

What Are You Going To Use :
The FF&E of Healthcare Design
.2 CEU Seminar

Presented by InteriorDesign-ED

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Introduction:

There are a few predominate questions which a health care designer should ask when embarking upon a health care project, whether it is a hospital department, an assisted living facility, a wellness spa, or a pediatric dental office.

The array of types of environments under the “health care” design umbrella is extensive, but at the core are really just a few questions which need to be answered at the inception of the design process.

The selections of all fabrics, furniture, and equipment, i.e. the FF&E of Health Care design, rest upon these questions and the health care designer’s response to them.

Design Process must ask:

1. Who am I designing for?
2. What is the patient population and their special needs?
3. Who else will participate in this space?
4. Will my design be part of the therapeutic process? Can it? Should it?
5. How do I integrate an aesthetically pleasing and healing space with one that functions properly for all occupants, while addressing the health, safety and welfare of those who will be treated; for those who will accompany or visit them; and for their caregivers within?

Other Issues must be taken into account. National and local codes, as well as the Americans with Disabilities Act must be first and foremost. The designer’s selections must address safety issues and codes, as well as take into consideration the durability of materials. Characteristics to consider are infection control standards; resistance to microbes, moisture, mold and fungus inhibition; fire retardant factors; stain and heat resistance; chemical resistance; and more.

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A full understanding of the following needs to be addressed and the local codes typically prevail:

1. ADA Compliance for all products specified, including:

- Signage
- Plumbing Fixtures
- Flooring thresholds
- Elevators, both interior and exterior
- Corridor handrails and wall lighting

2. Fire Codes for flooring materials, furniture and fabrics, wall treatments, window treatments, cubicle curtains
3. Smoke density factors for all materials and finishes
4. Wear ratings
5. Fade resistance ratings
6. Slip resistance coefficients for all flooring materials

Products which the designer will specify are:

1. Flooring
2. Wall treatments and Wall Protection Systems
3. Handrails
4. Signage
5. Furniture
6. Fabrics for furniture, cubicles, window treatments, and bedding
7. Plumbing Fixtures
8. Countertop Surfaces
9. Lighting
10. Window Treatments
11. Hardware
12. Surfacing Materials such as laminates, polymers, veneers, etc.

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Codes for Interior Furnishings and Finishes

All interior finishes must be selected with federal, state and even local codes in mind. Regarding fire, the National Fire Protection Association, known as NFPA, has developed stringent requirements which are intended to either inhibit the ignition of a flame or control the speed with which a flame will travel across the surface of a floor or ceiling, or travel up a drapery or curtain. The smoke density emission from a flame is also part of these requirements. The intention is to ultimately buy time for staff and building occupants to safely evacuate the premises under fire conditions.

The federal certification requirements can for interior wall and ceiling finishes in healthcare can be found in NFPA 101(00), either Chapter 18 or 19. Interior wall finish includes the interior finish of columns, fixed or movable walls, and fixed or movable partitions.

Interior finishes are broken down into three classifications, based on testing performed in accordance with NFPA 255(00), *Standard Method of Test of Surface Burning Characteristics of Building Materials*, also known as ASTM E 84. It is also known as the Steiner Tunnel Test.

Class A Interior Wall and Ceiling Finish, flame spread 0-25, smoke development 0-450
Class B Interior Wall and Ceiling Finish, flame spread 26-75, smoke development 0-450
Class C Interior Wall and Ceiling Finish, flame spread 76-200, smoke development 0-450

Wall and ceiling finishes and coatings must be Class A or B throughout, although Class C wall and ceiling finish is allowed in individual rooms with a capacity of not more than 4 persons. Other required details are outlined in Chapter 18 and 19 and should be reviewed by the healthcare designer for both new and renovated projects.

Furthermore, flame spread ratings of interior wall and ceiling finishes must be properly documents with the specific locations in the facility. Information regarding the washing and/or cleaning of the finishes with regard to its flame retardant characteristics, if any, must be documented. Interior floor finishes include not only the floors, but also ramps, stair treads and risers. A review of the requirements will reveal that the two major

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factors affecting the type of floor finish allowed in a healthcare facility are date of installation and automatic fire sprinklers.

Interior floor finishes are grouped in two classes, based on their critical radiant flux ratings as per ASTM E 648, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*:

Class I Interior Floor Finish, critical radiant flux of 0.45 watts/cm² or greater

Class II Interior Floor Finish, critical radiant flux of 0.22 watts/cm² or greater but less than 0.45 watts/cm². NFPA 701 refers to the requirements for the flame resistance of drapes, curtains, window shades, horizontal or vertical folding shades, swags, and decorations. There are two tests included in this code. The small or intermediate scale test is Method 1 and the large scale test is Method @ used for such things as plastic films, vinyl-coated fabrics, blackout linings, awnings, banners and the like.

Decorations refers to artificial plants, but excludes artwork such as photographs and paintings. Upholstered furniture and mattresses are also covered under NFPA 101(00) and should be reviewed. Check all fabric specifications to ensure that they meet the appropriate flame codes for the state and local of the facility and maintain the documentation.

Among some of the fire codes you will see for fabrics are:

CAL TB 117, California Technical Bulletin

UFAC Class 1

IMO Standards – International Maritime Organization

California Bulletin 133 with appropriate components

City of Boston Requirements

NY Port Authority

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The Integration of LEED and Sustainability:

Today almost every manufacturer is involved in creating eco-friendly products. Just a few years ago, “eco-friendly” products were just being developed, with some manufacturers moving leaps and bounds ahead of others.

Currently, the healthcare designer would be hard pressed to find a material or fabric which was not, in some way, fabricated with sustainability issues in mind, or has been developed in order to, participate towards LEED certification at some level.

The health care designer’s goal is to nurture healing through design. To this end, all products should be specified which have low or no volatile organic compounds and other off-gases, which do not require toxic epoxy adhesives for installation, and which would not adversely affect the health of the patient, the patient’s families and guests, and the staff ,whose exposure is almost constant.

Various certifications are available for products, among which are:

GreenGuard: Establishes acceptable indoor air standards (low emitting or no emitting volatile organic compounds , also known as VOC’s)

Green Label: The Carpet and Rug Institute’s certification program of low-emitting carpet products and cushions

NSF-140: Provides a method to identify carpet that offers environmental, economic and social benefits and reduces adverse impacts over its entire commercial life

Forestry Stewardship Council (FSC): Promotes environmentally appropriate, socially beneficial and economically viable management of the world’s forests.

Pre-Consumer / Post-Consumer: Pre-consumer refers to recycled materials that come from the manufacturing process, which divert waste that may otherwise end up in landfills and reduce the use of raw materials. Post-consumer materials are recycled after the consumer has already used them and they then are recycled.

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Recyclable: Refers to a product or material that can be converted back into material that can be used again in manufacturing new goods.

Bio-degradable: Refers to a material or substance which will decompose quickly and without harmful effects to the environment when left exposed to nature.

Energy Efficient: Refers to products which use less energy to perform as well or better than standard products or which promote other products to use less energy, such as window coverings which reduce ultraviolet light and, therefore, help in containing electricity costs.

Green Seal: Ensures consumers that any product bearing the Green Seal Certification mark has earned the right to use it; and encourages manufacturers to develop new products that are significantly less damaging to the environment than their predecessors. Cleaning products may have this designation.

Types of Flooring in Healthcare Environments:

The floor is one of the most important areas in any health care setting. Flooring makes both an important design statement, as well as participates in the all-important aspects of navigating through the facility. There are a variety of flooring materials which work well in health care facilities from a functional perspective, as well as which offer a multitude of design opportunities. Flooring can be resilient or non-resilient, such as ceramic or porcelain tiles. Carpet is also a flooring material which has application in health care design, but careful consideration should be given to the use of carpet in specific areas.

The major types of flooring for use in health care settings would be:

1. Resilient flooring: Vinyl composition tiles, sheet vinyl, vinyl planking, vinyl tiles, linoleum sheet goods, other types made with various organic materials such as straw.
2. Wood: acrylic coated and/or impregnated
3. Carpet: broadloom or carpet tiles
4. Ceramic or porcelain tile
5. Cork
6. Laminate
7. Rubber tiles or sheet good

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- **Resilient Flooring: Sheet Goods**

The variety of flooring products available on the market for healthcare facilities of all types is virtually endless. When specifying a proper flooring material, consideration must first be given to the function of the space. For example, an operating room or operatory, or other “clean” room, including isolation rooms, and surgical corridors must be seamless, to ensure that microbes cannot grow in seams. Therefore, we must utilize sheet goods, abundant in a variety of styles and finishes.

These products are typically vinyl, rubber, linoleum, or a combination of materials and are available in a multitude of finishes and designs, including those which look like wood flooring. This type of floor renders a warm, home-like feeling.

Manufacturers such as Lonseal, Mannington, Armstrong, Nora Rubber, and Forbo produce sheet vinyl, rubber, and flax seed goods. These are available in both 6 ½’ and 12’ widths and work well in almost any healthcare setting.

The use of both chemical and heat welding rods for these products melt seams together, so that the material is monolithic. The welding rods are available in an array of colors, lending these products endless design possibilities. They also are available in marbled colorations, to blend with the flooring, as opposed to creating an intended contrasting design element.

These products also works well when there is a need to “flash cove” them up the wall, meaning that the material is used as a base, as well. The intent is to create a floor with a base that has no seams and is easy to wet mop. The top is then sealed with a vinyl cap. Solid colored sheet goods allow for dynamic designs, from subtle to colorful for use in pediatric facilities and other spaces.

Heat welding is recommended when the flooring has been installed in rooms with continual and intensive wet cleaning, in areas with stringent requirements for hygiene or other special requirements such as operating rooms and laboratories.

Both vinyl, linoleum, and rubber have been refined over the years to be extremely sustainable products to use in health care environments. Most vinyl products have been reconstituted to reduce the Volatile Organic Compounds (VOC’s). Some vinyl goods, such as that made by Constantine, are combined with flax straw.

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Rubber floor coverings are extremely durable, and can last many years, thereby conserving resources. Eco-friendly rubber is easy to maintain, does not require coatings or wax, is scuff-resistant. Nora's rubber does not contain any PVC, plasticizers (phthalate) or halogens (e.g., chlorine). Nora also guarantees that no hydrochloric acid, dioxins and furans are generated. These types of resilient floors can be installed with solvent free environmentally compatible acrylic adhesives to reduce toxins during installation. These adhesives are classified as low-emission products according to the South Coast (CA) Air Quality Management, District 1168.

Slip retardant sheet flooring is available from a variety of manufacturers and offers additional grip power for special areas. This type of flooring is offered in many colors and textures. Armstrong's Slipguard product has quartz chips throughout, which provide a slip resistant finish for use in areas such as spas, bathrooms for the elderly and other wet rooms.

- **Resilient Flooring: Vinyl Composition Tile and Pure Vinyl Tiles**

Vinyl Composition Tile, also known as VCT, is another type of resilient flooring which can be used in non-sterile installations. VCT is an inexpensive material, typically installed for less than \$2.00 per square foot (materials included) and is available in a vast array of colors. VCT comes in 12" x 12" square tiles. To reduce labor costs, designs should work within these dimensions, although organic and geometric designs can be achieved with some significant additional labor costs. It is possible for clean, crisp edges to be cut by heating up the material in order to make it pliable and a good installer can achieve an effect a designer intends. Pure vinyl tiles and those with straw flax (Constantine is one manufacturer) are available in a vast array of styles and designs. These typically are larger than VCT, coming in 12" x 24" and 18" x 18" tiles.

Amtico, Azrock, Tarkett, and Partere are other manufacturers of pure vinyl tiles. Simulated marble, slate, and other stones are among the available designs, as well as funky ones which simulate water. Many are available in various metallic textures, may look like glass and come in other contemporary bright designs. Azrock and all flooring manufacturers produce flooring that is environmentally responsible and long lasting, besides being practical and affordable. Indoor air quality is important. To reduce the effects indoor air quality, the FloorScore Program was developed by the Resilient Floor

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Covering Institute in conjunction with Scientific Certification Systems to test flooring products and to certify that they comply with California Section 01350.

Resilient Flooring: Cork Tile

Cork is one of the most perfect products to use in health care design, although we often do not consider it. Some major pharmaceutical companies use cork flooring in their facilities, particularly in laboratories and corridors. Cork is harvested from the outer bark of the cork oak tree. It is harvested every 9 years and is truly sustainable. The tree continues to live and flourish.

The benefits of cork are its antimicrobial aspects. It repels dust, germs, and mold. Because of its honey comb structure and air pockets, it is quiet and reduces vibration, absorbing sound. It acts as a shock absorber, making it easy on the back and joints, and ideal for institutional and health care applications where staff has to stand and/or walk most of the day. Other uses are in massage rooms of med-spas and wellness centers, or even hospital corridors.

Cork is also water resistant and extremely resilient. It is easy to install and panels can snap together with no glue or adhesives. It also can be maintained easily with no harsh cleaners or chemicals. The benefits of cork are its antimicrobial aspects. It repels dust, germs, and mold. Because of its honey comb structure and air pockets, it is quiet and reduces vibration, absorbing sound. It is also a terrific shock absorber, making it easy on the back and joints, and great for institutional and health care applications where staff has to stand and walk most of the day. One perfect use is in massage rooms of med-spas and wellness centers, or even hospital corridors.

- **Resilient Flooring: Vinyl Plank**

Other types of vinyl flooring include plank flooring, typically in dimensions of 3" x 36". These products render the look of real wood, while having all the beneficial features of other types of resilient flooring, among which are ease of installation, low maintenance typically with damp mopping and buffing, as well as good sound control. The wood-looking vinyl plank flooring products are available in a multitude of simulated species and provide a home-like feeling to health care settings. Some of the manufacturers of these types of flooring are Amtico, Straticaa division of Amtico, Partere, and Azrock.

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- **Wood Flooring: Acrylic Impregnated and other types**

One of the best ways to get the look and feel of real wood, as well as the durability of vinyl or commercial flooring is to use acrylic impregnated wood plank flooring. This is real wood with a built-in finish. This type of flooring has improved resistance to abrasion, as well as indentation. It also has greater compression strength, which results in a product which requires minimal maintenance for use in commercial spaces.

Gammapar is a manufacturer which produces this type of flooring. Gamma Clean is their cleaning product which is a spray-and-buff treatment, which can remove surface dirt, light scratches, heel marks and light stains. Even a light sanding to remove burns or severe stains can be done without altering the appearance of the product.

Armstrong produces a highly durable acrylic wood flooring product. It is twice as resistant to indentation as non-impregnated wood. Acrylic impregnated floors are the toughest, most durable hardwood floors ever made. Stain is injected through the wear layer, for consistent color with great endurance. Color will not wear down, walk out or wash off.

Liquid acrylic fills and supports the open cells of the wood which increases resistance to both indentation and wear. Acrylic impregnated hardwood is over 50% more crush proof than un-impregnated hardwood flooring. Acrylic impregnated floors typically feature a 25-year commercial wood layer wear warranty.

- **Laminate Flooring**

Another option for health care flooring is laminate flooring, which first became popular in the residential arena. Laminate floors are subject to AC ratings aimed at determining where a particular laminate flooring is best suited for installation by testing the durability of the floor to various amounts of traffic. Laminate floors are rated from AC1 to AC5 where AC1-AC2 rated laminate floors are appropriate for residential applications and AC4-AC5 rated laminate floors are required for the demands of a commercial setting. AC3 laminate floors may be appropriate for heavy residential use to light commercial and are broken into 2 subcategories accordingly.

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Knowing the AC rating of the laminate flooring is important. Laminate flooring may not be able to withstand the unusually high traffic that a commercial setting may bring and thereby cause the floor to scratch or even crack in the long run. Commercial laminate flooring offers a low-cost yet high quality flooring option that is also easy to maintain. It allows a business to create an expensive look on a small budget.

Although very few flooring materials are likely to last a lifetime in a commercial setting, laminate flooring is one of the more durable options and is less expensive to install than hardwood flooring. The maintenance required for commercial laminate flooring will be very similar to that required for residential laminate flooring, only with much more frequency. Although it is made especially to endure large volumes of traffic, it should not be neglected as it may scratch if not maintained correctly. Do not use any wax or harsh chemicals on the floor unless specifically called for by the manufacturer.

- **Flooring: Ceramic and Porcelain Tile**

Both ceramic and porcelain tiles are frequently used in health care settings mostly because tile is easy to maintain, requiring a damp mopping with a neutral detergent. Sealing the grout can make cleaning even easier.

However, care must be given to specifying a tile which is slip resistant. ADA recommends, on dry surfaces, a .60 for accessible routes and .80 for ramp surfaces. In a situation where there is a potential for water, the tile should meet the COF of 0.6 or higher under wet conditions.

Ceramic tile's body is made of clay (or porcelain) and then glazed and fired with colored glass to finish the look of the tile. In installation, it is set into an adhesive and then set with grout between tiles so that there is a smooth, solid surface. It's difficult to find a surface as low-maintenance, and durable as ceramic tile. It is stain and fade resistant and can be used in any room of the home. It can withstand heavy traffic and wetness and stay looking like new. Cleaning is as simple as sweeping and occasional damp mopping.

Ceramic Tiles come in many sizes. More common sizes are: (measured in inches) 6 x 6, 8 x 8, 12 x 12, 13 x 13, and 16 x 16.

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However, some accent tiles are only 1"x1" and tiles 24x24 and larger are available. 6 x 6 and 12 x 12 are the most common sizes for walls and floors, respectively.

Textures and finishes are nearly unlimited in ceramic tiles.

Ceramic tiles can imitate the look of natural stones such as travertine, marble or slate. In this instance, you will have discernable variations between tiles as you would with products that come from nature. Glossy finishes in high traffic areas, or those that are prone to wetness, may end up posing a safety hazard. Matte finish and textured tiles are the best choice for wet areas.

Porcelain tile consists of a ceramic coating classified as ISO rule 13006, meaning this is a pressed material with an absorption lesser than or equal to 0.5 %. It is obtained from very strong raw materials subjected to thermal treatments and compression pressures higher than the ones used in the production of conventional ceramic plates.

Some of the features of porcelain tile are:

1. very low water absorption
2. resistance to flexion
3. resistance to deep abrasion
4. resistance to abrasion scratching
5. resistance to thermal shock
6. resistance to freezing
7. low expansion due to hydration
8. resistance to thermal attack
9. resistance to friction
10. resistance to cracking

- **Flooring: Carpet and Carpet Tiles**

Carpet selection must be concerned about infection control and maintenance. Improvements in both construction as well as composition have made carpet, both broadloom and modular tiles, an appropriate flooring material for particular functions and spaces.

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Such areas may be:

Waiting rooms

Corridors

Activities areas in assisted living facilities

Patient lounge areas within facilities

Library or patient education rooms

Conference rooms within facilities

Hospital chapels

Other areas which require comfort under foot, low noise levels, and an intimate and home-like ambience.

Carpet for health care settings must be bleach resistant, allowing carpet and hard flooring surfaces to be maintained together. Typically most hospital maintenance departments use bleach for cleaning ceramic or porcelain tile, which may butt up to carpeted areas. This would occur in corridors which are adjacent to patient lounge areas. As an example, Mannington's "ColorSafe" product works well for healthcare settings. The color is integrated into the nylon during construction. This protects the color from fading out to harsh cleaning products. In Assisted Living Facilities, for instance, residents who do their own laundry tend to prefer using bleach, which may spill in transfer, causing bleached areas in carpeting.

Carpeting for health care also must have built-in anti-microbial features, as opposed to topical treatments which can be washed out. This will inhibit the growth of both fungi and bacteria, vital in a health care application. Backing for carpet in health care facilities needs to assist in resisting spills, as well.

Durability in health care carpet is key, as hospitals are heavily traveled environments. Type 6,6 nylon is an excellent fiber for durability, wear resistance, resilience, and resistance to crushing, stains, matting and soiling, as well as has a reduced impact on the environment due to its long life.

The use of carpet tiles is another great option when the use of carpet is necessary, but soiling and wear are concerns. With carpet tiles, typically in 24" or 30" squares, a

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facility can replace only those areas where spills cannot be removed, or other wear factors have created a problem. Used correctly in an every-other direction, they can become a major design element in the space and add interest and focus, as well.

Carpet mills have come a long way in the last decade, developing carpet and carpet backing products which meet green and sustainability criteria in many ways.

Among the green attributes are:

1. post consumer recycled content in varying percentage amounts (10%-30%)
2. pre-consumer recycled content
3. adhesives with low or no volatile organic compounds
4. recyclable
5. can be manufactured with rapidly renewable products
6. made with regional products

Wall Treatments, Paint & Wall Protection Systems:

The wall treatments in a health care setting, such as a corridor, are extremely important and one of the most important design features that can make an impact while taking a beating from gurneys and carts. Several manufacturers provide wall protection products, including C/S Acrovyn, InPro, and Koroseal's Korogard brand, to name a few. C/S Acrovyn's Collection of Wall Covering and Wall Panels include PVC-Free Acrovyn 4000 in 64 solid colors and 16 patterns, real wood and real metal panels.

Korogard's products also come in a vast selection of color ranges, which offer many choices to designers for a variety of locations such as corridors, patient rooms, and other heavy traffic areas.

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Among the elements which must be selected to protect both the walls of the facility, as well as the patient within the facility are:

Handrails
Corner Guards
Bumper Guards
High-Impact Rigid Sheet Protection
Vinyl Wall Coverings: Type 1 and Type 2
Door Guards and Hardware Protectors

Commercial wall coverings are produced specifically for use in hotels, apartment buildings, office buildings, schools and hospitals. They are manufactured to meet or surpass minimum physical and performance characteristics set forth in Federal guidelines (Federal Specifications CCC-W408). The guidelines focus on requirements for flammability, tear strength, abrasion resistance, wash ability, scrub ability, and stain resistance.

Examples of various types of commercial wall coverings are:

Acoustical wall coverings
Cork and Cork Veneer
Fabric Backed Vinyl (Type I and Type II)
Natural Textile Wall coverings
Paper Backed Vinyl / Solid Sheet Vinyl
Polyolefin / Synthetic Textile Wall coverings
Wood Veneer wall coverings
Vinyl Coated Paper
Vinyl Coated Paper: purpose is to provide a smooth surface for the installation of wall coverings.

Vinyl wall covering is another surfacing material which not only provides a design aspect to a department or facility, but acts as wall protection in less trafficked areas. It is available in three major weights, Type 1, Type II, and Type III. Type I is a light weight wall covering with a weight of less than 15 oz. per linear yard, based on 54" wide. It has a scrim backing or nonwoven fabric. It is best used in light traffic areas or in out of reach areas.

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Type II is a medium duty wall covering which weights between 20 and 32 oz. per linear yard and is produced on Osnaburg (poly-cotton or polyester) or non-woven fabric backing. Type II is to be used in heavy traffic areas, such as corridors, lounge areas and cafeterias.

Type III is heavy duty wall covering in weights in excess of 33 oz. per linear yard and is made with a drill fabric backing. This is recommended as a wall protection for areas of extraordinary hard use and abrasive conditions.

Vinyl wall covering is now manufactured with microscopic perforations throughout which enables moisture to pass through the material, thus reducing the possibility of mold to grow. Topical solutions and additives to the vinyl and plastisols in wall coverings also help to reduce mildew and staph. Several wall covering companies such as Omnova and Koroseal has developed this technology over the years. Maintenance of vinyl wall covering is easy, with mild neutral detergent.

Vinyl is highly recyclable and post-industrial, pre-consumer and post-consumer waste can be fabricated into products such as, garden hoses, pipes and sound-deadening panels for automobiles—importantly not sent to landfills when their useful life is concluded.

Paints:

Durable and healthful paint options are most important for wall coatings in health care environments. Many facilities, worried about mold development behind wall coverings, especially those in humid climates, may prefer to use paint and paint coatings which can even appear to resemble wall coverings.

The healthcare industry has been an important driver in the development of low and zero VOC paint options. With heavy foot traffic and ongoing occupancy for the ill, hospitals and other medical care facilities require minimum disruption during the application of primers and topcoats. Low and zero VOC paints provide an eco-friendly, health conscious coating option for architects and designers.

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Wolf Gordon's Scuffmaster paint coating is among the most durable paints for health care applications. It is applied with a spray application and is rated at 4,200 scrubs in accordance with ASTM-D2486. It is water-based, low-emitting VOC's, and Class A fire rated. Additionally, it is formaldehyde free. The packaging is made from recycled materials. Custom colors are available

Another option for a paint coating is using a product such as those made by companies such as Zolatone or TEX•COTE® . These are multi-colored coatings with light reflective mica flecks which give them a soft and lustrous glow. They are low VOC, water-based, and extremely durable textured coatings.

Zolatone's Counterpointe's pearlescent effect brightens interior spaces and gives architectural details a diffuse, inner light. Small particle size allows it to be applied easily in a spray application. Mottled textures and various components reveal themselves when colors are viewed up close.

TEX•COTE®'s unique formulation makes their coatings completely impervious to water penetration, yet the coatings allow the underlying surface to breathe. TEX•COTE® products are also environmentally friendly due to their low volatile organic content (VOC).

Signage and Way Finding:

Complete and coordinated interior and exterior signage and way finding solutions help people get from Point A to Point B – whether within a building or across a healthcare campus. Beautifully coordinated signage that clearly directs patients and family members helps to reduce stress during times of illness and strife.

Signage must adhere to ADA regulations. Braille is required on all regulatory signs, such as restrooms, elevators, stairs, and all permanent identification signs that assist visitors, residents and staff as they travel throughout the building. Other regulations on signage apply with regards to both color ratio of background and letters, as well as the heights of letters and numbers, all depending on whether the signage is regulatory or simply informational.

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Furniture for Health Care:

Furniture for health care settings is designed specifically for the patient and the patient's family. Because of the variety of types of health care facilities, it is obvious that there is a variety of furniture which the designer needs to select for each application, based primarily on the purpose the furniture serves, the function or task the furniture needs to meet, and then the overall aesthetic requirements to conform with the design impression and intent.

Seating: Seating falls within the following major categories of health care:

1. Patient Waiting Room seating
2. Lounge Area seating
3. Therapeutic seating
4. Patient Room seating
5. Family Overnight seating
6. Other Types of Seating: Nurses' Task, Lab, Cafeteria, Classroom

Patient Waiting Room Seating, known as Tandem or Ganged Seating:

There are a variety of lines which manufacturer extremely durable, functional, variable, and stylish patient room seating. Among these lines are: Nemshoff, Brandrud, Lazyboy Healthcare, Cabot Wren Healthcare, Adden, Kimball Healthcare, Softcare, and Carolina Furniture.

For waiting room seating, the ideal type of seating would have the following features:

1. Clean-out design (space between seat and back)
2. Replaceable components
3. Plastic rubber cushioned glides
4. Spring seat construction
5. Optional urethane arm caps and vinyl boots for bottom of leg
6. Removable seat and back covers for in-site re-upholstery
7. Optional upholstered or vinyl arm panels

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8. Durable wood finish for heavy use and harsh cleaning
9. Low formaldehyde emissions
10. Lifetime warranty
11. Certified to meet CTB133/ASTM E-1537 with most fabrics
12. Moisture barrier
13. Integrated corner, end, and intervening tables
14. Gangable with intervening arms and steel construction to eliminate lots of legs
15. Bariatric chair which can be ganged with the grouping
16. Combinations of solo, duet, trio, four or five seat, loveseat, sofas, and bariatric components in order to achieve privacy between patients or for those who want/need to sit together
17. Variety of arm styles
18. Variety of corner table styles to create curved arrangements

Family and guest comfort is of utmost importance in a health care facility. Lounge seating needs to offer a soft place for guests to relax and rejuvenate themselves during the sometimes long stays of their family members or friends. Lounge areas need to offer privacy and a home-like feeling, no matter what style.

Lounge seating is roomier and wider and available in a variety of styles, can be ganged together or is available as individual units. The lounge series of many manufacturers offer most of the same features as the patient waiting room seating, such as removable seat and back cushions, arm cap options, and moisture barriers.

Therapeutic seating is important to both the patient and to the caregiver. Comfort and function are key considerations which the healthcare design must address. Furniture must be intuitive to use, durable and attractive, and be comfortable for patients, who may need to sit in therapeutic chairs for long periods of time. With both manual and automatically controlled reclining chair models, patients can reach a maximum level of comfort during their dialysis, phlebotomy or other treatment sessions.

Select therapeutic models may include independently functioning back and foot reclining mechanisms, removable back cushions, Trendelenburg features for medical emergencies and pull out footrests.

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Some of the valuable features of therapeutic seating are:

- Lifetime Warranty
- Spring Seat Construction
- Durable finishes for heavy use and harsh cleaning
- Optional urethane arm caps
- Low formaldehyde emissions
- Removable Seat and Back Covers
- 5" Casters with Front Brake
- Trendelenburg for medical emergencies
- Certified to meet CTB 133/ASTM E-1537 with most fabric
- Folding Side Table (right side facing only)
- Adjustable Tray Table (right side facing only)
- I.V. Rod, 1/2" adjustable height with double hook and holder, 1/2" and 3/4"
- Moisture Barrier
- Drainage Bag Hanger (right side facing only)
- Central Brake and Steer Caster System
- Fold-down Arm (right side facing only)
- Black Molded Urethane Arm Cap
- Square Back

Patient Room & Overnight Seating:

Overnight seating piece serves both as a loveseat/bench during normal hours and then converts to a bed so that a family member is able to stay throughout the night.

Valuable Features include:

Bench style Sleep Deck eliminates creases or gaps between cushions

Some designs have no moving parts

Clean-out design

Tablet Arm Caps provide surfaces for drinks, books, cell phones, and small personal items

Deep drawers utilize space below unit

Integrated drawer handles eliminate wear and breakage issues

Upholstery foams meet or exceed California Tech Bulletin Fire Code 117

Notes:
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Integrated Side Tables
Fascia Panel: to replace drawers
Casters
Moisture Barrier
Certified to meet CTB 133

Casegoods:

Patient rooms in hospitals may have freestanding furniture such as nightstands or armoires, although in recent years the trend has been to create custom built-in closets, desk areas, and storage, while nightstands have remained freestanding. However, in resident rooms in Assisted Living Facilities, freestanding dressers and nightstands still remain the customary furnishings, if supplied by the facility owners. Often, residents may bring their own furniture from their homes or the apartments or rooms may be furnished by the developer or owner.

Valuable Features

Seamless design
Units are sealed on all sides to prevent moisture from penetrating the core

A vented back panel allows for air to circulate

Raised top

Finger pulls

Optional plastic drawer liners

Laminate options

Additional features are that night stands in acute care rooms should have wheels. In the event of an emergency these items can easily be moved out of the way, providing total access to a patient from the side.

In ICU, also referred to as Critical Care, nightstands must be completely sealed inside to reduce the possibility of microbes growing in seams. This is a good practice for all areas and the health care designer should take care to review the complete specifications of construction to minimize potential areas where bacteria may develop. It

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is also a good idea to select a nightstand with a top which has a drip edge integrated into the design in order to assist in spill prevention.

Head and Foot Walls:

Hospital architects and designers must tread a narrow path between clinical efficacy and hospitality design. Clinicians need easy access to the services and tools that enable them to provide safe and effective care to their patients, while patients and families desire surroundings that provide comfort and evoke a hospitality experience.

A well designed headwall connects technology to design and links patient satisfaction with aesthetics. A headwall can provide maximum freedom in terms of design and the incorporation of technology. Its extendable infrastructure will allow adaption of the patient care environment as workflow processes change.

As an example, Hill-rom's Elements Headwall System is an acuity adaptable headwall system. It is an extremely flexible headwall system designed to bring electric power, data and gases to the patient care arena. This linear, high-quality system is clinically functional while delivering unparalleled aesthetics. The innovative panel system with its flush-mounted service panel clearly delineates clinical, patient and family spaces.

There are a variety of types of headwall systems from many manufacturers which, to a lesser or greater extent, conceal gases and offer a range of storage options. Modular system are available for critical care units as well.

Fabrics for Health Care Design

Fabrics for health care need to meet specific needs for specific areas. Among the fabrics which the healthcare designer selects:

1. Privacy Fabric and Netting
2. Window Treatment Fabrics:
Draperies and Top Treatments

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- 3. Seating Fabrics
- 4. Bedding Fabrics for eldercare facilities

Privacy Curtains:

Often the design of an emergency department, patient room, intensive care unit, physical therapy department, or exam rooms with dressing areas starts with the careful selection of the privacy curtain fabric. The color palette of a design may set begin with this selection since the privacy curtains will be a major visual element.

Privacy curtain fabric consists typically of 100% FR Polyester, 100% Avora Polyester, or CS ® Trevira and is 54", 72" or 74". It must meet NFPA 701, the National Fire Protection Act which requires that a fabric cannot be able to sustain a vertical flame.

Privacy curtains must also be fully stain, splash, bacterial, and flame resistant. Some manufacturers, such as Fantagraph, have proprietary technology developed to prevent microbes from growing in the fibers, as well as to be splash resistant. Cubicle fabric must endure repeated washings in water not to exceed 160 degrees. Colors should not wash or fade out.

Fabric must also pass the Volatile Organic Emission Test for formaldehyde emissions and total volatile organic compounds and the results must be "non-detectable".

Light fastness requirements must exceed 60 hours based on the AATCC Method 16A (Carbon Act) and rated Class 4.5. Curtain netting made of high denier nylon is available from many manufacturers in white, buff and other colors, with a standard width of 22" and finished at 19 ½". It is also available with or without brass or chrome grommets and must be ordered in this fashion. Mesh is to be open ½" on the diagonal which allows ceiling mounted sprinkler systems to function properly. Some curtains are available with integrated mesh, so that the designer does not have to order the fabric and the mesh separately. This also reduces the cost of labor. Integral mesh cannot be shortened. Mesh must remain intact. Fabric is railroaded, so there are no vertical seams. Various tracks are also available with some having "break away" capacities at 7 or less pounds, to prevent a patient from harming themselves.

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Window Treatments & Bedding:

Fabrics for window treatments and bedding in health care facilities must comply with stringent fire codes, as well as must meet other standards which address microbe growth, fading, wash ability, and wearability.

In health care design, many hospital departments have moved away from drapery as a common window treatment, although top treatments are used and do add a finished and residential ambiance. Bedding treatments, such as duvet covers, coverlets or bedspreads are not used in most hospitals, but are in eldercare facilities, hospice centers, and such. Avora® FR fabrics are the typical fabrics which to be specified and are found in hospitality, healthcare, office environments, transportation and a myriad of other markets that demand the utmost performance in textile as well as flammability standards. Unlike the topical FR treatments, the inherent flame resistance of Avora® FR never washes out and passes NFPA 701 small scale.

Summary of properties of Avora ® FR fabrics are:

- Resistant to Stretching and Shrinking
- Quick Drying Wrinkle Resistant
- Mildew Resistant
- Abrasion Resistant
- Easily Washed
- Passes NFPA 701 Fire Retardancy
- Low Smoke Generation
- Superior Hand
- Resistant to Sun Fading and Yellowing
- Non-absorbent properties, therefore, Stain Resistant

From a sustainability perspective, Avora® FR is cheaper to wash than flame-resistant treated cotton because Avora® FR has non-absorbent properties. Cotton

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absorbs a large percent of water. Therefore, using Avora® FR means: less water is added to the washing machine, less energy is needed to heat the water, and fewer chemicals are required. Drying time for Avora ® FR is less than a cotton fabric, and, therefore, conserves electricity. Another advantage of using Avora ® FR is that it can be treated with chlorine bleach. Avora® FR blankets dried in a tumbler dryer requires 10 minutes. Less material is used for the finished article made of Avora® FR means a lower per unit cost. When using cotton curtains allow for 10% shrinkage. When using Avora® FR, allow for just a 2% shrinkage.

Other suitable fabrics for draperies and bedding in healthcare facilities are Trevira CS and Trevira CS FR, the European equivalent.

Crypton Fabrics:

Years ago, health care designers had to laminate cotton fabrics in order to create a moisture resistant cushion in a health care setting, such as a hospital lobby or physician waiting room. The result was a sticky and slippery cushion which looked old and outdated from the very start, not to mention being uncomfortable to sit on.

Along came a product called Crypton, which literally changed the industry over the last twenty years. However, the first Crypton fabrics were only a bit less slippery than laminated cotton, although were not sticky. They also had the benefit that the cushion did not look like it was wrapped in plastic.

Crypton fabrics continued to evolve until the latest products are Crypton wovens, ultrasuedes, Jacquards, chenilles, velvets and leather. These fabrics look and feel as though they have no treatment at all because the Crypton is integrated into the fibers. Basically, the fabrics look and feel true to themselves, but have all the benefits which Crypton has to offer.

Since 1993, Crypton has been the fabric choice for some of the world's best known companies. A leader in the hospitality, contract, and health care industries, Crypton is expanding its reach to include residential, automotive and aviation markets. Today, Crypton is the most specified fabric in the health care market. Crypton is the only performance fabric specified by the U.S. Government .

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Crypton® fabrics are engineered to provide consistent performance features in one textile. Crypton is not a sprayed on coating or a treatment. Fabric is immersed in a bath of Crypton, a proprietary formula and then cured. The fibers become permanently encased in the formula. To clean, use soap and water or Crypton cleaners.

Unlike applied coatings, topical treatments, or laminates, Crypton's patented process is engineered into the fabric, encapsulating every fiber. This prevents moisture, bacteria, and stains from ever entering into fibers and also allows foreign substances to be easily removed from between the fibers' pores, which is why most stains can be wiped away.

The proof of Crypton's performance is in the test results. It's the only fabric on the market today that is thoroughly engineered to meet or exceed all of the heavy-duty contract fabric test requirements.

Crypton fabrics are the only fabrics that meet or exceed all of the following tests:

Stain Resistance, Class 4-5 (5 is the highest ranking for stain resistance)
Light fastness AATCC 16, Class 4.0 after 40 hours (standard Crypton)
Light fastness AATCC 16, Class 4.0 after a minimum of 500 hours -
(Crypton Outdoors)
Crock AATCC 8, Min. class 4.0
wet Crock AATCC 8, Min. class 4.0
dry Suter AATCC 127, 100 cm average Tear ASTM D 2261,
Min. 6.0 Warp, Min. 6.0 Fill Tensile ASTM D 5034,
Min. 50 lbs. Warp, Min 50 lbs. Fill Seam Slippage ASTM D 4034,
Min. 25 lbs. Warp, Min. 25 lbs. Fill
Resists fungal growth AATCC 30-1998, AATCC 6275
Resists bacterial growth AATCC 147-1998,
AATCC 6538 Flammability: Passes NFPA 260, UFAC Class 1; passes California 191-53
Technical Bulletin 117 Section E Special treatments for N.Y., Boston, Crib V Fire Codes,
IMO Res 1652 A, MVSS 302 ASTM E84 and Cal 133 (with components)
Meets or exceeds all other heavy-duty requirements for contract and residential
upholstery fabric

Crypton is stain and moisture resistant and has anti-microbial chemistry locked into every fiber. It literally stops spills from entering into a cushion, which would then allow

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the growth of microbial organisms and bacteria, leading to odors.

Most spills on Crypton can easily be cleaned with a towel. For dried stains or more difficult stains, Crypton can be easily cleaned with a soap-and-water mixture by combining 1 part of an enzyme powder detergent such as Tide® or Cheer® with 5 parts water. All soap residues must be completely removed. As with any fabric, dirt and dust can build up, so vacuuming regularly is advised.

Crypton is manufactured in Kings Mountain, North Carolina, in a green, or environmentally friendly, facility. During the manufacturing process, all chemicals generated are captured and recycled. The result is that they produce no effluent discharge into the environment.

Perfluorooctanoic acids (PFOAs) and volatile organic compounds (VOCs) have become real concerns in today's marketplace. Crypton uses no PFOAs during its manufacturing process. Also, Crypton does not contain any VOCs that can be emitted over time into the air, adversely affecting indoor air quality.

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Crypton has also gone green and many manufacturers, such as Arc-Com Fabrics and Architex International are using Crypton on fabrics of post consumer and post industrial recycled polyester. Crypton has also developed a green stain resistant finish which can contribute to LEED ® Certification.

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Other Treatments

Nano-Tex is a stain repellent treatment using polymer based architecture applied at the molecular level. Applications include upholstery, drapery, wall covering and topical bedding. It is both Greenguard and MBDC Silver Cradle to Cradle Certified. To clean, use soapy water, a detergent solution or dry cleaning solvents. Nano-Tex with Durablock combines the Nano-Tex stain repellent topical finish with a liquid barrier. Applications include upholstery and wall coverings and is both Greenguard and MBDC Silver Cradle to Cradle Certified, also cleanable with soapy water, a detergent solution or dry cleaning solvents.

GreenShield is a topical stain repellent treatment designed from established green, nano-technology principles using nano-particle based architecture. Applications include upholstery, drapery, wall covering and topical bedding. Optional anti-microbial or FR finishes can be applied. It is SCS Indoor Advantage Gold and SCS Low Fluorocarbon Treatment certified and cleanable with soapy water, detergent solution or dry cleaning solvents.

GORE Seating Protection is an anti-microbial stain release topical treatment with a breathable moisture resistant barrier. Used for upholstery only, this technology can be added to most fabrics. It can be cleaned with use soapy water, detergent solution or dry cleaning solvents.

InCase is an anti-microbial stain repellent treatment powered by Crypton technology. Applications include upholstery, drapery, wall covering and topical bedding. SCS Indoor Advantage Gold and MBDC Silver Cradle to Cradle certified. To clean, use soap water, detergent solution or dry cleaning solvents.

Teflon is a topical stain repellent treatment. Used for upholstery only, this technology can be applied to any fabric. To clean, use soap water, detergent solution or dry cleaning solvents.

BioAm (Biodegradable Anti-Microbial) is a topical anti-microbial finish that may be applied to upholstery, drapery, cubicles, panel and top of bed. BioAm provides protection against microbes including mold, fungi and algae. It's non-leaching technology does not come off and contains no arsenic, tin, heavy metals or

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polychlorinated Phenols. BioAm is effective for the life of the product and is excellent when combined with Nano-TEX.

Upholstery:

Vinyls and Faux Leathers

Vinyl fabrics are another alternative for use in any healthcare setting. Over the years, vinyl fabrics have improved both in the overall aesthetic, as well as in the feel of the fabric. Many vinyls give the appearance of tweeds and other textural fabrics, which greatly enhanced their appeal.

Vinyls and faux leathers from many manufacturers such as Arc-Com Fabrics are made of polyurethane, these fabrics are PVC free, formaldehyde free, phthalate free, BPA free, Antimony free, lead and heavy metal free, non toxic, low VOC and 99% of all water and raw materials used in their production are recycled.

Many of these fabrics have exceptional wear ability with some rating 500,000 double rubs using the Wyzenbeek Test Method. Some uses in health care settings are for task seating, particularly at nurses' stations where 24/7 usage occurs, patient room chairs and recliners, and pediatric facilities and waiting rooms where heavy and abusive use may occur.

Solution Dyed Nylon

Solution Dyed nylon is a durable fabric used extensively in health care design. Solution dyeing is different from all other dye methods in that pigments (inorganic color chips, not dyes) are added to the molten nylon before extrusion. The fiber is colored while in a liquid state. As a result, solution dyed fibers have uniform color all the way through with superior colorfastness. Solution dyeing has found a strong niche in environments where imperviousness to bleach really counts, such as schools and hospitals.

Nominal Fabric Width: 58-60". The colorfast properties of solution dyed nylon allow the use of diluted household bleach without color loss to remove certain stains. A solution containing 4 parts water to 1 part household bleach is generally sufficient.

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Avora® FR is a type of fiber which is inherently flame proof and, in upholstery weight, has the durability essential for health care applications. The inherent flame resistance of Avora® FR never washes off.

Fabrics made from Avora® FR fibers are easy to clean, hold their shape, do not retain odors and, because they are synthetic, are bacteria-free. Surface stains can be removed if wiped immediately with a sponge. However, dried-on stains are not as easy to remove.

If required, chlorine products can be used in hospital applications.

Thanks to their hydrophilic surface, Avora® FR fabrics wick away moisture quickly and are colorfast, abrasion-resistant and crease-proof.

Unlike topical FR treatments, no chemical treatment is required on fabrics made with Avora® FR. Such chemical treatments can cause skin irritation and topical flame-resistant treatments do not last for the life of the fabric. They can wash or wear off. With Avora FR, the designer does not need to have the fabric treated additionally, saving time and a cost.

Plumbing for Health Care Design:

Plumbing fixtures for health care facilities are designed uniquely for the specific needs of the end user. All fixtures must conform to current ADA guidelines and many manufacturers have responded to the increased need for fixtures and equipment which meet a variety of needs for patient care for many different settings.

In medical offices, exam rooms need to be equipped for physician use with integrated cabinetry with storage, gooseneck faucets with automatic controls, foot controls, if desired, and medical waste disposal. Public restrooms in hospitals and other types of facilities must be consider ADA requirements for the general public, as well as patients using the facilities.

Patient rooms require unique new solutions for sanitation requirements, as well as space concerns and patient ergonomics. New designs for integrated sinks that are ADA Compliant are aesthetically pleasing, as well as functional and easy to clean. Faucets

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need to be ADA Compliant and either have lever style handles or hands-free activation.

Solid surfacing materials are available which are fabricated with recycled materials and have been engineered and are now GREENGUARD Certified as low-emitting materials.

Integrated units for ICU and Acute Care patient rooms are space savers and have built-in bedpan washers. Counter top can be recycled solid surface and are GREENGUARD Certified as low-emitting materials. China or stainless steel water closets are ADA height compliant fixed-position and meet low flow flushing requirements. A stainless steel toe kick increases durability and water resistance. In some models, a fold-down seat cover conceals the water closet and acts as a bench for the patient, as well. Surface mounted ADA Compliant wall shower systems are ideal for barrier free shower rooms, have flexible supply hoses which make Rough-in easier and are completely pre-assembled.

Surfacing Materials for Health Care Design:

The selection counter tops of any facility must be addressed from not only an aesthetic vantage point, but also from a functional one. Health care facilities are heavily used and abused. Chemicals will be used in labs, exam rooms, emergency rooms, operating rooms and urgent care centers, to name just a few. Blood and other bodily fluids may wind up on these surfaces. Cleaning products will be used and may spill, as well. All of these activities and elements need to be taken into careful consideration when designing health care environments for all who use them: the patient, the family and the staff.

Required features of surfaces, particularly countertops:

- Durability
- Resistance to Microbes (Infection Control)
- Scratch Resistant
- Heat Resistant
- Stain Resistant
- Ease and Low Cost of Maintenance
- Ease of Field Repairs
- Low Cost of Installation

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Quartz

The fight to control infections in healthcare facilities is no longer just a facility issue. Today, helping with infection control is a healthcare design issue and the surfaces that you specify play an important role in helping you create safe and healthy environments.

Engineered with pure quartz crystals, quartz combines nature and science. Quartz is incredibly durable and resistant to heat and scratches and, therefore, performs extremely well as a counter surface in all healthcare environments.

Quartz is manufactured to resemble granite, terrazzo and other natural products, is available in an array of textures with fine or large particles, and in an extensive selection of colors. Quartz can be custom-cut to exact specifications, thereby allowing the designer a wide range of edge and installation options.

Quartz can be used for countertops, vanity tops, shower and tub surrounds in healthcare design. Quartz has remarkable strength and retains its original luster, which extends the aesthetic life of a facility, maintaining its fresh and new appearance over time.

In most cases, soap and water or a mild detergent is all that is required to maintain its luster. If necessary, the maintenance department can use a non-abrasive cleaner such

as Soft Scrub Liquid Gel with Bleach or Comet Soft Cleanser Cream With Bleach directly on a damp cloth or sponge and wipe the surface, rinsing thoroughly after cleaning.

Some manufacturers of quartz products are:

Dupont – “Zodiaz”
Cambria
Caeserstone

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Solid Surfacing:

Another preferred option for surfacing materials in health care applications is solid surfacing. Dupont's Corian® and Wilsonart's Gibraltar are among the most popular brands in this category. Solid surface material is made of pure acrylic with natural minerals added to enhance texture and color. Stains sit on the surface and, therefore, it does not support the growth of mold or mildew. Blood and plasma and chemicals such as betadine, crystal violet, iodine, silver nitrate and nitric acid will not penetrate or harm the surface. Chips can be repaired onsite with color going all the way through.

Dupont's Corian product meets most of the 18 characteristics of a preferred surface as defined in the 2006 Guidelines for Design and Construction of Healthcare Facilities, published by Facilities Guideline Institute and AIA. It has been evaluated in accordance with ANSI/UL Standard 723 Test for Surface Burning Characteristics of Building Materials by the Underwriters Laboratory, Inc., an independent product safety certification organization.

Corian® is also NSF/ANSI 51 Certified for food contact. NSF is a not-for-profit, non-governmental organization certifying products and setting standards for food, water and consumer goods.

Corian® is certified as low VOC emitting materials by the GREENGUARD® Environmental Institute, an ANSI Authorized Standards Developer establishing indoor air standards for indoor products and buildings. Corian® is also GREENGUARD listed for microbial resistance.

Wilsonart's Gibraltar®, Avonite®, Silestone®, and Formica Solid Surfacing® are other solid surfacing products. Solid surfacing is tough and long lasting and can be renewed if needed.

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Laminate:

Laminates are an inexpensive product to use on many surfaces, including countertops and doors. The major drawback to laminate is that it can chip easily, peel if it gets wet, and, in order to create a bull-nose edge, called post-formed, must be molded with special machinery.

It, therefore, is more limited in its applications than a solid surface material, such as Wilsonart's Gibraltar or the like. On the other hand, laminates are available from many manufacturers, such as Formica, Wilsonart, Pionite, or Nevamar in a vast array of colors and styles, from solids to granite-like colorations, to metals and wood-like patterns. In fact, nature woods have been replicated in laminate to simulate real wood,

The color range of laminates also makes them a good choice for pediatric medical and dental offices, as well as children's hospital units. In these applications, laminate does play a significant role as a useful surface material with many good applications and is less expensive than solid surface materials or quartz.

Wilsonart HD is a highly durable, high definition laminate. Their advanced technology has created dramatic optical dimension and clarity with a wear resistance 3 times that of the industry standard.

Chemical resistant laminates, such as Wilsonart's Chemsurf is specifically designed for highly corrosive environments and provides exceptional chemical and wear resistance in an extensive array of decorative patterns. It is post-formable and intended uses are laboratory casework and counters, hospital tabletops, photographic darkrooms, nurses' stations, physician and dentist examining rooms. It is GREENGUARD® Indoor Air Quality Certified. Other products such as Formica's Chem Top have similar chemical resistant laminates.

Other durable products include items such as MelCor II by Pionite, available in an array of colors and finishes, from suede to gloss, to even a soft leather appearance. It is a laminate to be used in an application where a solid color edge is desired.

It is a color-through laminate that is more flexible and less likely to chip. Multi-colored edges or sandwich colors can provide interesting design possibilities, as well. Lettering

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and grooved designs can be created using routers and engravers. Chips will not be visible as the color is clear through.

Formica's ColorCore2 product is very similar and has the same capabilities, allowing designers an expansive range of designs for many types of applications.

Conclusion

At the beginning of this seminar, the healthcare designer was prompted to ask some pertinent questions. Now the project has been completed. Patients are occupying the facilities, receiving treatments, evaluations, and testing, some for short periods of time and others anticipate longer stays. Families and friends are visiting their loved ones daily. The staff is hard at work.

From the vast array of products available, we have carefully made our selections. We have considered pertinent codes, product requirements, features and factors, and have created an environment to promote healing and wellness. Those using the facility may comment on its appearance.

Evaluate:

So how well did we health care designers do? Did we get it right? Does the design support health and how do we know? In what manner does the design relate to all who use the facility-the patient, their family and friends, the supporting staff?

Is the environment responsive to the needs of all who use it?

Does it make them feel better? Are they getting better and does the environment assist with this process? Is the design a relevant solution to the multitude of issues facing patients in their recovery?

Is it safe? Is it reassuring? Does the design participate in the therapeutic process? Does it work? How can it be better?

And finally...ask

Would I want to be a patient here? Would I want to work here? How would I feel if I were visiting a relative in this facility?

How can we measure our success?

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Brenda founded Weiss Design Group, Inc. in 1993 with her original focus on healthcare design. Among her South Florida and Philadelphia projects are Mt. Sinai Hospital, Westchester General Hospital, Victoria Hospital, University Hospital, and 3000 BC Spa. Her healthcare projects consist of ambulatory surgi-centers, psychiatric facilities, emergency and ICU departments, med-spas and wellness centers, dialysis units, acute care units, labor and delivery units, and assisted living and nursing care facilities, to name a few.

Over the years, Brenda expanded into residential, commercial, and hospitality design, including restaurants and retail spaces, as well as writing columns and articles on many facets of Interior Design for the Sun Sentinel, Broward County's leading newspaper, and a variety of regional magazines. Brenda's first book, Décor Enterprises' *Designing with Fabrics and Color* is available on all on-line bookstores through her publisher Xlibris.

Brenda is a professional member of ASID, the American Society of Interior Design; IIDA, the International Interior Design Association; and EDRA, the Environmental Design Research

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Brenda holds CAPS status through the National Home Builders Association, and is a Certified Aging in Place Specialist. She is also a Florida Realtor with Prudential Realty in Coral Springs, Florida.

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