

MODULAR CABINET SYSTEMS

RETAIL STORE FIXTURES

Injuries from Improper Installation

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I have been the retained expert witness by both the plaintiff and defendant to determine the causes of a variety of significant injuries that have happened as a result of improper cabinet and millwork installation practices. In most claims, if product abuse or deferred condition was not the reason for the injury, poor installation practices that have omitted required hardware was to blame. Architectural millwork injuries have occurred repeatedly in shopping centers and malls, hotels, hospitals, airports, and offices throughout the country. Casinos and restaurants are also routinely the location of significant cabinetry related failures leading to serious injuries. Many offices and industrial buildings that utilize modular furniture have had employees injured by improper or completely unattached components. In my other articles, improperly attached architectural millwork has been discussed. Heavy mirrors and headwalls have fallen upon hotel guests while they were asleep in bed. Generally, these failures occur due to lack of appropriate fasteners, missed structural connections, or product tampering.

This article addresses modular furniture and retail display component attachments.

MODULAR FURNITURE SYSTEMS CAN BE DANGEROUS

Every cabinet and millwork installation is unique. Although many may utilize the same products, methods of attachment can vary depending upon the site conditions present. Engineered points of attachment are often overlooked by the installation crews for temporary office furniture. Movable and modular systems offering quick reconfiguration options can be dangerous to the end users without proper support or adequate attachment hardware. Many single source retail display manufacturers rely upon the delivery and installation workers or untrained store employees to assemble and provide appropriate anchorage of their products.

In most office modular systems, wall panels form the basic support elements for hanging cabinets and desk tops. When manufactured, the design of these products allows for various interchangeable and reconfigurable components that offer quick modifications or easy movement to another location. If a company is relying upon the services of a professional installation team supplied by the manufacturer, the assumption is made that the installers are familiar with all of the system components and know how to properly and safely assemble and attach the modular systems. This is not always found to be the case. It is important that all special requirements of the installed products are met. Proper points of attachment, anchorage of moveable products, and appropriate electrical and data integration are critical. Ancillary cabinetry that often accompany these systems frequently includes adjacent file cabinets and storage products. All of these components need to be installed and attached safely when delivered and put into use. Sometimes these side components arrive at a jobsite many days or weeks after the original system installers have left the site and are never properly anchored or attached in any way.

Products such as tall storage cabinets and lateral file drawers that are not anchored properly can overturn when used. In an office environment or any retail location, no matter what size width or height, it is essential that any component that has moveable drawers or opening doors be securely anchored to avoid any potential toppling of that product. When even a single drawer, loaded with documents or sales merchandise, is fully opened it can create a significant cantilevered load on the cabinet carcass. If a loaded upper drawer versus a loaded lower drawer is pulled fully open the overturning stress is significantly increased. Depending upon the weight of the loaded drawer and the position in the drawer stack, there may be more extended cantilevered load than the combined total weight of the entire remaining carcass and drawer configuration can counter balance. This can easily create forces sufficient to cause an office file cabinet or merchandise display to overturn onto a user if not properly secured to the floor or wall as required. Due to the potential for creating an overturning load, it is a basic requirement that all cabinets and components with moveable parts be properly anchored when installed.

In states such as California that have frequent seismic activity, proper attachment and product anchorage seem commonplace. However, seismic events are not the primary reason to make sure that all modular casework, wall systems, or store display pieces are adequately anchored. Most modular system manufacturers recommend using angle brackets (often provided), or additional hardware. Base plates and blocking systems are also recommended to assure that the moveable furniture does not move in any way, until planned.

CASE EXAMPLES - IMPROPER CASEWORK ANCHORAGE

Some actual cases where I have been the retained cabinetry & fixture injury expert:

Man is injured while reaching for socks on display cabinet in store

A 5' high cabinet full of socks overturned on man while he was reaching for the top shelf socks. This particular cabinet was manufactured by an out of state company. The company sold this cabinet to hundreds of locations throughout the country. The cabinet was manufactured to provide appropriate anchorage, but the cabinet manufacturer relied upon the delivery team to also install the product. The product was to be placed using the required hardware to meet the local building code, as required. Due to scheduling, the cabinet was only dropped off at the store loading dock. Store employees moved the cabinet, placed the cabinet, and loaded it unaware of the potential toppling condition. The cabinet had only been in place in the store for a couple of days before this incident took place. Upon inspection, it was found that no anchoring of any kind had been done. The store and cabinet manufacturer were named in the lawsuit. It was determined that the manufacturer had provided appropriate instructions and complete hardware that would have enabled a proper secure installation to take place. The store assumed full responsibility because the store employees decided to place the cabinet without understanding the anchoring requirements.

Mother and toddler are injured when department store display falls onto them

A woman with a toddler in a stroller walked past a 3' high purse display and they were both injured when the cabinet fell apart and onto them. The store display had been in this department store for over two years. The original location of this display piece had been part of a large area renovation. The department store management decided to move this and several other cabinets to another part of the store. When the cabinet was removed from the original location, several support brackets installed into the base of this display were broken and damaged. During inspection of this piece it was discovered that a thin piece of wood originally used to conceal the base supports was the only thing now supporting the entire product. The structural integrity of the support base was destroyed when moved. As the cabinet collapsed, the merchandise and cabinet parts fell over the child in the stroller. The mother was trapped between the stroller and the display which broke her leg, and fractured the toddler's arm. It was determined that the store was responsible for this injury because they moved the display piece.

Defective store fixtures & displays caused injury to store patron

A large chain store had contracted with a national cabinet company to provide the design, implementation, and construction of multiple point of purchase display pieces. The agreement was that the cabinet manufacturer would figure out the needs of the designs sketched by the chain owners and build the products to fit the needs of any commercial installation. There was no input of any kind pertaining to structural requirements or materials needed to build these products by the chain ownership. The cabinet manufacturer took the pencil sketches and provided more formal blueprints to the client for approval prior to construction. In the original agreement between the manufacturer and the store chain, the manufacturer assumed all liability and responsibility for the product manufactured for a period of ten years. When a store patron was injured by a piece of falling casework, the chain store tendered the claim to the manufacturer. The manufacturer claimed no responsibility for the injury, and a cross complaint was filed between the store chain and the cabinet manufacturer. It was determined that inappropriate materials had been used to build the cabinet, the product had failed, and the manufacturer was responsible for the injury.

Office cabinet falls onto worker as she is accessing the upper drawer

An office worker was injured when file cabinets overturned while she was accessing an upper drawer. This cabinet was heavily loaded and was never attached to the modular system in any way. There were several warning labels placed on the component that showed that proper connection to the system was required to avoid overturning. The office had recently been recarpeted. When the modular systems were moved to install the new flooring, the installers had disconnected many of the modular components to allow access. This particular cabinet was never reattached. The carpet installers were found to be the responsible party for this injury claim.

Head and neck injuries from overhead cabinet in office

A bank employee reached into an overhead cabinet to access business forms. The cabinet detached from the wall panel system above her desk and landed on top of her. The force of this product landing on the woman created head and neck injuries. During the inspection, it was observed that the product had never been locked onto the wall panel system that it was suspended from. The cabinet was supposed to have been attached with a hanging cleat and cam lock. The locking mechanism between the cabinet and wall panel had never properly engaged. It was determined that the installing contractor, although factory provided, had not checked that the casework was securely installed during the original recent installation of the cabinet and modular system. The modular system looked fine visually, but no appropriate attachment had been made. Several other adjacent components were also found to be improperly connected during the inspection. The contractor was found to be responsible for this injury claim.

Secretary sitting at computer station is hit with upper cabinet

An entire hanging modular wall section and upper hanging cabinet landed on top of an office secretary as she was using her computer on the desktop below. In this case, the modular panels and cabinets were partially suspended off of the floor because of some specific site condition requirements. The points of attachment were made with metal cleats that were supposed to have been attached to wall studs or continuous backing. In the construction plans, it was noted that metal backing plates were required to have been positioned between the wall studs for future installation of the modular panel systems. There were specific height and widths as well as backing thickness noted on the building drawings. When inspected, it was determined that no backing material was ever installed on the subject wall location where the casework was placed. The installers, failing to verify that the wall condition was sufficient had inappropriately used wall anchors through drywall alone. Normal usage of the desk below had created a rocking movement that ultimately pulled the wall anchors out of the drywall. In this installation, the general contractor, the modular furniture installer, and the framing contractor were all held responsible for the injury to the secretary. The general contractor for oversight failure, the modular furniture installer for failing to verify during framing (a contract requirement) that the wall condition for backing was met, and the framing contractor for failing to install the appropriate wall backing.

As a modular furniture manufacturer and retail product installer, it is critically important to provide specific methods and instructions at delivery to insure that the installation of those products is performed correctly. Once a complete modular system or proprietary retail store display is in place, it is generally recommended that the end user contact the manufacturer or installation team when movement of those products is required. Using a professional installer usually assures the end user that all safety components and points of attachment are made correctly when relocated. Financial limitations, poor decisions, and uninformed choices often determine that using an outside installation team to rework modular furniture is not worthwhile. No thought is given to the safety aspect of moving this type of product around in a store or office space.

In comparison, a well-trained in-house engineering staff can assume the responsibilities of reconfiguration of the modular system or store display if all product components are understood and properly reassembled and secured. Untrained sales employees and office staff are not qualified to reinstall or reposition these movable products. Any injuries resulting from using unprofessional and improperly trained workers to relocate this type of cabinetry is negligent on the part of the management of the office or store location.

Examples of appropriate attachment include floor blocking and brackets when a component is placed in an open area away from any wall. When a cabinet is placed next to a support wall, brackets, chains, blocking, or screws to lock the cabinet into place are generally used. Modular furniture often uses a cleat and cam system to connect all components of the system together. In high traffic areas or areas that are subject to seismic activity, a combination of many methods of attachment is found. Specialty hardware supplied by a manufacturer may be used to meet building codes or anti-theft movement of the furnished products. These pieces of hardware are engineered to guarantee appropriate attachment for all applications as designed.

Read Michael Panish's published article about Mechanical Fasteners.

Mike Panish is a casework and cabinetry contractor in the State of California. His company has provided cabinetry and installation services to hotels, hospitals, medical offices, business offices, restaurants, shopping malls, courtrooms, airports, and most types of commercial and residential locations. Mike has worked extensively in medical environments with strict and specific anchoring requirements to meet OSHPD (Offices of Statewide Health and Planning Development) since the inception of the codes. Mike has been the retained expert witness for cabinet and millwork personal injury and defect cases across the country working for both plaintiff and defense to determine causation and forensic analysis of the claim. A list of other cabinet and millwork articles written by Mike Panish can be found at his website at www.constructionwitness.com. Contact Mike Panish to discuss your cabinetry or architectural millwork injury or defect case.