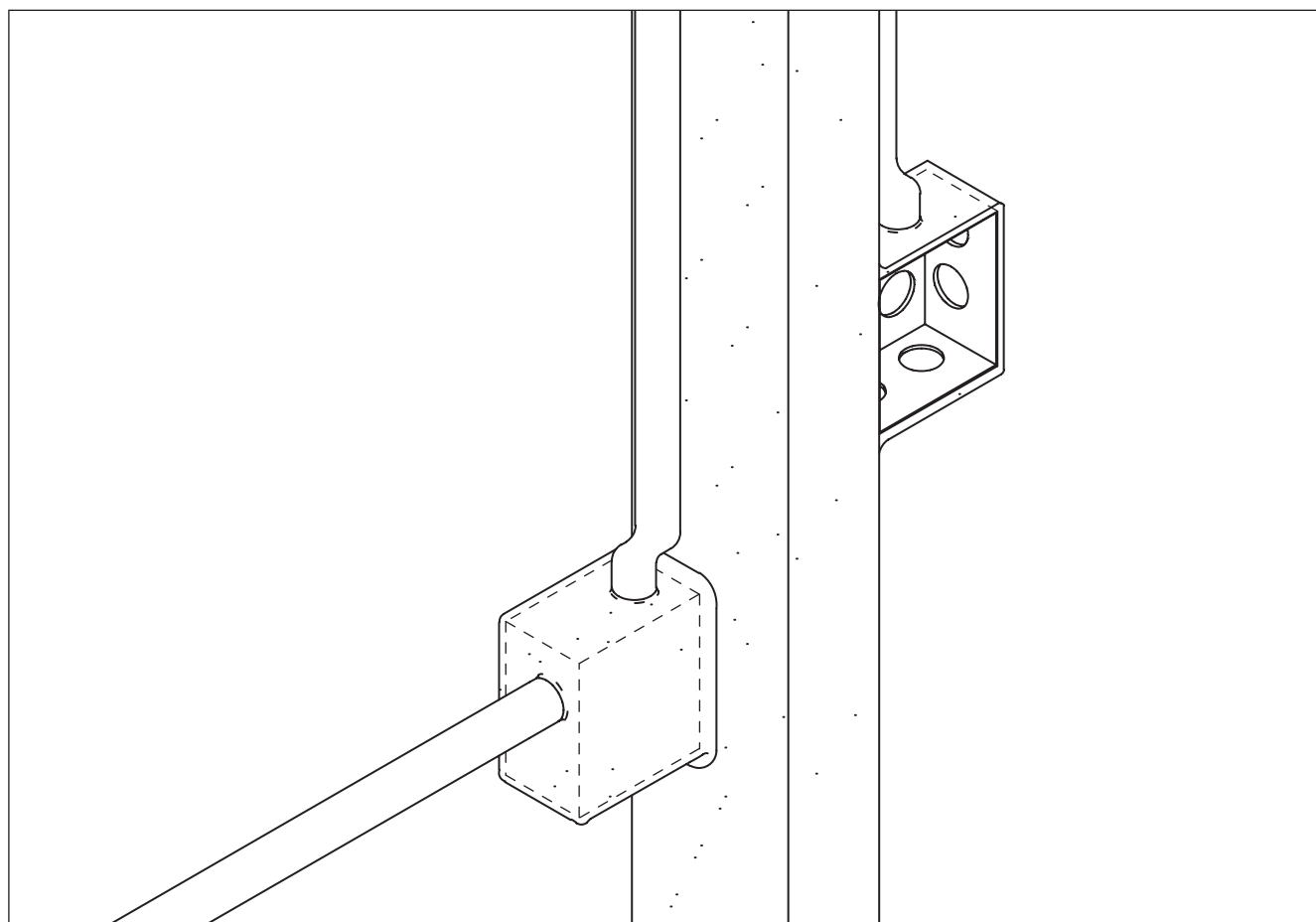




Fire Barrier Moldable Putty+ Pads

Protecting Metallic and Non-Metallic Electrical Boxes



This information brochure highlights requirements for UL listed, fire-rated electrical boxes located in some UL U300 and U400 fire-rated wall and partition designs. The information contained herein is intended to help in understanding codes (IBC, UBC, SBCCI, BOCA and NEC) and when to use 3M™ Fire Barrier Moldable Putty+ Pads per Underwriters Laboratories, Inc.® “Wall Openings Protective Material” (CLIV) listing.

What Does the Code Mean?

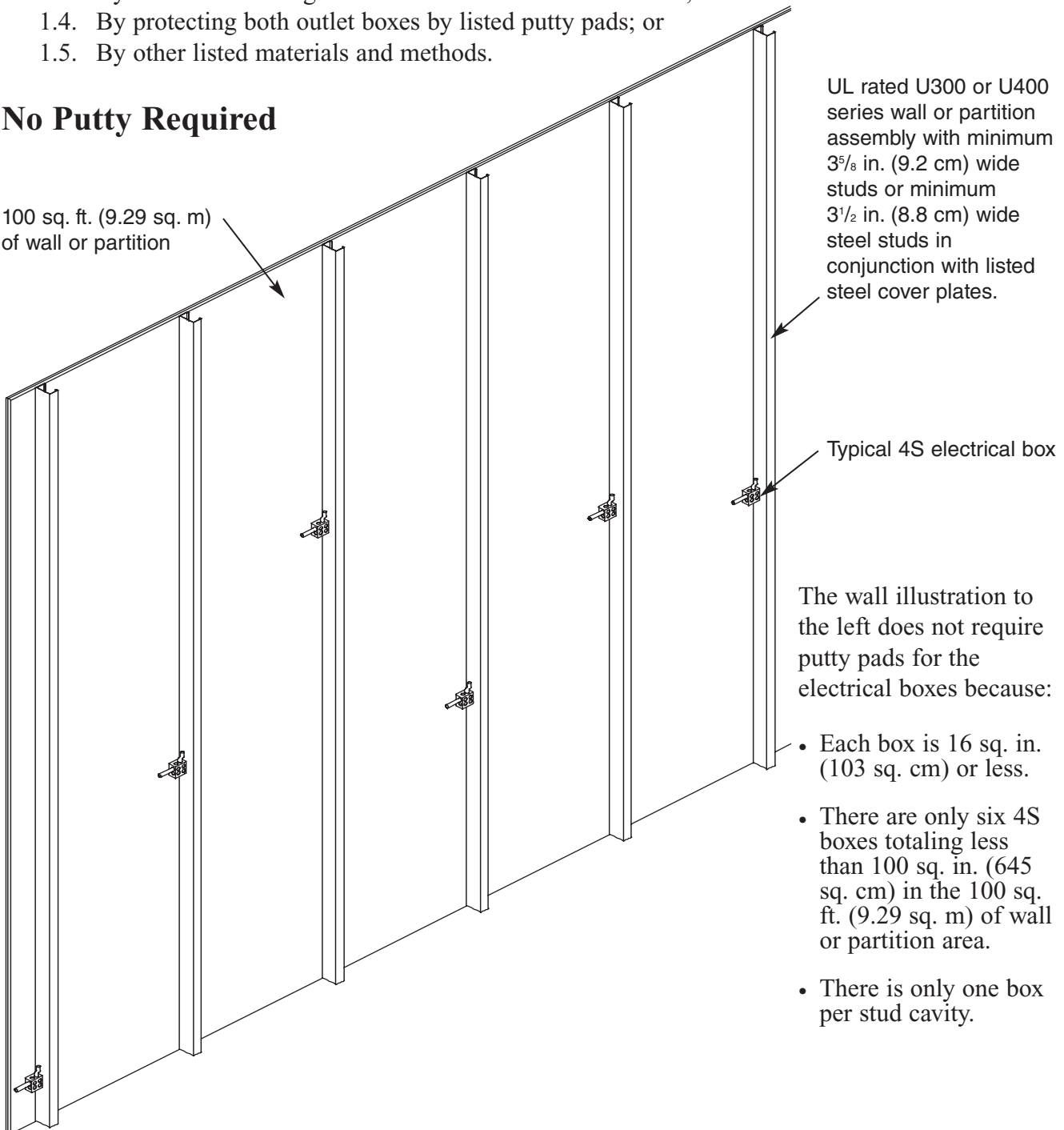
2003 IBC Code Guidelines

Section 712.3.2 Exception: 1. - Steel electrical boxes that do not exceed 16 square inches (0.0103 m²) in area provided the total area of such openings does not exceed 100 square inches (0.0645 m²) for any 100 square feet (9.29 m²) of wall area. Outlet boxes on opposite sides of the wall shall be separated as shown:

- 1.1. By a horizontal distance of not less than 24 inches (610 mm);
- 1.2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose fill, rockwool or slag mineral wool insulation;
- 1.3. By solid fireblocking in accordance with Section 717.2.1;
- 1.4. By protecting both outlet boxes by listed putty pads; or
- 1.5. By other listed materials and methods.

No Putty Required

100 sq. ft. (9.29 sq. m)
of wall or partition



UL rated U300 or U400 series wall or partition assembly with minimum 3⁵/₈ in. (9.2 cm) wide studs or minimum 3¹/₂ in. (8.8 cm) wide steel studs in conjunction with listed steel cover plates.

Typical 4S electrical box

The wall illustration to the left does not require putty pads for the electrical boxes because:

- Each box is 16 sq. in. (103 sq. cm) or less.
- There are only six 4S boxes totaling less than 100 sq. in. (645 sq. cm) in the 100 sq. ft. (9.29 sq. m) of wall or partition area.
- There is only one box per stud cavity.

When Putty Pads Are Used

Two Reasons to Use Putty

Putty pads are used to protect metallic and non-metallic electrical boxes for the following three reasons.

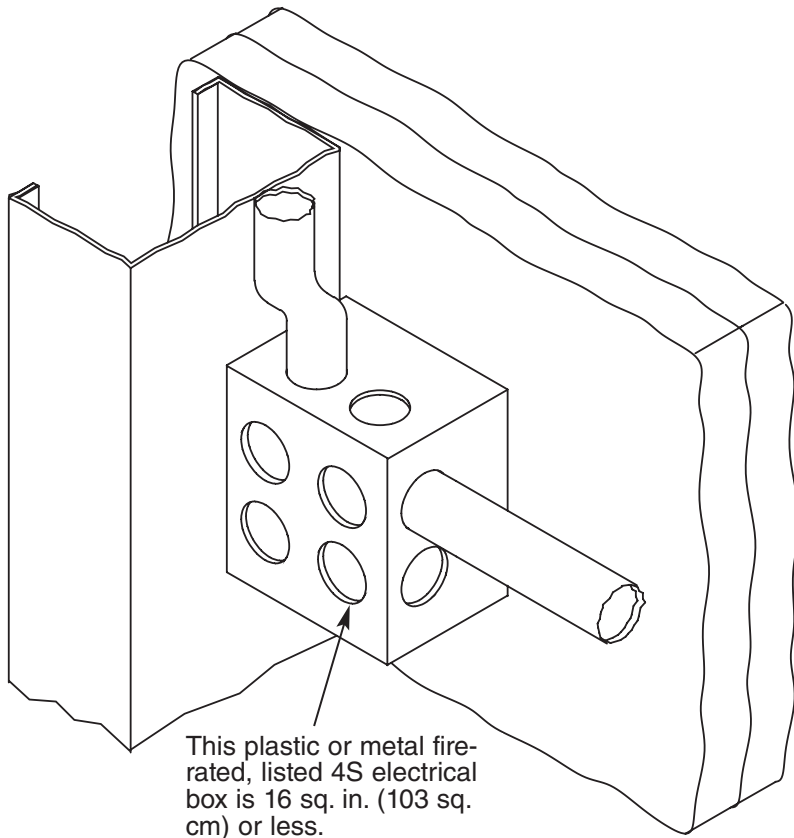
Size of Box

If the box is larger than 16 sq. in. (103 sq. cm), the box must be protected using putty pads.

Spacing Between Boxes

If the horizontal spacing between boxes is less than the required 24 in. (60.9 cm), the boxes must be protected using putty pads.

Size of Box



No Putty Required

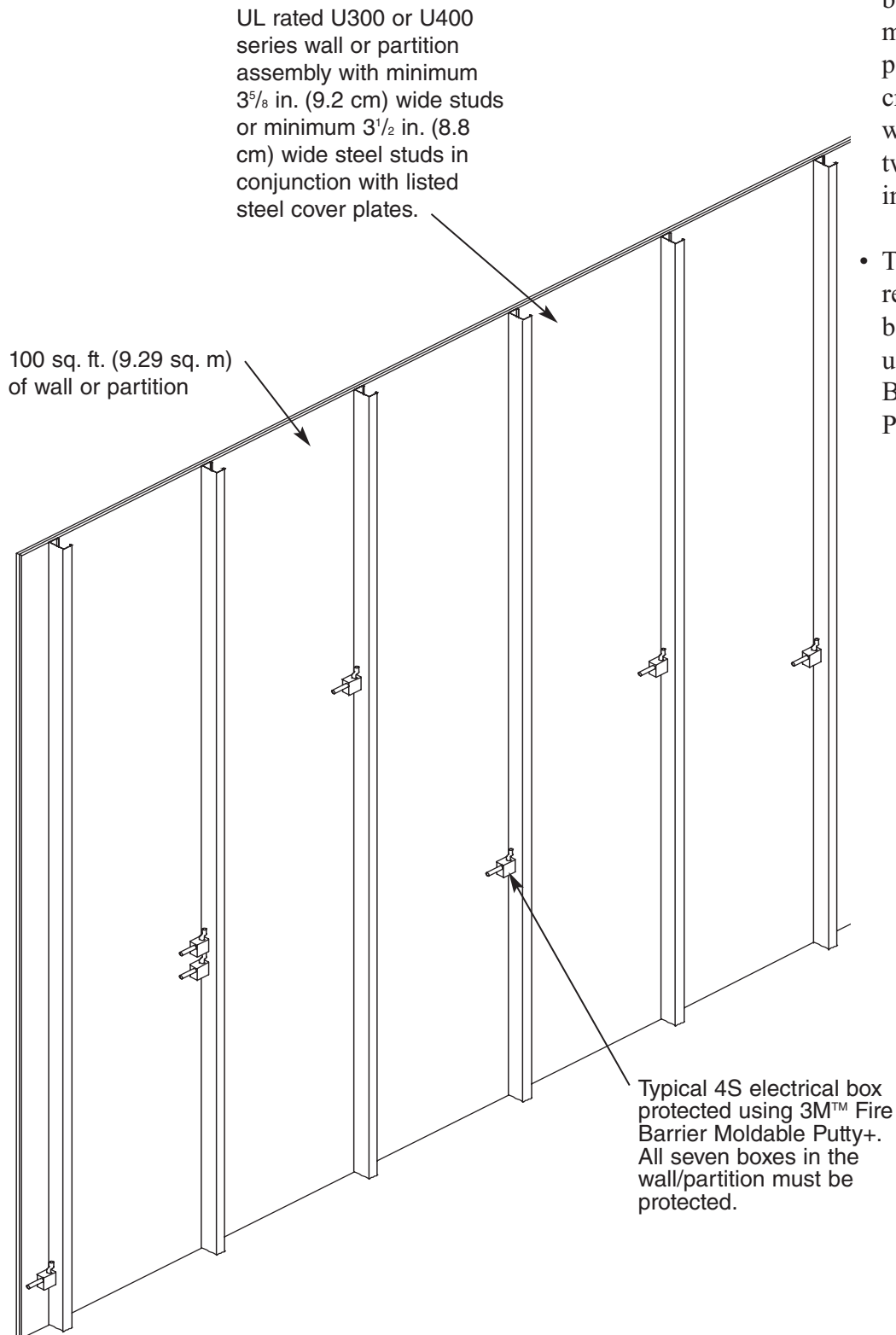
- Each 4S electrical box is 16 sq. in. (103 sq. cm) or less.
- Each 4S electrical box must be UL fire-rated and listed for use in a fire-rated assembly.

Putty Required

- Boxes exceeding 16 sq. in. (103 sq. cm) must be protected using putty pads. See back page for step-by-step instruction for applying putty pads to a typical electrical box.

Aggregate Area of Boxes

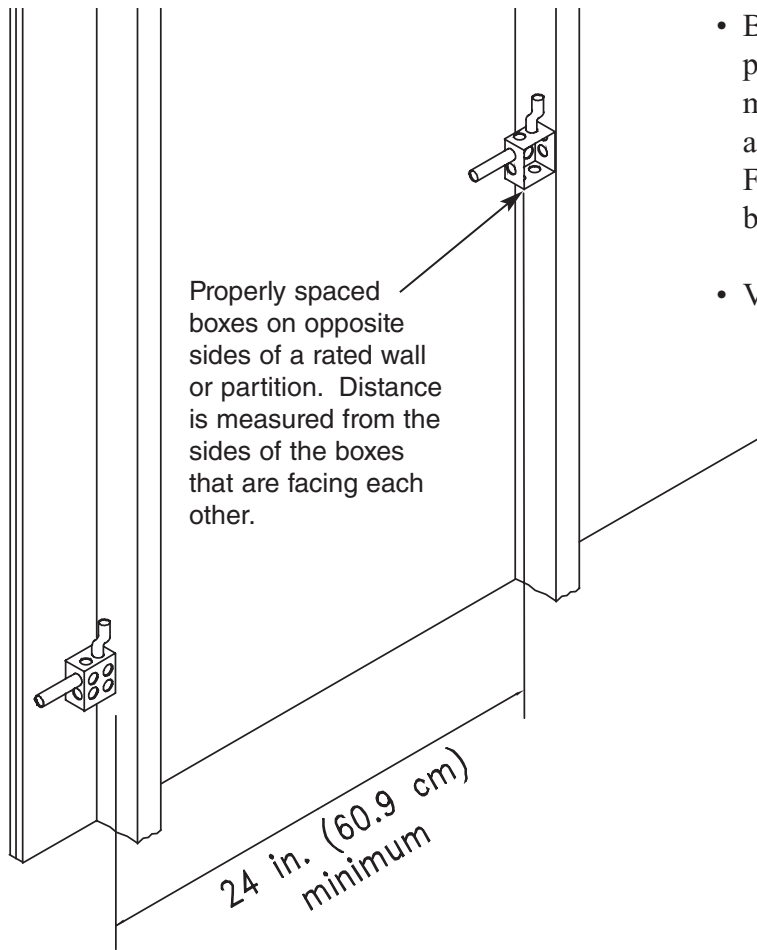
Putty Required



- Seven boxes are present within the 100 sq. ft. (9.29 sq. m) of wall. The aggregate area of all boxes exceeds the maximum 100 sq. in. per 100 sq. ft (645 sq. cm per 9.29 sq. m) of wall or partition, or if two boxes are located in one stud cavity.
- This configuration requires all seven boxes to be protected using 3M™ Fire Barrier Moldable Putty+ Pads.

Spacing Between Boxes

No Putty Required

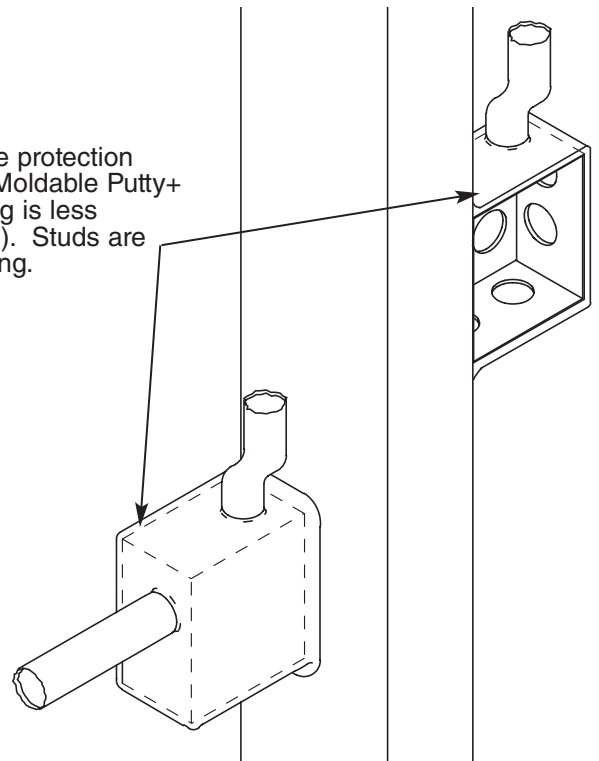


- Boxes on opposite sides of a rated wall or partition must be spaced 24 inches (60.9 cm) minimum horizontal. Reduced spacing is allowed if boxes are protected with 3M™ Fire Barrier Moldable Putty+ Pads, provided boxes are not back to back.
- Vertical distance is not considered.

Putty Required

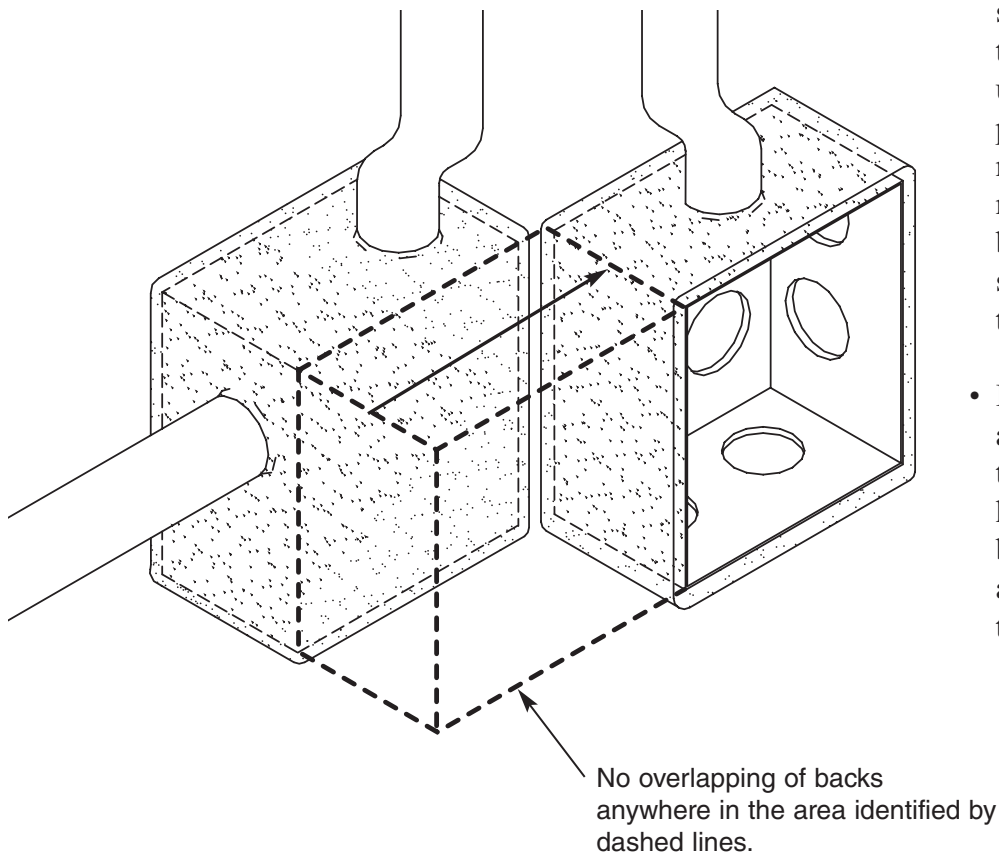
- Separation of boxes by a stud does not satisfy the 24 in. (60.9 cm) spacing requirement.
- Spacing is the indicator for determining if boxes on opposite sides of a rated wall or partition need to be protected. Vertical distance and studs are not considered for spacing.

Both these boxes require protection using 3M™ Fire Barrier Moldable Putty+ Pads. Horizontal spacing is less than 24 inches (60.9 cm). Studs are not considered for spacing.



Spacing Between Boxes - Continued

Putty Required



- The 24 in. (60.9 cm) minimum required spacing can be reduced if the boxes are protected using putty pads, provided the boxes are not installed back to back nor any portion of the backs are overlapping as shown in the drawing to the left.
- In addition, to facilitate application of the putty, the box corners should have sufficient space between them to allow application of putty pads to each box.

Using Putty Pads... Who Makes The Call?

Putty pads are a tested method for overcoming some of the limitations suggested by the NFPA Life Safety Code.

Adherence to these limitations is at the discretion of the local authority having jurisdiction (AHJ).

The bottom line? Check with your local inspector before installing putty pads.

WALL OPENING PROTECTIVE MATERIALS (CLIV)

This category covers proprietary compositions which are used to maintain the hourly ratings of fire resistive walls and partitions containing flush mounted devices such as outlet boxes, electrical cabinets and mechanical cabinets. The individual Classifications indicate the specific applications and the method of installation for which the materials have been evaluated.

The basic standard used to investigate products in this category is ANSI/UL 263, "Fire Tests of Building Construction and Materials".

LOOK FOR CLASSIFICATION MARKING ON PRODUCT

The Classification Marking of Underwriters Laboratories Inc. (shown below) on the product or container is the only method provided by Underwriters Laboratories Inc. to identify Wall Opening Protective Materials produced under its Classification and Follow-Up Service.

UNDERWRITERS LABORATORIES INC.®

CLASSIFIED

WALL OPENING PROTECTIVE MATERIAL

FIRE RESISTANCE CLASSIFICATION

SEE PRODUCT CATEGORY IN UL FIRE RESISTANCE DIRECTORY

3M COMPANY

3M CENTER, ST PAUL MN 55144 USA

R9700

Type MPP+ , moldable putty pads for use with max 4-11/16 by 4-11/16 in. flush device UL Listed Metallic Outlet Boxes installed with steel cover plates for use in 1 or 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. wide wood or steel studs and constructed as specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory. Outlet boxes secured to wood studs by means of two nailing tabs in conjunction with nails supplied with the outlet box.

Type MPP+ , moldable putty pads for use with max 14 by 4 by 2-1/2 in. deep flush device UL Listed Metallic Outlet Boxes installed with steel cover plates for use in for 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. wide steel studs and constructed as specified in the individual U400 Series Wall and Partition Designs in the fire Resistance Directory.

Type MPP+ , moldable putty pads for use with max 14 by 4-1/2 by 2-1/2 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Carlon Electrical Products, made of PVC and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Directory. Boxes installed with steel cover plates, for use in for 2 hr rated gypsum board wall assemblies framed with min 3-5/8 in. wide wood studs and constructed as specified in the individual U300 Series Wall and Partition Designs in the Fire Resistance Directory.

Type MPP+ , moldable putty pads for use with max 4 by 3-1/4 by 3-3/4 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Thomas & Betts Corp., made of polycarbonate, Type 234 or made of phenolic, Type 1052 and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Directory. Boxes installed with steel cover plates. For use in 1 hr fire rated gypsum board wall assemblies framed with min 3-5/8 in. wide wood studs and constructed as specified in the individual U300 series Wall and Partition Designs in the Fire Resistance Directory.

Type MPP+ , moldable putty pads for use with max 4 by 3-3/4 by 3 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Carlon Electrical Products, made of PVC and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Directory. Boxes installed with plastic cover plates, for use in 1 hr rated gypsum board wall assemblies framed with min 3-5/8 in. wide wood studs and constructed as specified in the individual U300 Series Wall and Partition Designs in the Fire Resistance Directory.

Type MPP+ , moldable putty pads for use with max 4 by 3-1/4 by 3-3/4 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Thomas & Betts Corp., made of phenolic, Type 2002- 738-C and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Directory. Boxes installed with steel cover plates. For use in 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. wide steel studs and constructed as specified in the individual U300 series Wall and Partition Designs in the Fire Resistance Directory.

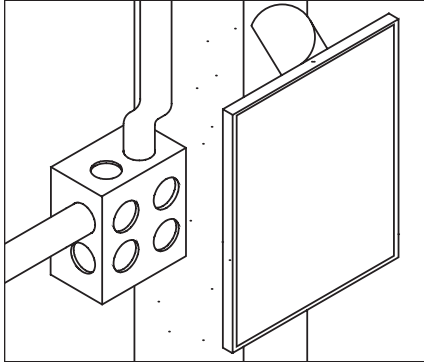
Moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) including nailing tabs and completely seal against the stud within the stud cavity. Additional putty material used to seal around each conduit and/or cable fitting on the exterior of each box. A min 1/8 in. thickness of putty material is required on the exterior surfaces of flush device boxes in 1 and 2 hr fire rated Wall and Partition Designs. When the moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the outlet boxes are not installed back to back.

This material was extracted and drawn by 3M Fire Protection Products from the 2003 edition of the UL Fire Resistance Directory.

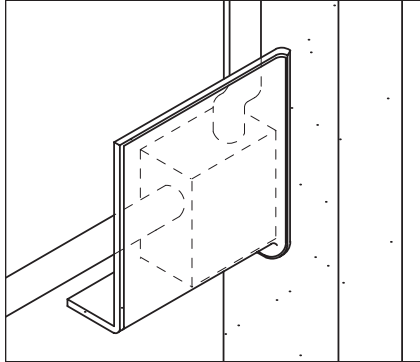
Typical Moldable Putty Application Steps

Refer to the Wall Opening Protective Material (CLIV) listing on the previous page for application details.

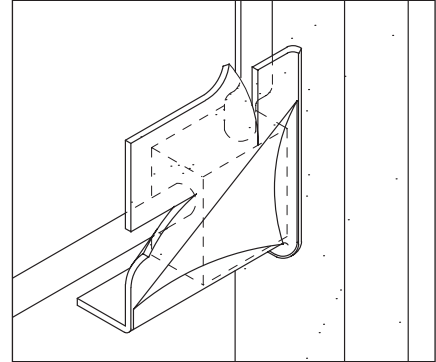
To ensure adequate adhesion, clean all surfaces removing dust, grease, oil, loose materials, rust or other substances. No special skill or tools are required.



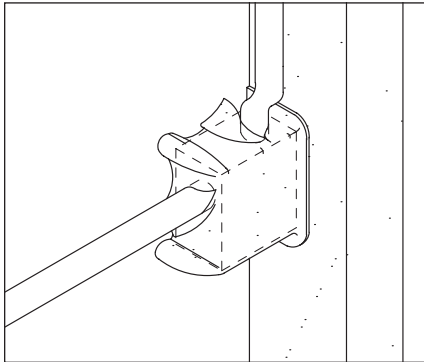
Step 1: Remove liner from one side of



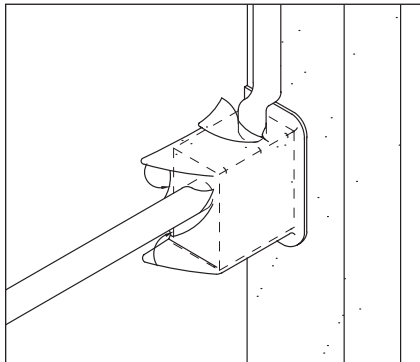
Step 2: Apply pad to bottom then backside of box, partially overlapping the stud.



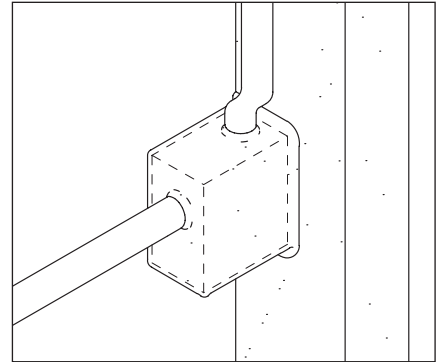
Step 3: Cut slits in pad to provide a snug fit around conduits or cables. Remove remaining liner from pad.



Step 4: Fold pad over top and side of box allowing excess putty to form pleats at the corners.



Step 5: Pinch pleat material together and fold against the vertical side of box or trim excess off as desired.



Step 6: Ensure pad is pressed firmly to surface of top, bottom and sides of box.

Important: Putty pad must be applied to a minimum depth of 1/8 inch (3.2 mm) (one layer of pad) over the entire exterior surface of the box for both 1 and 2 hour applications. Additional moldable putty may be packed into inside of conduit fittings to prevent passage of smoke through the conduit system.

3M™ Fire Barrier Moldable Putty+ (MPP)	Size	Cubic Inches (cm)	Units per Carton
MPP+ 7" x 7"	1/8 in. x 7 in. x 7 in. (3.2 mm x 178 mm x 178 mm)	6.12 (100.2)	20
MPP+ 9.5" x 9.5"	1/8 in. x 9.5 in. x 9.5 in. (3.2 mm x 241.3 mm x 241.3 mm)	11.3 (185.1)	20

Warranty and Limited Remedy. This product will be free from defects in materials and manufacture for a period of ninety (90) days from date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's application. If this 3M product is proved to be defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace the 3M product or refund the purchase price of the 3M product.

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Printed in U.S.A.
Bolger 5110911
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