hygienic floors & walls for modern operating rooms
TRENDS OF MODERN ORS

HYBRID OPERATING ROOMS

ENSURE HYGIENIC ENVIRONMENTS

THE NEED FOR DURABILITY

ORTHOPEDIC SURGERY

BARIATRIC CARE

MAINTAINING A HYGIENIC FACILITY

STEPS TO REDUCING STAINS

STAIN RESISTANCE TESTING

CLEANING & MAINTENANCE

ALTRO SUPREMA

ALTRO MAXIS UNITY

ALTRO WHITEROCK

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Trends of Modern Operating Rooms

The recent trends in healthcare have changed the needs of today’s operating rooms. Infection control, patient safety, and efficient operations are all of increasing importance in this evolving industry.

The rise in quality of technology and equipment has led many hospitals to create hybrid ORs to address the needs of modern healthcare.

Hybrid Operating Rooms

Many major hospitals are moving toward hybrid suites to promote efficiency, decrease the risks to patients, and provide a cost effective solution.

The availability of a hybrid OR suite allows multiple procedures to be completed without the need to move a patient to a new surgical area. 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 lowers costs.

Hybrid ORs are typically 1,000-1,200 square feet, which are 30-50% larger than traditional ORs. Hybrids are filled with heavier and more complex equipment, receive more foot and wheeled traffic, and have less downtime in between surgeries. These factors place specific demands on the floors and walls to withstand the increased weight, traffic, and abuse.

Needs of the Hybrid ORs include:

- Durable floor and wall products
- Flooring able to withstand heavy loads
- Slip resistant flooring
- Walls with high impact resistance
Seamless floor & wall finishes ensure hygienic environments.

The American Institute of Architects recommends that floor and wall finishes should be free of fissures, open joints or crevices that may retain or permit the passage of dirt and particles. These areas can retain moisture and provide a breeding ground for bacteria.

HAIs (Healthcare acquired infection) are the 8th leading cause of death nationally. The CDC estimates that national hospital spending for treating HAIs is up to $45 billion per year. Since 2008, hospitals are now required to cover 100% of the costs from HAIs.

Seamless floor and wall finishes facility wide ensure cleanliness and minimize the risk of spreading these infections.

With the number of sick and injured patients moving throughout the halls everyday, hospitals have become breeding grounds for bacteria, paired with the vast amount of antibiotics available, bacteria are evolving to become more resilient and are creating dangerous environments.

The need for high impact, durable floor & wall finishes.

Floors

Heavy rolling loads such as operating tables, patient beds, wheelchairs and heavy transportable imaging equipment can rip, tear or damage floors. A rip or tear compromises any hygienic flooring system leaving gaps and cracks for bacteria and microorganisms to grow.

With thousands of patients, healthcare workers, and maintenance crews moving about the facility on a daily basis, floors and walls will take abuse.

Flooring in operating rooms must be extremely durable and able to withstand constant foot and wheeled traffic.

Walls

After consulting with hospital facilities all over the country, we learned wall durability was a top concern. With the number of carts and machines wheeled in and out of operating suites, walls often take abuse in these fast paced environments.

Installing high impact resistant wall coverings will save hospitals time and money on repairs. Select durable finishes that won't crack or break under pressure.

By designing facilities that minimize the areas for bacteria to grow, we help minimize the dangers they pose. Bacteria are roughly 80 - 90% water and require moisture to grow. They obtain most of their nutrients from their aqueous environment.

Eliminate moisture, eliminate bacteria breeding grounds.
FLOOR & WALL REQUIREMENTS

- Ability to withstand high point & rolling loads
- Slip resistant
- Underfoot comfort
- Impact resistant walls
- Easily cleanable surfaces
Orthopedic Surgery

The rising number of orthopedic surgeries in the United States has caused orthopedic spending to outpace that of all US healthcare spending. This is due to many factors. The aging “baby boomer” generation has led to a high demand for these procedures, common later in life. Orthopedic surgeries are also becoming more commonplace amongst younger people due to the increase in obesity rates and greater strain on joints and bones.

The trend towards minimally invasive procedures comes from the advancement in equipment and imaging capabilities available for orthopedic surgeries. Many of these are completed in hybrid suites and ambulatory surgery centers due to the technology available.

This technology 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 which means greater circulation, higher turnover, more cleaning, and significantly more stress on floors and walls.

Due to the increase in traffic, regimented cleaning procedures are necessary to ensure these ORs are properly cleaned and disinfected in between operations. It is essential for the interior surface manufacturers to be involved when creating a maintenance plan for the facility.

Bariatric Care

According to the CDC, currently 35.7% of American adults are considered obese, and the percentage is expected to increase. Obese individuals typically require more healthcare than those of average weight, comprising a large segment of today’s hospital patients.

Traditional patient rooms are designed for individuals up to 330 lbs. The current parameters from the Facility Guidelines Institute for Bariatric Nursing Units require design elements to accommodate bariatric patients up to 1,000 lbs.

In addition to conforming to new regulatory design guidelines, bariatric rooms must be able to accommodate larger and heavier equipment, including lifts, wheelchairs and beds. With patient beds weighing up to 4 times greater than traditional beds, this puts additional weight on the floor and requires that the surface used be able to withstand high PSI loads.
Operating room floors and walls 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.

One poor cleaning job out of the 250 that occur each month can lead to permanent staining of the floor. Altro floors have been designed with superior stain resistant technology to combat the various staining agents found in operating rooms.

Even with this, it is still very important that maintenance teams are well educated on how to properly care for the floor and walls in a facility.

Steps to Reduce Staining in the OR

- Select interior finishes that incorporate enhanced stain defense technology like Altro Easyclean Maxis PUR.
- Use manufactured recommended cleaners.
- Train maintenance staff on proper care and cleaning procedures.
- Specify colors appropriate for the application area.
- Design operating room for easy repair; a central design element like a circle around an operating table (photo below) can help make repair much easier. In this design, the only portion of the floor that would likely need replacement is the center circle, which happens to be where the majority of OR stains occur.

Stain Resistant Flooring

Our premier cleaning technology brings industry leading performance in cleanability and stain resistance. It has been rigorously tested to ensure that floors continue to look pristine years after installation.

The vast array of chemicals used in hospitals and their varying concentrations make it impossible to know how the chemicals will behave when they come in contact with the flooring. Therefore, it is critical to specify flooring offering high stain resistance.

Stain Resistant Wall Panels

Altro Whiterock provides a continuously smooth, stain resistant, wipe clean surface with no gaps or grout. Its sleek, smooth texture is easy to clean and much easier to maintain than ceramic tile and other wall finishes.

Altro Whiterock is routinely used in operating rooms and pharmaceutical laboratories offering an unparalleled level of stain resistance. The nonporous composition eliminates areas prone to staining.

Stain Resistance Testing

To the right is a list of commonly used chemicals that might be found in and around an operating room and their chemical and staining effect on Altro safety flooring & Altro Whiterock wall cladding.

These tests were carried out by an independent test house. Results are displayed on a 0-5 scale with 0 meaning not affected and 5 meaning strongly affected.
### ALTRO SAFETY FLOORING RESULTS

<table>
<thead>
<tr>
<th>Stain &amp; Reagent</th>
<th>Chemical Resistance</th>
<th>Stain 30 min</th>
<th>Stain 2 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Betadine® (10%)</td>
<td>0</td>
<td>0</td>
<td>1*</td>
</tr>
<tr>
<td>Sodium Hydroxide (50%)</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Ammonium Hydroxide (28%)</td>
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</tr>
<tr>
<td>Isopropyl Alcohol</td>
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</tr>
<tr>
<td>Bleach</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chloroform</td>
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<tr>
<td>Acetic Acid (3%)</td>
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<tr>
<td>Xylene</td>
<td>0</td>
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</tr>
<tr>
<td>Blood</td>
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<tr>
<td>Ecolab Endure® 300 Cida-Rinse Gel</td>
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<tr>
<td>Ecolab Quik Care™ Foam</td>
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</tr>
<tr>
<td>Ecolab Quik Care™ Gel</td>
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</tbody>
</table>

*Left untreated for a length of time, Betadine will stain most floor coverings. Our tests, conducted by an independent third party, have shown that Altro flooring offers resistance to Betadine staining. In our experience, hospitals use various concentrations of Betadine. We strongly recommend that you conduct a stain test with your specific concentration prior to installation. Altro can provide sample material free upon request.

### ALTRO WHITEROCK RESULTS

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<thead>
<tr>
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<th>Chemical Resistance</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Betadine® (10%)</td>
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<tr>
<td>Sulphuric Acid (95%)</td>
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<tr>
<td>Ammonia</td>
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<td>Bleach</td>
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<tr>
<td>Formaldehyde (40%)</td>
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<td>Chloroform</td>
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<tr>
<td>Acetic Acid (100%)</td>
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<tr>
<td>Blood</td>
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<tr>
<td>Trichloroethene (100%)</td>
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</table>
Cleaning & 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 a Sterile Area Cleaning Guide, offering detailed instructions on proper care and cleaning techniques.

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.

We make it simple and the payoff is worth it.

Disinfecting Versus Cleaning

It’s 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 dis coloring or chemically damage the surface it is left on.

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

Follow cleaning instructions carefully. AltroClean 44 works best when it has been allowed to sit for 5 minutes while the cleaner breaks down dirt, making it easier to remove from the surface.

Recommended Cleaning Plan

With less than 20 minutes in between surgeries, it is important to follow the special cleaning instructions recommended by Altro for operating rooms.

To learn more scan the QR code or visit www.altro.com/ors.
Altro Suprema™
2.0mm, Innovative Slip Resistant Flooring

These are suggested colors for operating rooms. The full, 40 color range of Altro Suprema™ is viewable at [altro.com/suprema](http://altro.com/suprema)

Altro Suprema contains 5% post-consumer recycled content
These are suggested colors for operating rooms. The full, 18 color range of Altro Maxis Unity™ is viewable at [altro.com/unity](http://altro.com/unity).

Altro Maxis Unity™
2.5mm, Heavy Duty Slip Resistant Flooring

### Available Colors

- **Arena UB2510**
  - WR297 AM20

- **Streetlight UBI2505**
  - WR287 AM79

- **Vault UBI2517**
  - WR277 AM100

- **Roof Garden UB2500**
  - WR262 AM154

- **Monument UBI2508**
  - WR305 AM239

- **Pavement UBI2507**
  - WR83 AM83

- **Temple UB2509**
  - WR261 AM81

- **Stream UB2501**
  - WR288 AM71

**Altro Maxis Unity contains 10% post-consumer recycled content**
ALTRO SAFETY FLOOR AND WALL SYSTEMS ARE DESIGNED TO INTEGRATE TOGETHER.

THEY PREVENT WATER AND MOLD PENETRATION FROM FLOOR TO CEILING BY CREATING A SEAMLESS, IMPERVIOUS AND HYGIENIC SOLUTION.
Altro Whiterock™
heat formable, hygienic wall protection for all areas

Available in 4' x 8' & 4' x 10' panels

<table>
<thead>
<tr>
<th>Standard White</th>
<th>Linen</th>
<th>Oyster</th>
<th>Cesco</th>
<th>Echo</th>
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<tbody>
<tr>
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<td>W136-41 (8')</td>
<td>W136-32 (8')</td>
<td>W136-53 (8')</td>
<td>W136-208 (8')</td>
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<td>W104 (10')</td>
<td>W137-41 (10')</td>
<td>W137-32 (10')</td>
<td>W137-53 (10')</td>
<td>W137-208 (10')</td>
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<table>
<thead>
<tr>
<th>Urban</th>
<th>Ice</th>
<th>Seafoam</th>
<th>Mint</th>
<th>Flint</th>
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<td>W136-43 (8')</td>
<td>W136-203 (8')</td>
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<table>
<thead>
<tr>
<th>Ozone</th>
<th>Vibrance</th>
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<td>W137-218 (10')</td>
<td>W137-219 (10')</td>
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<table>
<thead>
<tr>
<th>Fawn</th>
<th>Bergamot</th>
<th>Zandra</th>
<th>Scarlett</th>
<th>Viola</th>
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<td>W136-220 (8')</td>
<td>W136-217 (8')</td>
<td>W136-221 (8')</td>
<td>W136-214 (8')</td>
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<tr>
<td>W137-206 (10')</td>
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<td>W137-217 (10')</td>
<td>W137-221 (10')</td>
<td>W137-214 (10')</td>
</tr>
</tbody>
</table>
Altro safety flooring is durable for hard-working environments and has been put to the test by the healthcare industry for many years. Altro Whiterock wall panels are extremely durable, hygienic and stain resistant.

The unique construction of Altro products make them ideal for use in today’s modern healthcare facilities. Altro offers a multitude of products suitable for many areas in healthcare.

Altro floors & walls are often utilized in:

- Emergency Rooms
- Scrub Rooms
- Prep Rooms
- Recovery Rooms
- MRI Rooms
- Immunocompromised Areas
- Sterilization Areas
- Patient Rooms
- Laboratories
- Showers and Bathrooms
- Kitchens
- Hallways and Corridors

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explore [altro.com/ors](http://altro.com/ors)