DECO**Guides**

DECO Guide To Institutional Casework

What is Institutional Casework?

Institutional casework can seem hard to define. It's not commercial cabinetry, nor is it residential. Institutional is its own category, but it shares similarities with commercial casework that can make it hard to distinguish.

There are some properties applicable to institutional casework which set it apart from other categories. To begin with, institutional casework is designed for **longevity, durability, safety, and functionality**. These qualities are required in public spaces or applications involving non-owner groups or multiple shifts. Basically, people who don't own the casework are going to be using it and it's going to take a lot of abuse, but at the same time needs to survive for decades.

Institutional casework must be durable. This means it is engineered (both components and the finished product as a whole) and then independently tested to perform uniformly for an extended life cycle. It also must conform to a higher level of safety because the public will be using it.

In addition, institutional casework is often based on modular designs so it can be easily adapted to new environments and uses. It is also built-to-order using a customized feature palette. Institutional casework buyers have much more control over the finished product than other casework applications.

In this guide we will be exploring the different materials used to manufacture institutional casework and how they apply to specific environments and uses.

Institutional casework appears in healthcare, public schools, higher-ed facilities, municipal buildings, research laboratories and emergency and first responder facilities.

Choosing Materials For Institutional Casework

The right choice of material is based on several factors. The environment, user groups, application, and budget all work together to determine the right material for the job. It's best when weighing institutional casework materials to consult knowledgeable advisors to help you make the most informed and effective decision.

When unsuitable materials are used in institutional environments, the consequences are publicly exposed and can have severe and costly repercussions. Forethought and planning today can save money and time and protect your reputation down the road.

Material	Cost	Commonly Found	Features
Wood	$$	Science classrooms, research facilities	Natural finishes and nostalgic look, chemical durability.
Plastic Laminate	$	Educational classrooms, hospital patient rooms, administration offices	Most flexible, easiest to incorporate colors and design elements.
Painted Steel	$$	Research labs, testing facilities, concession buildings	High-durability, excellent chemical resistivity, suitable for research environments.
Stainless Steel	$$$	Hospital support rooms, food service, operating rooms, marine applications	Best all-around strength and durability, great in wet locations.
Solid Surface	$$$$	Hygenic locations, ORs, MRI, high end decorative spaces	Most hygienic solution for critical infection exposure, highly customizable, modern aesthetic.
Phenolic	$$$	Chemistry labs, high moisture environments with high abuse	Structural panels give great design flexibility. Extremely durable.
Polymer	$$$	Wet locations exposed to the elements, water testing labs	Impervious to water. Color-through panels make for uniform design.

Plastic Laminate

Laminate cabinets are the most versatile type of institutional casework. These cabinets are precision engineered and tested with 50-year durability standards. They can be customized to the millimeter and lend themselves to all market segments: education, business, healthcare, research and municipal. Because the options are so abundant, it is best to work with a knowledgeable dealer when planning installations.

Plastic laminate is based on a concept that employs consistent, high-volume manufacturing which yields excellent value for the owner. Plus, it is also one of the best ways to introduce facets of sustainability into a project.

The modern laminate cabinet uses a composition particle board core that is made of reclaimed wood or products that would not otherwise be featured in furniture production. Incorporating this kind of cabinet reduces the consumption of older-growth hardwood products used to make cabinetry in former decades.

Painted Steel

Wet labs, high abuse environments and research facilities demand the durability of steel. With advanced epoxy powder coated finishes as well as stainless steel, these cabinets can be trusted to endure over the long haul. In addition, new manufacturing techniques continue to tighten build tolerances and improve the fit and finish of this product.

Many people fear that painted metal is a liability in a wet environment. In reality, painted steel casework is very similar to automobile applications. The powder coated finish seals and protects the cabinet structure from damage or corrosion and can stand up to the spills and exposures of this type of work.

The welded frames of the cabinetry bodies handle the heaviest weight loads and are well-suited to laboratory applications. Painted steel cabinets allow you to bring structurally sound cabinetry into your sensitive healthcare or laboratory environment without risking mold or bacterial growth, which can potentially be a factor with wood-based casework.

Steel cabinets do not lend themselves to the kind of flexibility and customization found with other products in this guide. Sticking with standard configurations and catalogued sizes will help ensure consistency, reduce lead times, and keep costs in check.

Stainless Steel

While not always the case, our rule of thumb is that stainless steel cabinets are double the cost of painted steel. That being said, in harsh environments there's no material to compare with the durability of stainless.

In high-abuse areas, stainless steel does not have a painted surface to scratch and introduce rust or corrosion. And in wet environments, stainless can be left unattended without adversely affecting its performance, even over decades of misuse.

Stainless steel is not typically used in lab settings because exposure to certain chemicals (some harsh bases, as well as hydrochloric acid) can affect the finish. However, it is very common in hospital settings, especially in decontamination or soiled-utility wash stations. It is the ideal product for these areas because it can handle the over-spray and exposure to cleaning agents without problems.

We also see stainless in laboratory "clean rooms" where any kind of particulate cannot be tolerated. In educational settings stainless is often used in unattended and non-climate-controlled concession buildings. Stainless steel can handle the abuse of multiple unaffiliated user-groups, the exposure to the elements, and will not swell or warp due to changing seasons and lack of climate control.

Solid Surface

This is one of the most exciting areas of development for the institutional casework industry. The use of fully solid surface cabinets has been an appealing concept, but until recently was fraught with too many compromises to be commercially viable.

Now, with the advent of the Futrus® patented construction system, the durability and superior infection control features of solid surface can be brought to the complete casework assembly, not just the countertops. The ability to bond this type of durable acrylic sheet to a structural frame overcomes the limitations previously seen with solid surface that created cracking at seams and a short lifespan for the early generation attempts at making cabinetry out of this material.

This product is ideal for areas where infection-control is paramount and resistance to microbial growth is important. Areas like Operating Rooms, MRI suites, decontamination rooms and cancer centers can all be well-served by this bleach-cleanable system.

Wood

Wood casework brings a warm and natural feel to a space and is commonly used in the laboratory. Its intrinsic strength and traditional joinery produce cabinetry that is engineered with the scientific process in mind.

One of the advantages this cabinetry brings is the natural beauty of wood, paired with a highly resilient, chemically-resistive finish to increase the cabinet's longevity and durability. Plus, the structural framing fits the needs of the rigorous laboratory environment. This includes upright chase frames and heavy laboratory equipment that often sits atop the cabinets.

Phenolic Resin

These can be expensive cabinets, but they fill a unique position in the market. Because they incorporate a structural panel that is both durable and resistant to chemicals and moisture, they can be used in settings where other cabinets could fail structurally or deteriorate due to corrosion.

The phenolic cabinet was initially developed to address the locker-room area in schools and gyms. Phenolic resin offered a solution for cabinets that were exposed to moisture and abuse by making the entire cabinet (body, doors, and drawers) out of a durable, water-resistant, machinable panel.

On top of that, the chemical resistant surface—so beneficial in laboratory countertops—is integrated into the construction of cabinetry. Doing so creates a durable, corrosion-resistant product that can handle high-moisture environments easily. These cabinets appear in wet areas like natatorium offices and scoring areas. In some laboratory applications, where the environment is both high in moisture and corrosive, phenolic resin cabinets shine.

Polymer

Environments where water is prevalent are a constant threat to most casework with substrate cores, such as particle board. There has been an idea in the casework industry that if all the internal construction cores susceptible to the ravages of moisture could be eliminated, you might have the ideal system.

Polymer cabinets come close to this ideal design by working with a homogenous sheet of waterproof and stain-resistant polymers. These sheets of plastic have great resilience, so they don't chip or crack and they are perfect for high-moisture environments.

Wastewater treatment plants, where the testing labs are constantly exposed to water samples and where chemicals are used for analysis in every process, are a great place to introduce this unique solution.

Environments like pools, marine and aquatic research facilities, procedure rooms and service locations in zoos find an ideal solution in polymer casework. These cabinets are easy to machine, have UV stable components, so they can survive inside or outside, and handle most any kind of harsh environment.

Viewpoint Commentary

This handout is based on the professional perspective of the DECO Associates team. The purpose of this handout is to suggest which products may work for various use-cases and is not a formal recommendation. Each product can vary in its benefits and detractors, apart from the opinion of the DECO Associates team.

About DECO Associates

We help Contractors, Construction Managers, and Owners complete their casework projects reliably and on time.

Many of our customers come to us looking for a partner with the financial strength, technical competence and production resources to successfully complete their complex projects — both large and small.

Throughout our history, Architects and members of the Design Community have been able to receive unbiased help, support, and assistance on their design projects. We strive to fulfill our customer commitments with integrity and diligence — from layout, to specification details and product selection.

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DECO
ASSOCIATES

Phone: (317) 842-4444
7225 East 87th Street
Indianapolis IN, 46256

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