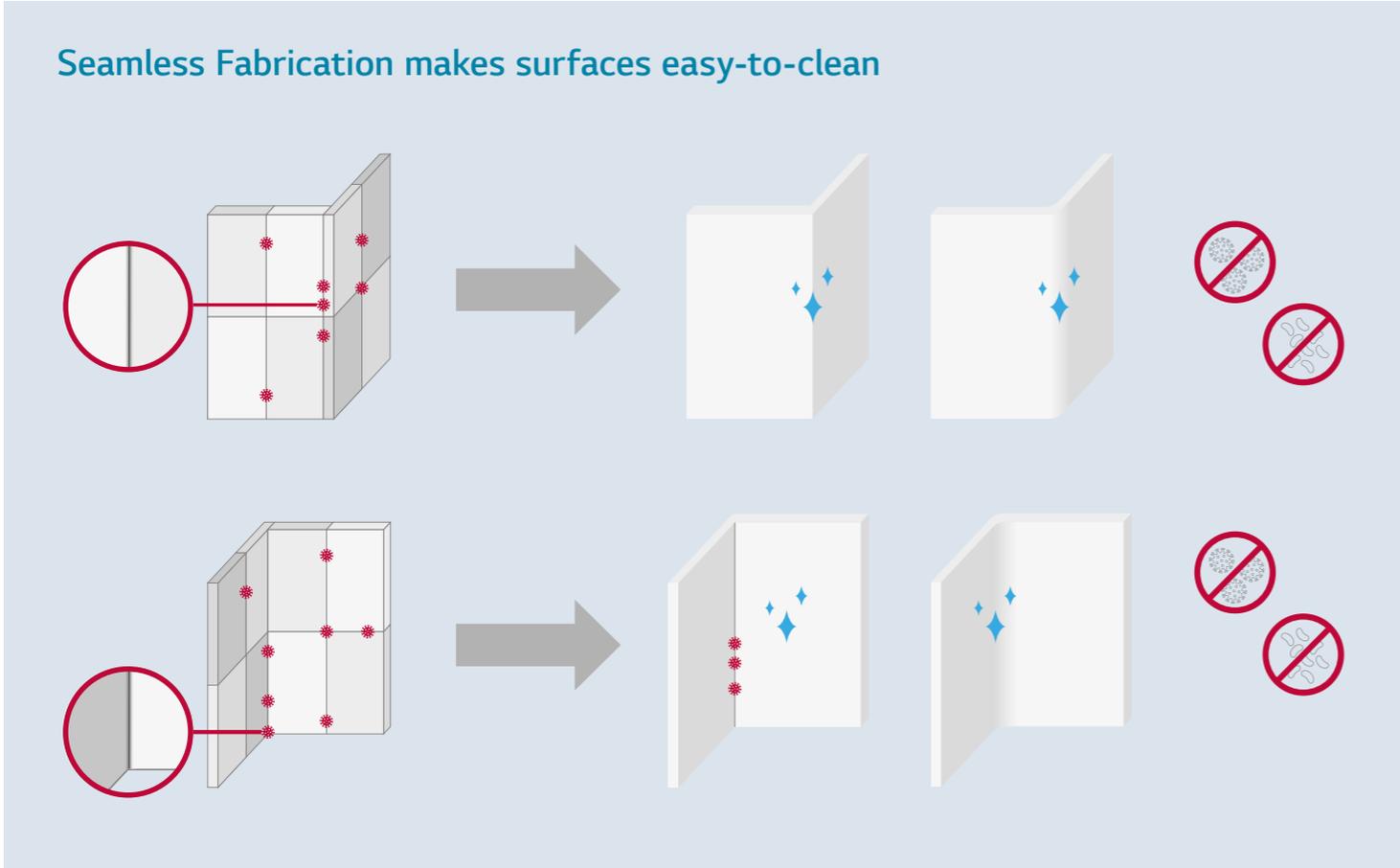
All HI-MACS® products are manufactured in accordance with the environmental standard ISO 14001. We track every single production stage, and make sure to comply with the highest environmental standards.

Avoid Infections in Healthcare. With HI-MACS®.

Preventing Healthcare Associated Infections in Hospitals: Introducing the HI-MACS® Solid Surface Design Solution for Infection Control in Healthcare Environments.

Healthcare Associated Infections (HAI) are infections that patients acquire while in hospital. They may appear after discharge, and also include occupational infections among staff.

HI-MACS®, thanks to its intrinsic properties and design possibilities, in combination with our recommended cleaning protocol, can help prevent HAI diseases, preventing cross-contamination in the physical surface environment at healthcare facilities.

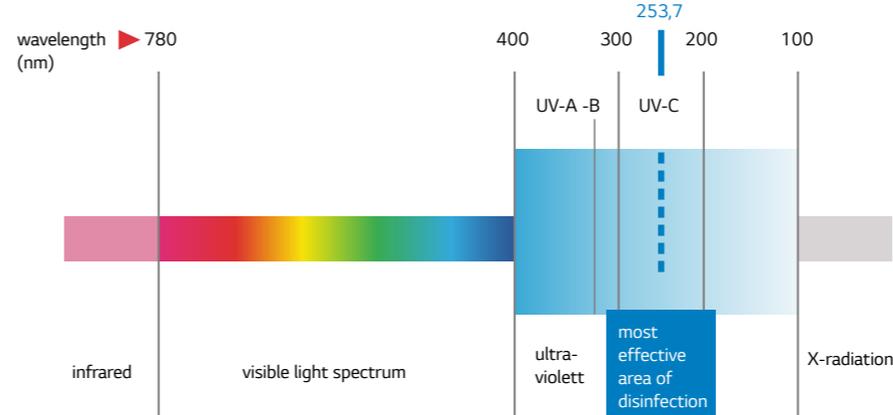


Destroys Microorganisms. But Not the Surface.

Highly effective disinfection methods are aggressive against germs but can damage some surfaces. HI-MACS® remains unaffected.

HI-MACS® S828 Alpine White UV+

To reduce the risks of HAI (Healthcare Associated Infections) to a minimum is imperative in the healthcare segment. Because of its antiseptic properties and its fast and easy handling, UV-C radiation is one of the most effective disinfection methods nowadays. Unfortunately UV radiation does not only harm microorganisms, but most solid surface material as well. The only exception: HI-MACS® S828 UV+. The advanced technology makes the product resistant to any UV radiation, whether it be UV-A, UV-B or UV-C. The advanced technology of HI-MACS® makes the product resistant to any UV radiation, whether it be UV-A, UV-B or UV-C, performing better in terms of colour variation, by a margin of 50%, than other solid surface materials. A long-lasting solution for hygienic environments and low maintenance cost.



The UV-C Disinfection Method

The UV-C method is a physical sterilisation procedure that utilizes UV rays. UV radiation is a natural component of sunlight. Depending on the wavelength, UV radiation is divided into different types; including UV-A, UV-B and UV-C rays. UV-C has the shortest wavelength, and is the most aggressive disinfectant of the 3 types. It kills microorganisms such as germs, viruses and bacteria quickly and effectively. The unique properties of HI-MACS® allow the use of this highly effective method.

HI-MACS® Healthcare cleaning protocol.

HI-MACS® has proven its suitability for use in healthcare environments, and it constitutes the best in class solid surface material thanks to its outstanding properties, even against virus contamination as hazardous as HIV-1.

In order to get the best out of HI-MACS®, it is essential to follow the QCM Fabrication Guidelines, to observe an appropriate/adequate cleaning protocol and to use disinfectant products recommended by the European Chemicals Agency (ECHA).



Quality Fabrication

To get the best performance out of HI-MACS®, a qualitative fabrication is imperative. Please, follow the fabrication guidelines specified in the HI-MACS® fabrication manual. For healthcare applications, please contact LG Hausys to be referred to a Quality Club Member.



Dentist Practice, Switzerland | Design: Jeannette Geissmann | Fabrication: Keller Züberwangen AG | HI-MACS® Supplier: Klausler Acrylstein | Photo: Daniel Ammann

Cleaning



In general, alcohol-based disinfectants (ethanol, propan-2-ol, propan-1-ol) have been shown to significantly reduce infectivity of enveloped viruses like SARS-CoV-2, in concentrations of 70 - 80 % with one minute exposure time. However, ethanol has not yet been approved under the BPR, so biocidal products based on ethanol are not authorised under the Biocidal Product Regulation, but are available under transitional measures. Therefore, according to the ECDC, the most reliable cleaning method is: Neutral detergent and Virucidal disinfectant or 0.05% sodium hypochlorite or 70% ethanol. For more information and for an indicative list of authorised disinfectant products, please visit the European Chemicals Agency (ECHA) at www.echa.europa.eu/covid-19

Maternity, Spain | Design: ANA Arquitectura de Maternidades | Architect: Angela Müller and Marta Parra | Fabrication: Lucalbe Carpintería | Photo: David Frutos / BIS Image

Dental Implant clinic, Romania | Design: Adriana Tihon/Avangarde Surfaces, AMA Design | Fabrication: Avangarde Surfaces | Photo: Stelian Popa



Cleaning options for healthcare settings after the management of a suspected or confirmed case of COVID-19

The environmental stability of viable SARS-CoV-2 is up to 2 - 3 days on a HI-MACS® surface, therefore:

- The area should be ventilated for 2 - 3 hours
- In closed circuits without windows, High-efficiency particulate air (HEPA) filtration should be used for the recycled air.
- The above mentioned areas should be carefully cleaned with a neutral detergent, followed by decontamination of surfaces using a disinfectant effective against viruses. Please, ask your HI-MACS® representative for an approved disinfectants list.
- Staff engaged in environmental cleaning in public spaces should wear personal protective equipment (PPE) .

Cleaning options for all type of premises

- Frequently touched surfaces should be cleaned as often as possible
- The use of a neutral detergent for the cleaning of surfaces in general premises (i.e. not for premises where a suspected or confirmed case of COVID-19 has been) should be sufficient.
- Staff engaged in environmental cleaning should wear PPE when performing cleaning activities. A uniform – which is removed and frequently washed in warm water – and gloves is enough for protection when cleaning general premises.
- The cleaning material should be properly cleaned at the end of every cleaning section.
- Hand hygiene should be performed each time PPE such as gloves are removed.
- Waste material produced during cleaning should be disposed of safely.

ECDC TECHNICAL REPORT March2020: Disinfection of environments in healthcare and no healthcare settings potentially contaminated with SARS-CoV-2

Where to use HI-MACS®.



A dentist surgery reception room designed with HI-MACS®. From the curved walls, the matching ceiling to a futuristic desk with indirect lightning.

Dental Clinic smileDentity, Germany | Design: Hubert Günther | Fabrication: Tischlerei Woodstar | Photo: Ralf Baumgartner



Cardio Centrum Dusseldorf, Germany | Design: bürger albrecht partner (bap) | Fabrication: Tischlerei Woodstar | Photo: © bap / Wolf Birke

Any shape is possible: HI-MACS matches your requirements with style – whether it is cut-outs, round edges, recessed handles or asymmetric shapes.



Project: Farmacia Gobantes, Spain | Fabrication: Inside Pharmacy | Photo: Vicugo Studio



The counters are skillfully highlighted with flush-mounted integrated light.

In addition to its core qualities, HI-MACS® offers a variety of advantages over traditional materials such as HPL, glass, stainless steel or ceramics.

An example of some of the applications for which HI-MACS® could be used in the Healthcare Sector would include: Interior & Exterior Cladding, Operating Theatre surfaces, Doors, Furniture in rooms and waiting areas, Nurses Stations and Reception Desks, Washrooms and Bathroom Facilities, Cafeteria and Kitchens Facilities, Internal and External Signage.



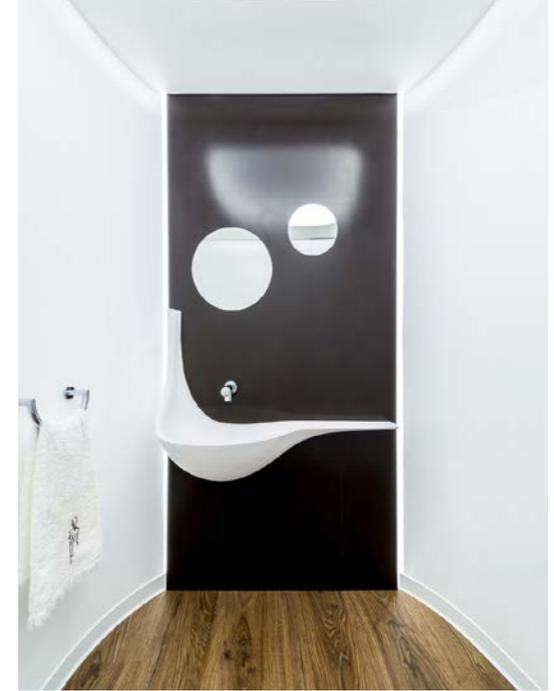
Welcoming settings in a waiting room: seating arrangements, counters and wall-cladding made out of HI-MACS materials. Even matching labels are possible.

Hospital Diaconessen, Netherlands | Design: Inbo | Fabrication: TechnoPlanning | Distributor: Baars & Bloemhoff | Photo: Jeffrey de Bie



Aesthetics Clinic, Romania | Design: Cristina Popescu | Fabrication: Atvanguardia Surfaces | Photo: Ciprian Stoian

Because first impressions count: From dynamic partition walls to aesthetic bathroom sinks and consultation areas – HI-MACS® creates a high-quality ambience that lets patients experience professionalism right from the start.



HI-MACS® enables the highest hygiene standards, design and functionality to be achieved in this aesthetic clinic: sterile surfaces with seamlessly integrated sinks, an individual reception counter and wall cladding with effective lighting design.

Gynecological Clinic Ritmo, Spain | Design: Fran Canos Studio | Fabrication: VF Superficies Solidas | Photo: Lope Matias



The appropriate use of colour for a healing environment.

A properly designed visual environment, with the appropriate use of colour and lighting, will have important benefits in hospitals for patients, staff and visitors.

The quality of the visual environment has a positive effect on the occupant's feeling of well-being and in the case of hospitals and healthcare buildings this can affect staff performance and patient recovery.

Neutral colour schemes have become very popular in domestic interiors in recent years with an expansion in the use of beiges, softer greys and off whites. Generally, this group is useful for making small interiors feel larger.

Whites and grey colours: In hospital environments, a colour preference for "whiteness" or pale shades is found among patients with its connotations of cleanliness and hygiene.

Greyed colours: These tones are known to be very relaxing and stress-reducing, they can be effective for areas that need to be calming or subdued so that they recede, providing environments with peaceful visual surfaces.

Pastel colours: Blue is a continuously popular colour for healthcare facilities.

Warmer colours: which include peaches, beiges or pinks, are recommended for convalescence and maternity wards.

Brighter colours: In children's areas or maternity units where people may expect to be in a more upbeat environment these colours are often chosen. They are also commonly used for orientation, wayfinding and navigation – as well as for signage.



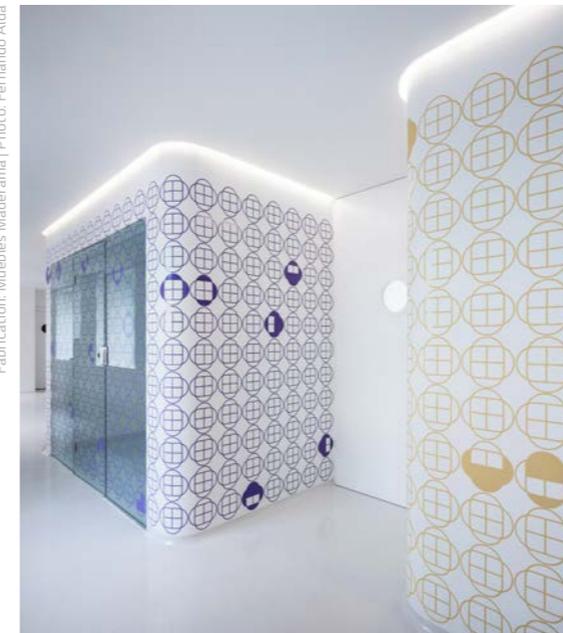
Dental Clinic smileDentity, Germany | Design: Hubert Günther | Fabrication: Tischlerei Woodstar | Photo: Ralf Baumgartner



Stomamed - Dental Clinic, Slovakia | Design: Pro-Style s.r.o | Fabrication: Drevovyroba | HI-MACS® Supplier: Polytrade CE, s.r.o | Photo: Katarina Bako Dohrnyova



Kindergarten, Capedezzo, Switzerland | Design: Herrmann Flavio | Fabrication: IL Falegnamerie Sagl, Ifalegnamerie.ch | Photo: Claudio Bader



Niño Jesús Hospital, Madrid, Spain | Design: Elisa Valero | Fabrication: Muebles Maderama | Photo: Fernando Aida



Emergency Hospital Clinic (3rd Floor), Spain | Design: PMMT Arquitectura | Fabrication: Abalit Elementos Moldeados S.L. | Photo: Pedro Pegemante, PMMT Arquitectura

Selection of popular colours in healthcare field.

HI-MACS® comes in a wide spectrum of colours. New effects are added regularly.

The full colour palette can be viewed at himacs.eu

Solids

From elegant to extravagant, classic to ultra-contemporary.



★ The basic HI-MACS® material is identical for every colour but it is important to note that darker and more heavily pigmented colours will show dust, scratches, haziness, marks left by hard water and other ordinary wear and tear more noticeably than lighter textured colours. Therefore colours marked with a ★ are less suitable for applications that are exposed to extensive surface contact such as worktops located in heavy traffic area.

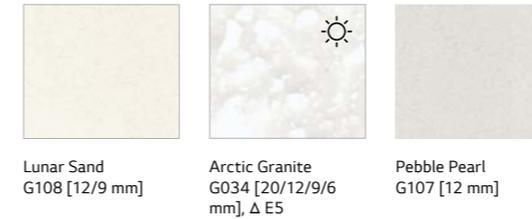
There may be deviations between the illustrated and actual colours owing to printing techniques. To receive the detailed colour range, please contact us at himacs.eu.

☼ Some HI-MACS® colours are particularly suitable for outdoor applications because of their good UV-resistance. HI-MACS® offers a 10 Year Warranty on colours' UV resistance and loss of gloss over 40%, 10 Year Warranty on colour leaching and 20 Year Warranty on colour peeling, swelling or delaminating. The warranty is applicable after the first installation and is only valid for the sheet material; adhesives are excluded. The conditions for this warranty are based on practical experience and on-going tests.

☽ Lucent colours have a higher level of translucency, more evident when combined with light sources.

Granite, Quartz, Sand & Pearl

A huge selection of textures and colours. Natural, elegant and perfect to combine.



Lucent

When combined with precisely positioned light sources, the translucent pastel shades become transformed into dramatic design "highlights".

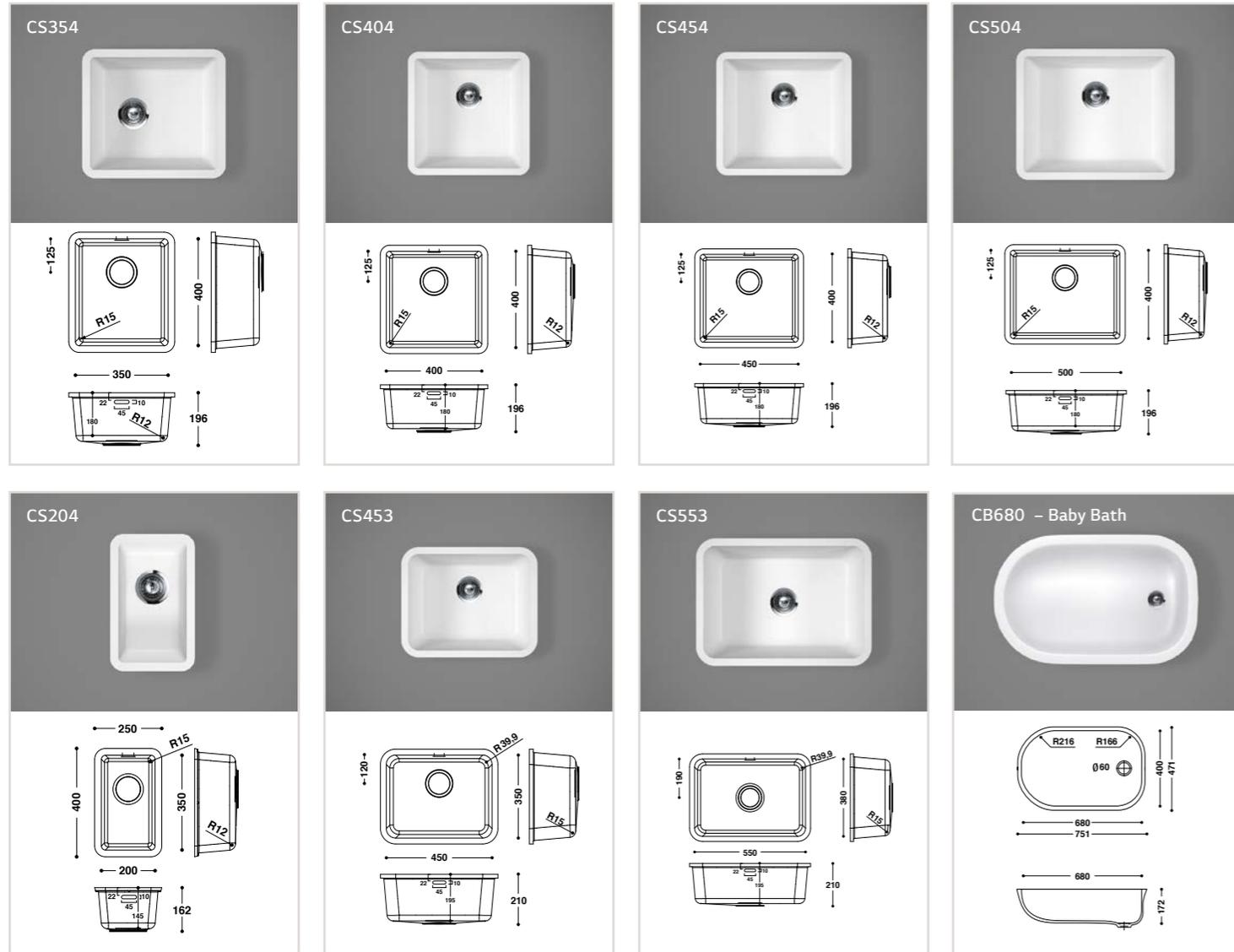


Omagh Hospital & Primary Care Complex, United Kingdom | Design: Andrew Murray, TODD Architects | Fabrication: McLaughlin and Harvey Specialist Joinery | Photo: Cris Hill



New perfection for healthcare applications.

Spaciousness, durability and hygiene are all key quality features when choosing a sink for a healthcare facility. These HI-MACS® coordinated sinks offer all those features, and are undermounted, with visually seamless joins, creating an extremely hygienic area.



Hygienic and highly functional: with these sink models, designers working in the healthcare sector have all the freedom of creativity they could ask for.

To discover the entire HI-MACS® range please visit himacs.eu

HI-MACS® sinks and Baby Bath are available exclusively in Alpine White S028. This shade perfectly complements any other colour from the HI-MACS® sheet collection.



Alpine White S028

Top disinfectants to control HAIs* – HI-MACS® Chemical Resistance.

*Hospital Associated Infections.



Stomamed - Dental Clinic, Slovakia | Design: Pro-Style s.r.o. | Fabrication: Drevovyroba | HI-MACS® Supplier: Polytrade CE, s.r.o. | Photo: Katarina Bako Dobrivarova

AGENT	RATING	TIME OF APPLICATION	RESULT
STERILANTS AND HIGH-LEVEL DISINFECTANTS			
Formaldehyde (37%)	5	24 h	No visible change
Glutaraldehyde (25%)	5	24 h	No visible change
Ortho-phthalaldehyde	5	24 h	No visible change
Hydrogen peroxyde (30%)	5	24 h	No visible change
Peracetic acid (1200 ppm)	3	24 h	Moderate change in gloss and/or colour
Peracetic acid/ Hydrogen peroxide	5	24 h	No visible change
INTERMEDIATE-LEVEL DISINFECTANTS			
Sodium hypochlorite	5	24 h	No visible change
Iodophors	5	24 h	No visible change
Chlorhexidine (4%)	5	24 h	No visible change
Isopropyl alcohol (45%)	5	10 min	No visible change
LOW-LEVEL DISINFECTANTS			
Quaternary Ammonium Compounds	5	24 h	No visible change
Phenols (1%) *	5	20 min	No visible change

Tests carried out in accordance to Norm EN ISO 19712-2 using samples in S028 Alpine White. For other colours, please contact your sales representative. Be aware that other colours may show different results.

Evaluation

RATING LEVEL	DESCRIPTION
Rating 5	No visible change
Rating 4	Slight change in gloss and/or colour, only visible at certain viewing angles
Rating 3	Moderate change in gloss and/or colour
Rating 2	Marked change in gloss and/or colour
Rating 1	Surface distortion and/or blistering



If you don't find the substance you are looking for in this table, or if you need support or more detailed information, please contact your HI-MACS® sales representative or email us at info@himacs.eu.

Technical data sheet



Pharmacy Gallardo, Spain | Design: Inside Pharmacy & Solo Luna Estudio | Fabrication: Inside Pharmacy | Photo: Vicugo Studio

SPECIFICATION	RESULT SOLIDS	RESULT GRANITE	TEST METHODS
Water absorption weight strength/thickness	<0,1%	<0,1%	≤DIN EN 438 Part 12
Slip resistance	>0,32 - 0,9		GMG100 (replaces R9)
Slip resistance	angle of acceptance of more than 10° to 19° = R10		DIN 51130
Water vapor transmission properties – diffusion resistance factor	18607	16150	DIN EN ISO 12572
Food tolerance	suitable for all colours		LMBG § 31
Hygiene	suitable	suitable	LGA Hygiene Certificate

SPECIFICATION / SUBJECT	MATERIAL THICKNESS	CLASS	PRODUCT	TEST METHOD
Fire Classification	12 mm	B1	Valid for all HI-MACS® Colour ranges.	DIN 4102
		M1	Valid for Alpine White S028, S728 CE MED, S828 UV+, Aster, Volcanics and Lucia Collections.	NF P92-501
		B - s1 - d0	Valid for HI-MACS® FR S728, UV+ S828, Ultra-Thermoforming S928, Solid, Sand, Pearls, Quartz, Granite and Volcanics.	EN 13501-1
	12 mm plus fibre cement board	B - s1 - d0	HI-MACS® colour range (2014)	EN 13501-1
	12 mm	B - s1 - d0	S728 CE MED	EN 13501-1 / SBI
		C - s1 - d0	Valid for Intense Ultra range.	EN 13501-1
		passed	S028 (standard)	DIN 5510
passed R1 / HZ3		S728 CE MED	EN 45545	
		IMO certified	S728 CE MED	Module B & Module D



Tierklinik, Switzerland | Design: Marx AG Haldenstein | Fabrication: Marx AG Haldenstein | Photo: Marx AG Haldenstein

Please feel free to contact us for further information.

HI-MACS®. Because Quality Wins.

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To find the contact for your region,
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himacs.eu



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