

TECH *Talk*

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Protective Hardware Simplified

Protective Hardware, as the title implies, is the type of hardware used to protect the door and to add to its life. Items to be covered in this Tech Talk include:

- Kick Plates
- Stretcher Plates
- Armor Plates
- Mop Plates
- Edge Guards

General Information

Materials used to form protection plates are aluminum, brass, bronze, plain steel, stainless steel, clear Plexiglas™, Kydex™ and laminated plastic. Metal protection plates are available in .038" (20 ga. US), .050" (16 ga. B&S / 18 ga. US) and .062" (14 ga. B&S / 16 ga. US) thicknesses and can be ordered in many of the BHMA (Builders Hardware Manufacturers Association) finishes. Kydex™ and clear Plexiglas™ protection plates are available in .080", .125" and .25" thicknesses. Plastic laminate plates are typically .125" thick.

Protection plates are typically square-cornered, and may be beveled on three (3) or four (4) edges. Beveled edges are primarily used for aesthetics. However, on armor and stretcher plates the beveled edges help to protect people from the exposed sharp edges created when the plates were cut to size. Certain manufacturers offer protection plates that wrap around the lock stile or bottom rail of a door.

Armor Plates

Armor plates are designed to be used on the push side of an opening to protect the lower part of a door. They are used in storage areas, patient rooms, operating rooms and cross corridor doors and are used to protect doors from the abuse of gurneys, dollies, trucks and carts.

Many armor plates are 42" high, but their height can range from 36" to 48". It is not unusual for the height of an armor plate to conflict with mounting height of a mortise or bored lockset. In these instances, the armor

plates will have to be ordered from the manufacturer to be prepped for the appropriate hardware item. Some manufacturers will require a sketch and lock template be sent with the order, before prepping the armor plates.

Notched cutouts can also be used (in lieu of the templated lock prep) to allow the armor plate to be installed around the lock trim.

Sizing armor plates in width has to be done with care. Unlike kick and mop plates, armor plates are intended to cover the full surface of the door. Usually, an edge guard will also be used on the hinge and/or lock stile of the door, to protect the stiles from potential damage. The type and size of the edge guards will have a significant affect on the actual width of an armor plate, as will the profit size of the door. Refer to the manufacturers' catalog to determine the actual width of an armor plate.

Kickplates

Kick plates are installed on the push side of openings equipped with door closers or spring hinges. When sizing kick plates, it's good practice to cover as much of the door surface as possible. Common practice is to size the kick plates at least 1 1/2", and no more than 2", less than the nominal door width (LDW) on single doors and 1" LDW on pairs of doors. Be sure to check door elevation details closely. Items such as a door louver or lite kit can affect the height of a kick plate. Unusual stop dimensions can also affect the width of protection plates.

Mop Plates

Mop plates are installed on the pull side of an opening and are used to protect doors from cleaning equipment such as floor scrubbers, waxers and vacuum cleaners, as well as cleaning detergents and waxes. Mop plates are generally 4" to 6" in height and are sized 72" to 1" LDW for both single and paired openings.

Stretcher Plates

Sometimes called a scuff plate, this plate is used on a door when a kick plate is installed in its regular position on the same side of the door. The stretcher plate is

positioned at the level or height of a gurney, bed or cart, to prevent damage to the door. Stretcher plates are typically 6" in height and are sized in width the same as kick plates. Stretcher plates are sometimes used in lieu of armor plates.

Edge Guards

As the name suggests, edge guards are used to protect the hinge and lock stile of a door, and are can be either surface or mortise applied, and are usually used in conjunction with armor plates. Edge guards are generally formed from .050" thick stainless steel (BHMA 630 finish) and satin chrome plated brass/bronze (BHMA 626 finish) metals. Although, some manufacturers offer other BHMA finishes.

Edge guards are available for 90 degree square-edged, 93 degree beveled-edged and radius-edged doors. Surface, or overlapping, types of edge guards are preferred because they do not require additional door preparation. Surface edge guards, applied to the hinge stile, can be installed over the hinge(s). Mortise types of edge guards will require a cutout around the hinge(s). Which will require the edge guards to be ordered from the manufacturer with the location and size of the hinge(s) and the handing of the door. Likewise, edge guards applied to the lock stile of the door will have to be cutout for the face plate of mortise and bored locks, as well as flush bolts installed on inactive leaves of paired openings.

Fasteners

Typically, protection plates and edge guards are fastened to hollow metal and wood doors with Phillips oval head sheet metal screws (SMS) for maximum holding power. Adhesives are also used to attach protection plates and edge guards to the doors. Wood screws are not generally used, because the unthreaded portion of the screw is often longer than the thickness of the plate it is attaching, lessening the holding power of the fastener.

Fire Rated Openings

Protection plates and door edges can be used on fire rated openings. However, care needs to be taken to research what types and sizes of protection plates are acceptable in a given area. The 1995 edition of NFPA 80, "Standard for Fire Doors and Fire Windows", limits the use of protection plates to the lower 16" of both sides of a door. Generally speaking, this 16" maximum height applies to kick and mop plates and edge guards. Protection plates must be installed so that the top of these plates are no higher than 16" from the bottom of the door.

Some door and hardware manufacturers have tested and received approval to use larger protection plates on specific combinations of fire labels, door constructions, protection plates and means of fastening. Local code authorities may have to be contacted to determine if these exceptions are available in your area and may require a variance to be approved before specifying, supplying and installing these plates.

CONCLUSION

Protection plates and edge guards extend the life of new and existing doors in abusive areas. They require relatively low maintenance over the life of their installation. Used appropriately throughout a building, they will blend into the building and provide many years of service to the Owner.

Proprietary information from

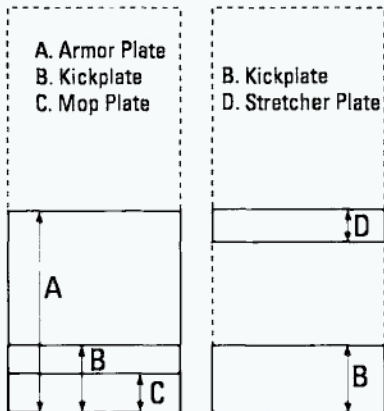


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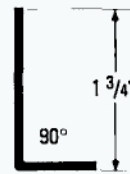


Typical Plate Heights*

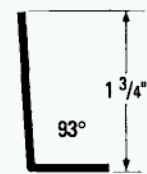


*see text for specific measurements

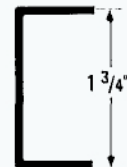
Mortise Type Armor



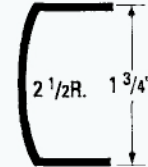
For non-beveled stile on single-acting door



For stile-beveled, 1/8" in 2" on single-acting door

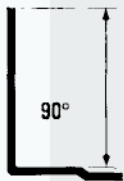


For non-beveled stile on double-acting door

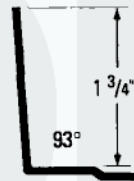


For radius stile on double-acting door

Overlapping (Non-Mortise) Type Armor



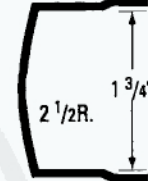
For non-beveled stile on single-acting door



For stile bevel 1/8" in 2" on single-acting door



For non-beveled stile on double-acting door



For radius stile on double-acting door

All stock edgings are made in standard lengths of 40" or 42" for 1 3/4" doors. Other lengths or edgings for different door thicknesses are available on special order.

Door Security +
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