

Firestopping Myth # 84

Electrical Outlet Boxes are UL Rated and never need to be firestopped.

Metallic and non-metallic outlet boxes for use in fire rated assemblies include both single and double gang outlet and switch boxes equipped with listed metallic and nonmetallic cover plates. These outlet boxes are intended for use in bearing and non load bearing wood or steel stud gypsum wallboard with fire resistance ratings of 2 hours or less. The electrical boxes must be securely fastened to the studs. Openings in the wallboard facing are to be cut so that the clearance between the box and the wallboard does not exceed 1/8 Inch. The surface area of individual metallic or switch boxes must not exceed 16 square inches. In addition, the entire surface of the boxes must not exceed 100 square inches per 100 square feet of wall surface.

A minimum horizontal distance of 24 Inches must separate electrical boxes on opposite side of walls or partitions regardless of vertical separation. This minimum horizontal spacing may only be reduced through the use of UL Classified Wall Opening Protective Materials, commonly known as Putty Pads. Additionally, “mud rings” may not be substituted for Tele/Data applications because “mud rings” may not be installed any fire rated wall.

Code Guidelines For Receptacle & Switch Boxes

Openings for steel electrical boxes not exceeding 16 sq. in. (103 sq. cm.) in area and that are not listed for use in fire resistance rated assemblies should be permitted provided the area of any such openings does not exceed 100 sq. in. (645 sq. cm.) for any 100 sq.ft (9.3 sq. in.) of enclosure wall area. Outlet boxes should be separated by a horizontal distance of not less than 24 in. (61 cm.)

Fig. 1

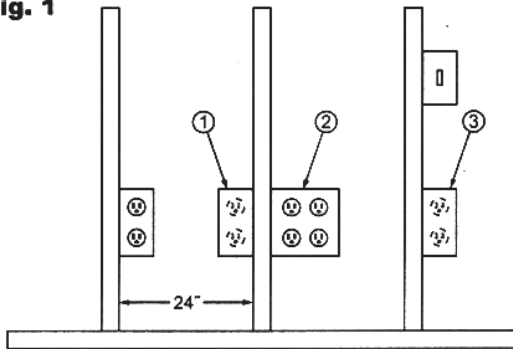
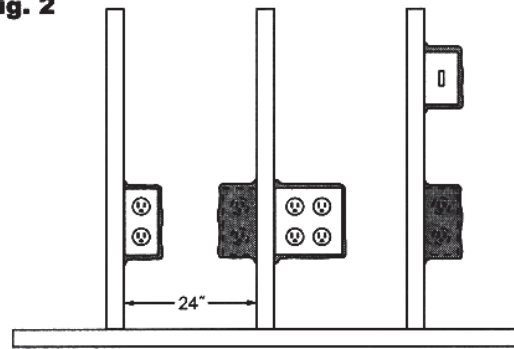


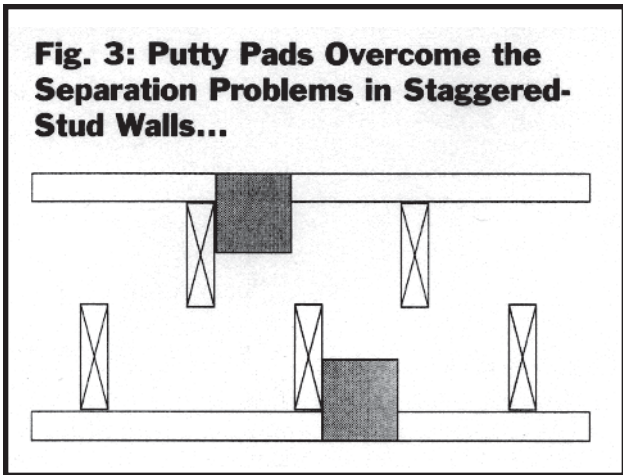
Fig. 2



In Fig. 1, three common problems are illustrated. The first shows receptacle boxes on opposite wall faces in the same stud cavity. The second depicts the use of a box that is larger than 16 sq. in. The third illustrates a switch and a receptacle box in the same stud cavity. In Fig. 2, Putty Pads provide a tested solution to these problems. Note that all boxes in the cavity are covered.

Adding another stud or drywall in between boxes does not restore the fire ratings as required by the National Electrical Code or the Underwriter’s Laboratories certification.

Fig. 3: Putty Pads Overcome the Separation Problems in Staggered-Stud Walls...



Electrical boxes cannot be installed on opposite sides of walls of staggered stud construction unless putty pads are installed on each of the electrical boxes located within the wall.

Firestop Putty Pad Classifications (They all are not the same!)

Type Of Box	Wood Studs		Metal Studs	
	1 Hour	2 Hour	1 Hour	2 Hour
Metallic	Most	Most	Most	Most
Non-Metallic - PVC	Some	Some	Some	Some
- Resin	Few	Few	Few	Few

Wall Opening Protective Materials (Putty Pads) are found under the category CLIV in the UL Fire Resistance Directory Vol. 1 and QCSN in the UL Electrical Construction Equipment Directory for use on metallic and specific nonmetallic electrical boxes for use in 1 Hr. or 1 & 2 Hr. rated wood or steel stud walls.

INSTALLATION OF PUTTY PADS ON ELECTRICAL BOXES (Protective Wall Opening Material)

STEP 1 Remove poly liner from one side of pad (Step 1). **STEP 2** Align pad to the side of box partially overlapping the stud and adhere. Working to the opposite side of the box to the edges (Step 2). **STEP 3** If wall membrane is in place, pack putty into gaps between box and gypsum board slightly overlapping inner wallboard surface. If membrane is to be installed after pad installation, overlap front edge of box so that putty will be compressed around edges of box as wallboard is installed. Cut slits in pad to fit around conduits or cables. (Step 3). **STEP 4** Press pad to surface of top, bottom, and sides of box (Step 4). Trim excess at corners and apply to conduit fittings connected to the box. Remove exposed poly liner. Optionally, putty may be packed into inside of conduit fittings to prevent passage of smoke.