April 2016 **Edition 7.1**

Design Guide for the Built Environment of Behavioral Health Facilities

Now with
Patient Safety Risk Assessment Tool

by James M. Hunt, AIA, NCARB
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Distributed by the
The Facility Guidelines Institute

"The hospital plans activities to minimize risks in the environment of care."

> "Risks are inherent in the environment because of the types of care provided and the equipment and materials that are necessary to provide that care. The best way to manage these risks is through a systematic approach that involves the proactive evaluation of the harm that could occur. By identifying one or more individuals to coordinate and manage risk assessment and reduction activities – and to intervene when conditions immediately threaten life and health – organizations can be more confident that they have minimized the potential for harm."

"The hospital manages safety and security risks."

> "Safety and security risks are present in most health care environments. These risks affect all individuals in the organization – patients, visitors, and those who work in the hospital. It is important to identify these risks in advance so that the hospital can prevent or effectively respond to incidents."

The Joint Commission
"Standards and Rationale"
2012 *Hospital Accreditation Standards*

"Listen to the patients, they'll tell you what you need to know."

-- J.J., Safety Officer,
Greystone Park State Psychiatric Hospital, New Jersey

Design Guide for the Built Environment of Behavioral Health Facilities:

Edition 7.1

April 2016

In an effort to keep up with the rapidly increasing number of new products that are becoming available for use in behavioral health care facilities, this document will be updated more frequently. The date of the latest posting will be provided in the upper left corner of the cover page and at the bottom of each page.

Readers are urged to check:
http://www.fgiguidelines.org/resource/design-guide-built-environment-behavioral-health-facilities/
whenever referring to this document to assure the latest information is being accessed.

EDITION 7.1
This edition has been heavily revised and edited since the last edition. Therefore, text that has been revised since the last edition is not indicated by being shown in blue, as has been our practice in the past.

The electronic version of this edition is searchable (CTL+F) on computers to make it easier to find exactly what you are seeking.

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INTRODUCTION

This document is intended to address the built environment of the general adult inpatient behavioral health care unit. Additional considerations that are *not* addressed here are required for child and adolescent patients, patients with medical care needs, dementia patients, and some patients with diagnoses such as substance abuse and eating disorders.

This document is not a replacement for regulatory requirements, but rather augments them to detail practical means of protecting patients and staff. It is intended to represent best current practices, in the opinion of the authors. It is not intended to represent minimum acceptable conditions and should not be interpreted as establishing a legal "standard of care" that facilities are in any way required to follow.

Note: Product information included in this document is intended for illustration of one or more specific items that are deemed appropriate for use in this type of facility. Comparable products by other manufacturers meeting the same design criteria may be substituted after careful comparison.

A WORD FROM THE AUTHORS

The *Design Guide* continues to be based upon our experiences in the field as operators, designers, consultants, and surveyors: what we have seen that is working and what we have seen that has not worked. Since first electronically published by the National Association of Psychiatric Health Systems (NAPHS) in 2003, we have received and welcomed countless suggestions, recommendations, and comments from users of the *Guide*, which continue to inform and lead us to new discoveries. We are grateful and humbled by how well our suggestions have been received and inspired others to think of new solutions to the inherent challenges of the behavior health built environment.

We hope that this edition of the *Design Guide for the Built Environment of Behavioral Health Facilities* will meet the expectations of and prove useful to the designers, operators, and clinicians who are entrusted with both the care of behavioral health patients and with the environment of care in which those people are cared for and treated.

As always, we introduce this edition by repeating how we introduced the 2003 edition, with a reminder that "*while a safe environment is critical, no environment of care can be totally safe and free of risk. No built environment – no matter how well designed and constructed – can be relied upon as an absolute preventative measure. Staff awareness of their environment, the latent risks of that environment, and the behavioral characteristics and needs of the patients served in that environment are absolute necessities. We also know that different organizations and different patient populations will require greater or lesser tolerance for risk; an environment for one patient population will not be appropriate for another. Each organization should continually visit and revisit their tolerance for risk and changes in the dynamics of the patient population served.*"

As before, we have highlighted products that we have found to be both safe and able to withstand the rigors of use in the behavioral health care environment. However, inclusion or exclusion of a product does not indicate endorsement or disapproval (nor that any product we identify is free of risk). There may be equivalent products available: all facilities should continually look to the marketplace to find products that are safer and more cost-effective.

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SHARE YOUR BRIGHT IDEAS

A continuing feature in this updated edition is the inclusion of **Bright Ideas** that are indicated by the graphic shown at the left. These are applications that we have thought of, or that have been suggested by readers, that do not require the use of any specific product, but utilize readily available items in creative ways to improve the safety of these units. Most of these **Bright Ideas** can be implemented by maintenance staff at nominal cost. We thank those who have contributed these ideas and information on new products. We encourage this kind of input and invite feedback from you, the readers. With your help, this can become a compilation of the best thinking of the industry. We promise to include more of your **Bright Ideas** in the future.

ACKNOWLEDGMENTS

We want to express our appreciation to the following professionals who have shared their insight and experience with us and helped make this edition more helpful to other readers:

Larry Denoyer – The Menninger Clinic
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Steven Shilts, RN – La Jolla Veterans Medical Center
Tom Loats – St. Joseph Hospital
Carter Wright – CWC Corporation

A WORD FROM FGI

THE IMPORTANCE OF RECOGNIZING THE UNIQUE NEEDS OF BEHAVIORAL HEALTH ENVIRONMENTS

We at the Facility Guidelines Institute are expanding our mission to publish documents that go beyond the fundamental health care design requirements we are known for. We are pleased to have been asked to publish this valuable document, which goes beyond the basic requirements to provide information that will help those in the behavioral health field develop safe and effective care environments for patients and staff.

Whether you are designing new construction, renovating existing space, or maintaining a facility, the *Design Guide* is intended to help you think through how the physical environment affects patient and staff safety. Keeping a behavioral health environment safe is an ongoing endeavor and requires a continuous process of review and evaluation.

For any health care facility type, it is essential to base decisions about the built environment on potential risks to the patient populations served. However, as noted by the National Association of Psychiatric Health Systems (NAPHS), previous publisher of this guide, this is particularly important in behavioral health facilities, where many patients are admitted because they are at risk of harming themselves or others.

We hope the *Design Guide* will help users engage all the stakeholders in a project or facility's operation in the discussions needed to develop and maintain an appropriate care environment. As identified by NAPHS, some questions to consider are:

- Could a patient be hurt by a particular aspect of the environment? Could it be used to harm someone?
- Can staff easily navigate the environment to get to patients in need of assistance?

- Is it possible to maintain patient privacy in this environment?
- Is the environment a respectful, therapeutic one that will contribute to recovery?

FGI does not endorse or recommend any specific product, and exclusion of a product from this document does not indicate disapproval. However, we support the authors' belief that providing information about specific products can help designers find solutions that work in the unique circumstances of behavioral health environments.

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GENERAL COMMENTS

1. Space Planning Considerations

A. **Behavioral health units and facilities should be designed to appear comfortable, attractive, and as residential in character as possible**. A focus on patient and staff safety has often pushed the aesthetics of these units toward the appearance of a prison environment. The Planetree organization actively advocates for patient-centered design and has made a significant positive impact on the general hospital therapeutic environment. However, many "healing environment" features that are desirable for a medical/surgical environment do not adapt well to behavioral health units and hospitals. Planetree designated its first patient-centered behavioral health hospital in 2011.

The final design must avoid an "institutional look" while meeting the array of applicable codes and regulations as well as therapeutic and safety needs for patients and staff. The challenge, therefore, is to strike a balance between the safest possible healing environment and a non-institutional appearance that is correct for the unique conditions that exist in each facility.

B. **Nurse stations should provide the least possible barrier between staff and patients.** This goal is sometimes felt to be in conflict with staff safety concerns. Some facilities have been successful in finding ways to prevent patients from jumping over the counter without providing solid barriers that restrict conversation and the exchange of objects. HIPAA (*Health Insurance Portability and Accountability Act of 1996)* privacy regulations make an "open" design increasingly challenging. Patient records, electronic or otherwise, must be protected from view of other patients, visitors, and unauthorized staff. Care must also be taken to shield computer monitors from unauthorized viewing. Areas must be provided in which clinical staff may discuss patients without being overheard by other patients or visitors. Provision should be made to accommodate storage of charts and patients' valuables in appropriately secure areas. The advancements in electronic medical records have somewhat reduced the need to provide all charting-related activities and spaces in the area behind the nurse station. Since an electronic "chart" can be accessed from many locations, in many cases the area around the nurse station can be used for more patient-centered activities.

C. **Gathering areas for patients near the nurse station are encouraged because patients often congregate near there to socialize.** It is far better to plan for this in the original design and to accommodate this behavior. This area should encourage comfortable seating and places for conversation, card or board games and other quiet activities that will not be distractions for staff working in the nursing station. Television sets, CD players, etc. should not be included at these locations. Many facilities are now experiencing issues, especially with younger patient populations, regarding use of electronic devices

(e.g., iPods, MP-3 players, and similar devices). Many patients like these electronics and say they help keep them calm, but the wires on the earphones can be hazardous. This is just one of many decisions that facilities will need to weigh to determine the level of risk they are willing to accept for the perceived benefit. It should always be remembered that a patient who is assessed as safe to have the player may set it down where another patient may pick it up to gain access to the wires.

D. **Chart rooms and other staff areas should be located so that staff members may have conversations regarding patients and other clinical matters without being overheard by patients or visitors**. Teaching hospitals that have a large number of residents and/or students making rounds will need larger spaces for confidential conversations. The expansion of the use of electronic medical record technology is continuing to change the needs and configurations of these rooms.

E. **Medication management** has evolved over the years from patients lining up at a window at designated times of day to staff taking medications to patients wherever they are on a unit. Although the trend is moving strongly toward the latter practice, some facilities prefer the former or some variation of the two. Whatever practice is used in a facility should be clearly defined, with flexibility built in to allow for future shifts in this critical function. Medication rooms and/or zones should be sized to accommodate the number of staff needed at peak times as well as planned future (if not current) computer systems. HVAC and electrical systems should have sufficient capacity to accommodate the cooling load of the refrigerator, computer, automated medication systems, and the number of people who may work in the area at peak times. The medication area should also have a hand-washing sink and be sized to accommodate storage of a medication cart when not in use without restricting staff use of the space. (See Section 2.1-2.6.6.2 (1) in the FGI *Guidelines for Design and Construction of Hospitals and Outpatient Facilities*, 2014 edition.)

F. **When possible, locate service areas (such as trash rooms and clean and soiled utility rooms) so that they are accessible both from the unit and from a service corridor.** This eliminates the need for environmental staff servicing these rooms to enter the treatment areas of the unit and possibly disturb patient activities. All doors to these rooms must be kept locked at all times.

G. **Traditional nurse call systems for patients to use to get assistance from nursing staff are not required** in behavioral health units. There are significant new developments in duress alarm systems that greatly improve safety for staff when in a threatening situation with patients. These utilize sensors located in all patient-accessible areas and a small device that the staff members wear.[650] If the staff feel threatened and want other staff to come, the device can be

activated. The alarm annunciates in different ways with the various products, but many provide the exact location of the staff activating the alarm.

H. When possible, have all **electrical outlets** in each patient room be tamper-resistant, hospital grade units on Ground Fault Interrupted Circuits (GFCI) and have the breakers for these circuits located where they are readily available to staff without entering the patient rooms. This is easily accomplished in new construction and very difficult to accomplish in remodeling projects.

I. **All electrical circuits** having receptacles near sources of water (such as sinks, lavatories, and toilets) must be protected by (GFCI) breakers. Simply replacing one receptacle on a circuit with a GFCI-equipped receptacle provides that protection for the entire circuit. It should be noted that this can cause complications in that poorly maintained equipment (such as vacuums and floor polishers) may trip these devices.

J. When possible, locate **water shut-off valves** in corridor walls where they are accessible from the corridor by opening a locked access door. This has been successfully accomplished during remodeling projects of existing units.

K. When possible, **locate serviceable parts of patient room HVAC systems** where they can be serviced without entering the patient rooms. In new construction, consideration may be given to radiant heating and cooling systems, which greatly reduce the need for mechanical devices in patient rooms.

L. **Environmental services (housekeeping) rooms should be large enough to lock away carts when not in use.** All cleaning materials must be locked inside these carts whenever the carts are in patient areas or corridors and not attended by staff.

M. **Smoking areas (if provided) should be outdoors.** These can be in the form of screened-in porches using heavy stainless steel screen fabric[81] similar to that specified in Level III-H.1 below. Furniture should be securely anchored in place. Provision should be made for staff observation without having to breathe the second-hand smoke. No wastebaskets should be allowed in these areas. Indoor smoking is not permitted now in most facilities, and many hospitals have gone to smoke-free campuses.

N. **At the time of this writing, the applicable standards** (the 2014 FGI *Guidelines for Design and Construction of Hospitals and Outpatient Facilities*, published by the Facility Guidelines Institute) **requires 100 net usable square feet per private patient room and 80 net usable square feet per patient in semi-private rooms (2.5-2.2.2.2).** All requirements of the FGI *Guidelines*, NFPA 101: *Life Safety Code* (2012 edition), and the Joint Commission standards as well as state and local regulations and building codes must be incorporated into planning for behavioral health care projects.

2. Safety

The level of concern for the safety of patients and staff due to the design of the built environment is not the same in all parts of a behavioral health unit or facility. The level of precautions necessary depends on the staff's knowledge of the patient (i.e., the patient's intentions regarding self-harm) and the amount of supervision the patient will have while using that part of the facility.

Previous editions of this Design Guide have proposed that the level of concern for patient safety in the behavioral health built environment could be stratified into five categories (from Level I to Level V). The lowest level (Level I) was described as spaces having no patient access or where patients are under constant supervision, such as staff and service areas, and correlated to an area in which some latitude was available regarding design, construction, and materials used. The highest level (Level IV) was described as an area in the built environment where patients were present with unknown or unassessed risks and in which patients in a highly agitated condition could be cared for. Areas identified as Level V are those that present special considerations that need to be addressed individually.

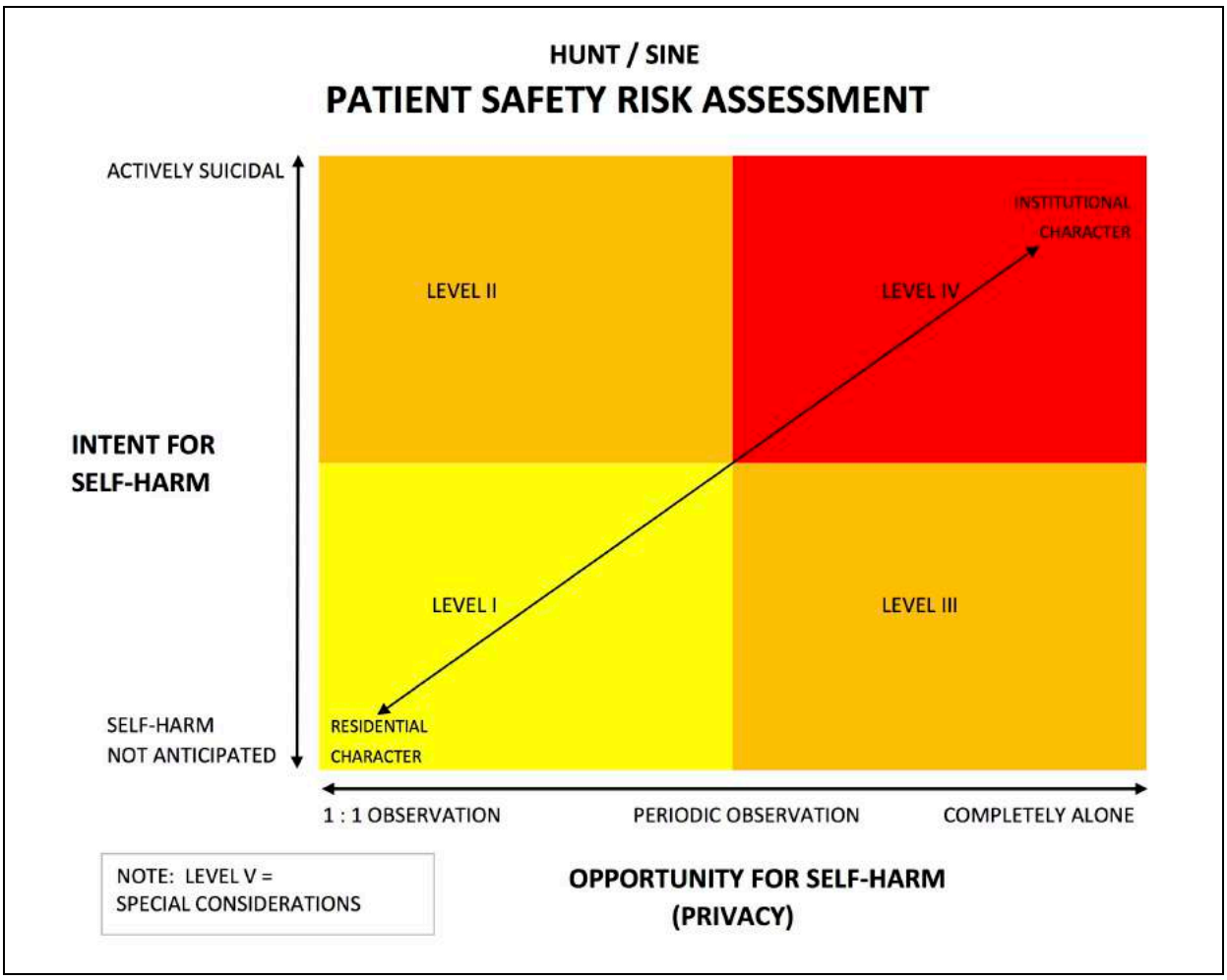
This approach of risk levels based on a functional statement of intended usage has been adopted by many others with varying numbers of levels but all share a similarity of describing the level of risk for a room or space that is similar to spaces with a similar occupant function (i.e. admissions rooms, examination rooms, etc.). However, some rooms or room functions can comfortably fit into more than one category or sit on a blurry boundary between two categories. In addition, the categories do not anticipate every use of every room. Thus, facility clinical staff and facility designer may be making assumptions when a room is described as an "activity room" and a level of concern to drive design choices is made that does not meet the actual needs of the stakeholders in an operating environment. For example, a Day Room may be located so that it is within line of sight of a nurse station that "always has staff present." However, if there is a patient who can't sleep and he or she is in the Day Room watching television at 2 AM and the only staff on duty is making rounds, the patient may actually be "completely alone" for a period of time in a space that may contain hazards.

For this edition of the Design Guide, the authors propose facilitating the conversation between clinical staff and designers regarding patient safety with the use of a patient safety risk assessment (SRA, see p. 14) that, in a Cartesian matrix, considers the opportunity for a patient to be alone in a particular space (of any name) on one axis and a level of risk of self-harm on the other axis. The greater the opportunity for a patient to be alone, the greater the opportunity for self-harm and the greater the caution that should be taken regarding design choices and materials. The authors acknowledge that patient intent for self-harm is often opaque and difficult to assess but place "actively suicidal" on the far end of this scale and describe the opposite end as "self-harm not anticipated." Privacy is arranged with close observation (such as "1:1 observation") on one end of the opportunity scale and the patient "completely alone" on the opposite end of that scale. This risk matrix is partly informed by

longitudinal studies done by the Veterans Health Administration of the frequent locations of acts of self-harm by inpatients and supported by Joint Commission data and is further influenced by the seminal works of Richard Prouty on risk maps. Designers and clinicians, rather than seeking agreement on what is meant by a particular room name, may now seek to agree on the actual or anticipated degree of aloneness or privacy a patient will experience in a room or space independently of room name and it is that agreement that will drive design choices for that room or space.

For example, a room such as a patient bathroom in which the patient is anticipated to be alone and have privacy would be far along the privacy axis. If that assessment intersects far along the patient intent for self-harm axis, then the space should be designed with the attributes of a Level IV space as described below. In sum, no matter the name of the room, a high level of privacy warrants a high level of concern if it is anticipated that patients who are actively suicidal (or patients with an unknown or unassessed intent for self-harm) are to be treated or housed in that space. While spaces with risk assessments located in the upper right (Level IV) of the risk map will have different products utilized, they do not necessarily need to look more "institutional" than spaces with a risk assessment located in the lower left (Level I) corner of the risk map.

Although the authors believe that the use of such a tool will facilitate the necessary conversation regarding patient safety and design between operators, clinicians, and designers the tool is not an absolute and not intended to predict risk levels in a particular facility (which the authors believe to be dynamic and non-static). The tool is only intended to encourage a dialog and promote a common understanding of for whom a designed space is intended and the risks of an anticipated patient population. Neither should this proposal be interpreted as a suggestion that patient privacy is to be avoided or a risk to be avoided. Quite the contrary, privacy is generally considered a good thing and desirous in the built environment, but privacy has associated with it a risk that should be considered and mitigated though good design when possible.



Level I: Areas where patients are not allowed or under constant supervision such as staff and service areas

Level II: Areas where patients are highly supervised and not left alone for periods of time such as corridors, counseling rooms, activity rooms and interview rooms

Level III: Areas where patients may spend time with minimal supervision such as lounges and day-rooms

Level IV: Areas where patients spend a great deal of time alone with minimal or no supervision such as patient rooms (semi-private and private) and patient toilets

Level V: Areas that require special consideration where staff interacts with newly admitted patients that present potential unknown risks or where patients may be in a highly agitated condition. Due to the unknowns, these areas fall outside of the risk map and require special considerations for patient safety. Such areas include seclusion rooms, examination rooms and admission rooms.

3. Outdoor Areas:

Outdoor areas (e.g. enclosed courtyards, fenced areas adjacent to the treatment unit, or simply an open campus) are considered to be of great therapeutic benefit. Levels of staff supervision for patients using outdoor areas may vary widely between facilities or even between different groups using the space at any given facility and should be carefully reviewed by the facility and be dependent on the assessment of the most acute patients using the area.

In all cases, careful consideration should be given to exterior landscaping and furniture in the vicinity of patient-use buildings. Trees should be located away from buildings to prevent access to building roofs. Climbable fences can permit, if not encourage, unauthorized access to windows and roofs or elopement over walls. Shrubbery should be non-toxic and low-growing. Avoid planting shrubbery close together as it can create visual barriers that patients or unauthorized visitors may hide behind. Landscape or decorative rocks that can be thrown and injure staff or other patients should not be used.

All outdoor furniture[660] should be anchored firmly in place to prevent it from being moved to create barricades or stacked to allow climbing over fences, into windows, or onto buildings. Many types of commercially available furniture can be anchored or are made of concrete or other heavy materials.

Buildings, walls, or fences may be used to establish clear boundaries and impede elopement to a degree appropriate to the patient population being served. Some facilities are comfortable with providing a perimeter enclosure that is not particularly difficult to climb and simply make any elopements a treatment issue if the patients return. Other facilities have a very high need to reduce elopements to the extent possible. Where this is the case, the enclosures may take on a very prison-like appearance. If views to the distance are not required, one approach is to treat the outdoor areas as meditation gardens with solid masonry walls that have a smooth interior surface and are twelve to fourteen feet high. One facility has installed large (22”-24”) diameter plastic pipe on top of the wall to resist

patients being able to get a grip on the top surface. This pipe can be painted to match the color scheme of the building and provides a much less institutional appearance than concertina wire. If views to the distance are desired, “windows” glazed with polycarbonate[201] or security glass[200] may be provided. Care should be taken to not have sills or cross bars that will provide toeholds for climbing.

Another option is a fine mesh chain link fence fabric[675] that can be installed over the existing fence material. This fabric comes in a range of sizes down to as small as 3/8” openings. This makes it more difficult to climb and the openings are too small for most bolt cutters. Care should be taken when using this material to assure that fence posts and rails are sufficiently strong to support the fabric and the additional wind loading that can occur. There has been at least one verified instance of a patient successfully climbing a mini-mesh fence, so it is suggested that a section at the top be angled inward to further increase the difficulty of climbing.

There are also maximum security fencing[676] available that have a very prison-like appearance, but may be necessary in some facilities with involuntarily admitted patients.

If portions of the building walls are used to enclose exterior courtyards for patient use, care should be taken that these walls are not easily climbable, especially if they are only one story high. Window sills, rain gutters, etc. may assist efforts to climb these walls to get access to the roof. All windows that patients will have access to from exterior courtyards shall have security glazing [200] polycarbonate glazing[201] or security window film[190] (as discussed in Level II-D below) for their exterior surfaces.

All areas surrounding patient-use buildings, areas where staff will be walking or escorting patients at night and courtyards should be well lighted. Care should be taken that exterior lights do not shine directly into patient room windows. Parking areas for staff and visitors should be well lighted and reviewed regularly for design features that encourage personal and property security. While

security is generally beyond the intended scope of this document, closed circuit television monitoring and video surveillance recording of these semi-public areas (i.e., where there is no expectation of privacy) should be considered.

All manhole covers, access panels, and area drain grates should be anchored firmly in place to prevent them being removed and used as weapons or allowing patients to enter the underground piping.

CONSTRUCTION AND MATERIALS CONSIDERATIONS

Each of these levels of concern requires increasing attention to the built environment to reduce the potential of the patients being afforded a means of doing harm to themselves or others. These levels are cumulative, and all steps taken for lower levels are also required for a higher level. For example: all steps recommended for Levels I, II, and III are also recommended for Level IV.

Level I. Staff and Service Areas – Comply with all applicable codes and regulations. All unattended service areas should be locked at all times to reduce the possibility of patients entering these areas.

Level II. Corridors, Counseling, and Interview Rooms – Minimize blind spots in corridors where patients cannot be observed from an attended nurse's station. All unattended counseling and interview rooms should be locked at all times to reduce the possibility of patients entering these areas. Counseling rooms and interview rooms should have a "classroom"-type lockset which requires a key to lock or unlock the outer handle, but the inside handle is always free.

A. **Floors** – Carpet[255] or sheet vinyl[245] meeting class A rating. Avoid patterns and color combinations that may appear to "animate" into objects that could contribute to visual misperception by patients. Anti-microbial carpet with solution-dyed yarn and moisture-resistant backing generally works well in these facilities and is available from most major carpet companies.

B. **Walls** – Abrasion-resistant and impact-resistant gypsum board[230, 231] on a minimum of 20 gage metal studs spaced at 16 inches on center are appropriate for use in these areas. Sound deadening gypsum board[232] is now available to help reduce noise levels created by traditional hard services. Consult manufacturers regarding the characteristics of the specific material most appropriate for a particular installation. These products are now available from several manufacturers. A painted finish is preferred because of easy reparability and the relatively low cost of renewing or changing colors to keep up with

current trends. This helps with minimizing the institutional qualities of the space and aids in providing as residential (or home-like) an ambiance as possible while meeting the institutional requirements.

C. Ceiling – May be lay-in acoustic tile if needed for accessibility to equipment and the ceiling height is sufficient to make the tiles and grid system difficult to reach. However, a solid ceiling is always preferred in all areas of the units when practical. If a lay-in ceiling is used, consideration should be given to the use of clipped-in-place ceiling tiles. If clips are used, regular safety rounds should include checking to see that the clips are in place. Frequently, they do not get replaced after maintenance is performed on equipment above the ceiling. Some facilities report installing motion sensors above lay-in ceilings to alert staff to patient activity above the ceilings.

D. Glass (Interior and Exterior) All glazing that is exposed in patient-accessible areas should stay in the frames when broken and not yield sharp shards of glass that patients could use as weapons. Terminology can be confusing in that laminated glass like that used in vehicle windows is often referred to as “safety glass,” but, when broken, can yield large sharp pieces. Some of the forms of glazing recommended for use in behavioral health facilities are listed below:

1. Standards – All glazing in patient-accessible areas should be safety glass.
    a. Section 2.5-7.2.2.5 (1)(a) in the 2014 edition of the FGI Hospital/Outpatient *Guidelines* calls for "all glazing (both interior and exterior), borrowed lights, and glass mirrors” to be “fabricated with polycarbonate or laminate on the inside of the glazing or with any glazing that meets or exceeds the requirements for Class 1.4 per ASTM F1233-08: *Standard Test Method for Security Glazing Material and Systems*.”
    b. American Architectural Manufacturers Association (AAMA) 501.8-12: *Standard Test Method for Determination of Resistance*

*to Human Impact of Window Systems Intended for Use in Psychiatric Application*s

2. Impact-Resistant Glass Products – Several glass manufacturers[200] are now producing products that may be appropriate for use in behavioral health facilities. Actual products will vary depending on the size of the opening, the type of frame, patient population served, and location of the glazing in the unit (as determined by the patient safety risk assessment). It is suggested that manufacturers be contacted directly to determine products that may be appropriate for a specific project.
    a. Heat-Strengthened Glass – is more difficult to break than regular float glass but has about half of the strength of tempered glass. Heat strengthened glass may be a good choice if it is laminated and high impact resistance is not required for the specific location.
    b. Tempered Glass – this may be acceptable for use in some patient accessible areas such as small windows in doors, portions of glass walls separating activity rooms from corridors and patient toilet room mirrors. Tempered glass is more impact-resistant than float glass or laminated glass, but will break into many small pieces and fall out of the frame, which may allow a patient to elope. Each piece may have sharp edges. Patients have been known to break tempered glass mirrors and rub the inside of their wrists on the broken surface to cut themselves. The hazard of this may be reduced by covering the tempered glass with a security film as described below.
    c. Tempered/Laminated Glass[200] – This consists of two layers of tempered glass bonded to a PVB interlayer, which helps the glass stay in the frame when broken.
    d. Glass-Clad Polycarbonate Glazing[200] – This consists of two layers of strengthened glass bonded to a polycarbonate core. This product combines the ability to stay in the frame and resistance to patients' access to shards of glass that could be used as weapons.

e. Window Film[190] – If replacing existing glass is cost-prohibitive, application to existing glass of a security laminate window film[190] may be an alternative. These films may be susceptible to scratching and defacement by patients, but they may be removed and replaced at less cost than replacing glass or polycarbonate panels. Additional protection may be obtained by using impact protection adhesives and a perimeter tape system to help hold glass in the frame if broken. However, claims that these window films will prevent glass from breaking should not be relied upon in the authors' opinion.

f. Wire Glass – This glass will break and yield sharp shards and is generally not permitted by many current codes and regulations. Any use of wire glass should be verified with all authorities having jurisdiction as many codes place restrictions on its use.

g. Fire-Rated Glass [205] – Clear fire-rated glass products are now available in a variety of types and ratings.

h. Polycarbonate[201] (Lexan) – Polycarbonate panels are highly impact-resistant and are available in a variety of thicknesses from several manufacturers. The panels will deflect upon impact, and large pieces have been known to pop out of their frames. Care should be taken to assure the depth of the stop securing the panel will hold it when subjected to strong impact near the center of the panel. This material is also highly susceptible to scratching and is a frequent target of patients who write profanity and draw pictures. Mar-resistant coatings are available, but they do not completely eliminate this concern. Recent projects have indicated this may be the most expensive option.

E. Doors in behavioral health facilities are subject to heavy use and possibly extensive abuse. They make up a significant percentage of the exposed wall surface in corridors and have a strong visual impact on these spaces.

Painted steel doors are durable, easily touched up or refinished, but more institutional in appearance. Doors with wood veneer faces and stain and varnish finish are more “residential” in character, but are easily damaged and difficult to repair. Plastic laminate covered doors are also easy to chip on the edges and may soon become unsightly. One response to the damage these doors receive is to add stainless steel kickplates, door edges and other add on devices which also add to the institutional look. (NOTE: The installation of kickplates may invalidate the fire rating of doors in some jurisdictions.) The kickplates and other protective devices are available in durable synthetic materials that come in a variety of colors that soften the stainless steel look but can still result in a patchwork quilt appearance.

Possible solutions to these issues are doors with durable synthetic wood grain faces. Some of these have removable end caps,[25a] which can be replaced if they become damaged at much less expense than replacing the entire door. Other doors with synthetic faces (but without replaceable end caps) [25b] are available at a lower initial cost.

The first cost of these synthetic-faced doors is higher, but the expenses of finishing the doors and purchasing and installing the kickplates, etc. are not required. The life cycle cost can potentially be much less than other doors, and the appearance over time may be a significant improvement.

F. Hardware

1. Hinges – Geared-type continuous hinges are preferred for all patient-accessible areas because they minimize possible attachment points. These hinges are available with a closed-slope top and continuous gears that resist ligature attachment.[111]

2. Closers – Closers are generally not required for patient room doors in most jurisdictions, but may be required for other doors. When needed, it is suggested that track closers[100] be mounted on corridor side of door away from rooms where patients will be alone or in groups.

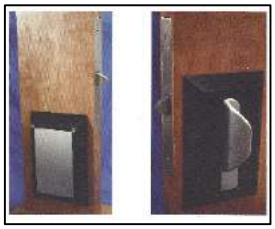
3. Locksets – All doors in patient-accessible areas are recommended to have some type of ligature-resistant lockset. There are three ways that a lockset can be used for ligature attachment: pulling down, pulling up and over the top of the door, and tying something around the latch edge of the door using both the inside and outside handles (transverse). The latchbolt itself has even been used successfully as an attachment point as has the opening behind the strike plate. In these authors' opinion, the perfect solution for this dilemma does not exist at this time. Several of the better options are discussed below.

   a. Lever handle locksets[130] effectively deal with up and down pressure, but are susceptible to transverse attachment. The lever should move freely in both directions when locked to reduce ligature attachment risks. This type of handle is more typical (less institutional) in appearance and operation than other choices. Both of these qualities are very desirable in items that patients will touch and use on a regular basis. However, lever handles may present more risk than some of the other choices.

b. Crescent handle lockset[136] is available which utilizes a lever handle and thumb turn that are ligature-resistant and may meet ADA requirements. This is now available with a revised handle that can be mounted in a horizontal position and allows the user's hand to easily slip off the free end.

c. Push/pull handle locksets[137] installed with both handles pointing down resist pulling down and, to some extent, the transverse attachment. However, they are very susceptible to being pulled up and having something looped over the top of the door. This hazard can be reduced by installing an over-the-door alarm as discussed later in this paper.

d. Push/pull hardware is also available with a flush push pad and on one side and a ligature-resistant pull handle on the other.[137b]



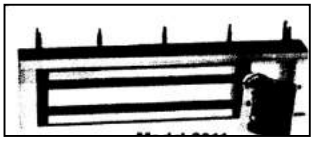
e. Modified lever handles, which provide minimal ligature attachment risk but have an unusual appearance and operating motion, are also available in various designs.

4. Unit entrance doors – Provide intercom (or telephone) for communication to nurse stations from outside the unit if needed. Electronically controlled access systems that utilize electric strikes or electromagnetic locks are preferred. These may be operated by a switch at the nurse station if the door is clearly visible from the location of the release button. Care should be taken to assure that patients are not in the area when the door is released. Card readers or keypads adjacent to the door are also commonly used. These are readily available from hardware suppliers and are generally extensions of systems currently in place at most facilities.

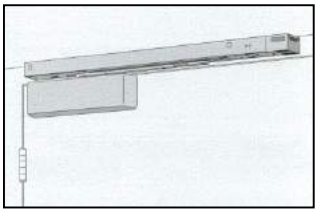
   Elopement buffers (formerly called sally ports) are created by providing two sets of cross-corridor doors that are electronically interlocked so that

only one door can be open at a time. These buffers are now required for the main entrance to inpatient units by the FGI *Guidelines*. Care should be taken to assure that adequate space is provided for both doors to be closed at the same time.

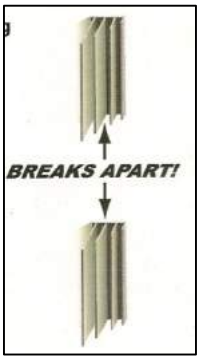
5. All exit doors (including stairway doors) may generally be locked at all times in these facilities. Exit doors may be locked with electromagnetic locks[110] that are connected to fire alarm system and may either stay locked when the fire alarm is activated (fail secure) or release when alarm is activated (fail safe) as deemed appropriate for patient population. The acceptability of this type of hardware and its operating mode should be verified with the authorities having jurisdiction at location of the facility. These are available in varying holding strengths and the mounting position recommended by the manufacturer must be carefully followed to provide the rated holding force. When extraordinary circumstances exist, more than one electromagnetic lock can be provided per door or electrically operated deadbolts or providing a vertical frame member at the strike jamb may be required.



6. All doors on the unit that are:
   a. Required by applicable codes and regulations to have a closer, but need to be open to provide observation of patients by staff shall be provided with a closer with a built-in release[101] that allows the door to close automatically when a fire alarm is activated.
   b. In-swinging and will have patients in the associated rooms are recommended to have one of the barricade-resistant methods discussed in “Level IV-a” below.



7. Smoke seals may be required in some situations and are often applied with adhesive strips that can allow patients to remove them to use as ligatures. Smoke seals that break into 8” long pieces[10] are preferred for use on all doors that patients will pass through.



8. Patient-accessible toilet rooms and shower rooms that are located near activity rooms and other locations on the unit are recommended to have all of the features of the patient toilet rooms as discussed in “Level IV-b” below. In addition, they will need to have a “classroom”-function locking device to limit both unauthorized use and entrance by others when in use.

G. Light fixtures – If located at a height or location that is not easily accessible to patients, these may be normal fixtures and lamps as long as staff observation from the nursing station is good and staff are in attendance, but tamper-resistant fixtures are preferred. Where they can be reached by the patients or are in areas that are not readily observable by staff, they must be tamper-resistant type[620] or have minimum ¼” thick polycarbonate prismatic lenses[634] securely fixed in the frame and the covers must be firmly secured with tamper-resistant screws.[470] Many of these fixtures are now available with LED light sources.

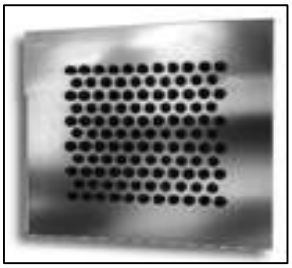
No glass components that will be accessible by the patients should be used in any fixture. Use of table lamps or desk lamps is strongly discouraged. Neither incandescent light bulbs nor fluorescent tubes should ever be accessible to patients.

It has been suggested that corridor light fixtures (other than minimal night lighting) be controlled at night by motion detectors. This would allow staff to know immediately when a patient leaves his or her room.

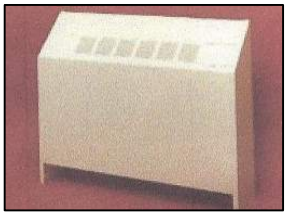
H. Fire sprinklers – institutional heads[521] that provide very little opportunity for attachment should be provided.

I. HVAC grilles and equipment

a. Standard grilles with small perforations[600] that are secured in place with tamper-resistant fasteners are generally acceptable in these areas as long as they are mounted high enough so they cannot be easily reached by patients.

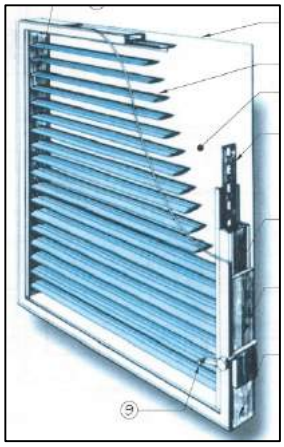


b. If there are existing fan/coil units (as well as fin-tube heaters or old style radiators) present in these spaces, they should be protected with vandal-resistant covers.[606]



J. Window-covering hardware

1. Mini-blinds mounted between layers of safety glass[200] are preferred because they are not accessible to patients. Care should be taken to assure that any exposed devices to control the tilt of the blinds not create a potential ligature attachment point. There are some commercially available window assemblies that have all of these features.[430] Exposed mini-blinds should never be used.



2. Roller Shades[440] that are specifically manufactured for use in psychiatric hospitals are another option. These have enclosed security roller boxes, security fasteners, cordless operation and locking devices that resist tampering by patients.

3. Curtains and curtain tracks of any type (including those designated as “break-away” and represented by their manufacturers as “safe for psychiatric hospitals”) are not recommended for use in any patient accessible areas, especially patient rooms and patient showers.

K. Miscellaneous

1. No plastic trash can liners should be allowed in any space accessible to the patient. Breathable paper liners[1] should be provided.

2. All operable windows in these areas should have opening limited to four inches[170].

3. Telephones located in corridors or common spaces for patient use should have stainless steel cases,[655] be securely mounted to the wall, have a non-removable shielded cord of minimal length (14 inches maximum) and may be equipped either with or without touchpads for placing outbound calls. It has been reported that if a patient pulls very hard on the receiver the armored cable can unwind and provide sharp edges. This risk should be weighed against the ease of removal of standard cords.

4. Cabinet pulls should be either recessed, with no protruding openings or of a closed ligature-resistant type.[460]

5. Cabinet locks are very important in these and all patient accessible areas. Cabinets that are used to store items that patients could use to harm themselves or others should be kept locked at all times when patients are present. This can lead to staff constantly looking for the right key on a large keychain. One solution is to provide locks that can be unlocked by using a key that staff already carry, such as the key used to activate the fire alarm. Another solution is to utilize existing key access cards now used by many facilities or a push-button keypad.[465] These are becoming more affordable and should be particularly helpful in Examination/Treatment rooms and any locked cabinets in patient rooms.

6. Room signs[300] are available in a flexible material that is adhesively applied and will not provide a weapon to the patients if removed. These can include braille and meet ADA requirements.

7. All fire alarm pull stations and all fire extinguisher cabinets[521] should be locked (with approval of all applicable code authorities). All staff on duty must carry keys for these at all times. These keys should be provided with a red plastic ring or other means of quick identification. In addition, fire extinguisher cabinets should have continuous hinges, recessed pulls (if any), and polycarbonate glazing (if view windows are provided).

8. Lighted exit signs[640] or photoluminescent signs[642] should be vandal-resistant and installed tight to the ceiling with a full-length mounting bracket to avoid use as a hanging device. Wall mounting these signs perpendicular to a wall is not recommended because it leaves the top exposed as a possible attachment point.

9. Observation mirrors – Convex mirrors installed in corridors, seclusion rooms, and other locations to assist with observation of patients who are in patient-accessible locations should be made of a minimum 1/4" thick polycarbonate, be filled with a high-density foam, and have a heavy metal frame that fits tightly to the wall and ceiling.[420] Convex mirrors made of steel are also available. Additionally, the perimeter should be sealed with a pick-resistant caulking.[20]

L. Furniture

1. Furniture should be easily cleaned, easily reupholstered, very sturdy, and as heavy as possible to minimize the likelihood of patients throwing chairs, tables, etc. It is recommended that as much furniture as practical be built-in or securely anchored in place to prevent stacking or barricading of doors. Remaining loose items (such as chairs) can vary from high-quality wood- or steel-framed upholstered chairs[482] that resemble typical residential furniture in appearance to polyethylene rotationally molded[483] and sand-ballasted seating that is now available in a less institutional look. The selection depends on the care provider organization's determination of what is appropriate for the patient population to be served.

2. Lockable storage cabinets and drawers and the means to lock phones and computers away from patients should be provided.

3. All upholstery and foam used in furniture should have flame spread ratings that comply with the requirements of Section 10.3 in NFPA 101.

M. All pictures and artwork must be given special consideration in patient accessible areas:

1. Murals have been used very effectively in some facilities. These can be very effective in brightening and adding interest to corridors and day rooms. It is usually a good idea to cover them with at least two coats of a clear sealer for protection, but patients typically enjoy these and defacing them is not usually a problem. Murals are also available on wall vinyl and wall protection materials.

2. Large sheets of durable wall protection material are now available with a wide variety of printed artwork.[304] Rather than using the standard vinyl trim pieces with these materials, It is suggested that the edges be tightly fit together and sealed with pick-resistant caulk.[20]
3. Specially designed frames[302] that slope away from the wall and have polycarbonate[201] or acrylic

glazing are preferred. The frames should be screwed to the walls with a minimum of one tamper-resistant screw[470] per side. Care should be taken to reduce the opportunity of attaching ligatures to the frame or the joint between the top of the frame and the wall, especially when the surface of the wall is not perfectly straight and gaps between the wall and frame are present. The joint at the top should be sealed with a pick-resistant sealant.[20] Some of these frames also allow for easy replacement of the images and provide the opportunity for patients to customize what is displayed with personal photos, etc.

3. Another option is to print artwork on flexible vinyl[301] that can be attached to the walls with low-tack adhesive or regular wall vinyl adhesive for more permanent installations. These reduce the risk of patients obtaining harmful materials. The low-tack adhesive used on smaller images also provides the opportunity to change the art displayed on a seasonal or other basis. It allows hospitals to give the patients a choice of artwork to display in their rooms which can contribute to them having more control over their environment.

N. Ligature-resistant drinking cup water-filling stations must be given special consideration in patient-accessible areas. Drinking fountains are often required or desired in common spaces on units, and patients having to ask staff every time they want a drink of water can rank high on patient dissatisfaction surveys. However, typical drinking fountains may prove problematic for ligature and infection prevention reasons.

Several options are now available for cup-filling stations[599] with either local or remote refrigeration units, in both wall-mounted and countertop styles.

Level III. Lounges and Activity Rooms

A. **Floors** - Use sheet vinyl[245] where wet or potentially messy activities will be conducted. Carpet should be broadloom or sheet carpeting and have anti-

microbial solution-dyed yarn and non-moisture absorbing backing.[255]

B. **Walls** - Same as for corridors in #2 above.

C. **Ceiling** – Prefer non-accessible solid gypsum board ceiling. If more sound attenuation is desired, apply 1'x1' acoustic tile to the gypsum board with adhesive or provide sound attenuation gypsum board.[232] A nine-foot-high ceiling is highly desirable in that the added height makes it more difficult to reach and therefore decreases patient tampering with ceiling-mounted devices.

D. **Glass** - Same as for corridors in #2 above.

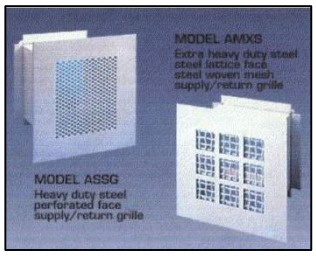
E. **Hardware** - Same as for counseling and interview rooms in #2 above.

F. **Light fixtures** - Same as for corridors in #2 above.

G. **Fire sprinklers** – Institutional type – Same as for corridors in #2 above.

H. **HVAC grilles and equipment** –Only grilles with very small perforations[600] complying with the National Institute of Corrections standards,

1. If other types exist and must remain, cover with heavy gauge stainless steel screen fabric.[81]
2. If individual fan/coil type units exist and must remain, secure all access panels, grilles and controls - Same as for corridors in #2 above



I. **Window covering hardware** – Same as for counseling and interview rooms in #2 above.

J. **Furniture** – All lounge furniture requirements listed for counseling and interview rooms in Level II above apply to this level also. Where movable seating is required, such as dining and activity rooms, very lightweight polypropylene chairs[481] that resist breaking into sharp pieces are preferred. An alternative is a chair that can be partially filled with sand to make it difficult to throw or use as a weapon.[480]

K. **Kitchen appliances**

1. All cooking appliances (ranges, microwaves, coffee makers, etc.) should have key operated lock-out switches[611] to disable the appliance.

2. Patients' access to coffee should be carefully considered by each facility's Risk Management Program. If access to this (and other potentially scalding liquids) is allowed, the location of the coffeemaker should be chosen so it is readily observable by staff. Glass coffee pots should never be available to patients. Insulated plastic dispensers are preferable.

3. All garbage disposal units should have a key operated lock-out switch[611] to disable the device.

4. GFCI-protected receptacles must be provided near all sources of water including sinks and are recommended for all patient accessible receptacles.

L. **Miscellaneous**

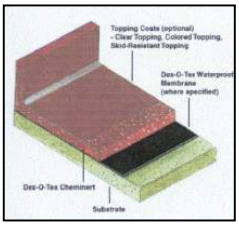
1. All electrical device (switches, outlets, etc.) cover plates must be attached with tamper-resistant screws.[470] Electrical cover plates for switches and receptacles made of polycarbonate [612] materials and secured with tamper-resistant screws are preferred; however, these cover plates must have screws in each corner to make them rigid enough to resist bending and giving patients access to electrical wiring and contacts. Standard stainless steel cover plates are usually rigid enough to be secured with a single tamper-resistant screw in the center, as long as it is securely tightened.

2. All miscellaneous requirements listed for counseling and interview rooms in Level II above apply to this level also.

3. Television – TV sets should not be mounted on walls using exposed brackets because of the risk presented to patients. All cords and cables should be as short as possible. Consideration should be given to providing built-in TV or media centers and installing an isolation switch that staff can control. Manufactured covers with sloped tops[290] are now available to fit a variety of TV set sizes. For maximum safety, the electrical outlet and cable TV outlet should be located inside the cover to keep the wires and cables away from patients. One facility utilized unused platform beds mounted vertically on the wall to house television sets and conceal all wires and cables.

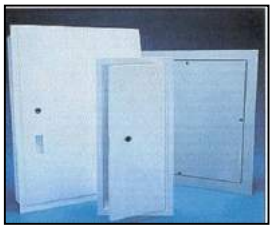
Level IV-a. Patient Rooms

A. **Floors** – Same as lounges and activity rooms in Level III above. If some patients are prone to urinate on the floor, provide some rooms with seamless epoxy flooring[250] with integral cove base or sheet vinyl flooring with integral cove base. Metal or plastic strips should not be provided at the top edge of the base.



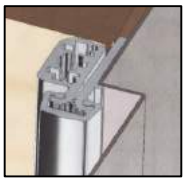
B. **Walls** – Impact- and/or abrasion-resistant gypsum board[230] on metal studs – paint finish preferred. Sound attenuating gypsum board[232] may also be used on walls if approved by the manufacturer.

C. **Ceiling** - Non-accessible solid gypsum board (sound attenuating if desired) ceiling - paint. Provide key-lockable access panels[50] at all locations where access is required. If doors do not fit tightly, or on larger panels, it may be necessary to provide tamper-resistant screws in the corners of the panels.



D. **Doors** – Doors from patient rooms to corridors present the possibility of patients barricading themselves in their rooms to delay staff members' access. One solution is to hinge the door so it swings into the corridor (which may create its own problem with the *Life Safety Code* and applicable building codes). However, this may (depending on the design) result in the creation of an alcove that is difficult to observe and which patients may use as

hiding places from which to attack staff or other patients. If these doors are mounted to swing into the Patient Rooms, there are several other barricade solutions that may be provided:



1. Double-acting continuous hinges[113] can be used on patient room-to-corridor doors to assist with barricading without the hazard presented by pivot hinges. They are also available with a full-height emergency stop[115] that locks in place and can be easily unlocked to allow the door to swing into the corridor.

2. The door-within-a-door[44] (sometimes referred to as a "wicket" door) has a portion of the center of the door hinged to swing into the corridor. This hinged panel is mounted on a continuous (or concealed) hinge, and the panel is secured with a deadbolt lock.
3. If space is available, a separate narrow (18"-24") wide door that swings into the corridor may be used for emergency access to the room. This smaller leaf can either be mounted in the same frames as the main door in a "double egress" configuration or there can be a mullion[47] between the two leaves.

4. Integral system doors[30] are available that have a nearly flush push plate on the outside that releases the continuous latch bar and a tapered pull handle that releases the latch bar from the other side. A recessed-pull handle[121] is necessary on the push side to aid in closing the door. These doors come as an assembly including the door itself, lockset and a continuous hinge. This assembly is very resistive to upward, downward and transverse attachment. This product is also available with an "Emergency Release Hinge" that can be unbolted and allows an in-swinging door to be pulled into the corridor in the event that it is barricaded. A standard latchbolt is not used with this system, but the top of the latching bar may still provide an attachment point. Maintenance staff may need to be available on all shifts to remove this door if required for emergency access

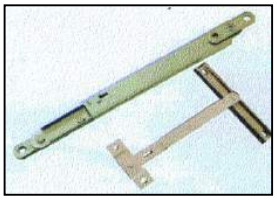
5. The top of all tight-fitting doors provides a pinch point that allows a patient to tie a knot (in a sheet,

the leg of a pair of jeans or other object), place it over the top of the door, and close the door. This provides a hanging device. One way to reduce this risk is with a pressure-sensitive or photoelectric device placed near the top of the door that can sound an alarm[150] when activated.

6. Some facilities have begun to address a desire of some patients to lock themselves in their rooms to avoid unwanted entrance by other patients. The challenges with this are to provide individual security for the patient without restricting access to the room by staff. Locksets with specialized locking functions and ligature-resistant turnpieces[140] for the inside of the door are now available. A cylinder protector[141] to cover the lock cylinder on the corridor side of the door resists attempts to insert objects in the keyway. Options are also available to control these locks with card access technology.

E. **Glass**

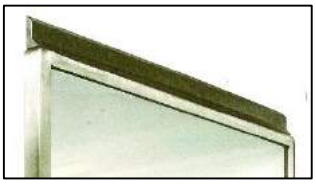
1. Exterior windows – (See Level II-D.1 Safety Glazing above.) Advances in different types of safety glass make it worthwhile to consult an expert for advice for any specific project. The height above the ground, patient population and many other factors should be taken into account in making these decisions. Comply with all applicable codes and regulations for operable sash. Fixed windows or units equipped with sash control devices[170] that limit amount of opening and can be released using a key to full opening for evacuation purposes are preferred. Window systems are also available that allow fresh air[434] through a rotating vent at the bottom or by sliding open a few inches.



2. Security screens - If replacing the windows presents a prohibitive cost in remodeling work, provision of a security screen with a very sturdy steel frame[80] designed to resist deflection with multiple key locks and equipped with heavy gage

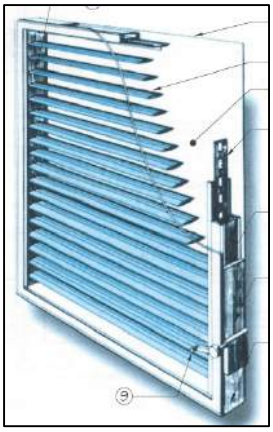
stainless steel screen fabric[81] may be used. These are very functional and secure, but create a very "institutional" appearance and can be defaced by writing obscene words with toothpaste (or other material).

3. Mirrors – Radiused stainless steel framed security mirrors[360] are preferred for patient-room mirrors, and the reflective surface may be polycarbonate, tempered glass, stainless steel, or chrome-plated steel. Each has durability and distortion characteristics. Some framed mirrors will have a flat surface on top and/or not fit tightly to the wall and provide opportunities for ligature attachment. When this occurs, a tapered strip[361] may be installed to reduce this risk.



4. View windows to corridors in doors or sidelights – Use polycarbonate[201] (if possible). If fire rating is required by codes, request permission from the authority having jurisdiction to install a layer of polycarbonate on each side of the fire-rated glass.

View windows in patient room-to-corridor doors or sidelights create some conflicting issues. One point of view is that they are necessary to provide observation by staff. The other view is that the windows infringe on patient privacy in that anyone, including other patients, can see into the room. One solution is to provide an operable blind[220] that only staff can control from the corridor side.



F. **Hardware** – See comments under Level II-E above. It is highly desirable to keep vacant patient rooms locked at all times to avoid other patients entering these rooms without staff's knowledge. Many jurisdictions do not allow the capability of locking a patient in a room. Therefore, "classroom"-type locks are recommended. These can always be opened from the inside, and the corridor side may be either locked or unlocked with a key.

G. **Light fixtures** – Same as in Level II above except that all light fixtures should be security-type fixtures.[620]

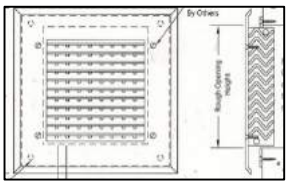
Advancements in LED lighting applications are rapidly creating new options. Use of traditional 2'x4' fluorescent light fixtures creates a very commercial or institutional appearance in patient rooms, and the placement of one of these directly over the bed is a carryover from general hospital design that is seldom needed in behavioral health facilities. Preference is for using either round or oval surface-mounted, vandal-resistant fixtures for general illumination and recessed security downlights with polycarbonate lenses over the beds for reading lights. Many of these fixtures are now available with LED light sources.

Covers[630] are available for existing (or new) downlights that are secure and make the fixtures appear more residential in nature.

No glass components should be exposed to patients in any fixture, and use of table lamps and desk lamps is strongly discouraged.

H. **Fire sprinklers** – Institutional type – Same as for corridors in Level II above.

I. **HVAC grilles and equipment** –



1. Fully recessed vandal-resistant grilles with S-shaped air passageways [602]are recommended for all ceiling and wall-mounted grilles.
2. In new construction or major remodeling, locate individual room HVAC equipment (such as fan/coil units) in an adjacent corridor or in other location (such as an interstitial space) where they can be serviced without entering the patient's room.
3. In existing facilities that have units located below the windows, manufactured vandal-resistant enclosures[606] should be provided or care should be taken to secure all access panels with tamper-resistant screws. All supply and return air grilles should also be covered with perforated grilles or stainless-steel screen fabric.

J. Window covering hardware –Same as for Counseling and Interview rooms in Level II above.

K. Furniture

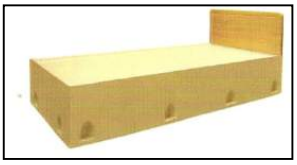
1. Furniture – Sturdy wood, thermoplastic or composite furniture should be bolted to the floor or walls whenever possible. Care must be taken to assure that the furniture will withstand abuse, will not provide opportunities for hiding contraband, and will resist being dissembled to provide patients with weapons.

Open-front units with fixed shelves and no doors or drawers[495]are recommended. Doors should not be provided because they can be used by patients to hang themselves. Drawers should not be provided because they can be removed by the patients and broken to use as weapons. All upholstery and foam used in furniture and mattresses should have flame spread ratings that comply with the requirements of NFPA 101: *Life Safety Code*, Section 10.3.

Desk chairs are preferred to be lightweight[481] or ballasted[480] as discussed in Level III above.

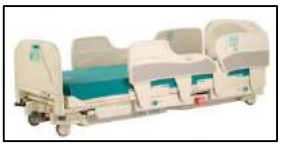
2. Beds

a. **Non-adjustable platform beds**[493] without wire springs or storage drawers are preferred. It is recommended that these beds be securely anchored in place to prevent patients from being able to use them to barricade the door. If use of a portable lifting device is needed, beds are available with an opening under the bed to accommodate the legs of the lift[494]. Portable lifts can also be accommodated by placing an existing platform bed on a specially designed riser. This also reduces the amount of bending over that staff need to do to work with the patient.[494b]



b. **Mattresses** for platform beds[492]should be specifically designed for use in these facilities and be resistant to abuse and contamination.

c. If medical necessity is present, **manual hospital beds**[491] are preferred. It is recommended that the wheels of hospital-type beds be removed or rendered inoperable to reduce the opportunity of using them to barricade the door. It should be noted that the bed rails, headboard and footboard all present hazards for these patients.



d. If **electrically operable beds** are needed to reduce risk of staff injuries (especially for patients with co-existing medical issues), new beds are available[490] that are specifically better suited for use on these units than standard electrically adjustable hospital beds These beds will sense obstructions and reverse direction, have lockout features for the controls, reduced length cords and other tamper-resistant features.

e. If existing electrically operable beds must be used for financial reasons, use only beds that require a constant pressure on a switch located on the bed rail (not a remote control device or paddle that can be placed on the floor). If existing electric beds are to be used, provide key lockout switches on beds (or removable pigtail) so that only staff can operate the beds. All electrical cords should be secured and shortened. Key lock-out switch is preferred.[611] It is recommended that the wheels of hospital type beds be removed or rendered inoperable to reduce the opportunity of using them to barricade the door. It should be noted that the bed rails, headboard and footboard all present hazards for these patients.

3. Wardrobe

Wardrobe units should not have doors and should have fixed (non-adjustable) shelves[495]. They should be securely anchored in place and have sloped tops. Wardrobes with clothes poles requiring hangers are discouraged because, while the bar can be made safe, the hangers present serious hazards. It should be noted that starting with the 2010 edition, the FGI *Guidelines* no longer calls for patient rooms to have accommodations for "hanging full-length clothing." The average length of stay in many facilities is now in the 7- to 10-day range, and patients seldom come with clothing that needs to be hung up.

L. **Miscellaneous**

1. **Pull cords** on nurse call and/or emergency call switches (where required or provided) are preferred to be push-button-type.[653] If cords are provided, it is recommended they be no longer than 4" and as lightweight as possible.

2. All **Miscellaneous** requirements listed for lounges and activity rooms in Level IV above apply to this level also.

3. In new construction, or major remodeling, provide a **dedicated circuit for all electrical outlets in each patient room and bath**. This will allow power to the outlets in a specific room to be turned off if necessary for patients' safety. Where this is not practical, the outlet may be temporarily covered. It is strongly recommended that all electrical outlets in patient rooms and patient toilet rooms be hospital grade, tamper-resistant type. It is also preferred that they be GFCI receptacles[610] to greatly reduce the risk of patients being able to harm themselves by tampering with the receptacles.

   All electrical switch and outlet cover plates should be as discussed in Level III above.

4. **Coat hangers** are not recommended.

5. **Cubicle curtains and tracks** are generally not required and are not recommended in behavioral health facilities because of the risk they present. If non-ambulatory patients with co-existing medical conditions are being treated on these units, it is recommended that they be assigned to single patient rooms.

6. **Telephone** – If desired, cordless phones may be provided to allow the patient to check out a phone for private conversations when appropriate. Phones should not be left in patient rooms permanently because they can be used as weapons.

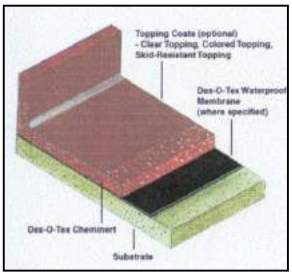
7. **Television sets** should not be typically provided in patient rooms to encourage patients to use activity areas with other patients and allow easier supervision. Some facilities that are treating patients who also have medical conditions that prevent them from being ambulatory and are providing televisions sets in tamper-resistant enclosures[290] and with override controls for staff use.

8. **Medical gas outlets** – These are not normally required for behavioral health units. If there is medical necessity or the outlets are a pre-existing condition in remodeling projects, they should be covered with panels that are lockable[590] or are attached with tamper-resistant screws. These should be removed only for medical necessity of the current patient and replaced when that patient is discharged or moved. Special care must be taken in semi-private rooms to assure that access to the medical gasses does not present a safety risk to the other patient. Some manufacturers can provide these lockable covers for their outlets.

9. **Trashcans and liners** – Trash cans and liner requirements listed for counseling and interview rooms in Level II above apply to this level also. In choosing trashcans and liners, the potential for patient risk should always be assessed. Plastic

liners should be prohibited because of their potential risk of suffocation. A substitute liner made of paper[1] may be used.

10. **Baseboards** that are made of rubber or vinyl and are thin, flexible and applied with adhesive only that are intended to cover the joint between the wall and floor is strongly discouraged. They become prime targets for patients to tamper with and can be used to conceal contraband.



Finishing the wall surface to the floor, sealing the joint with pick-resistant sealant[20]and painting a contrasting color stripe at the floor is preferred. There are several alternatives for locations where finishing the wall material to the floor is not practical.

a. Seamless epoxy flooring[250] that has an integral coved base is an exception to this as long as there is no metal edge strip on the top of the base.
b. Pre-molded base[240] that extends onto the floor plane and finishes flush with the top of the floor tile and is heat welded to the flooring may be acceptable in some locations, but does not address the issue of hiding contraband unless the top edge is sealed with a pick-resistant sealant[20].

c. Rubber base that is thicker and resembles wood base profiles [241]is available and provides a more “residential” appearance. It is suggested that all joints to the wall floor and vertical joints be sealed with a pick-resistant sealant[20].
d. In some cases wood-base material of a minimum ¾” thickness that is adhered to the wall, secured with countersunk tamper-resistant fasteners, and sealed with pick-resistant sealant[20] has been used successfully. If desired, this can be given a semi-transparent stain finish to provide more of a residential look.

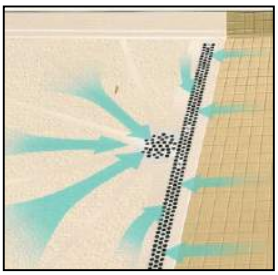
Level IV-b. Patient Toilet Rooms

A. **Floors** – Use one of the following depending on acuity of patient population:

1. Seamless epoxy flooring[250] with slip-resistant finish and integral cove base including shower. Do not use metal or plastic strip at top of base as this can be removed by patients and used as a weapon.

2. Ceramic and porcelain tile may be used as long as larger pieces are provided to reduce the number of joints and it is maintained in good condition.

3. One-piece floor units[566] are now available that provide a monolithic floor (European style) for the entire patient toilet room that drains the shower to a central location and, if used in conjunction with location of the shower enclosure and shower head can eliminate the need for shower curtains.



4. Solid surface material floors are also available that include a trench drain[565]across the entire front opening of the stall which not only helps control water from getting into the room, but also makes the drain more difficult for patients to intentionally clog. Fiberglass shower stalls and floors are generally not durable enough.

5. Pre-built bathrooms[568] that contain all finishes, fixtures and accessories are available that can reduce construction time because they are shipped to the site ready to be connected to the utilities.

B. **Walls** – Use one of the following depending on the acuity of patient population and the budget:

1. Avonite[320] solid surface type sheet material

2. Ceramic or porcelain tile in large pieces

3. Gypsum board that is impact-resistant with mold- and moisture-resistant facing[230]with epoxy paint and solid surface sheets in showers

C. **Ceiling** – Gypsum board with mold- and moisture-resistant facing[230] with epoxy paint.

D. **Glass** – Mirrors, same as patient rooms in #4 above.

E. **Door –** The first question to address for patient toilet room doors is whether the facility ever has the need/desire to lock patients out of their bathrooms.

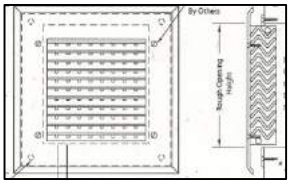
1. If there is a need to lock patients out of the bathroom, then a full door will need to be installed with similar hardware as described above and with a classroom-function deadbolt[144] (with a ligature-resistant turn piece that will retract the bolt, but not extend it), a flush pull,[121] and roller[146] or ball[145] latch. An over-the-door alarm should also be provided.[150]

2. If there is not a need to lock patients out of their bathrooms, then one of the following options may be provided:
   a. **"Soft Suicide Prevention Door**" (SSPDoor)[41] that eliminates many of the hanging hazards associated with a typical door. The door is attached by magnets and may be easily removed by staff and used as a shield against an attacking patient and can have a photograph printed on its faces. This door cannot be locked or latched in any manner. (Use of this product eliminates the need for the items listed under "Hardware" below.)
   b. **Sentinel Event Reduction Door**[40] (without movable top panel) is another option. Privacy for two patient rooms can be improved slightly by installing the door a little higher than normal.
   c. Acrovyn Patient Safety Door[42] is similar to the item above but is available in finishes to match other Acrovyn doors if they are used on the unit.
   d. Some facilities with single-patient rooms are electing to remove the doors entirely from the patient toilet rooms. The practicality of this depends on the sight lines into the toilet room from the corridor door.

F. **Hardware** - See II-E above.

G. **Light fixtures** – Same as patient rooms in Level IV above except that fixtures shall be water-resistant type with a sealed polycarbonate lens. No glass components should be used in any fixture.

H. **Fire sprinklers – institutional type** – Same as for corridors in Level II above.



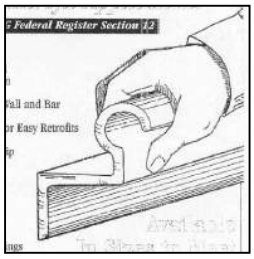
I. **HVAC grilles and equipment** – Fully recessed vandal-resistant grilles with S-shaped air passageways [602]

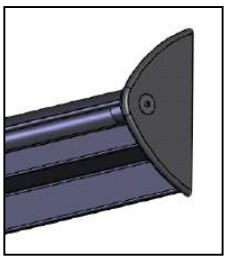
J. **Miscellaneous**

1. **Medicine cabinets** should not be provided because of difficulty in observing potentially dangerous items that may be placed in them.

2. Evaluate the risk of using **robe hooks.** If they are required, they should be the collapsible type. [350]

3. **Towel bars** should not be used. Provide collapsible hooks[350] for towels.





4. **Grab bars** for toilets and showers are preferred to be provided in all patient accessible toilets because some patients may be on medications that interfere with their equilibrium. A self-draining bar[332] may be installed on a slight slope with one end cap on the higher end. These provide a high degree of safety and are also easy to clean and sanitize. If the wall surface behind the bar is not smooth and flat, provide pick-resistant sealant to this joint between the bar and the wall.

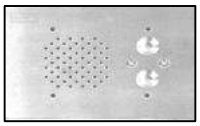

Cross-section


Finished End

5. **Vertical grab bars** are required or desired in some locations and these ligature-resistant bars can typically be grasped only from one side, not both. There is now a ligature-resistant grab bar that is specifically designed to be mounted vertically[337] and can be grasped from either side.

6. **Shower curtains and curtain tracks** of any type (including those designated as “breakaway” and represented by their manufacturers as “safe for psychiatric hospitals”) are not recommended for use in any patient-accessible areas, especially patient showers. In new construction, showers could be designed to contain the spray within the compartment without the use of a curtain. In existing facilities, the use of a Soft Suicide Prevention Shower Door[41] mounted with a minimal gap between the bottom of the door and the floor may be used for 36-inch or narrower openings. A Sentinel Event Reduction Shower Door[473] with a seal on the bottom may also be provided.


7. **Nurse call** switches (where required or provided) should be push-button type[653] that are ligature-resistant. If pull cords are provided, they should be no longer than 4” and as lightweight as possible.



8. **Lavatories** – Typical commercial solid-surface countertops with integral sinks, which have a much less institutional appearance, can be provided. These also give patients a place to set their toothbrush, etc. Specialty vanity top-type lavatories[541]are also available and provide many of the same benefits.

9. **Wall-hung solid-surface lavatories** that make it very difficult to tie anything around them are available.[540] Some of these have an optional filler panel that is recommended to fill the space between the side of the fixture and an adjacent wall when there is one near the fixture. Stainless steel or high-impact polymer pipe covers that fit beneath the unit are also available and should be provided. If a wall-mounted lavatory is used, a shelf (surface-mounted or recessed) [370] that limits attachment of a ligature may be needed to hold toiletry items.


10. **Lavatory and sink faucets and valves** provide attachment points for ligatures. A lavatory valve unit is now available that uses a shower valve fitted with a ligature-resistant handle[574] to give patients control over the temperature (thermostatically limited to prevent scalding) and duration of the water flow. This valve can be used to replace the motion sensor activation of some faucets. Faucets are available in a variety of materials and configurations that range from push button to motion sensor activation.[570]

11. All **lavatory waste and supply piping** must be enclosed and should not accessible to patients [410]. Extreme care should be taken when doing this that the material is trimmed to fit tightly to the underside of the lavatory fixture to prevent the patient from using this to hide contraband.

12. **Soap dishes**[390] should not have handles and should be recessed.

13. Many facilities are now using **liquid or foam soap** in patient areas. The hard plastic dispensers in use in many facilities are problematic in that they can fairly easily be pulled off the wall and broken to provide sharp shards that can be used as weapons. At least one manufacturer of these dispensers now has steel covers available for their standard dispensers. One solution is a dispenser that is made of solid-surface material[391] that is commonly used for countertops and is relatively tamper-resistant. There are some commercially available stainless steel dispensers that are reasonably ligature-resistant.

14. **Toilets** in new construction to be used by behavioral health patients should be a floor-mounted, back outlet, back water supply type[530]in lieu of wall-mounted fixtures, which can be broken off of their hangers. China fixtures in this configuration are now available only in ADA handicapped-accessible fixtures,[531] where required. Where replacing existing wall-hung toilets is not practical, a wall-hung toilet support[538] can be used if it can be secured so that patients cannot remove it to use as a weapon. Movable seats provide attachment points for ligatures and should be considered carefully by each hospital. The solution is to use a fixture with an integral seat as suggested above. Some facilities feel this is too prison-like and choose to accept the risk of the movable seat. China fixtures themselves can be broken (both floor- and wall-mounted) and yield large, sharp shards.

15. Toilet fixtures made of solid surface material[533] and stainless steel[534]are available and are much more resistant to breaking. The stainless steel fixtures can be powder-coated for a less “institutional” appearance

Toilet fixtures that will support the weight of bariatric patients**[536]** are also available to withstand loads in excess of 2,500 pounds if needed.

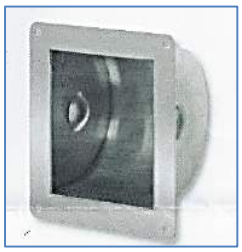
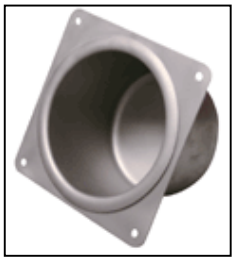
16. Patients in behavioral health care facilities have been known to use various materials to attempt to clog toilets. There is now a product to help simplify the removal of material clogging the waste lines.**[537]** This is installed in the waste line immediately adjacent to the fixture and is intended to catch the material at that location so it can be removed more easily by maintenance staff.

17. **Flush valves** are preferred to be recessed in the wall[580]and activated by a push button[581, 582]. Where this is not practical, the flush valve and all related pipes should be enclosed with a stainless steel [584] or plastic[584] cover that has a sloped top that incorporates a push-button activator for the valve.




18. **Toilet Paper Holders**
    a. A semi-recessed toilet paper holder[400] that does not require a bar or tube to hold the paper is now available.
    b. Fully recessed[4010] stainless steel tube-type holders have been used widely for a number of years; however, some facilities feel this creates an infection control problem because the users have to handle the entire roll.

    c. Other toilet paper holders are available that use a bar(s) that pivots down[402] when vertical pressure is imposed.

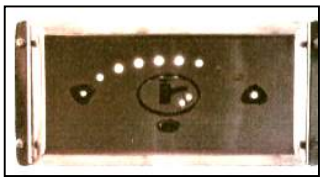

19. **Shower Control Valves –** NOTE: Provide **thermostatically limited hot water** to prevent accidental or intentional scalding in all patient-accessible toilet rooms.

    a. Single-knob mixing valves, which it is difficult to tie anything around, are preferred.[552] These give patients control of the water temperature and duration of flow. Some of these are claimed to be ADA-compliant by their manufacturer.

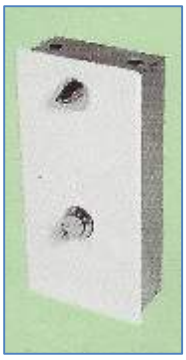
    b. If it is only necessary to replace the valve handles and the valve itself is working properly, a replacement valve handle[553] that can be adapted to a variety of valves might be

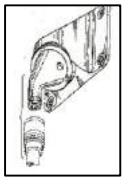

considered. NOTE: This may void any remaining warranty on the existing valve.

c. A “no-touch” valve[551] that appears to be clearly ADA compliant is available. It has infrared controls and allows patient control of a range of water temperatures and the duration of flow.

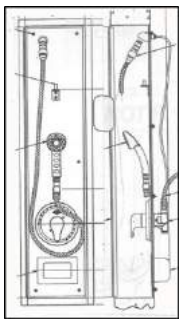


d. One-piece units that contain shower head and push button valves as a recessed soap dish[560, 561] are available and work well for remodeling projects because they reduce the amount of repair needed for wall finishes. These are also available with a second head located at 48” above the floor and a diverter valve if needed for ADA purposes.

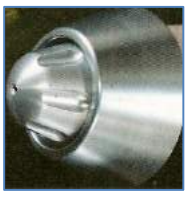




20. **Showerheads** should be an institutional type[550] that are ligature-resistant. Handicapped-accessible showers are required to have either a handheld showerhead or a second, lower showerhead located at 48” above the floor. The handheld showerhead should be on a quick disconnect fitting that will allow removal of the head and attached hose when not in use. If a hook is provided to hold the handheld showerhead, it should be mounted on the part of the fitting that is removed when the hose is removed. Another option is to provide a lockable cabinet to house the handheld head and valve.[563]



21. If a **diverter valve** is needed to change the water flow from the standard showerhead to the ADA-required head, a ligature-resistant diverter valve[557] may be provided.



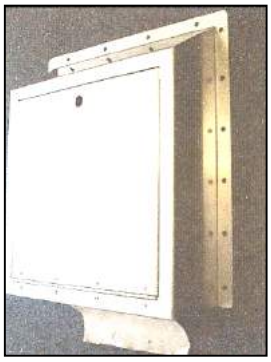
22. **Shower seats** that fold away typically have many tubes and brackets that are hazardous. If a

folding shower seat is necessary, one without the tubes and brackets[380] is suggested.

23. **Shelves** to hold miscellaneous items are often requested in shower stalls and near wall-hung lavatories. A stainless steel suicide-resistant shelf that is either surface mounted or recessed into the wall[370, 371] may be considered for these applications.

24. **Paper towel dispensers** in patient-accessible toilets are a concern because they typically are constructed of lightweight materials that can be either broken or bent to form sharp objects that may be used as weapons. Options to address these issues are as follows:
    a. Place a small stack of paper towels on a surface-mounted or recessed shelf.
    b. Provide a heavy-gauge, vandal-resistant dispenser.[340b]
    c. Provide a heavy-duty secure cover[340a] over a standard-weight paper towel dispenser.

25. Provision of ground fault circuit interrupter (GFCI)-type electrical circuit breakers for all receptacles near sources of water such as lavatories, toilets, and showers (as well as all patient-accessible areas) is required by the FGI *Guidelines*.

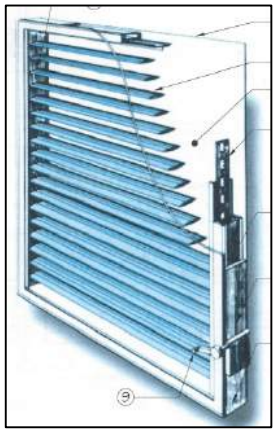


Level V-a. Admissions (especially emergency admissions, which frequently occur at night and on weekends). If at all possible it is recommended that this function not take place in an inpatient unit. At admission, unit staff members know very little about a new patient and his or her trigger points. A separate location avoids disrupting either the unit or the new patient due to the agitation of either. This room should be pleasant and welcoming and minimally furnished (with a minimum of loose pieces of furniture). The room should be large enough to allow for several staff to physically manage the patient if necessary. If possible, the admitting staff member should not be in the room alone with a patient. After the admitting process is complete, the patient can be escorted to the unit.

A. **Floors** - Same as activity rooms and lounges in Level III above.

B. **Walls** - Same as patient rooms in Level IV above.

C. **Ceiling** - Same as patient rooms in Level IV above.



D. **Glass**

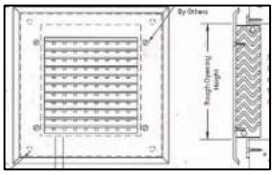
1. Same as in Level IV above.

2. Provide small (12”x12” or 4”x24”) view window that can be controlled by staff to restrict views into or out of this room.

E. **Hardware** – Same as in Level IV above.

F. **Light fixtures** – Same as in Level IV above.

G. **Fire sprinklers – institutional type** – Same as in Level IV above.



H. **HVAC grilles –** Fully recessed vandal-resistant grilles with S-shaped air passageways [602].

I. **Window covering hardware** – Same as in Level IV above.

J. **Miscellaneous**

1. All Miscellaneous requirements listed for corridors in Level II above apply to this level also.

2. An emergency call button should be provided so the staff may summon additional staff if necessary.

3. “Baseboards” same as patient rooms in Level IV above.

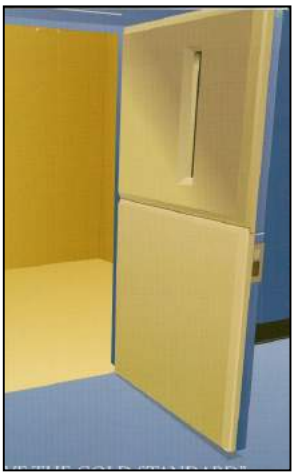
K. **Furniture**

1. This room should have a built-in desk or table that is firmly attached to the floor or walls and contain a lockable file drawer for forms and a lockable box drawer for pens, pencils, staplers, etc. All

loose items should be kept in drawers and out of sight. The furniture arrangement should locate the patients' chair so that the patient, when seated, will not be between the staff member and the door to the unit.

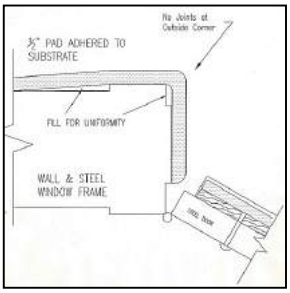
2. The computer, printer, and telephone should be located so they cannot be easily reached by the patient. Use of tablet computers and cordless phones in these rooms is preferable.

3. Seating should be fixed in place or heavyweight as discussed above.



Level V-b. Seclusion Rooms are required by the FGI *Guidelines* to be no less than 7 feet wide and no greater than 11 feet long and designed to minimize blind spots where patients cannot be observed by staff without entering the room. A minimum of a 9-foot ceiling height is preferred. The distance of the seclusion room from the nurse station needs to be considered. The goal is to avoid excessive distance so that staff can be readily available as needed. The seclusion room door should open directly into an anteroom to separate these activities from other patients as well as to provide access to a toilet these patients can access without entering the corridor.

A. **Floor** – Continuous sheet vinyl with foam backing and heat-welded seams[272] or padded flooring to match wall padding, if used



B. **Walls** – Impact-resistant gypsum board[230] over 3/4" plywood on 20-gauge metal studs at 16" on center with high-performance finish.[280] If wall padding is desired, systems with Kevlar facing or heavy vinyl facing with a 1 1/2" thick foam backing[270] may be considered.

One facility has encountered issues with regulating authorities when plywood is used for this purpose and has substituted 25-gauge sheet metal, which stiffens the wall, is easily cut, and does not require wider doorframes.

C. **Ceiling** – Impact-resistant and/or abrasion-resistant gypsum board,[230, 231] painted at 9'-0" minimum height.

D. **Glass** – All glazing exposed to patients should be same as Level II-D above. This includes the exterior pane of any window accessible to patients from exterior courtyards

E. **Hardware**

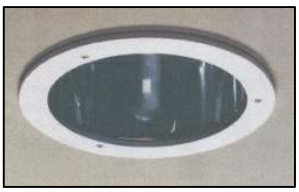
1. **Doors** – Heavy-duty commercial-grade steel doors that have a minimum clear width of 3'-8" and are hinged to open out of room with a polycarbonate[201] view window not to exceed 100 square inches installed at a height where shorter staff members will be able to see into the room.

2. Exposed door hardware is typically not provided in these rooms.

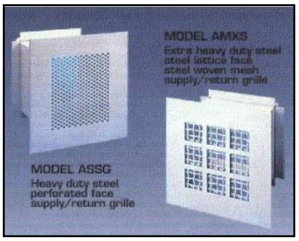
3. The anteroom side shall have three-point latching, which may be provided with individual bolts[162] or included in one piece of hardware with a single lever to operate all three.[160] Consideration should be given to whether the facility wants to have hardware that latches immediately when the door is closed or hardware that requires manual motion to latch this door. Use of a self-latching door may increase the risk of staff becoming locked in the room with a patient; to remedy this, a keyed cylinder (or concealed card reader) may be required to be accessible from inside the room.

F. **Light fixtures** – Fully recessed, moisture-resistant, vandal-resistant type light fixtures[620] in the ceiling are recommended.

G. **Fire sprinklers–institutional type** – Same as for Level IV above.



H. **HVAC grilles**



1. Fully recessed vandal-resistant grilles with S-shaped air passageways [602].

2. **Thermostats** should be digital-type mounted on wall in Anteroom with sensors in return air ducts serving the room.

I. **Window Covering** – No window covering material or hardware should be accessible to the patient. All window coverings should be located behind safety glazing as described in Level II-D above. Mini-blinds, roller shades or other types of window covering may be used behind the safety glazing as long as only staff can operate the covering and no ligature attachment points are provided by the system. If electrically operated devices are chosen, controls should be located in the Anteroom.

J. **Miscellaneous**

1. No electrical outlets, switches, thermostats, blank cover plates, or similar devices are permitted inside these rooms.

2. Toilets same as Toilets in Level IV-B above. Powder-coated stainless steel fixtures are preferred by some facilities.

3. Baseboards should not be used in these rooms.

4. Install a convex mirror same as for glass in Corridors in Level II above. Locate the mirror in the upper corner of the room and opposite the seclusion room door. Make sure the mirror can be seen when viewing it from the window in the door. Installing this mirror gives staff a 360-degree view of the room prior to opening the door. Care shall be taken to assure the attachment is secure so patients cannot remove the mirror and have a weapon.

K. **Furniture**

This room should have only a behavioral health care mattress[492] on the floor or a special seclusion room bed.[493a, 498] These beds are available with loops to which mechanical restraints may be attached, if needed.

SUMMARY

Thoughtful consideration of these design elements and materials by the design team and hospital staff can result in a very aesthetically pleasing environment, which will enhance the treatment process and help maximize safety for all patients, staff, and visitors. It is strongly recommended that wall-hung lavatories, 2'x4' fluorescent light fixtures, paddle handle door hardware, and many other items typically found in general hospitals **NOT** be used in behavioral health care facilities. The reasons these are used in general hospitals typically do not exist in behavioral health care units. Their elimination will significantly reduce the institutional character of these facilities without decreasing patient or staff safety. As stated in the introduction, this document is intended to represent best current practices, in the opinion of the authors, and does not establish minimum standards for these facilities.

APPENDIX

1a. Trash can liner

Sani-Liner; Paper Trash Can Liner

Sani-Liner ®
Wisconsin Converting
Green Bay, WI
800-544-1935
www.wisconsinconverting.com

1b. Trash can liner

Weizel Security; SR851-S36 Breathable Trash Can Liners

Weizel Security
800-308-362
http://www.securinghospitals.com/

1c. Large trash can liner

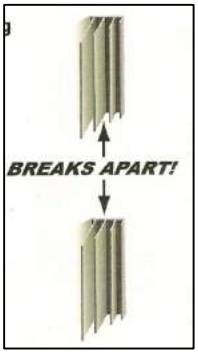
Dano Group; Large Select SLCT Psych Ward Bag

Dano Group
150 Harvard Avenue
Stamford, CT 06902
800-348-3266
www.danoinc.com

10. Smoke Seals: Break-away

DHSI, Door and Hardware Systems, Inc.; Cush-N-Seal with break-away anti-ligature option

DHSI
17 Silver Street
Rochester, NY 14611
585-235-8543
http://www.dhsi-seal.com/



20a. Pick-Resistant Caulk

Pecora Corporation; DynaFlex SC

Pecora Corporation
165 Wambold Road
Harleysville, PA
800-532-6688
www.pecora.com

20b. Pick-resistant Sealants

Surebond; SB-190 Everseal

Surebond
3925 Stern Avenue
St. Charles. IL 60174
877-843-1818
www.surebond.com

20c. Pick-resistant Sealants

BASF; Masterseal CR-190

BASF Corporation
889 Valley Park Drive
Shakopee, MN 55379
800-243-6739
www.master-builders-solutions.basf.us

25a. Synthetic Door

C/S Acrovyn Doors

Construction Specialties.
3 Werner Way
Lebanon, NJ 08833
800-972-7214
http://www.c-sgroup.com/

25b. Synthetic Door

Maiman; Thermally Fused Doors

Assa Abloy Springfield
3839 East Mustard Way
Springfield. MO 65803
417-862-0681
www.maiman.com

30. Quick Release Hinge Door

Total Door; Quick Release Hinge Door

Total Door
6145 Delfield Dr.
Waterford, MI 48329
800-852-6660www.total-door.com

40a. Patient Toilet Door

Norva Plastics, Inc.; Sentinel Event Reduction Door

Norva Plastics, Inc.
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

40b. Patient Toilet Door

Kennon Products; Soft Suicide Prevention Door

Kennon Products, Inc.
Sheridan, WY
307-674-6498
http://www.suicideproofing.com/

40c. Patient Toilet Door

C/S Acrovyn Patient Safety Door

Construction Specialties.
3 Werner Way
Lebanon, NJ 08833
800-972-7214
http://www.c-sgroup.com/

40e. Patient Shower Door

Norva Plastics, Inc.; Suicide-resistant Shower Door

Norva Plastics, Inc
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

44b. Wicket Doors

C/S Acrovyn Doors

Construction Specialties.
3 Werner Way
Lebanon, NJ 08833
800-972-7214
http://www.c-sgroup.com

44c. Wicket Doors

Ceco Door; Step through Access Door

Ceco Door
9159 Telecom Drive
Milan, TN 38358
888-232-6462
www.cecodoor.com

44d. Wicket Doors

Marshfield Door Systems; Wicket Door (Wood Doors)

Marshfield Door Systems
800-869-3667
www.marshfielddoors.com

44e. Wicket Doors

Graham Wood Doors; GCD-EC Wicket (Wood) Structural Composite Lumber Core

Graham Wood Doors
525 9th St. SE
Mason City, Iowa 50401
641-423-2444
www.grahamdoors.com

47a. Security Sidelight

Curries Company; Security Sidelight

Curries Company
1502 12th St. NW
Mason City, IA 50401
641-423-1334
www.curries.com

47b. Security Sidelight

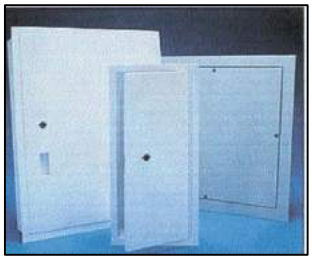
Ceco Door; Security Sidelight Unit

Ceco Door
9159 Telecom Drive
Milan, TN 38358
www.cecodoor.com

50. Access Panel – lockable

J. L. Industries, Inc.; Standard SP Security Panel with mortise prep

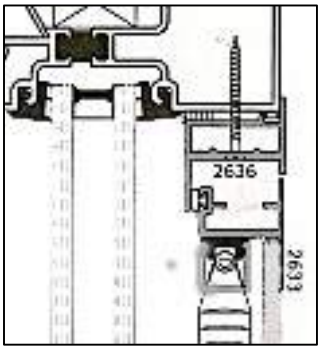
J.L. Industries, Inc.
4450 West 78th Street Circle
Bloomington, MN 55435
612-835-6850
www.jlindustries.com



430a. Aluminum Window with Integral Blind

Manko Window Systems; 2450 Storefront with hinged sash and integral blind

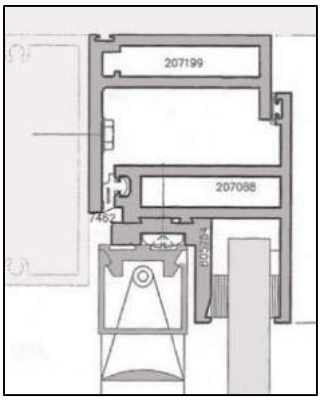
Manko Window Systems, Inc.
800 Hayes Drive
Manhattan, KS 66502
800-642-1488
www.mankowindows.com



430b. Aluminum Window with Integral Blind

Wausau Window Systems; 4000i-DT Psychiatric Windows with integral blind

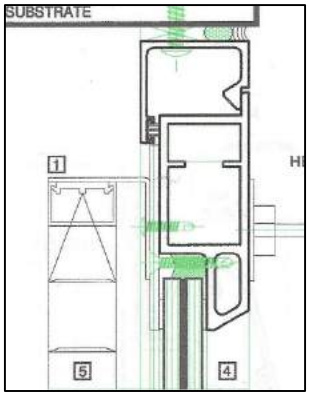
Wausau Window and Wall Systems
7800 International Drive
Wausau, WI 54401
877-678-2983
www.wausauwindow.com



430c. Aluminum Window with Integral Blind - removable

Sherwood Windows Group; SS-5100

Sherwood Windows Group
37 Iron Street
Toronto, Ontario, Canada M9W 5E3
800-770-5256
www.sherwoodwindows.com



434a. Exterior Windows - ventilation

Britplas; Safevent Windows

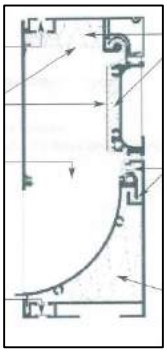
Britplas
Unit 18 Kingsland Grange
Woolston
Warrington
WA1 4RW
+44-1925-824317
www.britplas.com

434b. Exterior Windows - ventilation

Sherwood Windows Group; SS-5100

Sherwood Windows Group
37 Iron Street
Toronto, Ontario, Canada M9W 5E3
800-770-5256
www.sherwoodwindows.com

434c. Exterior Windows - ventilation



Kawneer Company, Inc.; 512 Ventrow Ventilator

Kawneer Comp, Inc.
Technology Park / Atlanta
555 Guthridge Court
Norcross, GA 30092
770-449-5555
http://www.kawneer.com/

80. Detention Security Screens

Kane Manufacturing Corporation

Kane Manufacturing Corp.
515 North Fraley Street
Kane, PA 16735
800-952-6399
http://www.kanescreens.com/

81. Stainless steel screen fabric

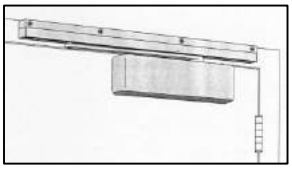
McMaster-Carr; Type 304 Stainless Steel, Standard Grade Woven Wire Cloth

McMaster-Carr Supply Company
P.O. Box 4355
Chicago, IL 60680-4355
630-833-0300
www.mcmaster.com

100. Security Arm Door Closers

LCN 4510T Series Security Track Closer

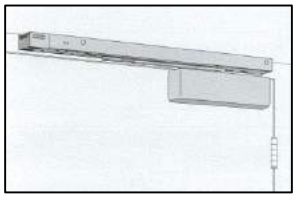
Ingersoll-Rand
Architectural Hardware
LCN Division
P.O. Box 100
121 West Railroad Avenue
Princeton, IL. 61356-0100
815-875-3111
http://us.allegion.com/



101. Sentronic Closer

LCN Fire/Life Safety Series Sentronic closer

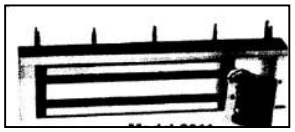
Ingersoll-Rand
Architectural Hardware
LCN Division
P.O. Box 100
121 West Railroad Avenue
Princeton, IL. 61356-0100
815-875-3111
http://us.allegion.com/



110. Electromagnetic Lock

Dynalock Corp. series 2011 Full Size Series

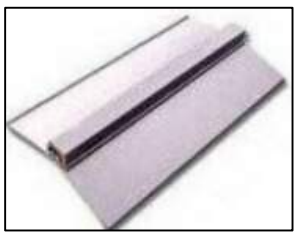
DynaLock Corporation
705 Emmett Street
P.O. Box 9470
Forestville, CT 06011-9470
877-DYNALOCK
www.dynalock.com



111a. Continuous Hinges – gear type with hospital tip

Hager – Roton Hinges

Hager Hinge Company
139 Victor Street
St. Louis, MO 63104
800-255-3590
http://www.hagerco.com/



111b. Continuous Hinges – gear type w/hospital tip

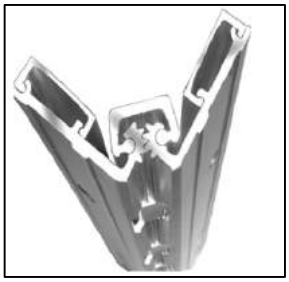
Ives 112HD Concealed Continuous Hinge

Ives
2720 Tobey Dr.
Indianapolis, IN 46219
877-613-8766***I***
http://us.allegion.com/

111c. Continuous Hinges – gear type w/hospital tip

Weizel Security; SR824-S22 SafeSupport Continuous Gear Hinge

Weizel Security
800-308-362
http://www.securinghospitals.com/



111d. Continuous Hinges – gear type w/hospital tip

Behavioral Safety Products – Continuous Hinge #DH430 w/ plastic hospital tip

Behavioral Safety Products
29A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

111d. Continuous Hinges – gear type w/hospital tip

Kingsway Group; Swing Hinge – LG200

Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

113b. Double-Acting Continuous Hinge

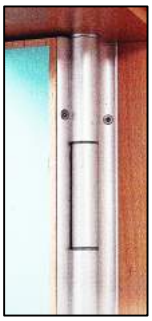
Pemko Double Swing Hinge - DSHP01

Pemko
P. O. Box 18966
Memphis, TN 38181
800-824-3018
http://www.pemko.com/

113c. Double Acting Continuous Hinge

Kingsway Group; Swing Hinge – LG202

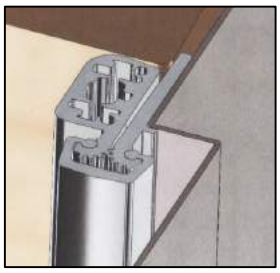
Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com



115b. Emergency Stop

Pemko Emergency Release Stop - ERS

Pemko
P. O. Box 18966
Memphis, TN 38181
800-824-3018
http://www.pemko.com/



115c. Emergency Stop

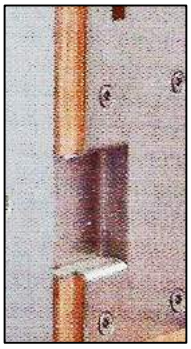
Kingsway Group; Swing Stop – LGg205, LG206

Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

115d. Swing Through Strike Plate

Kingsway Group; Swing Through Strike Plate – LG149

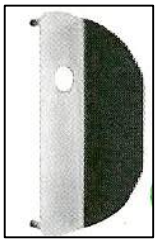
Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com



120. Door Pull

Ives Vandal-Resistant Door Pull; VR910-DT

Build.com, Inc.
282 Convair Ave.
Chico, CA 95973
877-613-8766
http://us.allegion.com/



121a. Door pull, recessed

Stanley Hardware; cast, flush door pull

Stanley Hardware
480 Myrtle Street
New Britain, CT 06053
800-337-4393
www.stanleyworks.com

121c. Door Pull, recessed

Rockwood; D89 Heavy Duty Security Flush Pull

Rockwood Manufacturing Company
300 Main Street
Rockwood, PA 15557
800-458-2424
www.rockwoodmfg.com

130a. Ligature-Resistant Lockset

Stanley Hardware SPSL Anti Ligature Lockset

Best Access Systems
Stanley Security Solutions
6161 East 75th Street
Indianapolis, IN 46250
www.bestaccess.com/

130b. Ligature-Resistant Lockset

Townsteel, Inc.; Anti-Ligature Lever Lockset MRX-L-IP

Townsteel, Inc.
707 N Barranca Ave. Building 6
Covina, CA 91723
877-858-0888
http://www.townsteel.com/

130c. Ligature-Resistant Lockset

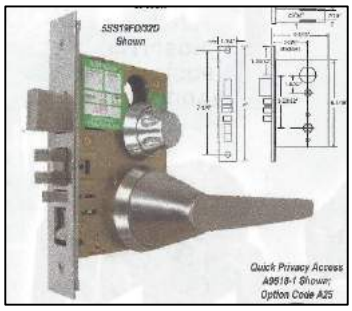
Schlage "L" Series Mortise Lock w/Deco Lever

Ingersoll Rand Security Technologies
11819 N. Pennsylvania Street
Carmel, IN 46032
317.810.3459
http://us.allegion.com/

130e. Ligature-Resistant Lockset

Marks USA; Series 5EE19 Institutional Life Safety Mortise Locksets - Levers

Marks USA
800-526-0233
http://www.marksusa.com



130f. Ligature-Resistant Lockset

Sargent Lock Company;8200 with BHW Trim

Sargent Manufacturing Company
100 Sargent Drive
P. O. Box 9725
New Haven, CT 06536-0915
800-727-5477
http://www.sargentlock.com

130i. Ligature-Resistant Lockset

Sargent Lock Company;8200 with Push/Pull Trim (ALP)

Sargent Manufacturing Company
100 Sargent Drive
P. O. Box 9725
New Haven, CT 06536-0915
800-727-5477
www.sargentlock.com

130k. Ligature-Resistant Lockset

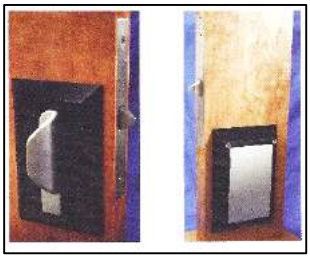
Accurate Lock and Hardware; Crescent Handle Lockset - horizontal

Accurate Lock and Hardware
1 Annie Place
Stamford, CT 06902
203-348-8865
http://www.accuratelockandhardware.com

130l. Ligature-Resistant Lockset

Accurate Lock and Hardware; Push/Pull Paddle Trim

Accurate Lock and Hardware
1 Annie Place
Stamford, CT 06902
203-348-8865
www.accuratelockandhardware.com



140. Patient Room Privacy Lockset

Stanley Security Solutions; Patient Room Privacy Lockset SPSL-ML-RF-16F-630 & SPSL-ML-LTF-16F-630

Stanley Security Solutions
6161 East 75th Street
Indianapolis, IN 46250
800-392-5209
www.stanleysecuritysolutions.com

141. Cylinder Protector

Stanley Security Solutions; Cylinder Protector

Stanley Security Solutions
6161 East 75th Street
Indianapolis, IN 46250
800-392-5209
www.stanleysecuritysolutions.com

143. Deadbolt

Securitech; Deadbolt #Proto-PBL102-630 w/ ligature-resistant turn piece

Securitech Group, Inc.
54-60 46th Street
Maspeth, NY 11378
800-622-5625
http://www.securitech.com/

145. Ball Catch

Ives - #347 Dual Adjustable Ball Catch

Ives
2720 Tobey Dr.
Indianapolis, IN 46219
877-613-8766
http://us.allegion.com/

146. Roller Latch

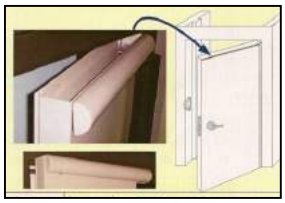
Ives - #RL30 Roller Latch

Ives
2720 Tobey Dr.
Indianapolis, IN 46219
877-613-8766
http://us.allegion.com/

150a. Over-Door Alarm

Stanley Hardware SEDA Door Alarm

Best Access Systems
Stanley Security Solutions
6161 East 75th Street
Indianapolis, IN 46250
www.bestaccess.com/



150b. Over-Door Alarm

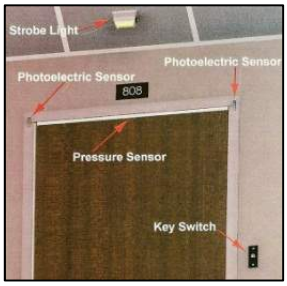
The Door Switch

11772 Westline Industrial Drive
St. Louis, MO 63146
314-298-3433
http://thedoorswitch.com/

150c. Over-Door Alarm

Door Control Services, Inc.; Top Door Alarm

Door Control Services, Inc.
321 VZ County Road 4500
Ben Wheeler, TX 75754
800-356-2025
http://www.doorcontrolsusa.com/



160a. Seclusion Room Door Locks

Securitech – Seclusion Room Time-Out Lock

Securitech
54-45 44th Street
Maspeth, NY 11378
800-622-5625
www.securitech.com

160b. Seclusion Room Door Locks

Schlage; LM9000 Multipoint Solution

Allegion
11819 N. Pennsylvania Street
Carmel, IN 46032 US
877-671-7011
http://us.allegion.com/

161a. Surface-Mounted Slide Bolt

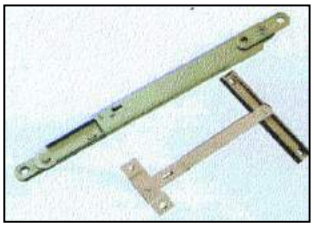
Stanley Hardware CD4060 solid brass 6inch long surface bolts

Stanley Hardware
480 Myrtle Street
New Britain, CT 06053
800-337-4393
www.stanleyworks.com

170. Life safety Window Hardware

Truth Hardware; Life Safety Window Hardware

Truth Hardware
700 West Bridge St.
Owatonna, MN 55060
800-866-7884
www.truth.com



190a. Window Film

3M; Scotchshield Ultra - 200 Series

3M Specified Construction Products Department
3M Center Building 225-4S-08
St. Paul, MN 55144
800-480-1704
http://solutions.3m.com/

190b. Window Film

ACE Security Laminates, 200 Series – High-end Safety

Ace/Security Laminates, Inc.
200 Isabella St., Ste. 500
Ottawa, ON, Canada
K1S 1V7
888-607-0000
www.smashandgrab.com

200a. Security Glazing

Oldcastle Building Envelope; ArmorProtect Plus - #121000 or # 121100

Oldcastle Building Envelope
5103 Janice Avenue
Schofield, WI 54476
800-922-6639
www.obe.com

200b. Security Glazing

Global Security Glazing; 9/16Psych-2118

Global Security Glazing
616 Selfield Road
Selma, AL 36703
(800) 633-2513
www.security-glazing.com

201a. Polycarbonate Sheet Glazing

SABIC brand "Lexan" MR10 Sheet with Margard II UV and Abrasion-Resistant Coating

SABIC Americas
www.sabic.com

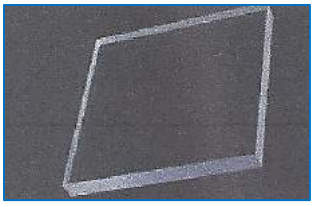
201b. Polycarbonate Sheet Glazing

Sheffield Plastics - Makrolon GP Sheet

Sheffeld Plastics
119 Salisbury Road
Sheffield, MA 01257
800-254-1707
www.sheffieldplastics.com

201c. Polycarbonate Sheet Glazing

Alro Plastics; Tuffak CM-2 with Abrasion-resistant coating



Alro Plastics
3100 E. High Street
Jackson, MI 49204
800-877-2576
https://www.myalro.com/

205a. Fire-Rated Glazing

O'Keeffe's, Inc.; SaftiFirst – SuperLite

O'Keeff's, Inc.
100 N. Hill Dr. #12
Brisbane, CA 94005
888-653-3333
www.safti.com

220a. Vision Panels

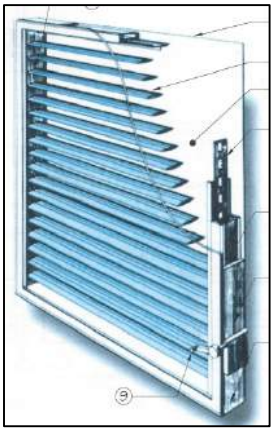
Vistamatic, LLC.; Vision Panels, key operation

Vistamatic, LLC
11713 NW 39th St
Coral Springs, FL 33065
866-466-9525
http://www.vistamaticvisionpanels.com/

220b. Vision Panels

Unicel Architectural Corp.; mini blinds inside glass panels

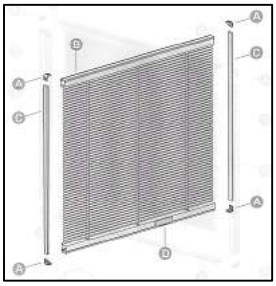
Unicel Architectural
2155 Fernand Lafontaine Blvd.
Longueuil, Qubec
J4G 2J4 Canada
800-668-1580
http://www.unicelarchitectural.com/



220c. Vision Panels

Vistamatic, LLC.; Vision Panels, Between Glass Blinds

Vistamatic, LLC
11713 NW 39th St
Coral Springs, FL 33065
866-861-9135
http://www.betweenglassblinds.com/



220d. Vision Panels

RAL & Associates, Inc. - IE; Blinds

RAL & Associates, Inc.
P. O. Box 442
Ben Wheeler, TX 75754
866-267-1917
www.ieblinds.com

230a. Impact-Resistant Gypsum Board

USG; SHEETROCK® Brand Abuse-Resistant Gypsum Panels

USG
800-874-4968
http://www.usg.com/

230b. Impact-Resistant Wallboard

National Gypsum Hi-Impact Brand Fire Shield Wallboard

National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211
704-365-7300
www.nationalgypsum.com

231a. Abrasion-Resistant Wallboard

National Gypsum Hi-Abuse Brand Wallboard

National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211
800-628-4662
www.nationalgypsum.com

232. Sound-Absorbing Wallboard

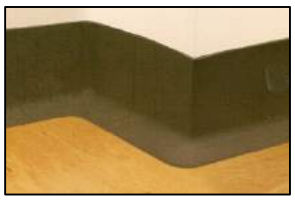
Pabco Gypsum; QuietRock - sound absorbing gypsum board

Pabco Gypsum
Newark, CA
800-797-81592
www.quietrock.com

240. Wall Base

Flexco Health Design Wall Base

Flexco Corporation
1401 East 6th Street
Tuscumba. AL 35674
800-633-3151
http://www.flexcofloors.com/F



241a. Wall Base

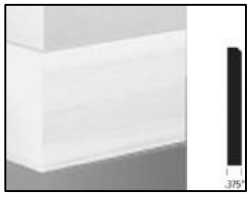
Roppe Visuelle Wall Base

Roppe Corporation, USA
1602 North Union Street
Fostoria, OH 44830
800-5379527
www.roppe.com

241b. Wall Base

Johnsonite "Millwork" Contoured Wall Base - Mandalay

Roppe Corporation, USA
1602 North Union Street
Fostoria, OH 44830
800-5379527
www.roppe.com



245a. Sheet Vinyl Flooring

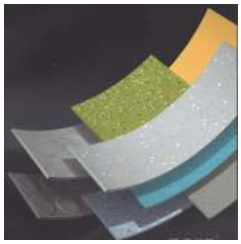
Armstrong World Industries, Inc. Commercial Flooring, vinyl, homogeneous

Armstrong World Industries, Inc.
P.O. Box 3001
Lancaster, PA 17604
877-ARMSTRONG
http://www.armstrong.com

245b. Sheet Vinyl Flooring

Nora Systems, Inc.; Noraplan sheets

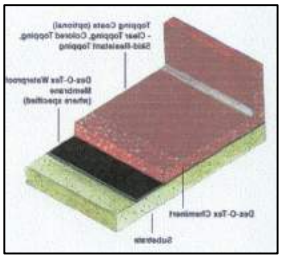
Nora Systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
603-84941021
www.nora.com/us



250a. Seamless Floors and Base

Dex-O-Tex Cheminert "K" Flooring

Dex-O-Tex
Division of Crossfield Products Corp.
140 Valley Road
Roselle Park, NJ 07204
908-245-2800
www.dexotex.com



250b. Seamless Floors and Base

Dur-A-Flex Flooring

Dur-A-Flex, Inc.
95 Goodwin Street
East Hartford, CT 06108
800-253-3539
908-245-2800
http://dur-a-flex.com/

255. Carpet

Lees; Bello IV Collection

Lee's Carpets
3330 W. Friendly Avenue
Greensboro, NC 27410
336-379-3897
www.leescarpets.com

270a. Wall Padding

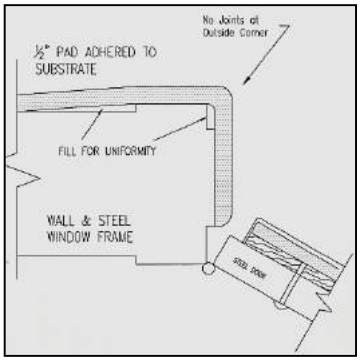
Marathon Engineering Corporation; Gold Medal Safety Padding

Marathon Engineering Corporation
5615 2nd Street West
Leigh Acres, FL 33971
239-303-7378
http://goldmedalsafetypadding.com/

270b. Wall Padding

Padded Surfaces

Padded Surfaces
5323 W. Minnesota Street
Indianapolis, IN 46241
888-243-8788
http://paddedsurfaces.com/



272. Seclusion Room Wall and Floor Material

Lonseal, Inc. LonFloor plain, smooth

Lonseal, Inc.
928 East 238th Street, Building A
Carson, California 90745
800-832-7111
www.lonseal.com

280. Deco Coat

Sto-ex, Inc.; DecoCoat

Sto-ex, Inc.
3932 N Greenbrooke Dr. SE
Kentwood, MI 49512
800-782-3162
www.sto-ex.com

290a. TV Enclosure – suicide-resistant

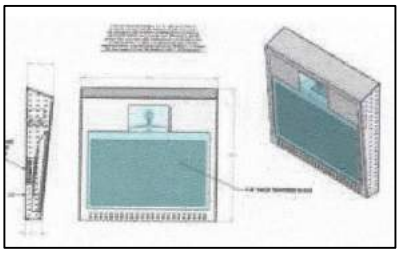
Behavioral Safety Products; Suicide-resistant Protective TV Enclosure

Behavioral Safety Products
29A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

290b. TV Enclosure – suicide-resistant

Peerless A-V; Protective Enclosures, FPE55F(H)-S

Peerless A-V
2300 White Oak Circle
Aurora, IL 60502
800-865-2112
www.perlessmounts.com



300a. Room Signs

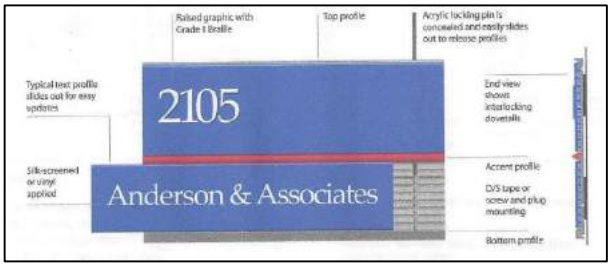
2/90 Sign Systems – Flxsigns

2/90 Sign Systems
5350 Corporate Grove Blvd. SE
Grand Rapids, MI 49512
800.777.4310
www.290signs.com

300b. Room Signs

King Architectural Products; King KMS Modular Sign System

King Architectural Products
31 Simpson Road
Bolton, ON, Canada, LTE 2R6
877-857-2804
www.kingarchitecturalproducts.com



301. Vinyl Art Work

Kennon; Vinyl printed art work

Kennon Products, Inc.
Sheridan, WY
307-674-6498
http://www.suicideproofing.com/

302a. Ligature-Resistant Frames

Custom Design Frameworks; Solid Surface frames

Custom Design Frameworks
3998 Fox Hunter Lane
Mechanicsville, VA 23111
804-476-4233
http://www.customdesignframeworks.com/

302b. Ligature-Resistant Frames

Behavioral Safety Products; Ligature-resistant Art Frame #AF550

Behavioral Safety Products
9A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

303. Display Boards

RAO Contract Sales; Tak-Les Bulletin Board with Guardian Frame

RAO Contract Sales
94 Fulton Street
Paterson, NJ 07501
800-445-7065
www.rao.com

320a. Synthetic Wall Material

Avonite Solid Surface Wall Panels

Avonite
1945 Highway 304
Belen, NM 87002
800-4-AVONITE
www.avonitesurfaces.com

320a. Synthetic Wall Material

C-S Products; Acrovyn By Design Protective Wall Panels

Construction Specialties
6696 State Road 405
Muncy, PA 17756
800-233-8493
www.c-sgroup.com

330a. Corridor Handrail

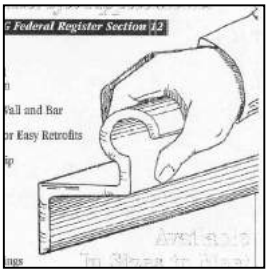
C-S Products; Ligature-resistant Handrail with Continuous Aluminum Mounting Bracket

Construction Specialties
6696 State Road 405
Muncy, PA 17756
800-233-8493
www.c-sgroup.com

332a. Grab Bar

Cascade Specialty Hardware; SafeBar

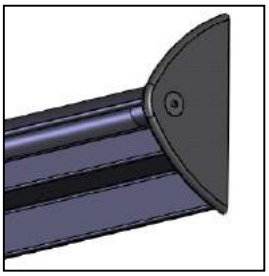
Cascade Specialty Hardware, Inc.
1413 Lincoln Avenue
Vancover, WA 98660
360-823-3995
http://www.cascadesh.com/



332b. Grab Bars

Weizel Security; SafeBar Grab Bar

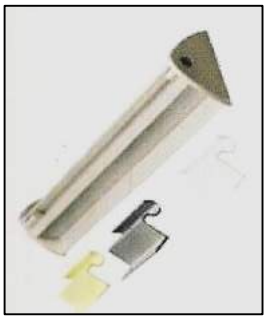
Weizel Security
800-308-3627
http://www.securinghospitals.com/



332c. Grab Bar

Northwest Specialty Hardware, Inc.; SecurityBar

Northwest Specialty Hardware, Inc.
15865 SE 1143th Avenue, Suite C
Clackamas, OR 97015
503-557-1881
http://www.northwestsh.com/



337. Grab Bars - Vertical

Odd Ball Industries; Vertical Grab Bar

Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

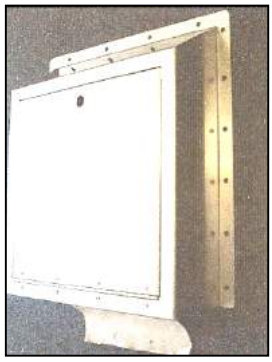
Cross-section

with finished end

340. Paper Towel Dispenser

Weizel Security; Paper Towel Dispenser Model 11-100-10-010

Weizel Security
800-308-3627
http://www.securinghospitals.com/



340b. Paper Towel Dispenser

Kingsway Group; LG02 Paper Towel Dispenser

Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

350e. Robe Hook

Kingsway Group; LG180 Coat Hook

Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

360. Security Mirrors

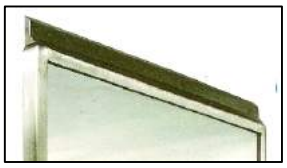
American Specialties, Inc.; Roval Inter-Lok stainless steel framed mirror

American Specialties, Inc.
441 Saw Mill River Road
Yonkers, NY 10701
914-476-9000
http://www.americanspecialties.com/

361. Mirror Guard

Odd Ball Industries; Mirror Guard

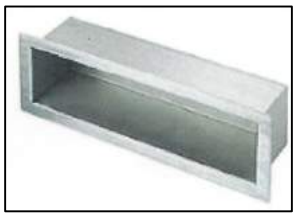
Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com



370a. Recessed Shelf

Bradley Corporation – SA47 Recessed Shelf

Bradley Corporation
PO. Box 309
Menomonee Falls, WI 53052
800-BRADLEY
www.bradleycorp.com



370c. Recessed Shelf

Whitehall Manufacturing; Bestcare Bathroom Accessory Solutions Model Number 1820-FA (front mount)

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

371a. Suicide-Resistant Shelf

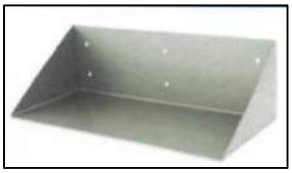
Norix; Suicide-resistant Stainless Steel Shelf

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

371c. Shelf – Surface-Mounted

Bradley Corporation – SA56 Surface Mounted Shelf

Bradley Corporation
PO. Box 309
Menomonee Falls, WI 53052
800-BRADLEY
www.bradleycorp.com



380a. Shower Seat

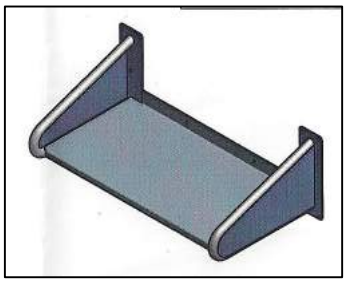
Norix; ADA Shower Seat

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

380b. Shower Seat

Kingsway Group; Shower Seat – S-6510-SS

Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com



390a. Soap Dish

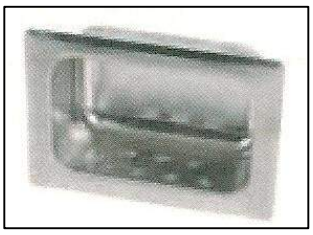
Norix Group Inc.; Recessed Soap Dish

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

390b. Soap Dish

Brey-Krause Manufacturing Co.; Recessed Soap Dish S-2632-SS

Brey-Krause Manufacturing Co.
1209 W. Lehigh Street
Bethlehem, PA 18018 USA
Phone - 610.867.1401
www.breykrause.com



391a. Soap Dispenser

Norva Plastics – Soap Dispenser

Norva Plastics, Inc
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

391c. Foaming Hand Soap Dispenser

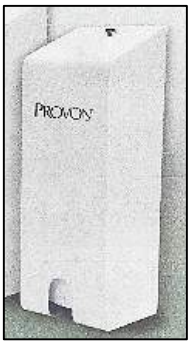
Archer Manufacturing; OPS 1-Touch Ligature-resistant Soap Dispenser

Archer Manufacturing
Danville, CA
800-796-5545
http://www.vandalproof.org/

391e. Liquid Soap Dispenser

GOJO Industries, Inc.; Security Enclosure

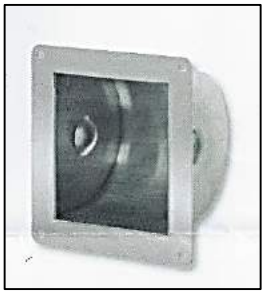
GOJO Industries, Inc.
One GOJO Plaza, Suite 500
Akron, OH 44309
800-321-9647
www.GOJO.com



400a. Toilet Paper Holder

Kingsway Group; LG13 Toilet Roll Holder

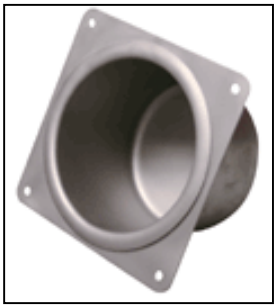
Kingsway Group, Inc., Suite 200
2807 Samoset Road
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com



400b. Toilet Paper Holder

***Odd Ball Industries; SP-5* Toilet Paper Holder**

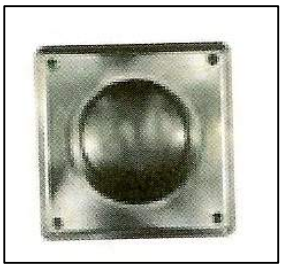
Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com



400c. Toilet Paper Holder

Brey-Krause Manufacturing Co.; Recessed Soap Dish S-2632-SS

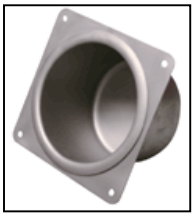
Brey-Krause Manufacturing Co.
1209 W. Lehigh Street
Bethlehem, PA 18018 USA
Phone - 610.867.1401
www.breykrause.com



400d. Toilet Paper Holder

Norix Group Inc.; Model ITP-110

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
http://www.norix.com



400e. Toilet Paper Holder

Cascade Specialty Hardware; Safety Toilet Paper Holder, Model C-400

Cascade Specialty Hardware, Inc.
1413 Lincoln Avenue
Vancover, WA 98660
360-823-3995
http://www.cascadesh.com/

400f. Toilet Paper Holder

Whitehall Manufacturing; Model #1845 Auto-release Toilet Paper Holder (front mount)

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

400g. Toilet Paper Holder

Weizel Security; 817-S59 SafeSupport SR Maryland TP Dispenser.

Weizel Security
800-308-3627
http://www.securinghospitals.com/

400h. Toilet Paper Holder

Norva Plastics – Toilet Paper Holder

Norva Plastics, Inc
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

410a. Lav Shield

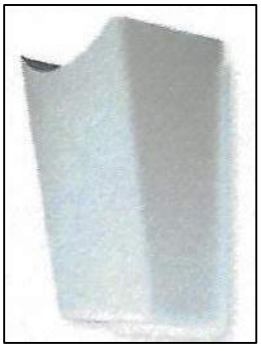
Truebro, IPS Corporation

Truebro
202 Industrial Park Lane
Collierville, TN 38017
http://www.truebro.com/

410b. Lav Shield

Weizel Security; SR831-S27 SafeSupport SR Undersink Enclosure

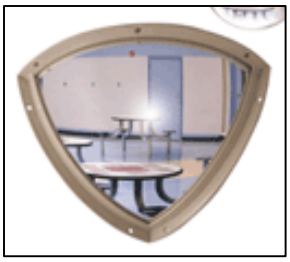
Weizel Security
800-308-3627
http://www.securinghospitals.com/



420a. Convex Mirrors

Norix Group Inc.; Duarvision, Model QD18

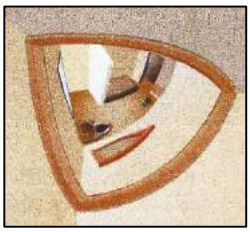
Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com



420b. Convex Mirrors

Duramax Corrections polycarbonate quarter dome:

Convex Mirror Shop
3 Bert Drive, Unit 10
West Bridgewater, MA 02379
781-344-8459
http://www.convexmirrorshop.com/



420c. Convex Mirrors

Weizel Security; SR815-S51 SafeSupport Steel Dome Mirror

Weizel Security
800-308-3627
http://www.securinghospitals.com/

440a. Roller Blinds

Webb Shade; Level-Lok

Webb Designs, Inc.
P. O. Box 1405
El Cajon, CA 92022
800.262.9322
www.webbshade.com

440b. Roller Blinds

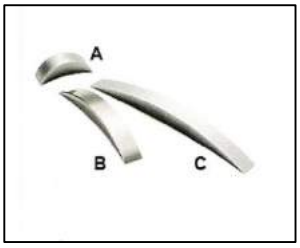
Draper, Inc.; FlexShades for Healthcare Facilities

Draper, Inc.
411 South Pearl Street
Spiceland, IN 47385
800-238-7999
www.draperinc.com

460a. Cabinet Pulls

Doug Mockett & Company, Inc. – DP74C Cabinet Pull

Doug Mockett & Company, Inc.
1915 Abalone Ave.
Torrance, CA 90501
800-523-1269
www.mockett.com



460b. Cabinet Pulls

Sugatsune America, Inc.;UT-105/S

Sugatsune America, Inc.
18101 Savarona Way
Carson, CA 90746
800-562-5267
http://www.sugatsune.com/

460c. Cabinet Pulls

Top Knobs – Mayfair cup pull attached with tamper-resistant fasteners

My Knobs.com
19-22 45th Street
Astoria, NY 11105
866-695-6627
http://www.myknobs.com/

460d. Cabinet Pulls

Hafele; Modern Zinc Handles – 104.66.200

Hafele
800-423-3531
http://www.hafele.com/

465a. Cabinet Locks – Keyless

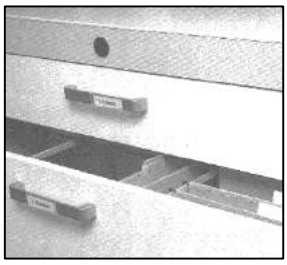
CompX Security Products; eLock Series

CompX Security Products
Mauldin, SC
864-297-6655
www.compx.com

465b. Cabinet Locks – Keyless

Hafele; dialock

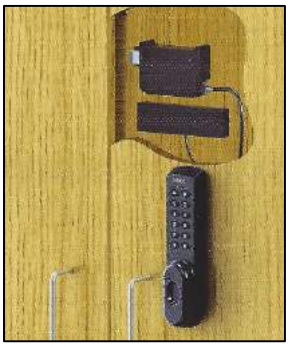
Hafele America Co.
3901 Cheyenne Drive
Archdale, NC 27263
800-423-3531
http://www.hafele.com/



465c. Cabinet Locks – Keyless

CompX Security Products; 100 Series Cabinet Locks

CompX Security Products
P. O. Box 200
Mauldin, SC 29662
864-297-6655
www.compx.com



470a. Tamper-Resistant Screws

Tamperproof Screw Company, Inc.

Tamperproof Screw Company, Inc.
30 Laurel Street
Hicksville, NY 11801
516-931-1616
www.tamperproof.com

470b. Tamper-Resistant Screws

Northwest Specialty Hardware, Inc.; Security Pin Torx Screws and Bits

Northwest Specialty Hardware, Inc.
15865 SE 1143th Avenue, Suite C
Clackamas, OR 97015
503-557-1881
http://www.northwestsh.com/

473a. Shower Doors

Norva Plastics, Inc.; Sentinel Event Reduction Shower Door

Norva Plastics, Inc
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

480. Sand-Ballasted Seating

Norix Group Inc.; Ultra-Max Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

481a. Lightweight Seating

Norix Group Inc.; Integra Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

481b. Lightweight Seating

Cortech; RazorBack Chair

Cortech Correctional Technologies, Inc.
7530 Plaza Court
Willowbrook, IL 60527
800-571-0770
www.cortechusa.com

481c. Lightweight Seating

Moduform; Stackable chairs

Moduform
172 Industrial Road
Fitchburg, MA 01420
800-221-6638
www.mycorrectionalfurniture.com

482a. Upholstered Seating

Norix Group Inc.; Sierra Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

482b. Upholstered Seating

Nemschoff; Meridian Chair

Nemschoff
909 North 8th Street
Sheboygan, WI 53081
920-459-1205
http://www.nemschoff.com/

482c. Upholstered Seating

Blockhouse Contract Furniture Company; Endurance Series

Blockhouse Contract Furniture Company
3285 Farmtrail Road
York, PA 17406
800-346-1126
http://www.blockhouse.com/

482d. Upholstered Seating

Spec Furniture Inc. – Dignity Series

Spec Furniture Inc.
888-761-7732
http://www.specfurniture.com/

482e. Upholstered Seating

Kwalu: Carrara

Kwalu
6160 Peachtree Dunwoody Rd.
Atlanta, GA 30328
877-695-9258
www.kwalu.com

483c. PVC Molded Seating

Norix Group Inc.; Forte' roto-molded upholstered chairs with wood base or sand ballasted base

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

483d. PVC Molded Seating

Norix Group Inc.; Hondo Nuevo

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

490a. Electrically Adjustable Hospital Bed

Sizewise Behavioral Health Bed

Sizewise
1600 Genessee, Suite 950
Kansas City, MO 64102
800-814-9389
www.sizewise.net

490b. Electrically adjustable hospital bed

CHG; Spirit Bed with Mental Health Package

CHG Hospital Beds
153 Towerline Place
London, ON N6E 2T3
866-516-5446
www.chgbeds.com

490c. Electrically adjustable hospital bed

Stryker; S3 Med/Surg Bed

Stryker
3800 East Centre Avenue
Portage, MI 49002
269-385-2600
https://www.stryker.com/

491. Manually adjustable hospital bed

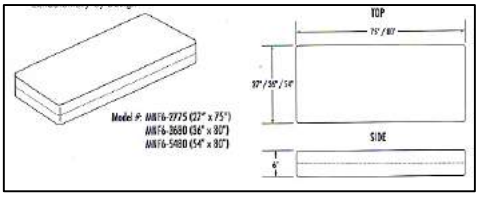
Stryker; Psych Bed

Stryker
3800 East Centre Avenue
Portage, MI 49002
269-385-2600
http://www.stryker.com/

492b. Behavioral Health Mattresses

Norix; Comfort Shield Mattresses

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
http://www.norix.com/



492d. Behavioral Health Mattresses

American Innovation Products; Behavioral Health Mattress with Bed Bug Protection & BioArmour ™ Infection Control Composite Lamination Surface

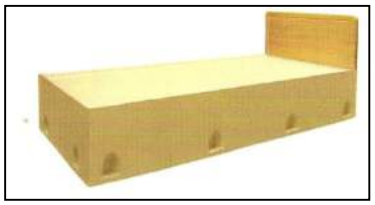
American Innovation Products
12004 Trinity Road
Trinity, NC 27370
814-490-0660
http://www.americaninnovationproducts.com/

492e. Behavioral Health Mattresses

Comfortex; Closed System Behavioral Health Mattress

Comfortex
1680 Wilkie Drive
Winona, MN 55987
800-445-4007
http://www.comfortexinc.com/

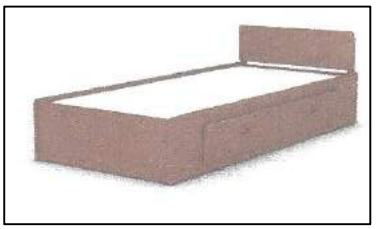
493a. Platform Bed



Norix Group Inc.; Roto Cast Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

493d. Platform Bed



Nemschoff; Platform Bed BHBP/68 and BHHD/68

Nemschoff
909 North 8th Street
Sheboygan, WI 53081
920-459-1205
http://www.nemschoff.com/

493e. Platform Bed

Cortech; Endurance Series

Cortech Correctional Technologies, Inc.
7530 Plaza Court
Willowbrook, IL 60527
800-571-0770
http://www.cortechusa.com/

494a. Platform Bed – lift-accessible

Norix; Sleigh Bed

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

494b. Platform Bed Riser - lift accessible

Norix; Platform Bed Riser

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

495a. Patient Room Furniture

Blockhouse Contract Furniture Company; Vista Casegoods

Blockhouse Contract Furniture Company
3285 Farmtrail Road
York, PA 17406
800-346-1126
www.blockhouse.com

495b. Patient Room Furniture

Norix- Safehouse Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

495c. Patient Room Furniture

This End Up Furniture Company, Inc.; Safe and Tough

This End Up Furniture Company, Inc.
500 N. 7th Street
Sanford, NC 27331
800-979-4579
www.thisendup.com

495d. Patient room furniture

Cortech; Endurance Series

Cortech Correctional Technologies,
7530 Plaza Court
Willowbrook, IL 60527
800-571-0770
www.cortechusa.com

495e. Patient Room Furniture

Norix Group Inc.; Attenda Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
http://www.norix.com

496a. Patient Room Furniture

Norix Group Inc., Attenda Series

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
http://www.norix.com

496b. Patient Room Furniture

Moduform; Wardrobe

Moduform
172 Industrial Road
Fitchburg, MA 01420
800-221-6638
www.mycorrectionalfurniture.com

498. Seclusion Room Bed

Moduform; Seclusion Bed (restraint loops optional)

Moduform
172 Industrial Road
Fitchburg, MA 01420
800-221-6638
www.mycorrectionalfurniture.com

499. Nurse Servers

Carstens; WALLAroo

Carstens
7310 West Avenue
Chicago, IL 60706
800-782-7524
www.carstens.com

520a. Fire Sprinklers

Tyco Fire and Building Products; Raven Fire Sprinkler Head

Tyco Fire And Building Products
451 N. Cannon Avenue
Lansdale, PA 19446
215-362-0700
http://www.tyco-fire.com/

520b. Fire Sprinklers

Weizel Security; SR819-S17 SafeSupport SR Sprinkler

Weizel Security
800-308-3627
http://www.securinghospitals.com/

521a. Fire Extinguisher Cabinet

Whitehall Manufacturing; Facility Safety Solutions

Model Number 1704-F

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

531. Toilet Fixture, ADA– floor mounted, back outlet

American Standard; ADA height fixture is Huron Elongated Flush Valve Bowl, Floor Mounted, Back Outlet, Concealed Back Spud Bowls, Model 3341.001 with integral seat or 3342.001 with holes for movable seat

American Standard
P. O. Box 6820
1 Centennial Way
Piscataway, NJ 08855-6820
800-442-1902
www.americanstandard-us.com/

533. Solid-Surface Toilet Fixture

Wallgate Products; Solid Surface WCs

Wallgate Products
44(0)1722-744-594
www.wallgate.com/

534a. Stainless Steel Toilet

Willoughby Industries ETW-1490 Series

Willoughby Industries
5105 West 78th Street
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com

534b. Toilet Fixture - stainless steel

Whitehall Manufacturing; Bathroom Solutions Model Number 2142

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

536. Bariatric Toilet Fixtures

Willoughby Healthcare Products; Bariatric Toilet

Willoughby Healthcare Products
5105 West 78th Street
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com

537. Toilet Waste Line Clog Removal Assistant

Willoughby Healthcare Products; Nallyator

Willoughby Healthcare Products
5105 West 78th Street
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com

538. Wall-Hung Toilet Support

Big John Products, Inc.; Big John Toilet Support

Big John Products, Inc.
8533 Canoga Avenue, Suite D
Canoga Park, CA 91304
866-366-0669
www.bigjohntoiletseat.com

540a. Lavatories

Bradley Corporation - Model HSL1 SafeCare Ligature-resistant Single Station Lavatory now available with High Impact Polymer Trap Cover

Bradley Corporation
PO. Box 309
Menomonee Falls, WI 53052
800-BRADLEY
www.bradleycorp.com

540c. Lavatories

Intersan Manufacturing Company; Saniwave lavatory with extensions

Intersan Manufacturing Company
1748 West Fillmore Street
Phoenix, AZ 85007
602-254-3010
www.intersanus.com

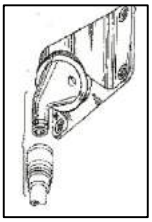
541a. Vanity Top Lavatory with Two-Button Control

Norva Plastics – Suicide Prevention Patient Sink Faucet

Norva Plastics, Inc
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

550a. Shower Head – institutional

Odd Ball Industries; SP7 Shower Head with Quick Disconnect Handheld Shower



Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-242-8482
www.oddballindustries.com

550c. Shower Head – institutional

Behavioral Safety Products; Anti-Ligature Shower Head – SH330

Behavioral Safety Products
29A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

552a. Shower Control Valve

Whitehall Manufacturing; ADA Ligature-resistant shower valve and trim

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

552b. Shower Valve

Behavioral Safety Products; Anit-Ligature Shower Valve – SV220

Behavioral Safety Products
29A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

552c. Shower Valve

Weizel Security; SafeSupport SR Retrofit Shower Knob

Weizel Security
800-308-3627
http://www.securinghospitals.com/

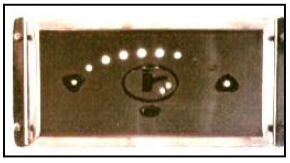
552d. Shower Valve

Odd Ball Industries; SP-10 Shower Valve

Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

552e. Shower Valve

Armstrong Hot Water Group; brainwave Model DMV2-Individual Shower with optional stainless steel cover.



Armstrong Hot Water Group
221 Armstrong Blvd
Three Rivers, MI 49093
269-279-3602
www.armstronginternational.com

555a. Shower Diverter Valve

Weizel Security; SafeSupport SR Diverter Valve – 834-SN2

Weizel Security
800-308-3627
http://www.securinghospitals.com/

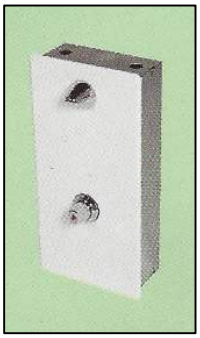
555b. Shower Diverter Valve

Odd Ball Industries; SP-10 Shower Diverter Valve

Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-242-8482
www.oddballindustries.com

560a. Shower Assembly

Whitehall Manufacturing; Best Care Shower Solutions Model Number 1741-CSH-SRCH

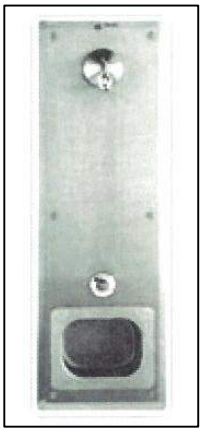


Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

560b. Shower Assembly

Weizel Security; SR834-S35 Safe Support SR Shower Panel

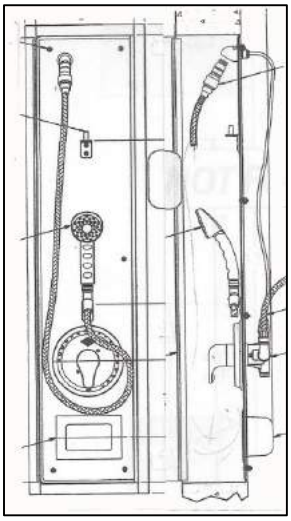
Weizel Security
800-308-3627
http://www.securinghospitals.com/



563a. Shower Assembly – recessed hand-held

Acorn Engineering; Model M0418-E508 in locking box

Acorn Engineering
P.O. Box 3527
City of Industry, CA 91744
800-782-7706
http://www.acorneng.com



563b. Shower Assembly – Handicapped-Accessible

Odd Ball Industries; SP7 Shower Head with Quick Disconnect Handheld Shower

Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

563c. Shower Assembly – Handicapped-accessible

Whitehall Manufacturing; Bestcare Wall Shower Solutions

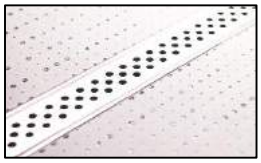
Model Number 174FH-CSH-SRCH

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

564a. Shower Trench Drain

Quick Drain USA; Proline Drain with "Dots" cover

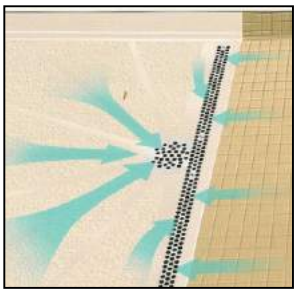
Quick Drain USA
101 Main Street #206
Frisco, CO 80443
866-998-6685
http://www.quickdrain.com/



565a. Shower Floor Basin

Watermark;

Watermark
2969 armory Drive, Suite 400
Nashville, TN 37204
615-291-6111
http://www.watermarksolidsurface.com/

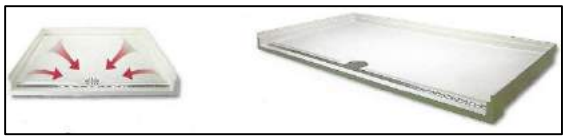


565b. Shower Floor Basin

Willoughby Healthcare Products,

Aquasurf Solid Surface Shower Bases

Willoughby Healthcare Products
5105 West 78th Street
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com



566. One Piece Patient Toilet Room Floor

Best Bath Systems; UniFloor

Best Bath Systems
4545 Enterprise Street
Boise, ID 83705
800-727-9970
www.best-bath.com

568. Pre-Built Bathrooms

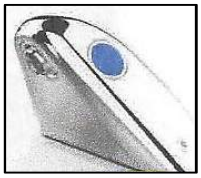
Eggrock Pre-Built Bathrooms

Eggrock, LLC
265 Foster Street
Littleton, MA 01460
978-952-8800
www.eggrock.com

570a. Lavatory Faucet

Behavioral Safety Products – SF370

Behavioral Safety Products
29A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com



570b. Lavatory Faucet

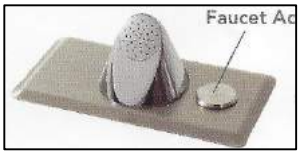
Norva Plastics – Suicide Prevention Patient Sink Faucet

Norva Plastics, Inc
3911 Killam Ave.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

570c. Lavatory Faucet

Whitehall Manufacturing; Bestcare Basin Solutions Model Number 3374-PPZ

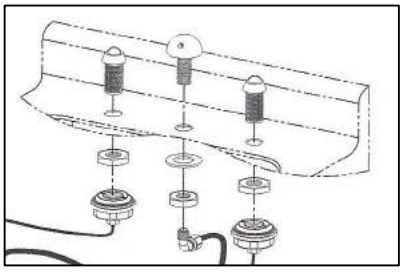
Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com



570d. Lavatory Faucet

Acorn Engineering, Two button bubbler – R04 with hemispherical push-buttons (PBH)

Acorn Engineering Company
P.O. Box 3257
City of Industry, CA 91744
800-488-8999
http://www.acorneng.com



574. Lavatory Countertop Valve

Odd Ball Industries; SP11 Lavatory Faucet Valve

Odd Ball Industries Mfg. Co., Inc.
P.O. Box 376
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

580. Recessed Flush Valve

Sloan Valve Company Royal 611 & WB-1-A Easy Access Wall Box

Sloan Value Company
10500 Seymour Avenue
Franklin Park, IL 60131-1259
800-9-VALVE-9
http://www.sloanvalve.com

581a. Recessed Flush Valve

Sloan Valve Company Regal XL Hydraulic Concealed Flushometer & WB-1-A Easy Access Wall Box

Sloan Value Company
10500 Seymour Avenue
Franklin Park, IL 60131-1259
800-9-VALVE-9
www.sloanvalve.com

581b. Recessed Flush Valve

Zurn Plumbing Products; 3" Push Button Assembly for Concealed Flush Valves- P6000-NL3

Zurn Plumbing Products
5900 Elwin Buchanan Drive
Sanford, NC 27330-9525
(919) 775-2255
www.zurn.com

585a. Flush Valve Cover

Bradley Corporation – Model No. HSC79 SafeCare Ligature-resistant Flush Valve with Cover

Bradley Corporation
P. O. Box 309
Menomonee Falls, WI 53052
800 BRADLEY
www.bradleycorp.com

585b. Flush Valve Cover

Behavioral Safety Products – FV500 (2 piece) & FV600 (1 piece)

Behavioral Safety Products
29A N. Main St., Suite 3
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

585c. Flush Valve Cover

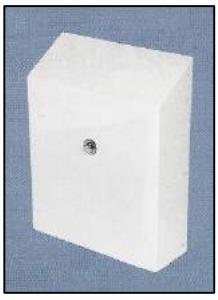
Weizel Security; SR831-S39; SafeSupport SR Flush Vale Enclosure

Weizel Security
Unit 9 – 62 Fawcett Road
Coquitlam, BC V3K 6V5
Canada
800-308-3627
http://www.securinghospitals.com/

585d. Flush Valve Cover

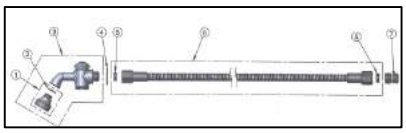
Whitehall Manufacturing; Bestcare Bathroom Solutions Model Number 2802

Whitehall Manufacturing
P.O. Box 3257
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

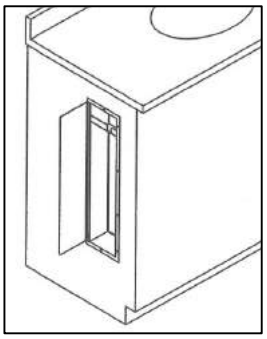


588. Recessed Bedpan Washer

Willoughby Healthcare Products, Recessed Bed Pan Washer



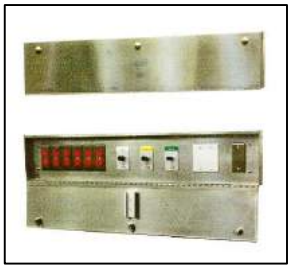
Willoughby Healthcare Products
5105 West 78th Street
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com



590a. Medical Gas Covers

Hospital Systems, Inc. – PTC Series Security Patient Console

Hospital Systems, Inc.
750 Garcia Avenue
Pittsburg, CA 94565
925.427.7800
www.HospitalSystems.com



590b. Medical Gas Covers

Modular Services Company Security Console

Modular Services Company
500 East Britton Road
Oklahoma City, OK 73114
800-687-0938
www.headwalls.com

590c. Medical Gas Covers

Modular Services Company Security Headwalls w/ 3/8" polycarbonate locked cover bottom hinge

Modular Services Company
500 East Britton Road
Oklahoma City, OK 73114
800-687-0938
http://www.modularservices.com/

599a. Drinking Water Cup Filling Stations

Filtrine; B103-C2-HR Ligature-resistant Bottle Filling Station with dual cup dispensers and security features

Filtrine Manufacturing Company
15 Kit Street,
Keene, NH 03431
800-930-3367
www.filtrine.com

599b. Drinking Water Cup Filling Stations

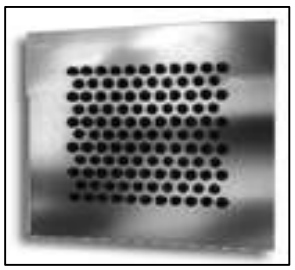
Quench; 755 Countertop Water Cooler

Quench
780 5th Avenue, Suite 200
King of Prussia, PA 19406
888-877-0561
www.quenchonline.com

600a. Air Grilles

Carnes; Stamped, Perforated Diffuser; see catalog D-22

Carnes Company
448 South Main Street
Verona, WI 53593
608-845-6411
www.carnes.com



600b. Air Grilles

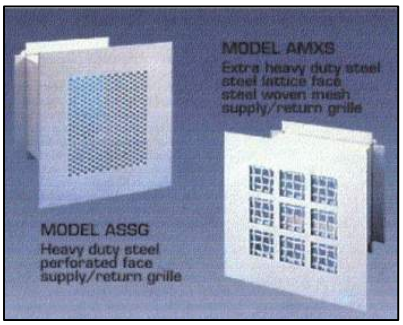
Kees Incorporated - SEG-4P3 Security Grille

Kees Incorporated
400 S. Industrial Drive
Elkhart Lake, WI 53020
920-876-3391
www.kees.com

602a. Air Grilles

Anemostat Products Model SSV42, SSV49 and SSV432 – Supply/Return Grille, Heavy Duty with "S" Channel Design

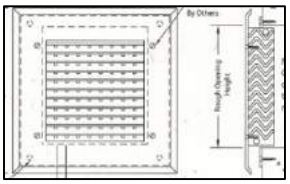
Anemostat Products
P.O. Box 4938
1220 Watson Center Road
Carson, CA. 90745
310-835-7500
www.anemostat.com



602b. Air Grille

Weizel Security; SR814-R17 SS-Vent High Security Grille

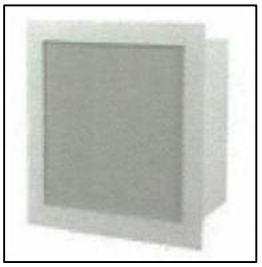
Weizel Security
800-308-3627
http://www.securinghospitals.com/



604. Air Grille – Max Security

Titus; "SD SG" Maximum Security Suicide Deterrent Grille, steel with 3/16" holes

Titus
605 Shiloh Road
Plano, TX 75074
972-212-4800
www.titus-hvac.com



606. Fan Coil Enclosures

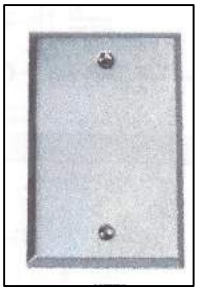
Arsco; Fan Coil Enclosures / Covers - Security

ARSCO Manufacturing Company
5313 Robert Avenue
Cincinnati, OH 45248
800-543-7040
http://www.arscomfg.com/

607. Thermostat – Tamper-Resistant

Kele, Inc.; KTP Series - Stainless Steel Flush-Mount Thermistor or KTP Series

Kele, Inc.
3300 Brother Blvd.
Bartlett, TN 38133
888-397-5353
http://www.kele.com/home.aspx



610a. Hospital-Grade Receptacles

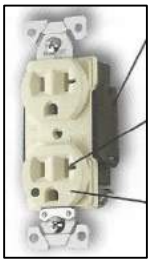
Hubbell Incorporated; Hospital Grade GFCI Receptacles

Hubbell Incorporated
Wiring Device-Kellems
185 Plains Road
Milford, CT 06461
800-255-1031
www.hubbell-wiring.com

610b. Hospital-Grade Receptacles

Cooper Industries LTD.; Hospital Grade GFCI Receptacles

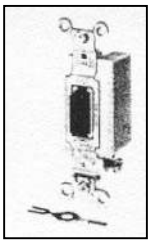
Cooper Industries LTD.
600 Travis, Suite 5600
Houston, TX 77002 1001
713-209-8400
www.cooperindustries.com



611. Key-Operated Electric Switches

Hubbell Locking Type Switch #5Z724

Hubbell, Inc.
584 Derby Milford Road
Orange, CT
www.hubbell.com



612c. Polycarbonate Electrical Coverplates

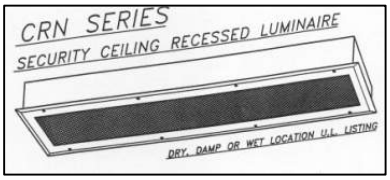
Cortech, Correctional Technologies, Inc.; Tiger Security Wall Plates

Cortech
7501 Quincy
Willowbrook, IL 60527
800-571-0700
www.cortechusa.com

620a. Light Fixture

The L. C. Doane Company; CRN Series with polycarbonate external lens TP door fasteners

The L.C. Doane Company
P.O. Box 975
Essex, CT. 06426
860-767-8295
www.lcdoane.com



620b. Light fixture

Cooper Lighting; Fail Safe SGI with Flat Polycarbonate Lens

Cooper Lighting
1121 Highway 74 South
Peachtree City, GA 30269
770-486-4800
www.cooperindustries.com

620c. Light Fixture

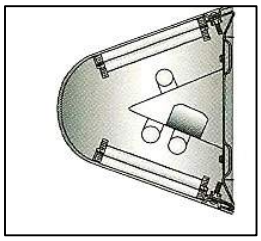
Weizel Security; SR818-R13Recessed Security Lighting with polycarbonate lens

Weizel Security
800-308-3627
http://www.securinghospitals.com/

620d. Wall-Mounted Light Fixture – vandal-resistant

Kenall – Mighty Mac; WCBU Bull NoseSeries

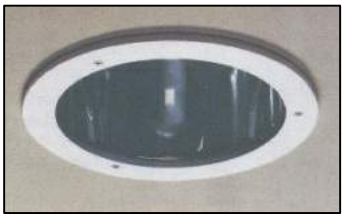
Kenall Manufacturing
1020 Lakeside Drive,
Gurnee, IL 60031
847.360.8200
www.kenall.com



620e. Wall-Mounted Light Fixture – vandal-resistant

Designplan – RDL/RHL Security downlights

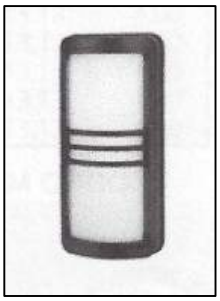
Designplan
79 Trenton Avenue
Frenchtown, NJ 08825
908-996-7710
www.designplan.com



620f. Wall-Mounted Light Fixture – vandal-resistant

Luminaire Lighting Corporation – Sonar 12 Vandal-resistant decorative wall fixture

Luminaire Lighting Corporation
7 Olsen Avenue
P. O. Box 2104
Edison, NJ 08818
732-549-0056
www.luminairelighting.com



620g. Wall-Mounted Light Fixture – vandal-resistant

Luminaire Lighting Corporation – Anyx ARV13 Vandal-resistant round wall/ceiling fixture

Luminaire Lighting Corporation
7 Olsen Avenue
P. O. Box 2104
Edison, NJ 08818
732-549-0056
www.luminairelighting.com

624. Polycarbonate prismatic lens

The L. C. Doane Company; CRN Series with polycarbonate prismatic lens

The L. C. Doane Company
P.O. Box 975
Essex, CT. 06426
860-767-8295
www.lcdoane.com

630. Downlight Cover

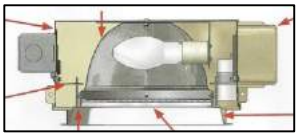
Re*cesso Lights

Re*cesso Lights
13501 100th Avenue NE, #524
Kirkland, WA 98034
877-357-6127
http://recessolighting.com/

637. Exterior Lighting

Kirlin Exterior Vandal-resistant Lighting

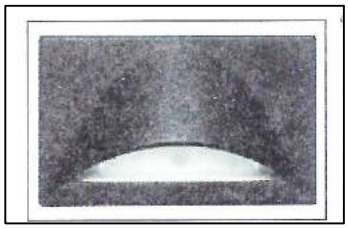
The Kirlin Company
3401 East Jefferson Avenue
Detroit, MI 48207
313-259-6400
http://www.kirlinlighting.com/



639. Night Light

Chloride Systems; PathMaster LED; PH1SBK

Chloride Systems
272 West Stag Park Service Road
Burgaw, NC 28425
910-259-1000
http://www.chloridesys.com/chloride/



640a. Exit Signs, LED – Vandal-Resistant

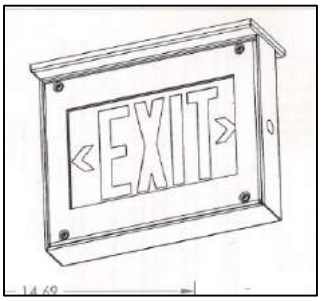
Chloride Systems; SC Series Cast Aluminum LED with vandal-resistant lens and tamper proof hardware

Chloride Systems
272 W. Stag Park Service Road
Burgaw, NC 28425
910-259-1000
www.lightingproducts.philips.com

640b. Exit signs, lighted – Vandal-Resistant

Kenall – Mighty Mac; MMEX Series with full length mounting canopy

Kenall Manufacturing
1020 Lakeside Drive,
Gurnee, IL 60031
847.360.8200
www.kenall.com



642. Exit signs – Photoluminescent

Access Products Inc.; Photoluminescent Exit Sign, Model EX424246-100G

Access Products Inc.
241 Main Street, Suite 100
Buffalo, NY 14203
888-679-4022
http://www.us.ecoglo.com/

650a. Wireless Duress Alarm

Pinpoint, Inc.; Instant Alarm 5000

Pinpoint, Inc.
2100 Southbridge Parkway, Suite 650
Birmingham, AL 35209
205-414-7541
http://www.pinpointinc.com/

650f. Wireless Duress Alarm

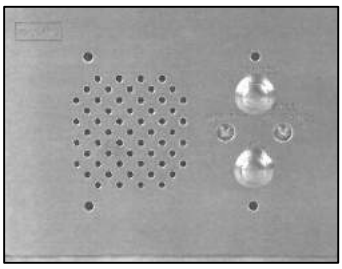
Vocera; B3000 Communication Badge

Vocera
525 Race Street
San Jose, CA 95126
800-331-6359
www.vocera.com

653. Nurse Call System – Vandal-Resistant

Rauland – Borg Corp; Responder Health Care Communications System Model HSS401 – High Security Staff Duty Station

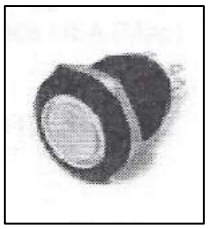
3450 West Oakton Street
Skokie, IL 60076
847-679-0900
www.rauland.com



654. Push-Button Switch – Vandal-Resistant

Lamb Industries; Anti-Vandal Switchs PV1-PV8

Lamb Industries
4826 SW Scholls Ferry Road
Portland, OR 97225-1668
800-824-9374
http://www.e-switch.com/



655a. Stainless Steel Wall Phones

Allen Tel Products, Inc.; Model GB306V-14 (with key pad)

Allen Tel Products, Inc.
30 TVS Drive
Henderson, NV 89014
702-855-5700
www.allentel.com

655b. Stainless Steel Wall Phones

TWAcomm.com; Ceeco Stainless Steel Wall Phone Model #SW-321-X

TWAcomm.com
Oceanview Promenade
101 Main Street, 3rd Floor
Huntington Beach, CA 92648
877-892-2666
www.twacomm.com

655c. Stainless Steel Wall Phones

G-Tel Enterprises; CS400 Armored Courtesy Phone

G-Tel Enterprises
16840 Clay Road
Houston, TX 77084
800-884-4835
http://www.payphone.com/

660. Outdoor Furniture

Norix; Hilltop Outdoor Furniture

Norix Group, Inc.
1000 Atlantic Drive
West Chicago, IL 60185
800-234-4900
www.norix.com

675a. Security Fencing

Fence Factory; Miniature Mesh

Fence Factory
1606 Los Angeles Ave.
Ventura, CA 93004
800-613-3623
www.fencefactory.com

675b. Security Fencing

Riverdale Mills, Wire Wall High Security Fencing – Maximum Security

Riverdale Mills
130 Riverdale Street; PO Box 200
Northbridge, MA 01534
800-762-6374
www.wirewall.com

675c. Security Fencing

Metalco Fence and Railing Systems – Steel Fence Systems

Metalco Fence and Railing Systems
586 Territorial Drive
Bolingbrook, IL 60440
800-708-2526
http://www.fence-system.com/

675d. Security Fencing

Britplas - Safevent Fencing

Britplas
Unit 18 Kingsland Grange
Woolston
Warrington
WA1 4RW
+44-1925-824317
www.britplas.com

ABOUT THE AUTHORS

James M. Hunt, AIA, NCARB, is a practicing architect and facility management professional with over 40 years of experience. He is a registered Architect, holds a certificate from the National Council of Architectural Registration, and began his career practicing architecture for several major health care projects. He then served as director of facilities management for the Menninger Clinic for 20 years. In addition to managing their main campus, he also consulted on behavioral health care unit remodeling projects for their Clinical Network program, which involved work in eight states including both coasts and the Midwest. During this time he was a founding member of the Health Care Council of the International Facility Management Association. He held several offices in the council, including chair. He was featured in a cover story of *Facility Design and Management* magazine and continues to publish articles and speak at major conferences. He is president of Behavioral Health Facility Consulting, LLC. (BHFC), an organization has worked with behavioral health facilities and their designers in 30 states and Canada on improving patient and staff safety. He is also a principal and co-founder of Behavioral Healthcare Architecture Group which has offices in Topeka and New York. This firm specializes in creating healing environments for psychiatric and addictions facilities. He can be reached at 2342 SE Alamar Rd., Topeka, KS 66605 or jim@bhfcllc.com .

David M. Sine, DrBE, CSP, ARM, CPHRM, has had over a 25-year career in safety, risk management, human factors, and organizational consulting. He has been the state Safety Director of two eastern states, the Senior Staff Engineer for The Joint Commission, and a Senior Consultant for the American Hospital Association. Founding partner and one time contributing editor for *Briefings on Hospital Safety,* co-author of *Quality Improvement Techniques for Hospital Safety,* one time Vice Chair of the board of Brackenridge Hospital in Austin, Texas, Mr. Sine is certified by the Joint Board of the American Board of Industrial Hygiene and Certified Safety Professionals and as a Certified Professional Healthcare Risk Manager by ASHRM. He has been a health care risk management consultant since 1980 and has conducted more than 1,300 Joint Commission compliance assessment surveys. He serves as a member of the NFPA 101 Life Safety Code Subcommittee on Health Care Occupancies, The Joint Commission Committee on Healthcare Safety, and acts as a risk management advisor to the National Association of Psychiatric Health Systems. Mr. Sine served in the corporate offices of the Tenet HealthSystem in Dallas as Director of Risk Assessment and Loss Prevention and Vice President of Occupational Health and Safety. Mr. Sine continues to write and lecture extensively on health care policy, governance, quality improvement, and risk management as President of SafetyLogic Systems in Austin, TX. He can be reached at dsine9@gmail.com.

ABOUT FGI

The Facility Guidelines Institute is a not-for-profit corporation founded in 1998 to provide leadership and continuity to the *Guidelines* revision process. FGI functions as the coordinating entity for development of the *Guidelines* series of documents using a multidisciplinary, consensus-based process and for provision of ancillary services that encourage and improve their application and use. FGI invests revenue from sales of the *Guidelines* documents to fund the activities of the next revision cycle and research that can inform the *Guidelines* development process. For more information, visit www.fgiguidelines.org or contact the Facility Guidelines Institute at info@fgiguidelines.org.

DEFINITIONS / RESOURCES

***Americans with Disabilities Act* (ADA).** The *Americans with Disabilities Act* gives civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, State and local government services, and telecommunications. See www.ada.gov/.

***Guidelines for Design and Construction of Hospitals and Outpatient Facilities* – 2014 edition**. This book, published by the Facility Guidelines Institute, includes chapters on psychiatric hospitals and outpatient psychiatric centers. For information on purchasing the FGI *Guidelines*, visit: http://fgiguidelines.org/fgistore.php

***Health Insurance Portability and Accountability Act of 1996* (HIPAA).** The Office for Civil Rights within the U.S. Department of Health and Human Services (HHS) enforces the HIPAA Privacy Rule, which protects the privacy of individually identifiable health information; the HIPAA Security Rule, which sets national standards for the security of electronic protected health information; and the confidentiality provisions of the Patient Safety Rule, which protect identifiable information being used to analyze patient safety events and improve patient safety. See http://www.hhs.gov/ocr/privacy/.

The Joint Commission. See www.jointcommission.org for their standards.

National Fire Protection Association (NFPA). Publishes NFPA 101: *Life Safety Code®, 2012 edition*, which is available at http://www.nfpa.org/catalog/product.asp?pid=10109&order_src=A291. For more on NFPA or links to new publications, see www.NFPA.org.

National Institute of Corrections. See http://www.nicic.org/.

LIST OF MANUFACTURERS

Access Products, http://www.us.ecoglo.com/
Accurate, www.accuratelockandhardware.com
Ace Security, www.smashandgrab.com
Acorn Engineering Co. http://www.acorneng.com
Allen Tel Products, www.allentel.com
Alro Plastics,http://www.myAlro.com
American Innovation, http://www.americaninnovationproducts.com/
American Spec, http://www.americanspecialties.com/
American Standard, www.americanstandard-us.com/
Anemostat, http://www.anemostat-hvac.com
Archer Manufacturing, http://www.vandalproof.org/
Armstrong Flooring, http://www.armstrong.com
Armstrong Hot Water Group, http://armstronginternational.com
Arsco, http://www.arscomfg.com/
Avonite, http://www.avonitesurfaces.com
BASF, www.master-builders-solutions.basf.us
Behavioral Safety Products, www.besafepro.com
Best Access Systems, www.bestaccess.com/
Best Bath, www.best-bath.com
Big John, www.bigjohntoiletseat.com
Blockhouse, http://www.blockhouse.com/
Bradley, http://www.bradleycorp.com
Brey-Krause, www.breykrause.com
Britplas, www.britplas.com
Carnes, www.carnes.com
Carstens, www.carstens.com
Cascade, http://www.cascadesh.com/
Ceco, http://www.cecodoor.com
CHG, www.chgbeds.com
Chloride, http://www.chloridesys.com/chloride/
CompX, www.compx.com
Comfortex, www.comfortex.com
Cooper, www.cooperindustries.com
Cortech, www.cortechusa.com
CS Acrovyn, http://www.c-sgroup.com/
Curries, http://www.curries.com
Custom Design Frameworks, http://www.customdesignframeworks.com
Dano group, http://www.danogroup.com
Designplan, www.designplan.com
Dex-O-Tex, http://www.dexotex.com
DHSI, http://www.dhsi-seal.com
Door Control Services, http://www.doorcontrolsusa.com/
Door Switch, http://thedoorswitch.com/
Draper, Inc., www.draperinc.com
Dur-A-Flex, http://www.dur-a-flex.com
Dynalock Corp, http://www.dynalock.com
Eggrock, www.eggrock.com

Fence Factory, http://www.fencefactory.com
Filtrine Manufacturing Co.; www.filtrine.com
Flexco, http://www.flexcofloors.com/
Flxsigns, www.290signs.com
G-Tel, http://www.payphone.com/
Global, www.security-glazing.com
GoJo Industries, www.GOJO.com
Grahan Wood Doors, www.grahamdoors.com
Hafele, http://www.hafele.com/us/index.htm
Hager, http://www.hagerco.com/
Hospital Systems Inc., www.HospitalSystems.com
Hubbell, www.hubbell-wiring.com
IE; Blinds, www.ieblinds.com
Intersan, www.intersanus.com
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