



Designed for possibilities.
Made for people.



Floor and wall solutions for operating rooms

Floor and wall finishes that enhance hygiene and durability

Your guide to floor and wall finishes that enhance operating room hygiene and durability.

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Today's modern operating room

The recent trends in healthcare have changed the needs, and footprint, of today's operating rooms (ORs). But as the industry standard continues to evolve, aseptic technique and the sterile field, patient safety, regulatory compliance and less use of anti-microbial additives all remain top priorities in the surgical center.

Aseptic technique

Regulatory compliance

Fewer anti-microbial additives

More procedures with less downtime

Larger, multi-purpose rooms

More complicated and heavy equipment

The increasing size of ORs

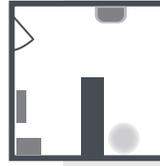
The footprint of the OR is largely dependent on the size of the hospital. Large hospitals may have many smaller and specialized ORs, provided they have the demand to support the investment. Smaller hospitals may prefer to design a large, multi-purpose OR or Hybrid OR that can perform a variety of procedures from orthopedic surgery to vascular surgery.

With the growing need for more frequent, complicated and diverse procedures, the size and complexity of ORs are increasing.

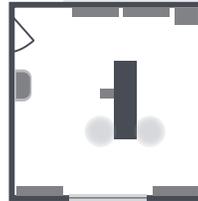
In the 1970s changes in federal regulations increased the minimum size of a general purpose OR from 320 to 400 square feet. But, this seems tiny by today's standards.

According to the Health Care Advisory Board's Facility Innovation Brief, most architects and facility planners generally agree that 600 to 650 square feet is ideal for a standard operating room, considering surgical staff circulation space and the amount of mobile equipment required. However, some modern hybrid ORs are as large as 1,200 square feet.

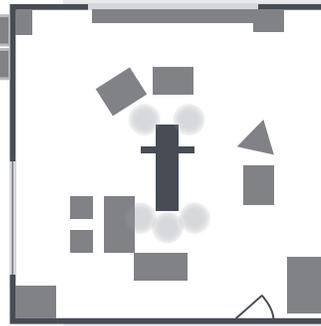
1960s (300 sq. ft.)



1970s (400 sq. ft.)



Modern OR (600 sq. ft.)



Modern Hybrid OR (1200 sq. ft.)



Hybrid Operating Rooms

Many major hospitals have moved to more efficient and centralized hybrid operating rooms. Hybrid ORs promote efficiency, decrease the risks to patients, and provide a cost effective solution by allowing multiple procedures to be completed in a single suite.

By centralizing everything, this allows hospital staff to do imaging and procedures in one area without the need to move a patient. These suites allow doctors across different specialties to access all necessary technology and imaging equipment in one central location. This lowers the risk of infection to the patient, increases the efficiency of the surgical team and reduces costs.

Hybrid ORs are typically 1,000-1,200 square feet, which are much larger than traditional ORs. Hybrids are filled with heavier and more complex equipment weighing in excess of 4 ½ tons. They receive more foot and wheeled traffic, and have less downtime in between surgeries.

More procedures, greater demands

The continual advancement in equipment and imaging capabilities of a hybrid operating room allows for more operations to be done arthroscopically, which reduces procedure and recovery time.

This increases the number of surgeries that are completed in a day, meaning greater circulation, higher turnover, more cleaning, and significantly more stress on finishes.

It is imperative that these environments have regimented cleaning procedures to ensure these ORs are properly cleaned and disinfected in between operations. At the same time, it is equally important that the floor and wall finishes installed can withstand the level of cleaning required.



Stainless steel corner guards for increased protection

Altro Whiterock used as wainscoting

Durable floor and wall products

Flooring able to withstand heavy loads

Slip-resistant flooring

High impact-resistant wall cladding

Easily cleaned and disinfected

Wall overlaps floor
for enhanced hygiene and cleanability

Altro Symphonia
flooring

Thermoforming
of corners



i Did you know?

With the chance to generate over \$100,000 worth of revenue per day in a single operating room, facilities want the best, most robust floor and wall solution to meet their needs on a daily basis.

An integrated floor and wall solution

It's an integrated solution, which means it fits together perfectly to provide a hygienic, watertight surface — ideal for designing a sterile field. This doesn't just offer the best possible protection against bacteria and contamination; it makes cleaning easy too.

Easy to clean

Effective detailing + accessories

Fully sealed

Thermoformed on site

Heat welded joints

High impact resistance

Easy to keep clean

Together, our products provide a robust, hard-wearing surface that resists stains, odors and chemicals. PVC is non-porous, non-shedding, and has very high impact resistance, preventing damage that can trap bacteria compared to traditional surfaces.

Fully sealed

Altro Whiterock is a fully-bonded system with hygienic sealed edges, abutments and joints. It can even be sealed around fixtures and fittings.

When joined together with Altro flooring, they form a watertight covering - from floor to ceiling.

Thermoforming

Because our wall panels can be molded around corners on-site, they form an uninterrupted surface that's resistant to impact and damage. There's no need for unsightly corner trims which can form potential dirt traps that are difficult to access and clean.

Joint forces

Joints and junctions are a key part of system integrity. For instance, did you know that traditional flooring cap trims used with resilient flooring forms a ledge that is not USP 797/800 compliant?

While we have multiple joining methods, in hygienic areas Altro recommends heat welding for all wall joints and overlapping at the wall to floor transition.



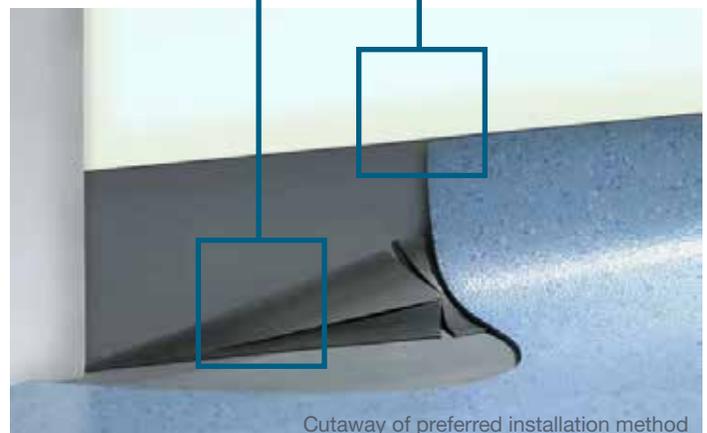
Altro Whiterock

Thermoformed corners
No unsightly trims

Heat welded joints
Fully-sealed, seamless joining

Cove stick
For a seamless transition

Wall overlaps floor
Preferred installation



Cutaway of preferred installation method



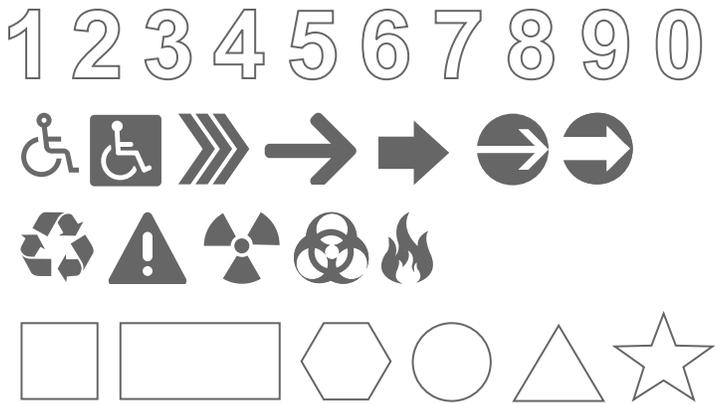
In house digital cutting services

Renovating multiple ORs at the same time? Altro's in-house cutting machine is capable of making very precise cuts to your exact specification. By cutting the material in advance by machine, installation and OR downtime is reduced. This also ensures the cuts are made precisely to your specification.

Typical digital cutting requests

- ✓ Shape under OR tables
- ✓ Wayfinding
- ✓ Icons
- ✓ AIGA Symbols
- ✓ Numbers
- ✓ Logos
- ✓ Borders
- ✓ Medallions
- ✓ Room-kits
- ✓ Corridor-kits
- ✓ Pediatric theming
- ✓ Patterning

In addition, we can cut custom shapes, words, symbols or numbers.



Meeting the mark - How do Altro products stand up to guidelines?

Engineering our products to perform well in the most demanding of situations means your installation is durable, long-lasting and meets industry standards.

American Institute of Architects

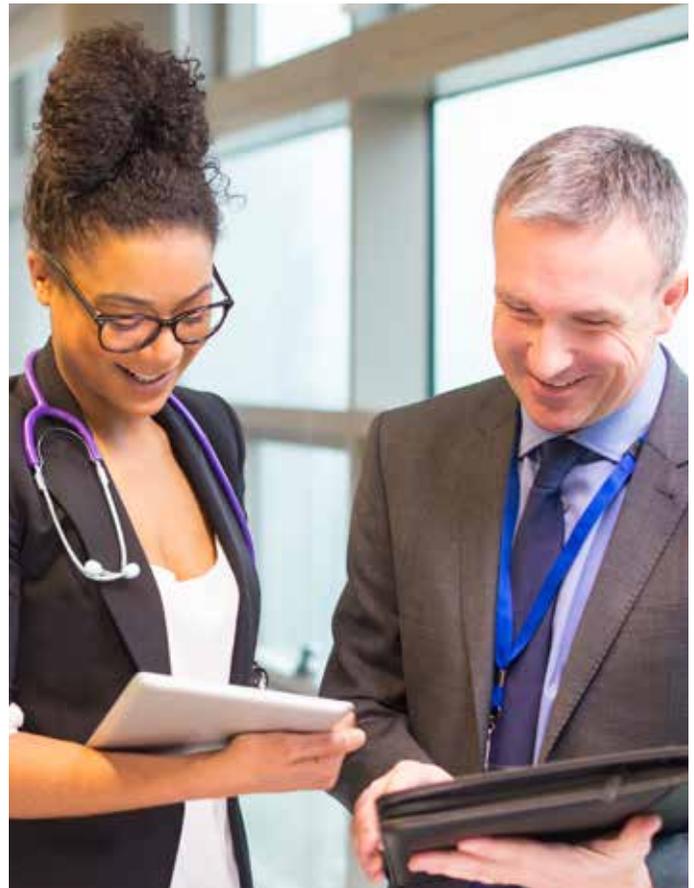
- ✓ Floor/wall should be free of fissures, open joints, crevices that may retain or permit the passage of dirt and particles.
- ✓ Seamless floor/wall finishes should be used to ensure cleanliness and minimize risk of healthcare acquired infections (HAIs).

2018 FGI Guidelines

- ✓ Flooring shall be cleanable and wear-resistant.
- ✓ Slip resistance level of floor shall be appropriate for the area of use.
- ✓ High gloss/reflective surfaces shall be avoided.
- ✓ Operating rooms shall have floor and wall base assemblies that are monolithic and have integral coved wall base up the wall a minimum of 6 inches.
- ✓ Flooring shall be unaffected by wet cleaning, germicidal, and other types of cleaning solutions.
- ✓ Walls shall be washable.
- ✓ Walls shall be free of fissures, open joints or crevices.
- ✓ Walls shall be monolithic or have sealed seams that are tight and smooth.

Additional considerations

- ✓ Indentation resistance – minimum 1,000 psi.
- ✓ Bacteria-resistant surfaces – without the addition of anti-microbials.
- ✓ Stain resistance to chemicals used in procedures, sterilization, and cleaning.
- ✓ Impact-resistant walls.



CSA Z8000

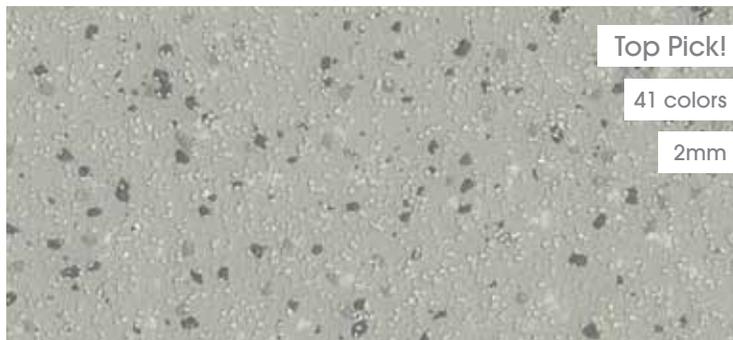
- ✓ Surface material shall be resistant to microbial spread and growth.
- ✓ Minimum height of OR: 3.5 meters / 11.5 feet.
- ✓ Floors shall be cleanable and maintainable without toxic stripping and finishing.

US Pharmacopeia - USP 797/800

The US Pharmacopeia - USP 797/800 also have many regulations which apply to ORs. While many of these overlap with the FGI guidelines, there are additional guidelines that must be addressed. USP guidelines are legally enforced on a state and federal level and failure to comply can lead to costly shutdowns.

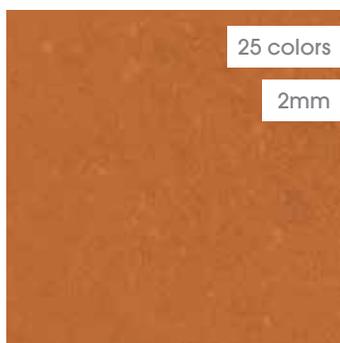
- ✓ Flooring cap should be avoided – smooth floor to wall transitions such as overlap or heat-weld methods are preferred
- ✓ Preferably floors are overlaid with wide sheet vinyl flooring with heat-welded seams
- ✓ Particle emission must meet ISO Class 5 and lower

Flooring



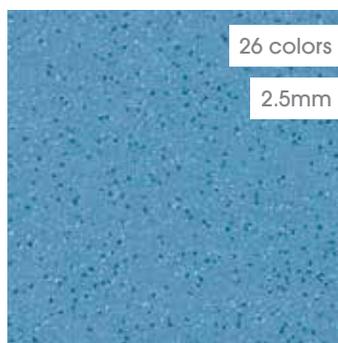
Altro Symphonia

An innovative blend of smooth and slip-resistant engineering with enhanced stain resistance. High PSI values and easy cleanability — a perfect fit for operating rooms.



Altro Operetta

Superior stain-resistant sheet vinyl



Altro Reliance 25

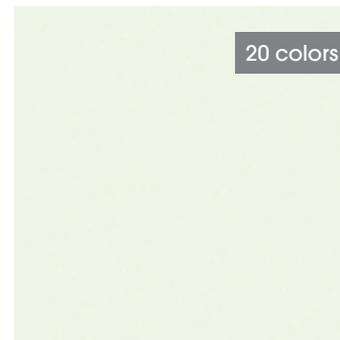
Heavy-duty, slip-resistant sheet vinyl



Altro Cantata

Adhesive-free sheet for quick installations and minimum downtime

Walls



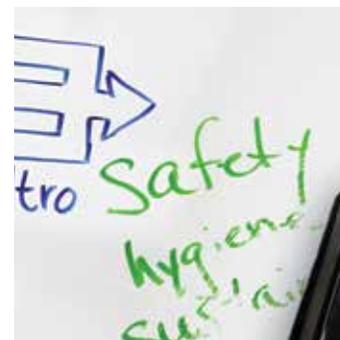
Altro Whiterock

Complete PVCu hygienic wall paneling system



Altro Whiterock Digiclad

Custom printed Altro Whiterock panels



Altro Whiterock Whiteboard

Add dry erase film to any of our wall products

Color Sapling/Seafoam was designed with recommendations from the Royal College of Surgeons

Top Altro picks for Operating Rooms



In 2013, Altro removed all biocide additives from its products. Once considered best practice, the overuse of these ingredients is believed to be leading to 'superbugs' and the increasing problem of fewer medicines to treat the soaring number of antibiotic resistant infections. A major health network, Kaiser Permanente, has banned the use of these ingredients from all of its 38 hospitals and 600 medical offices.



Flash coving

Preventing water and moisture damage as well as dirt accumulation is crucial to maintaining a hygienic environment. Flash coving is an installation technique used to help promote sanitary conditions where they're needed most.

Flash coving is typically done on-site by a qualified flooring installer. Altro also offers prefabricated coving shown below.

FlashCove™

Turn the weakest part of your floor into the strongest. FlashCove prefabricated bases arrive on site with a bonded aluminum reinforcing backer that strengthens the weakest part of the base. Where site-formed bases are prone to punctures during maintenance and use, thus compromising hygiene, FlashCove bases are guaranteed to stay puncture-proof for life.

FlashCove can be made using any type, color or pattern of Altro sheet flooring to match or contrast with your primary flooring material (also known as a picture frame cove). It can also be used with any type of resilient or metal cap strip including stainless steel cap strips (as pictured in diagram above).

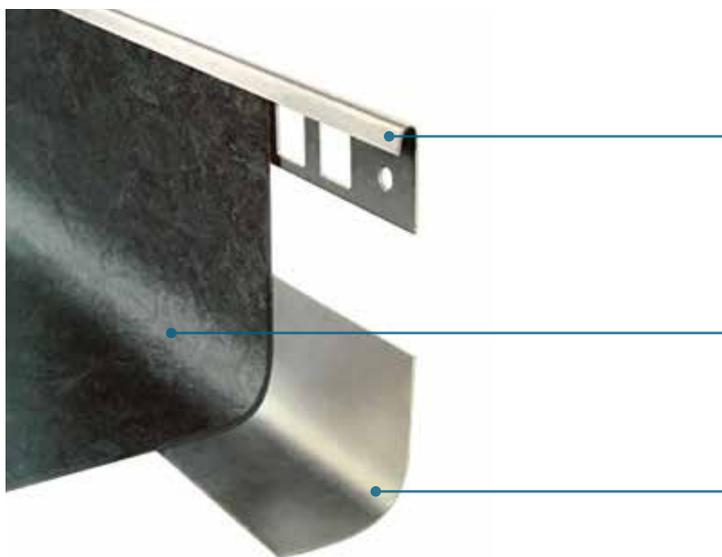
The tighter radius of a FlashCove prefabricated base allows for no gaps at standard door frames and corners. Just cut and install – no messing around trying to fill the unhygienic gaps that may occur with site-formed bases. The tighter radius also allows cleaning equipment to get closer to the wall and clean more thoroughly without risk of damaging or puncturing the base.



Flash cove



Picture frame cove



Any cap strip

Stainless steel cap strip shown.

Any Altro sheet vinyl flooring

Safety flooring, slip-resistant flooring or smooth flooring.

Bonded puncture-proof aluminum reinforcement

FlashCove™ prefabricated base

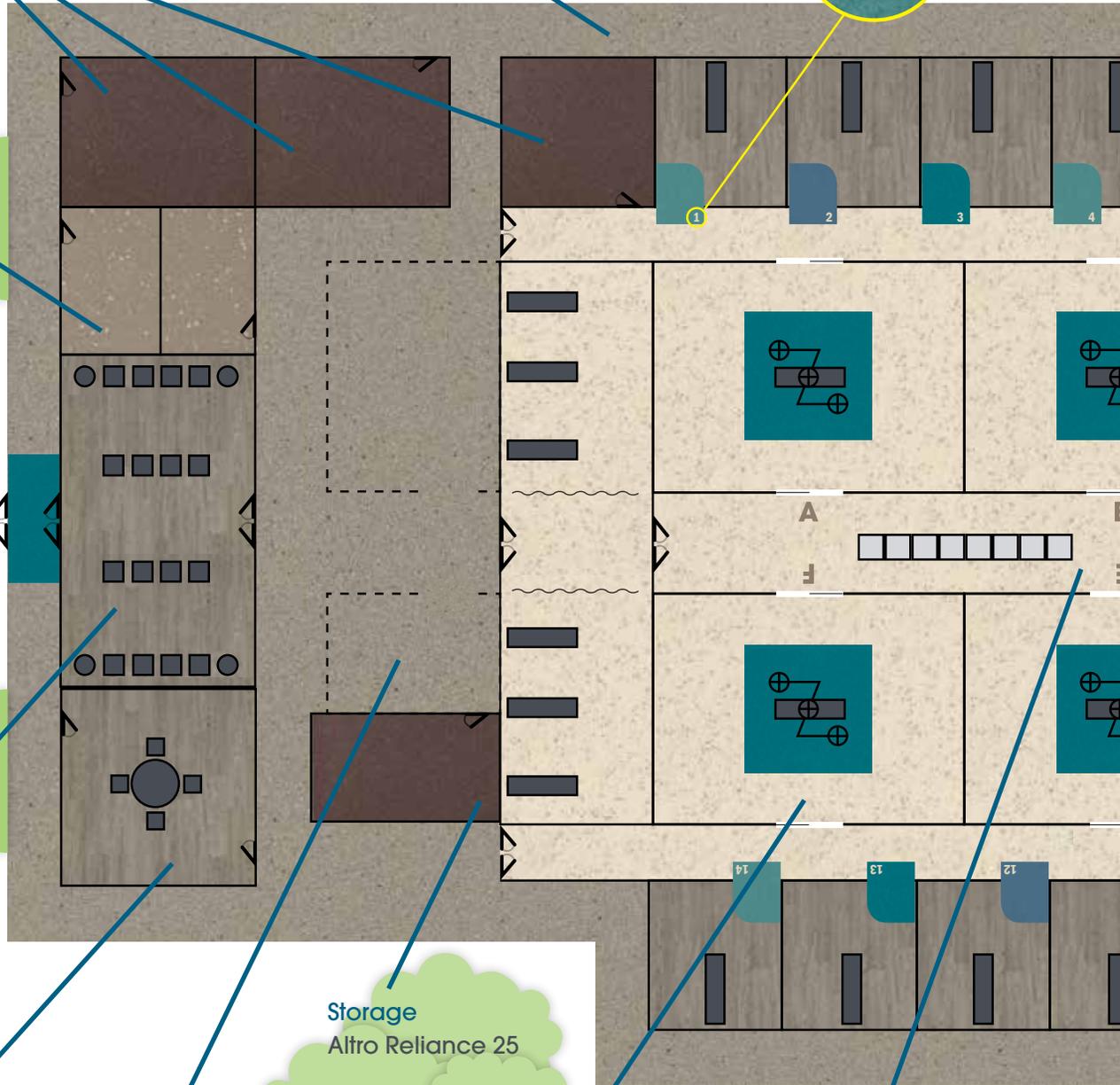
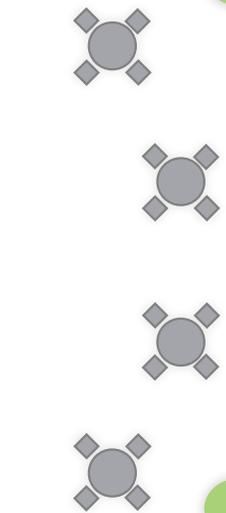
Surgical unit

Electrical room, mechanical room, janitorial closet
 Altro Reliance 25
 Heavy-duty flooring for back-of-house spaces

Corridors
 Altro Operetta
 Altro Whiterock Matte *as wainscoting*
 Prevent bumps and dings in busy corridors with Altro Whiterock Matte used as wainscoting

Easy wayfinding
 with our in-house digital cutting service

Restrooms
 Altro Reliance 25
 Altro Whiterock Chameleon
 Protect walls from moisture around fixtures and make design statement



Family waiting area
 Altro Wood

Family consult area
 Altro Wood

Nursing stations
 Altro Orchestra
 2.85mm for underfoot comfort

Storage
 Altro Reliance 25

Operating rooms
 Altro Symphonia
 Altro Whiterock

Clean core
 Internal corridor
 Scrub area
 Altro Symphonia
 Altro Whiterock

Pre & post op

Altro Wood

Altro Whiterock Digiclad

Biophilic elements to help heal and create a calming environment

Staff restroom

Altro Reliance 25

Altro Whiterock

Chameleon

Staff lounge

Altro Wood Acoustic

Acoustic backed flooring gives tired feet a rest

Restrooms

Altro Reliance 25

Altro Whiterock

Chameleon

Protect walls from moisture around fixtures and make design statement

Family waiting and consult area

Altro Wood

Nursing stations

Altro Orchestra

2.85mm for underfoot comfort

Corridors

Altro Operetta

Altro Whiterock

Darker inset around OR table

Altro Symphonia

Most stains occur around the OR table. Reduce severity by using a darker color. This can be pre-cut with our in-house digital cutting service and additional stain protection can be added if needed.

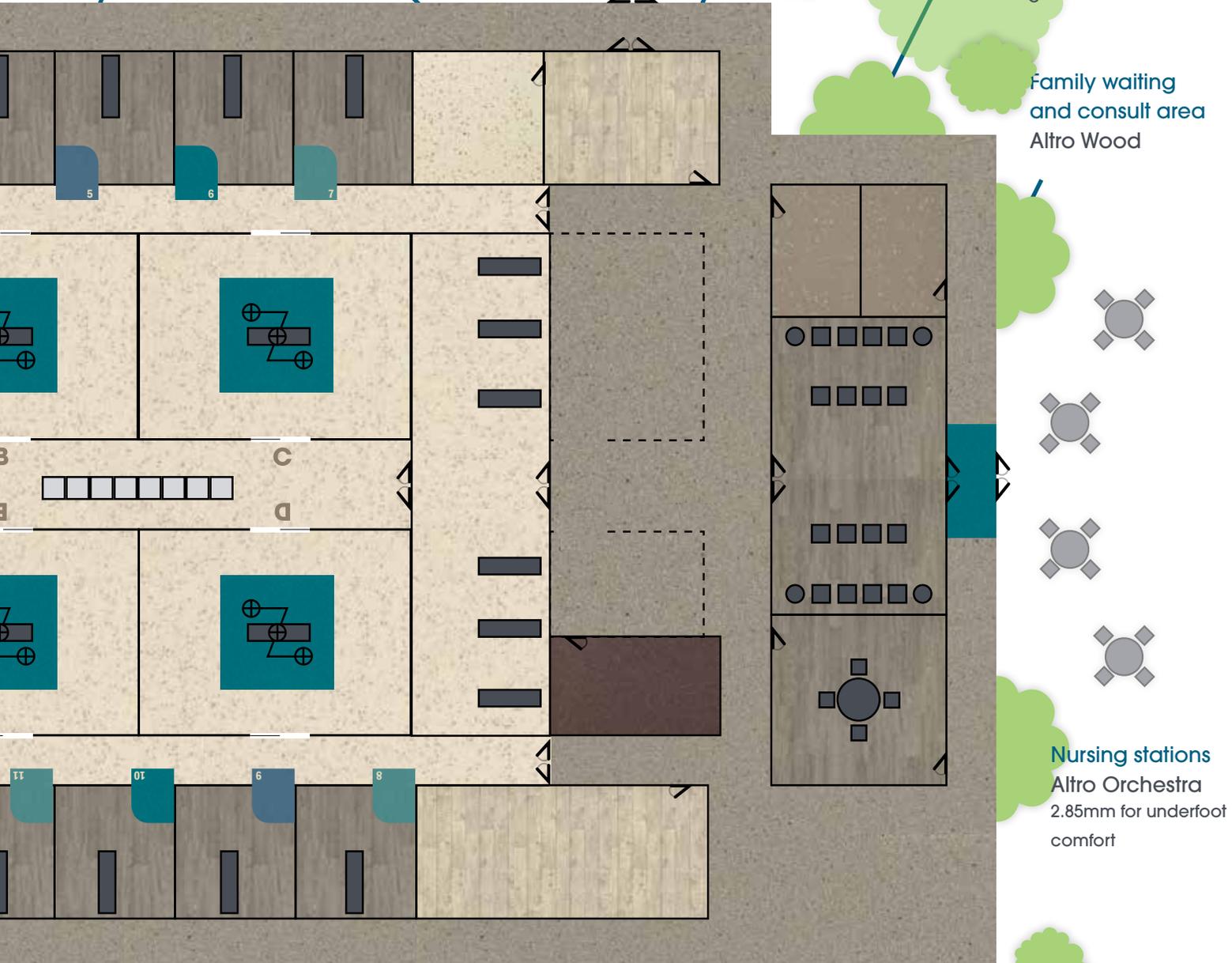
Storage

Altro Reliance 25

Administration

Altro Wood

Corridor to main building



Altro in action

Lahey Hospital and Medical Center

Creating a hygienic environment that promotes the safety of both patients and staff is a key priority of healthcare design. While modern trends are leaning more towards materials with a residential aesthetic rather than a neutral, uniform look, the need for easy-to-clean surfaces that can help reduce the risk of hospital acquired infections remains constant.

Lahey Hospital sought a way to grow its available clinical services while making the most of its existing space. This inspired the decision to convert the hospital's former emergency unit into an updated version of its endoscopy department. The transition would allow the department to expand its patient capacity and incorporate fluoroscopic imaging technology as well as an innovative scope processing room into its layout.

After careful consideration, four Altro smooth flooring products were specified for the endoscopy department's interior – Altro Wood, Altro Wood Comfort, Altro Operetta and Altro Serenade. These ranges are unique in the sense that they share certain finishes while complementing each other with varying backing thickness.







Nursing stations, corridors and patient bays

Traditional carpet and VCT flooring commonly found in healthcare settings can harbor harmful bacteria and other contaminants within cracks and fibers. This can contribute to an increased risk of hospital-acquired infections (HAIs) in patients during their stay.

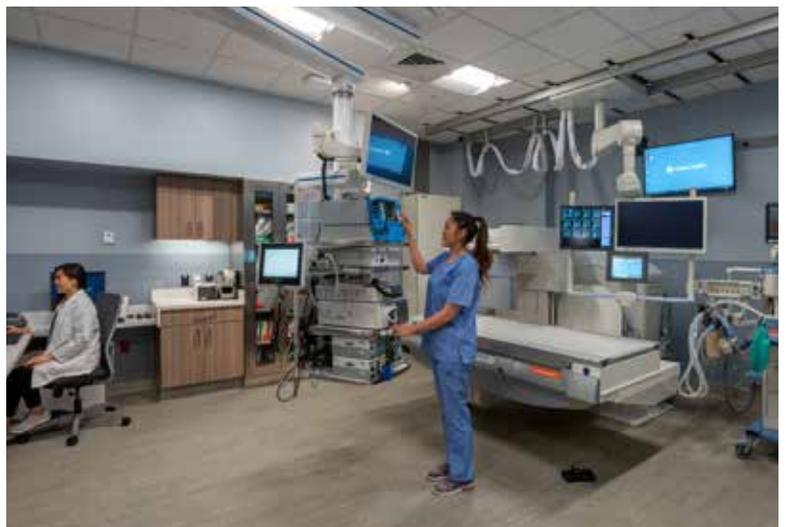
Lahey Medical Center's installation featured Altro Operetta in the nursing stations as well as Altro Wood throughout the corridors and patient bays. Both of these ranges feature smooth, consistent surfaces with heat-welded seams that prevent bacteria from escaping below the surface during routine maintenance while promoting a hygienic environment.



Procedure rooms and decontamination areas

For areas such as operating rooms, recovery rooms and patient rooms, our interior finishes in calm and neutral shades can help ease stress and facilitate the recovery process. They can be covered and fully adhered to meet infection control guidelines.

Lahey Hospital chose Altro Wood Comfort and Altro Serenade for their thicker backings to provide ample support to staff standing for extended periods.







i Did you know?

The Royal College of Surgeons suggests pale blue or green for operating rooms, as this has been shown to be less tiring on the eyes. This is important to surgical teams that may perform procedures for hours on end.

Altro Whiterock color Sapling/Seafoam was designed for this.

1. **Altro Operetta** Clef
2. **Altro Operetta** Madrigal
3. **Altro Wood** Vintage Cherry
4. **Altro Symphonia** Frozen
5. **Altro Symphonia** Brook

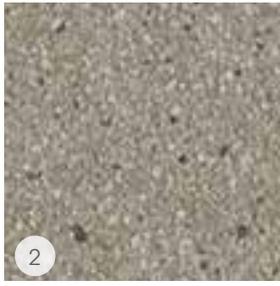
6. **Altro Whiterock** Sapling / Seafoam
7. **Altro Symphonia** Whirlpool
8. **Altro Symphonia** Lakeside
9. **Altro Whiterock** Sage

9





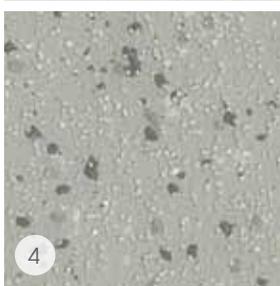
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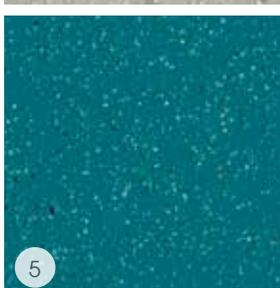
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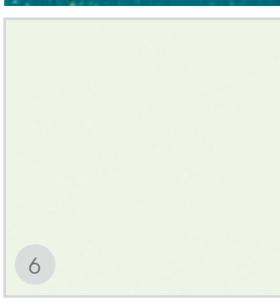
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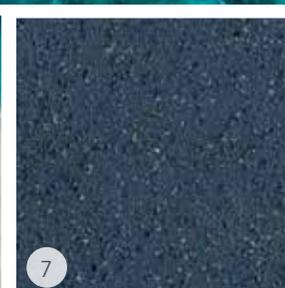
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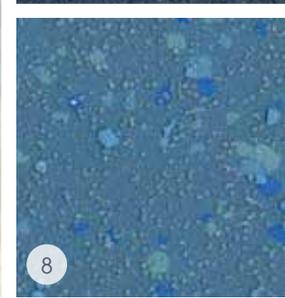
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6



7



8



Altro Symphonia™

Smooth sheet flooring with added slip-resistance

Altro Symphonia is the top choice in OR flooring solutions, boasting an expansive color palette and impressive stain resistance.

Smooth to the touch and easy to clean, Altro Symphonia satisfies ISO Cleanroom standards while providing safety underfoot during long, extensive surgeries.

The product is impervious, free from cracks and crevices, and non-shedding. Built with Altro Easyclean surface technology, Altro Symphonia is resistant to disinfectants and other cleaning agents.

Combine with Altro Whiterock wall panels for areas requiring a seamless, floor-to-ceiling hygienic surface.

- ✓ 2mm thick
- ✓ 2m wide
- ✓ Withstands 2000 psi
- ✓ 10-year warranty
- ✓ 41 colors
- ✓ Enhanced slip resistance values
- ✓ Stain-resistant
- ✓ Low-VOC emitting
- ✓ Meets ISO Class 4 cleanroom requirements
- ✓ Non-toxic, non-polluting, no heavy metals

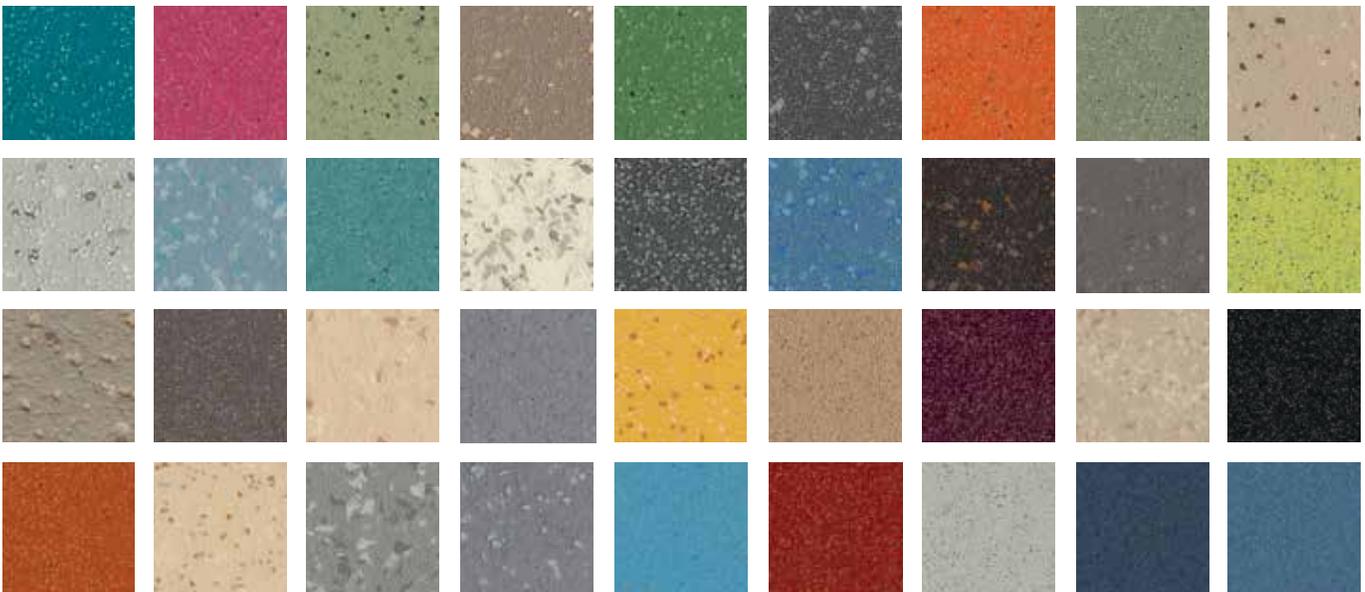
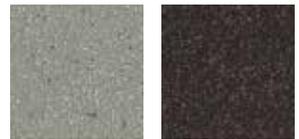


floors

Roll dimensions		6'7" x 65'5" 2m x 20m	
Weight		4.60 lbs./yd ² 2.5 kg/m ²	
Warranty		10 years	
Cleaning technology		Altro Easyclean	
Static coefficient of friction		ASTM D2047	.8 dry, .9 wet
Dynamic coefficient of friction		ANSI/NFSI B101.3	.38 wet DCOF
Ramp test		DIN 51130	R10
Static load limit		ASTM F970	2000 psi
Indentation		EN 433	≤ 0.10mm
Wear (abrasion) resistance		EN 660	≤ 10% 50,000 cycles
Castor chair abrasion		EN 425	Pass
Flexibility		ASTM F137	Pass
Light fastness		EN 20105-B02	≥ 6
Sound insulation		ISO 140-8	5dB
Electrical behaviors		EN 1815	≤ 2kV Antistatic
Minimum operating temperature		-4°F (-20°C)	
Fire and smoke performance		CAN/ULC - S102.2 ASTM E648 ASTM E662	Tested Class I < 450
Chemical resistance		EN 423	Tested
Particle concentration	ISO 14644 - 9:12	Meets ISO 4 cleanroom requirements	
VOC emissions		CA 01350 FloorScore	Pass Certified

Meets the following requirements

- ✓ Smooth
- ✓ Impervious
- ✓ Free from cracks
- ✓ Non-shedding
- ✓ Resistant to disinfectants
- ✓ Able to cove
- ✓ Able to heat weld
- ✓ Provides slip resistance
- ✓ Combines with Altro Whiterock wall system
- ✓ Meets AIA guidelines
- ✓ Meets FGI guidelines
- ✓ Meets CSA Z8000 guidelines
- ✓ USP 797/800 compliant



Altro Reliance™ 25

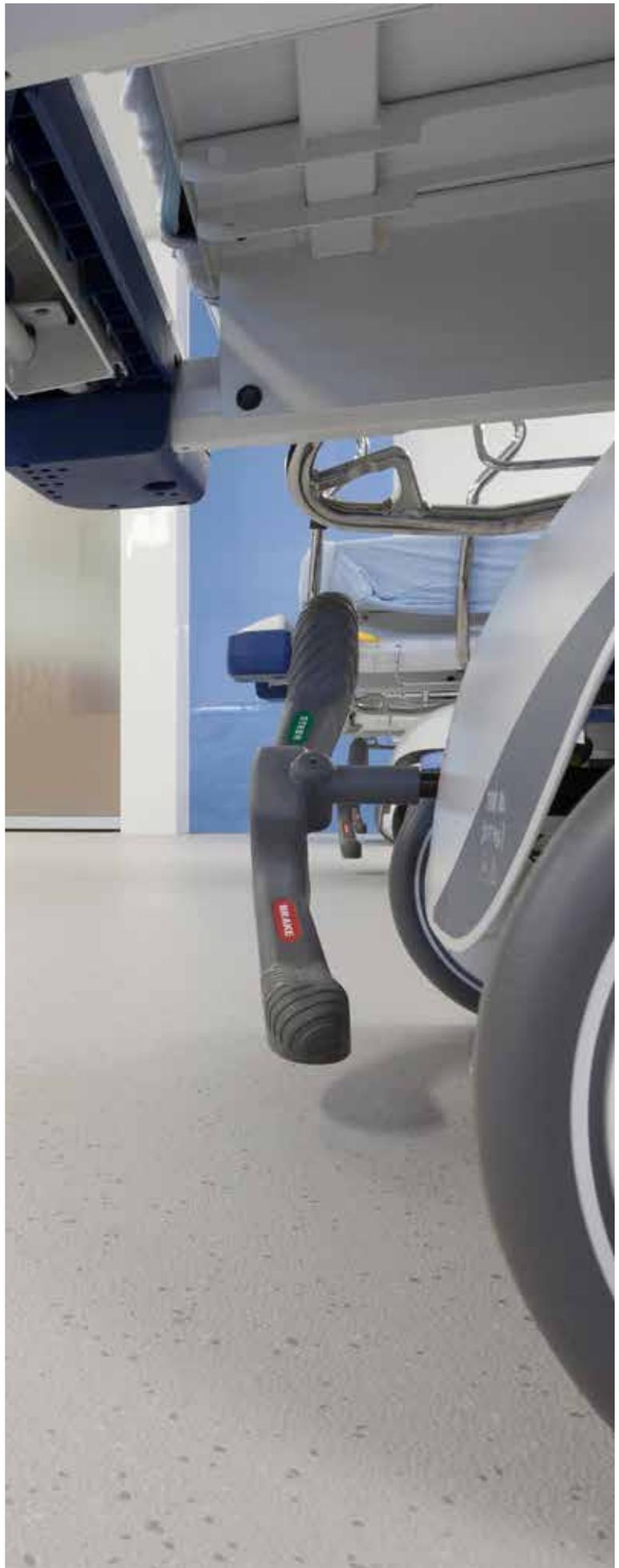
Robust slip-resistant flooring

At 2.5mm thick, Altro Reliance 25 combines proven stain resistance, slip resistance and incredible durability to create a surface capable of enduring high levels of foot and wheeled traffic without compromising performance.

This product is a premium choice in heavy-duty commercial flooring, offering the best slip resistance of our OR solutions.

Combine with Altro Whiterock wall panels for areas requiring a seamless, floor-to-ceiling hygienic surface.

- ✓ 2.5mm thick
- ✓ 2m wide
- ✓ Slip-resistant
- ✓ Withstands 2000 psi
- ✓ 15-year warranty
- ✓ 25 colors
- ✓ Stain-resistant
- ✓ Low-VOC emitting
- ✓ Non-toxic, non-polluting, no heavy metals

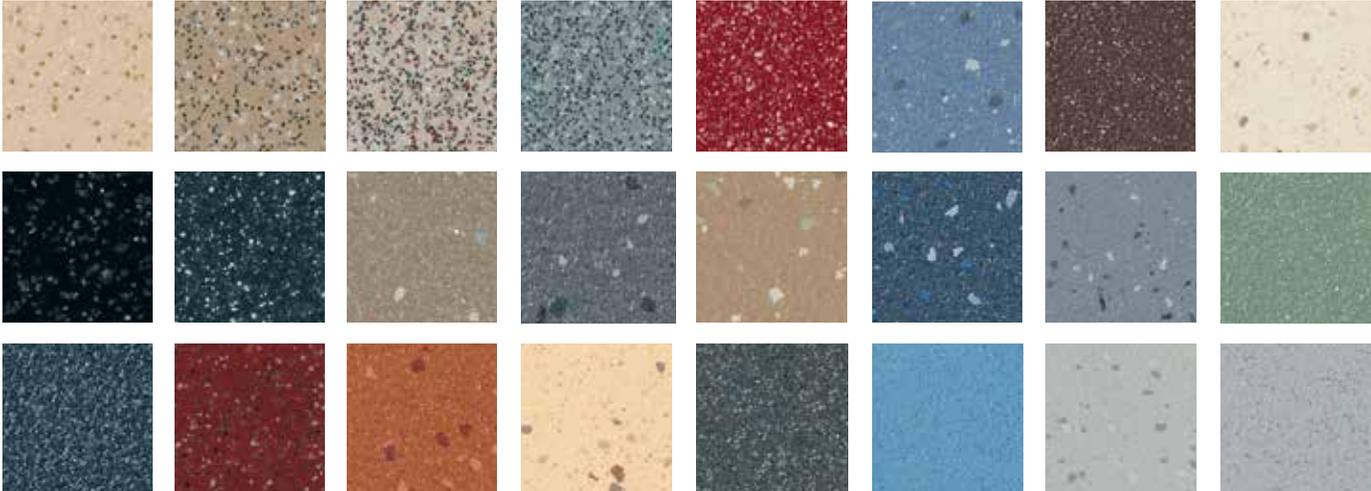
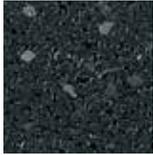


floors

Roll dimensions		6'7" x 65'5" 2m x 20m	
Weight		6.27 lbs./yd ² 3.4 kg/m ²	
Warranty		15 years	
Cleaning technology		Altro Easyclean	
Static coefficient of friction		ASTM D2047	.8 dry, .9 wet
Dynamic coefficient of friction		ANSI/NFSI B101.3	.44 wet DCOF
Ramp test		DIN 51130	R10
TRRL pendulum test		BS 7976 ASTM E303	40+
Static load limit		ASTM F970	2000 psi
Indentation		EN 433	≤ 0.10mm
Wear (abrasion) resistance		EN 660	≤ 10% 50,000 cycles
Castor chair abrasion		EN 425	Pass
Flexibility		ASTM F137	Pass
Light fastness		EN 20105-B02	≥ 6
Sound insulation		ISO 140-8	7dB
Electrical behaviors		EN 1815	≤ 2kV Antistatic
Minimum operating temperature		-4°F (-20°C)	
Fire and smoke performance		CAN/ULC - S102.2 ASTM E648 ASTM E662	Tested Class I < 450
Chemical resistance		ASTM F925	Tested
VOC emissions		CA 01350 FloorScore	Pass Certified
Bio-based content		Manufactured with rapidly renewable bio-based content.	

Meets the following requirements

- ✓ Smooth
- ✓ Impervious
- ✓ Free from cracks
- ✓ Resistant to disinfectants
- ✓ Able to cove
- ✓ Able to heat weld
- ✓ Superior slip resistance
- ✓ Combines with Altro Whiterock wall system
- ✓ Meets AIA guidelines
- ✓ Meets FGI guidelines
- ✓ Meets CSA Z8000 guidelines



Altro Operetta™

Smooth sheet flooring

Altro Operetta is a robust floor perfect for medium to high traffic areas. Its smooth profile is ISO cleanroom compliant, and provides the highest available stain resistance with a surface that can be easily cleaned and maintained.

The product boasts a surface profile that is smooth, impervious, free from cracks and crevices, and non-shedding. Built with Altro Easyclean surface technology, Altro Operetta is resistant to disinfectant and other cleaning agents.

Combine with Altro Whiterock wall panels for areas requiring a seamless, floor-to-ceiling hygienic surface.

- ✓ 2mm thick
- ✓ Smooth surface, easy-to-clean
- ✓ Withstands 2000 psi
- ✓ 10-year warranty
- ✓ 25 colors
- ✓ Stain-resistant
- ✓ Low-VOC emitting
- ✓ Meets ISO Class 4 cleanroom requirements
- ✓ Non-toxic, non-polluting, no heavy metals

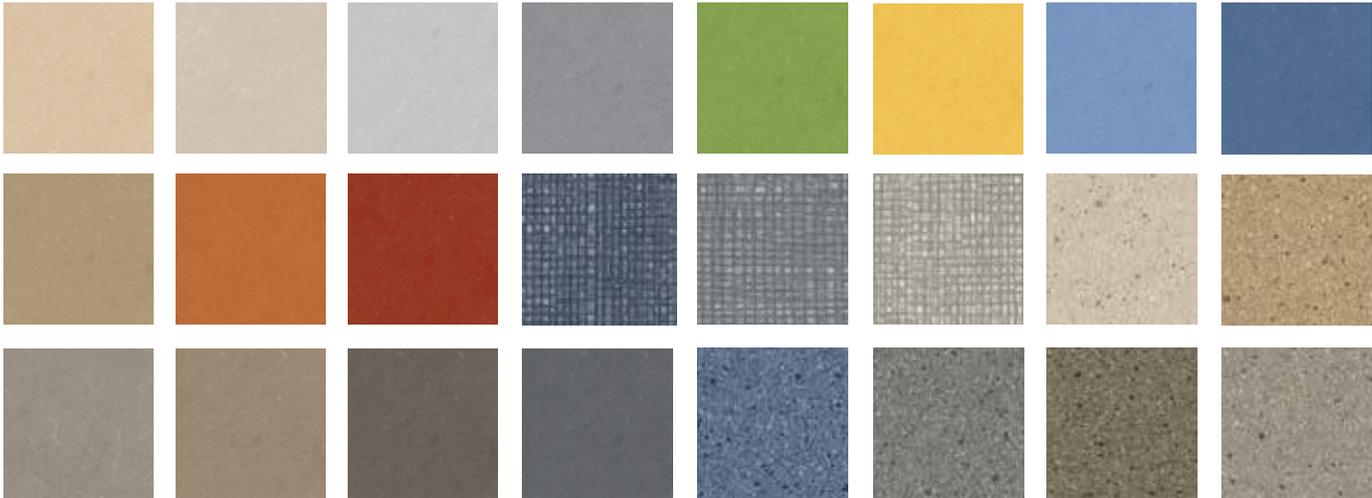


floors

Roll dimensions		6'7" x 65'5" 2m x 20m	
Weight		4.90 lbs./yd ² 2.66 kg/m ²	
Warranty		10 years	
Cleaning technology		Altro Easyclean	
Static coefficient of friction		ASTM D2047	.7 dry, .8 wet
Dynamic coefficient of friction		ANSI/NFSI B101.3	.49 wet DCOF
Ramp test		DIN 51130	R10
Static load limit		ASTM F970	2000 psi
Indentation		EN 433	≤ 0.10mm
Wear (abrasion) resistance		EN 660	≤ 10% 50,000 cycles
Castor chair abrasion		EN 425	Pass
Flexibility		EN ISO 24344	Pass
Light fastness		EN 20105-B02	≥ 6
Sound insulation		ISO 140-8	4dB
Electrical behaviors		EN 1815	≤ 2kV Antistatic
Fire and smoke performance		CAN/ULC - S102.2 ASTM E648 ASTM E662	Tested Class I < 450
Mold resistance		ASTM D3273	Excellent - Score of 10
Fungi resistance		ASTM G21	Passes rating 0* *achieves zero growth after 28 days
Chemical resistance		ASTM F925	Tested
Particle concentration	ISO 14644 - 9:12	Meets ISO 4 cleanroom requirements	
VOC emissions		CA 01350 FloorScore	Pass Certified

Meets the following requirements

- Smooth
- Impervious
- Free from cracks
- Non-shedding
- Resistant to disinfectants
- Able to cove
- Able to heat weld
- Combines with Altro Whiterock wall system
- Meets AIA guidelines
- Meets FGI guidelines
- Meets CSA Z8000 guidelines
- USP 797/800 compliant





i Did you know?

Our adhesive-free flooring stands up to heavy rolling loads. It has been tested with a 1,975lbs (900kg) drilling rig with caterpillar tracks.



Altro Cantata
Adhesive-free flooring

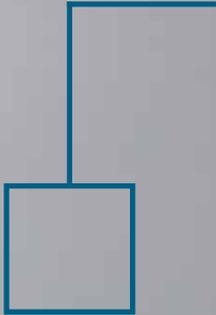
Fast track renovations

We realize that the ORs are the lifeblood of a hospital's profit center. When a single room can generate as much as \$100,000 worth of revenue per day, lengthy shutdowns to install new floors are not acceptable.

Our adhesive-free flooring options, Altro Cantata, Altro Wood adhesive-free and Altro XpressLay, were created with speed in mind, capable of being installed and walked on within 24 hours. This allows crews to get in and complete renovations overnight!

Altro Cantata, Altro Wood adhesive-free and Altro XpressLay form a trio of adhesive-free sheet flooring, providing both smooth and slip-resistant options, respectively. Utilizing a tape-down method, these floors can accommodate the point loading and rolling loads required of a modern OR.

Altro Whiterock Matte
Protects heavily trafficked areas



For more information on adhesive-free flooring please see our brochure or ask your sales representative.



Altro Cantata™

Adhesive-free flooring

Altro Cantata is a tonal and modernist, adhesive-free floor that creates maximum impact with minimum downtime. It is ideal for busy public spaces where disruption needs to be minimal, and has no associated adhesive odors. Using our award-winning adhesive-free installation method, it can be welded and walked on the same day, and at the end of its life can be removed easily, allowing it to be reused or recycled.

Our most advanced cleaning technology ensures ease of maintenance and enhanced infection control with the reduction of bacterial and mold growth by improved cleanability.

- ✓ Installs quickly without adhesive
- ✓ 2.4mm thick
- ✓ 2m wide
- ✓ Withstands 1000 psi
- ✓ 10-year warranty
- ✓ 17 colors
- ✓ Stain-resistant
- ✓ Low-VOC emitting
- ✓ No adhesive odors
- ✓ Non-toxic, non-polluting, no heavy metals
- ✓ Can be walked on immediately

For areas with extreme point loading or heavy rolling loads we recommend extra loose-lay tape is used.

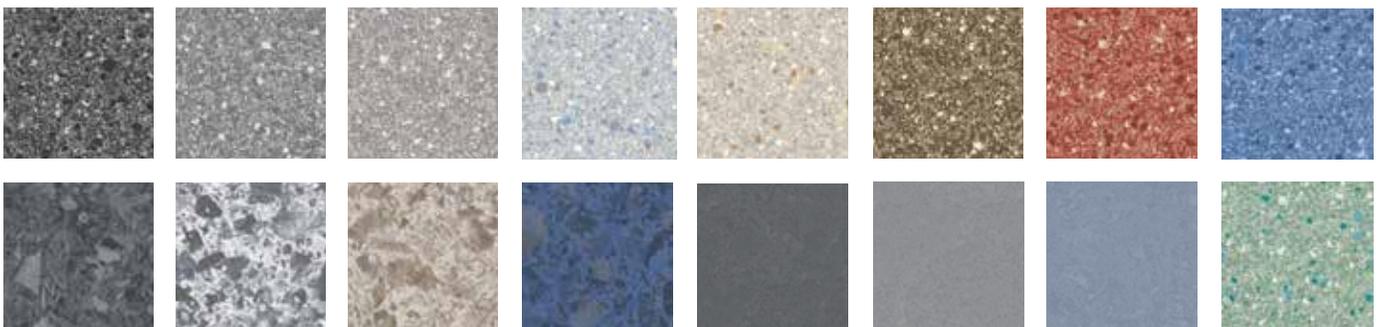
floors



Roll dimensions		6'7" x 65'5" 2m x 20m	
Weight		4.42 lbs./yd ² 2.4 kg/m ²	
Warranty		10 years	
Cleaning technology		Altro Easyclean	
Dynamic coefficient of friction		ANSI/NFSI B101.3	Altro Cantata .70 wet DCoF
Static coefficient of friction		ASTM D2047	.79 dry, .94 wet SCoF
Ramp test		DIN 51130	R10
TRRL pendulum test		BS 7976	36+
Static load limit		ASTM F970	1000 psi
Residual indentation		EN ISO24343-1	≤ 0.20mm
Wear (abrasion) resistance		EN 660	Group T
Castor chair abrasion		EN 425	Pass
Flexibility		EN ISO 24344	Pass
Light fastness		EN ISO 105-B02	≥ 6
Sound insulation		EN ISO 10140-3	14dB
Electrical behaviors		EN 1815	≤ 2kV Antistatic
Fire and smoke performance		CAN/ULC - S102.2 ASTM E648 ASTM E662	Tested Class I < 450
Chemical resistance		EN ISO 26987	Good
VOC emissions		CA 01350 FloorScore	Pass Certified
Bio-based content		Manufactured with rapidly renewable bio-based content.	
Ortho-phthalate content		Ortho-phthalate-free	

Meets the following requirements

- Smooth
- Impervious
- Free from cracks
- Resistant to disinfectants
- Able to cove
- Able to heat weld
- Provides slip resistance
- Combines with Altro Whiterock wall system
- Meets AIA guidelines
- Meets FGI guidelines
- Meets CSA Z8000 guidelines
- USP 797/800 compliant



Altro Wood™ adhesive-free

Altro Wood adhesive-free creates maximum impact with minimum downtime. With 12 color choices, 14dB sound reduction, a 10-year warranty and our Altro one-in-a-million slip resistance reassurance, Altro Wood adhesive-free offers high levels of comfort underfoot providing a safe, durable and decorative solution for busy spaces.

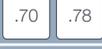
Using our award-winning adhesive-free installation method, it can be welded and walked on the same day, and at the end of its life can be removed easily, allowing it to be reused or recycled. Using Altro adhesive-free floors, you can halve installation time compared with a traditional adhered installation.

- ✓ Installs quickly without adhesive
- ✓ 2.4mm thick
- ✓ 2m wide
- ✓ Withstands 1000 psi
- ✓ 10-year warranty
- ✓ 12 colors
- ✓ Stain-resistant
- ✓ Low-VOC emitting
- ✓ No adhesive odors
- ✓ Non-toxic, non-polluting, no heavy metals
- ✓ Can be walked on immediately

For areas with extreme point loading or heavy rolling loads we recommend extra loose-lay tape is used.

floors



Roll dimensions		6'7" x 65'5" 2m x 20m	
Weight		4.42 lbs./yd ² 2.4 kg/m ²	
Warranty		10 years	
Cleaning technology		Altro Easyclean	
Dynamic coefficient of friction		ANSI/NFSI B101.3	Altro Wood adhesive-free .78 wet DCoF
Static coefficient of friction		ASTM D2047	.79 dry, .94 wet SCoF
Ramp test		DIN 51130	R10
TRRL pendulum test		BS 7976	36+
Static load limit		ASTM F970	1000 psi
Residual indentation		EN ISO24343-1	≤ 0.20mm
Wear (abrasion) resistance		EN 660	Group T
Castor chair abrasion		EN 425	Pass
Flexibility		EN ISO 24344	Pass
Light fastness		EN ISO 105-B02	≥ 6
Sound insulation		EN ISO 10140-3	14dB
Electrical behaviors		EN 1815	≤ 2kV Antistatic
Fire and smoke performance		CAN/ULC - S102.2 ASTM E648 ASTM E662	Tested Class I < 450
Chemical resistance		EN ISO 26987	Good
VOC emissions		CA 01350 FloorScore	Pass Certified
Bio-based content		Manufactured with rapidly renewable bio-based content.	
Ortho-phthalate content		Ortho-phthalate-free	

Meets the following requirements

- Smooth
- Impervious
- Free from cracks
- Resistant to disinfectants
- Able to cove
- Able to heat weld
- Provides slip resistance
- Combines with Altro Whiterock wall system
- Meets AIA guidelines
- Meets FGI guidelines
- Meets CSA Z8000 guidelines
- USP 797/800 compliant



Altro Whiterock™

Complete PVCu hygienic wall paneling system

Altro Whiterock provides the ideal wall cladding solution for modern ORs. Our heat-formable panels may be installed seamlessly to prevent cracks, gaps and fissures, or with system accessories engineered to maintain the integrity of the encapsulated system.

These joining methods create a smooth, seamless surface that prevents the harboring of bacteria.

Altro Whiterock's smooth, durable, hygienic, and easy-to-clean surface can help you meet demanding regulatory requirements, and minimize OR downtime between surgeries — with no surprises along the way.

- ✓ 2.5mm thick
- ✓ 4' x 8' and 4' x 10' panels
- ✓ 20-year warranty
- ✓ 20 colors available
- ✓ Stain-resistant
- ✓ Impact-resistant
- ✓ Low-VOC emitting
- ✓ Meets ISO Class 2 cleanroom requirements



walls

Thickness	2.5mm .10"	
Dimensions	8' - 4' x 8' 2" 1.22m x 2.5m 10' - 4' x 9' 10" 1.22m x 3.0m	
Weight	8' panel - 23.59 lbs 10.7 kg 10' panel - 28.22 lbs 12.8 kg	
Warranty		20 years
Fire and smoke performance	CAN/ULC-S102.1 CAN/ULC-S102.2 ASTM E84-08	Tested Tested Class A
Impact resistance	ASTM D5420	Up to 198 inch lbs in force
VOC emissions	CA 01350	Pass
Particle concentration	ISO 14644-1:12	Meets ISO Class 2 cleanroom
Max service temperature	140°F (60°C)	
Tensile strength (Mpa)	ISO 527	48
Surface resistance ROE (Ω)	DIN IEC 60 167	2.00E +14
Dielectric strength (kV/mm)	DIN IEC 243	16.8
Dielectric loss index	DIN 53483	0.02
"U Value" bonded to 100mm block wall (W/m² °C)	DIN 52612	1.8
Compressive strength (N/mm²)	DIN 53454	70
Water absorption	ISO 62	24 hrs - .030% 168 hrs - .093% 216 hours - .106%
UV exposure	ASTM G154	Tested
Composition	Extruded semi-rigid virgin PVCu with a tight molecular structure and incorporated UV stabilizers.	

	Altro Whiterock is USDA compliant	
	Altro Whiterock is FDA compliant	
	Altro Whiterock conforms to the hygienic standards of USP 797	
	Altro Whiterock is CFIA compliant	
	HACCP International certified	
Density (g/cm3)	ISO 1183	1.39
Flexural strength (Mpa)	ISO 178	79.8
Shore hardness, Type D	ISO 868	79
Volume resistance RD (Ω)	DIN IEC 60 093	6.90E+13
Dielectric constant	DIN 53483	3.2
Thermal conductivity - "K Value" (W/mK)	DIN 52612	0.16
Coefficient of linear thermal expansion	DIN 53752	7.10-5 at 68°F (20°C) after 1 hr storage at 194°F (90°C) (104/K)
Vicat softening point VST/B	ISO 306	176°F (80°C)
Heat distortion temperature	ISO 75-2	140°F (60°C)
	Fungi resistance ASTM G21	Passes rating 0* *achieves zero growth after 21 days
	Mold resistance ASTM D3273	Excellent Score of 10

Meets the following requirements

- ✓ Smooth
- ✓ Impervious
- ✓ Free from cracks
- ✓ Non-shedding
- ✓ Resistant to disinfectants
- ✓ Able to seal at ceiling
- ✓ Able to heat weld
- ✓ Combines with Altro flooring
- ✓ Meets AIA guidelines
- ✓ Meets FGI guidelines
- ✓ Meets CSA Z8000 guidelines
- ✓ USP 797/800 compliant

Features and benefits

- ✓ Class A fire rated
- ✓ Consistent 2.5mm thickness
- ✓ Heat welded seams
- ✓ Fully bonded to substrate
- ✓ Impervious to water ingress
- ✓ Surface does not promote bacterial or fungal growth
- ✓ Extremely impact resistant
- ✓ Highly stain and chemical resistant
- ✓ Withstands robust cleaning procedures including pressure washing
- ✓ Non-porous, hydrophobic
- ✓ Non-shedding
- ✓ No VOCs
- ✓ Lead free
- ✓ Internal and external preformed corner accessories available
- ✓ Thermoformable on site



Altro Whiterock Digiclad™

A growing trend with pediatrics as well as other areas is to add more natural images into the surgical areas. This concept, called biophilic design, is proven to reduce stress, improve our well-being, and expedite healing.

With Altro Whiterock Digiclad, you can produce high quality, life like images that include all the hygienic and functional attributes of Altro Whiterock. With vector artwork, these images can span multiple panels or could be used singularly as a design element. The choice is yours and the design opportunities are endless.

- ✓ Fully hygienic, sealed system
- ✓ Use with Altro Whiterock
- ✓ Inspirational images
- ✓ Infinite possibilities



Learn more about the completely custom Altro Whiterock Digiclad process in the brochure or ask your local sales rep.



walls

Altro Whiterock™ Whiteboard

The use of a whiteboard during the “time out” before surgery can significantly improve memory retention among members of the surgical team.

A surgical pause or “time out” performed before any operative procedure is a major component of the Joint Commission’s Universal Protocol to prevent wrong site, wrong procedure, and wrong person surgery. Retention of information presented during the surgical pause is essential, at the beginning of the case and for the duration of the procedure. Multiple studies have shown that the surgeons who used a whiteboard retained as much as 23% more information than those who relied on verbal cues.

Altro Whiterock can be treated with our Whiteboard film print technology allowing it to be used as a dry erase board. This treatment can be applied to one panel allowing it to be heat-welded to the others in the surgical suite.

- ✓ Blends durability of Altro Whiterock with the versatility of a dry erase board
- ✓ Integrates with other Altro wall products, allowing designated areas to be dry erase surfaced
- ✓ Installation tip - Heat weld to the perimeter of the Altro Whiterock Whiteboard with a dark or contrasting weldrod to specify areas with dry erase capability

i Did you know?

Studies have shown that the surgeons who used a whiteboard retained as much as 23% more information than those who relied on verbal cues.

Staining

OR floors are consistently exposed to aggressive chemicals. Antiseptics such as Betadine®, Chlorasept™, Rifampin™, DuraPrep™ and Methylene Blue™ as well as industrial cleaners can cause havoc on many surfaces if allowed to sit. Therefore it's critical to specify flooring that has high stain resistance in ORs.

Select finishes with cleaning technology

Specify appropriate colors

Use manufacturer recommended cleaners

Develop standard cleaning protocols

Train cleaning staff

Critical stain areas should have dark insets



Color insets

Placing a camouflaging color inset around the operating room table, as a design element, or in other areas of high stain probability, can help reduce the appearance of stains caused by Betadine®.

Color insets can also be taken up and replaced without uplifting the rest of the floor. Adhesive-free products are ideal for these areas, as their tape-down installation allows for insets to be removed and installed within 24 hours.

Altro Symphonia, Altro Reliance 25 and Altro Cantata stain results

Chemical	Chemical resistance	Stain resistance after 24 hrs
Preempt RTU™ (hydrogen peroxide based)	0	1
Simple Green D Cleaner® (Didecyl dimethyl ammonium chloride)	0	0
Sodium Hypochlorite	0	0
Bleach	0	0
Phenol disinfectant	0	0
Hydrogen Chloride (HCl)	0	0
Isopropyl alcohol	0	0
Sulfuric Acid (H2SO4)	0	0
Hydrochloric Acid	0	0
Betadine® (Povidone-iodine 10%)	0	1

Altro Operetta stain results

Chemical	Chemical resistance	Stain resistance after 24 hrs
Preempt RTU™ (hydrogen peroxide based)	0	1
Simple Green D Cleaner® (Didecyl dimethyl ammonium chloride)	0	0
Sodium Hypochlorite	0	1
Bleach	0	0
Phenol disinfectant	0	1
Hydrogen Chloride (HCl)	0	0
Isopropyl alcohol	0	0
Sulfuric Acid (H2SO4)	0	0
Hydrochloric Acid	0	1
Betadine® (Povidone-iodine 10%)	0	1

Altro Whiterock stain results

Chemical	Chemical resistance	Stain resistance after 24 hrs
Preempt RTU™ (hydrogen peroxide based)	0	0
Simple Green D Cleaner® (Didecyl dimethyl ammonium chloride)	0	0
Sodium Hypochlorite	0	0
Bleach	0	0
Phenol disinfectant	0	1
Hydrogen Chloride (HCl)	0	0
Isopropyl alcohol	0	0
Sulfuric Acid (H2SO4)	0	0
Hydrochloric Acid	0	1
Betadine® (Povidone-iodine 10%)	0	0
Ecolab™	0	0
Trichlorethene	0	0

Full reports are available on altro.com/downloads



Cleaning and Maintenance

Disinfecting versus cleaning

It is a common misconception that disinfecting is the same as cleaning. Differentiating and executing the two properly is important to ensure a healthy, clean operating room.

A dried-on disinfectant residue or film, with all of the bugs it has killed, may make a floor or wall surface sticky. This can attract additional soiling and lead to discoloring or chemically damage the surface it is left on.

Proper care is essential to ensure floor and wall products perform as intended. It is fundamental that facility teams understand it is just as important to clean the operating rooms as it is to disinfect them.

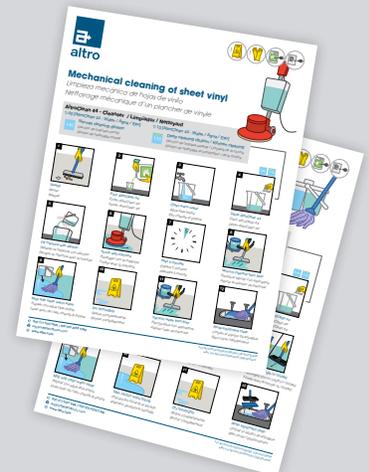
Floor and wall maintenance

Routine maintenance is the key to keeping Altro floor and wall products in peak condition throughout their lifetime.

After consulting with hospital facility teams, Altro developed detailed instructions on proper care and cleaning techniques in hygienic areas. The focus is to implement a consistent and effective cleaning procedure that keeps the operating room hygienic and pristine. This results in lower maintenance costs over the lifetime of the product.

For more information please refer to our sterile area cleaning guide or ask your sales representative.

Laminated illustrated cleaning cards are also available in English, French and Spanish languages.



Cleaning and disinfecting overview

A cleaning and disinfecting program for an OR or other sterile area requires close work with many parties. These policies, procedures, schedules, training, cleaning and disinfecting regimes must be developed and in place prior to the OR opening.

These policies should meet the institution's needs, conform to CDC and AORN recommendations, and all disinfectant and cleaning chemicals need to be deemed appropriate for the surfaces (floor, wall or other surface).

A very general disinfecting program could look like this;

- Cleaning the floor, wall, and other surfaces, with surface manufacturer recommended cleaning chemicals, equipment, and procedures, to remove all visible dust, dirt, debris, and soil.
- Followed by Disinfecting using an EPA registered disinfectant appropriate for the type of, and level of, disinfection required for the surfaces, space, and disinfectant needs (follow disinfectant manufacturer's instructions).

Whenever possible and after the disinfecting process, the floors and walls must be cleaned and rinsed well to remove any residues of harmful chemicals, disinfectants, or other potentially damaging residues and substances. This may be on less than a daily schedule however, it must be frequent enough to prevent damage to the floor and wall surfaces from disinfectants and other chemicals.

- Between case disinfecting use an EPA-registered disinfectant for patient-contact surfaces and for appropriate removal of visible potentially infectious materials (blood and body secretions and splashed irrigating solutions containing these materials), again follow disinfectant manufacturer's recommendations.
- Terminal or end-of-day disinfecting cleaning of surfaces and equipment with a disinfectant registered with the EPA.

Make sure the floors and walls have been effectively disinfected per policy and procedures developed by infection control, housekeeping, and disinfectant manufacturer and supplier.

- Utilize all PPE (personal protective equipment) as outlined in the facilities policies and procedures for cleaning and disinfecting.
- Follow regular maintenance instructions.



Wall maintenance

Initial cleaning

Once all panels and joints are installed, remove the protective film and clean all surfaces down with an anti-static solution or anti-static wipes. This is required as the panel may have static build up and any dust in the atmosphere will adhere to the surface of the panel.

Regular cleaning

- Altro Whiterock can be cleaned with a diluted soap/detergent solution, such as PVC wall cleaner (for stubborn stains) or AltroClean 44 cleaner.
- Use a lint-free, non-woven wipe or a polyester knit wipe. Both are extremely low in particle generation.
- When cleaning Altro Whiterock's surface, we recommend the temperature of water does not exceed 140°F (60°C).
- Pressure cleaning with hot water may be used with the pressure nozzle, a minimum of 2 feet (600mm) away from the surface.
- To reduce the buildup of static, regularly cleaning the panels with an anti-static solution or anti-static wipes is recommended.
- Some cleaning and disinfecting agents may adversely affect Altro Whiterock. See the full chemical resistance chart on our website altro.com/downloads.
- Do not use materials containing abrasives or solvents.

Recommended cleaners/disinfectants for Altro Whiterock

To meet demanding regulatory requirements, a well-planned program to disinfect a variety of surfaces in order to maintain microbial control is critical.

We have conducted extensive testing on some of the most commonly used cleaners and disinfectants provided by **Steris Corporation.

- PVC wall cleaner (Altro)
- AltroClean 44
- **Spor-Klenz®
- **Vesphene® Ilse
- **LpH® se
- **CIP 200®

Samples were tested with these Steris cleaners at various dilution rates with water. The drying process of these chemicals typically takes 10 minutes, however, in these tests, the sample exposure was obtained by full immersion in the chemical for seven days. These extreme measures were taken to represent a worst case scenario. In all scenarios, with all chemicals, Altro Whiterock performed extremely well.

Floor maintenance

Initial maintenance

1. Do not begin any maintenance procedure until such time as all adhesives have set (excluding adhesive-free products), for at least 72 hours after the completion of the installation.
2. Sweep or vacuum floor surface to remove all loose dust and debris.
3. Apply diluted* AltroClean 44™ to the floor. Allow to sit for five minutes to allow the cleaner to attack the surface soil.
4. Scrub floor with an automatic scrubber (3-in-1 machine) or a standard low speed swing machine (150rpm to 350rpm) fitted with an Altro Unipad™.
5. If using a standard low-speed swing machine, remove wash water with a wet vac. Ensure the floor is thoroughly rinsed with fresh, clean water. No cleaning residue should remain on the floor.
6. Allow surface to dry before use.

Regular mechanical maintenance

1. Sweep and/or vacuum floor surface to remove all loose dust and debris.
2. Apply diluted* AltroClean 44™ to the floor. Allow to sit for five minutes to allow the cleaner to attack the surface soil. DO NOT flood the floor unless the flooring system was designed for holding water and was installed per Altro's Detailing guide for wet environments. Always allow the adhesive to dry and cure before flooding any floor.
3. Scrub floor with an automatic scrubber (3-in-1 machine) or a standard low speed swing machine (150rpm to 350rpm) fitted with an Altro Unipad™.
4. If using a standard low-speed swing machine, remove wash water with a wet vac.
5. Ensure the floor is thoroughly rinsed with fresh, clean water. No cleaning residue should remain on the floor.
6. Allow surface to dry before use.

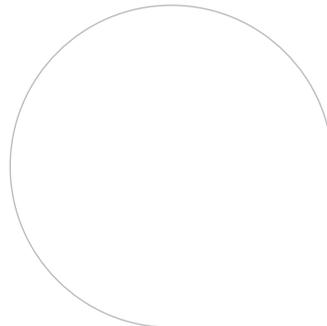
* Dilution rates depend on the condition of the floor. For moderate soiling use a 1:40 dilution ratio. For heavy soiling use 1:10.

Laminated illustrated cleaning cards are also available in English, French and Spanish languages.





updated 05/15/20



Follow us



Altro Whiterock in Standard White

Centre Hospitalier de l'Université de Montréal (CHUM) chose Altro Whiterock wall cladding.

USA 800 377 5597

CANADA 800 565 4658

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www.altro.com

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