

## **REPAIR OF FIRE-RATED GYPSUM PANEL PRODUCT SYSTEMS (GA-225-08)**

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 must follow procedures dictated by the severity of the damage.

Small holes (such as those caused by a door-knob) can be repaired by patching. To maintain the integrity of the surface membrane, a gypsum panel product patch must be mechanically secured in the diaphragm; attachment with joint compound material only 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 materials so that the patching material 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 patching material. Use caution when cutting or fastening into stud cavities to avoid electrical shock or water leaks. Thermal insulation, if present, must be restored. Metal runner track is secured to the inside edges of the damaged area. The patching material is screw attached to the exposed face of the runner track with fasteners a maximum of 8 in. (200 mm) apart. The patch should be treated with tape and joint compound to restore appearance, fire resistance qualities, and acoustical performance.

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

Several alternative proprietary clip products are available which provide mechanical support for patching. Manufacturers of these products should be contacted for information.

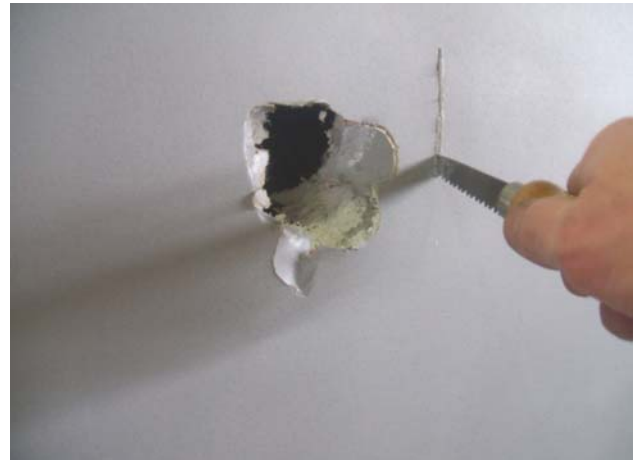
If mechanically or environmentally caused damage covers more than 100 in<sup>2</sup> (700 cm<sup>2</sup>) in 100 ft<sup>2</sup> (10 m<sup>2</sup>) of wall or ceiling area, all materials in the damaged area back to the original framing must be removed to make the repair. Framing in the area to be repaired should be inspected and replaced if necessary without increasing original framing spacing. Replacement material should be cut to fill the opening and mechanically attached to the framing. Ends and edges of the board 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 board be removed beyond the base layer joint so as to retain the staggered joint feature.

To improve the appearance of large areas that are in structurally sound, but aesthetically unacceptable condition, a new layer of regular or type X gypsum board may be attached to the existing surface with adhesive or mechanical fasteners without adversely affecting the fire resistance rating or acoustical performance.



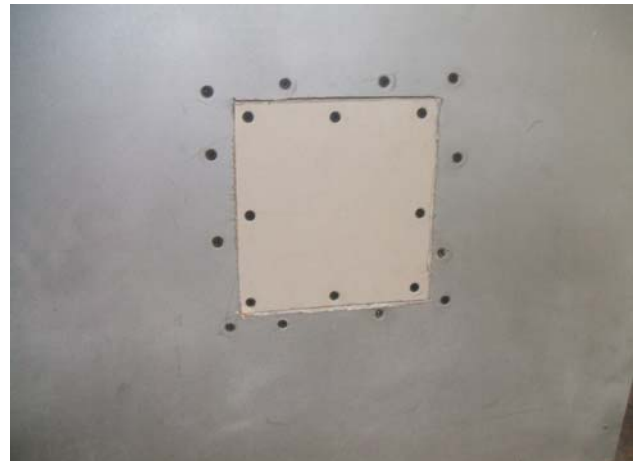
**Figure 1. Damaged Gypsum Board**



**Figure 2. Square-Off Damaged Area**



**Figure 3. Frame Cutout**



**Figure 4. Apply Gypsum Board Patch**



**Figure 5. Tape and Finish Patched Area**



**Figure 6. Redecorate Patched Area**

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