CITY of CHICO

COMMUNITY DEVELOPMENT DEPARTMENT

BUILDING DIVISION

411 Main Street, 2nd Floor | P.O. Box 3420, Chico, CA 95927
(530) 879-6700 | www.chicoca.gov

Repair of Fire Rated Gypsum Panel Product Systems

Fire-rated gypsum panel product systems may be damaged during the life cycle of buildings.

To maintain the required fire-rated separation between occupancies or areas, damaged systems must be repaired so that they are restored to their original fire-resistive condition. The repair procedures should be dictated by the severity of the damage.

Small holes (such as those caused by a doorknob) can be repaired by patching (see Figure 1). To maintain the integrity of the surface membrane, a gypsum panel product patch must be mechanically secured to blocking in the opening; attachment with joint compound material only does not provide fire resistivity and is not acceptable. The patching material should be cut from type X or proprietary type X gypsum panel product of a thickness equal to the original panel so that the patch is in the same geometric shape as, but slightly larger than, the damaged area. The damaged area is then further enlarged to match exactly the size of the patch (see Figure 2). Use caution when cutting or fastening into stud cavities to avoid electrical shock or causing water leaks. Insulation, if present, must be restored. Metal runner track is secured to the edges of the frame opening (see Figure 3). The patch is screw-attached to the exposed face of the runner track with fasteners a maximum of 8 in. (200 mm) on center (see Figure 4). The patch should be treated with tape and joint compound to restore appearance, fire-resistance qualities, and acoustical performance (see Figures 5 and 6).

NOTE: Overlapping of joint tape can result in finishing problems.

Proprietary clip products are available that provide mechanical support for patching. Manufacturers of these products should be contacted for information.

If damage covers more than 100 sq. inches (700 cm 2) in 100 sq. ft. (10 m2) of wall or ceiling area, all materials in the damaged area must be removed back to the original framing to make the repair. Framing in the area to be repaired should be inspected and replaced if necessary, without increasing original framing spacing. Replacement panels should be cut to fill the opening and mechanically attached to the framing. Ends and edges of the panel that are not backed by framing materials should be supported with metal runner track. The repaired area should be finished with tape and joint treatment compound as necessary.

Multiple-layer systems typically require that joints be staggered between layers. Proper repair of multiple-layer systems requires that face layers of panels be removed beyond the base layer joint to retain the staggered joint feature, and each layer shall be inspected.

To improve the appearance of large areas that are structurally sound but aesthetically unacceptable, a new layer of regular or type X gypsum panel may be installed with mechanical fasteners without adversely affecting the fire-resistance rating or acoustical performance.

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Figure 1: Damaged Gypsum Panel

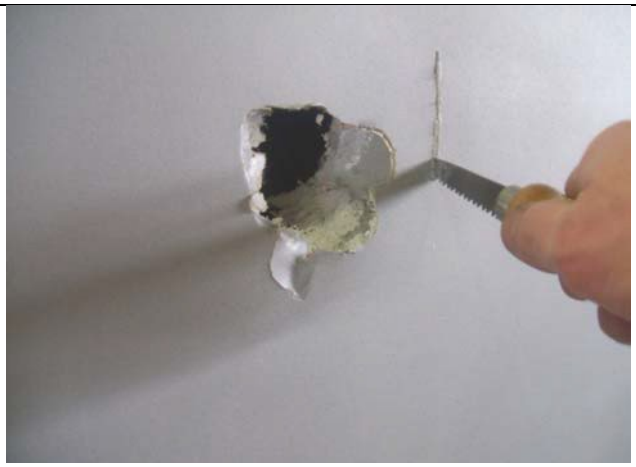

Figure 2: Square Off Damaged Area

Figure 3: Frame Opening

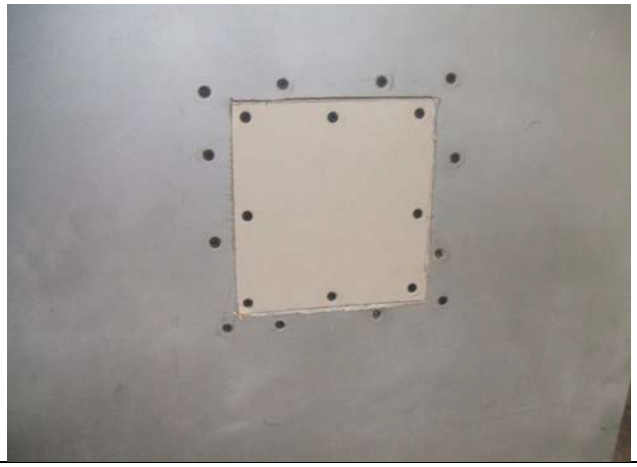

Figure 4: Apply Gypsum Panel Patch

Figure 5: Tape and Finish Patched Area

Figure 6: Redecorate Repaired Area